

6-30-1992

# Annual Report of the University, 1991-1992, Volumes 1-4

University of New Mexico

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ANNUAL REPORTS  
1991-92

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ANNUAL REPORT  
DEPARTMENT OF PLANNING AND POLICY STUDIES  
RICHARD H. CADY, DIRECTOR  
July 1, 1991 - June 30, 1992

1. SIGNIFICANT DEVELOPMENTS

- The directors' administrative evaluation took place. The evaluation committee's report was filed in the President's office.
- Arrangements were made to have the computer programs for USC Faculty Planning Model rewritten and improved. This computer simulation permits exploration of alternative futures for faculty.
- Provided extensive analyses, graphs and text to support UNM's effort on the WICHE-sponsored Diversity Institute.
- Provided several reports to the Provost on UNM's faculty instructional workload.
- Continued the freshman cohort tracking system. Issued several reports and displays. Added an analysis on transfer cohorts.
- Continued extensive reporting and comparisons of UNM's faculty salaries and benefits and administrative salaries.
- Wrote recommendations by President Peck to CHE regarding overhaul of the state's PSE data system.
- Prepared draft of new policy on tuition waivers for UNM's employees.
- Responded to Provost's written request for a thorough revision of the faculty information system.

DETAIL ON SIGNIFICANT DEVELOPMENTS

Activities, Analyses, Reports, Presentations:

- Prepared sections of the report required by the NM House Bill IV (the "report card" bill): UNM response to section 2, B(1) on learner outcomes assessment and section 2, B(6) placement data on graduates.
- Prepared sections of UNM's response to the NM CHE Institutional Planning Guidelines. UNM response to section VII, C (9) on follow-up studies; section VIII, A and B (1 and 2) on system development plans, plans for outcomes assessment, placement and follow-up studies; section XI, A on currently accredited programs.
- Created and continued to maintain a comprehensive Bibliography and Library of assessment related materials (materials on higher education accountability, educational outcomes, faculty evaluation, institutional assessment, program review and evaluation, quality indices, student

outcomes assessment, and related survey instruments).

- Served as a resource person/consultant on student outcomes assessment and program evaluation. Met with individuals from different units on campus, from UNM branch campuses, and from the community.
- Conducted several special data analyses to provide user outcome information for the Center for Academic Program Support (CAPS). Wrote reports to summarize analyses.
- Served in an advisory capacity to VP Zuniga Forbes for the Alumni/Placement Survey she conducted.
- Conducted secondary analyses and prepared report of all analyses of the Freshman Survey (CIRP) for VP Zuniga Forbes. Gave presentation of CIRP findings to the Regents Subcommittee on
- Work with Faculty Contracts and Data office (Donna Dionne) and CIRT (Paula Mortensen) to obtain data needed on faculty for equity analyses as well as standard reporting.
- Starting in February, 1992 Donna Dionne and Tom Field initiated discussions about this. Later in the spring I was temporarily assigned part time to her office to make a concerted effort along these lines. Significant progress was made by June 30, 1992 and efforts continued into 1992-93.
- Continue to produce standard reports on faculty compensation and other selected indicators for internal and external use (including IPEDS, AAUP, OSU Regents, OSU/NASULGC). Typically completed by end of November if not sooner. Distribution of internal report to Provost, President, Vice President Business and Finance, Budget Director. Should be less problematic than last year when UNM converted to a new machine based human resources system which required major renovation in data access, but not entirely streamlined since fringe benefits will be coming from a different system for the third consecutive year.
- Completed in a timely fashion all the standard reports referenced. Fringe benefit reporting continues to be problematic but workable with effort.
- Perform a multiple regression analysis of faculty salaries both to examine for systematic bias with respect to sex, race-ethnicity, and age (and other putative discrimination variables as needed) and to assist the Provost-dean/director-academic chair chain of command in setting salaries. Unlike the past two years when this was done "at the last minute" in spring I plan to complete this prior to the end of the calendar year.
- Completed as scheduled prior to the end of the calendar year.
- Update in a timely fashion (shortly after the 21 day census date) the Freshman Cohort Tracking system files and produce and distribute the standard reports based on this system. Primary recipients are Office of

Student Affairs personnel, Faculty Senate A&R committee members, possibly the Council for Common Concerns (consisting of some UNM Student Affairs employees and APS high school principals, guidance counselors and directors).

- Completed both fall and spring semesters.
- Begin work on a Transfer Student Tracking system. Fall semester is typically crowded with mandatory reporting so it is likely this project will extend over the entire year. Office of Student Affairs personnel will be involved heavily in this project.
- Update and enhance the "Demographic Profile of the Faculty" if required by task force on the professoriate and HM-38, HM-25 reports. Completed during the fall.
- Produce the standard reports comparing UNM Main Campus Full Time Faculty Salaries to those reported in the OSU/NASULGC faculty salary survey (by rank and discipline) including national, regional, and peer comparisons, as soon after receiving the survey (typically February or March) as possible. Recipients include Provost, President, Vice President Business and Finance, Budget Director. Use the survey values to update the market index used in multiple regression analyses. Completed in March/April of 1992.
- Produce the reports on student loan indebtedness for office of Student Financial Aid. John Whiteside provides updated files on loan indebtedness which I match to a file I maintain on student characteristics and enrollment. After matching and merging the files I run several programs which produce values used by SFA. The past two years this has been run in the spring. It is possible it could be run in the fall this year. Run in October, 1991.
- Resurrect the reporting of instructional workload for use by the Provost, deans/directors, and academic chairs. While I have continued to produce, maintain and store the longitudinal machine readable files used for this purpose, reporting was discontinued due to lack of interest. Depending on the reception the "standard" reporting receives it is possible that additional effort may be requested to answer questions regarding instructional workload.
- Old (ca 1979) system determined to be non functional due to changes in creation of input files (dependent on other processes which changed).
- Continue to produce, maintain, and store machine readable files to add to the longitudinal series for student demographic and enrollment and for the so-called Contribution-Consumption reports (basically a file showing student-course enrollments). The former is used in conjunction with the Selected Indicators on Students, while both series have myriad other applications with regard to answering questions on students and their enrollment behavior. As

time permits Planning and Policy Studies would like to pursue augmenting the contribution-consumption report file system to include grades awarded.

- Performed as indicated. Augmentation not completed as Culprit program from Student Affairs was determined to be out of date and unable to make changes given workload.
- Continue to provide special reports to a variety of requestors. Typically this will include the Provost's office, other employees of this office, Graduate Studies, Student Affairs, and others through the year. My ongoing maintenance of longitudinal machine readable files on employees and students uniquely situates me to answer many queries on widely ranging topics.
- Done. Examples include:
- Persistence and graduation for WICHE/CHE diversity projects.
- Preliminary analysis for third semester retention of first time freshmen.
- Answered special query from ASM regarding graduates in its programs (simple counts, etc.)
- Produced list of Law School faculty.
- Faculty salaries by race/ethnicity, professorial ranks, tenured, tenure track only.
- Rosters of faculty in Chem, PolSci, ASM
- Number, percentage of faculty getting larger salary increases than President Peck.
- Count of new faculty by race-ethnicity
- Research assistant professors' salaries for FCO
- Percent Hispanic faculty by rank and new assistant professors
- Continue to serve as Editor of the AIR BITNET Newsletter and member of the AIR Publications Board. Resigned as Editor in Fall, 1991.

#### Student Affairs.

##### Service to committees, governance structure (R. Cady)

- UNM Planning Council, ex-officio member
- UNM Staff Council, elected from Precinct One (Scholes Hall, Police and Parking); served on Benefits Committee
- Faculty Senate Long Range Planning Committee; voting member
- Faculty Senate Budget Committee; provided information
- Service on Task Force as the Coalition of the Professoriate; wrote report
- Faculty Senate Admissions and registration Committee
- Faculty Senate Admissions and Registration, Committee Grade Petition Review Subcommittee.
- Faculty Senate Long Range Planning Committee. Gave presentations on Student Outcomes Assessment.
- Faculty Senate Reallocation Committee. Gave presentation on Student

### Outcomes Assessment.

- Advisory Group for Planning Student Outcomes Assessment. Served as Chair. Prepared materials on UNM's outcomes assessment efforts and plans for the focused site visit to UNM by the North Central Accrediting Association.
- WICHE Diversity Institute Subcommittee on Assessing Outcomes, Student Assessment and Learning Assistance. Facilitator. Prepared report for the WICHE Diversity Institute.

### For the New Mexico Commission on Higher Education

- Commission on Higher Education Research Advisory Committee. Served as member.
- CHE Research Advisory Committee Subcommittee on Outcomes Measures. Served as member.
- CHE/NMSU Assessment Conference Steering Committee. Served as member.
- CHE Planning Committee. Gave presentation as part of a panel discussion for the committee on student outcomes assessment regarding the North Central Accrediting Association's requirements for assessment in higher education.
- CHE Workgroup to Review Institutional Plans for Minorities and Women (Diversity Plans). Served as member.

### Other

- Albuquerque Business/Education Compact (ABEC), Subcommittee on Accountability, Measurement and Standards. Served as member, representative from UNM. Participated in discussions and institutional presentations about student outcomes and accountability at UNM, TVI and APS. Also participated in ABEC Retreat to define goals and strategies.

### Conferences and Workshops Attended:

AAHE Conference on Assessment in Higher Education, June 1991 and June 1992 (also attended in 1989 and 1990)

### Professional Memberships:

Association for Institutional Research

Rocky Mountain Association for Institutional Research

Society for College and University Planning

American Evaluation Association

### Teaching

- R. Cady taught Political Science 340 (International War) in Fall 1991 and Spring 1992 on an overload contract. He also advised several graduate students on their research.

## 2. SIGNIFICANT PLANS AND RECOMMENDATIONS FOR THE FUTURE

- (1) Support the work of the Planning Council.
- (2) Use a computer simulation model faculty flow with alternative personnel policies for the future.
- (3) Revising the "Report Card Act."
- (4) Providing expertise and staff support to the Provost's Committee on assessment of student outcomes; press for a high level decision to proceed with student outcomes assessment.
- (5) Performing salary equity analyses, as required.
- (6) Continue the tracking of freshman cohorts with the possibility of transferring responsibility for it to Registration. Develop and propose longitudinal tracking of undergraduate transfer students.
- (7) For the Dean, Graduate Studies, prepare a tracking study on graduate students.
- (8) Service the Committees of the Faculty Senate and Staff Council, as required.
- (9) Coordinate UNM's responses to planning directives from the CHE. Under the new commission, planning is expanded and different.
- (10) Serve on the two teams for improved information and data; STEPS and the CHE's data system.
- (11) As time permits, supply analytical services to CAPS, Freshman English Program, Student Financial Aid, and other units requesting support.
- (12) Respond to the demand of the Provost's office to overhaul an obsolete and inadequate faculty information system.

### 3. Appointments to staff

Constance Lockett, administrative assistant, was selected to replace 23-year veteran employee, Elsie McConnell who retired. Lockett's date of employment was 06/29/92.

### 4. Separations from Staff

Pauline Thomas, work-study, half-time: started 07/02/91, ended 05/15/92.  
 Jacqueline Bergdahl, Project Assistant, half-time: started 07/02/91, ended 01/13/92. Bergdahl was summoned back to the Sociology Department to teach and could not continue her assistantship in Planning and Policy Studies.

### 5. Publications

- Few external to UNM. Numerous reports, memorandum and studies were completed. These are the main output and contribution of the office. File copies are available.
- Book review, "Comparing Your Institution with Others" in Planning for Higher Education, Vol 20, Spring, 1992.

Tom Field

- Wrote two novels (96,000 and 85,000 words, respectively), submitted one for publication to numerous publishers with no takers in the time period covered. Due to success in initiating creative writing, a lifelong goal, I decided to minimize for the time being my involvement in outside professional activities. Joined Southwest Writers Workshop.

6. Service externally

- Member of Albuquerque/Bernalillo County Goals Commission
- Vice Chairman, Publications Advisory Committee of the Society for College and University Planning
- Finance Committee, Aquinas Newman Center
- Service on NMICHE's committees, briefing to new commissioners and the CHE Planning Committee; participation in planning a data system for tracking all students in K-12 > college in New Mexico (STEPS)
- UNM School of Medicine. Program Evaluation Consultant to Dept. OBGYN Federally Sponsored Communication Project.
- UNM School of Medicine. Participated as an observer/checklist for the Objective Structured Clinical Exam (OSCE) for second year medical students.
- UNM Office of Student Affairs, One-on-One Program. Participant (4 years)
- UNM International Students' Programs. Friendship Family. Participant. (5 years)
- Member, Board of Directors, Parents of Intercultural Adoption (PICA) (a 501C(3) organization)
- Editor, PICA Newsletter
- Organizer/Teacher, PICA Heritage Camp, a multicultural daycamp for children (preschool to middle school). (4 years)
- Sunday School Teacher. First Unitarian Universalist Church.
- Parent Teacher Association, Montezuma Elementary School. Member



# THE SCHOOL OF ARCHITECTURE & PLANNING

1990-1992

GEORGE ANSELEVICIUS, A.I.A., DEAN

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## PROGRAMS & COURSES

### Architecture Accreditation and Graduate Review

An accrediting team from the National Architectural Accrediting Board (NAAB) visited the School in spring, 1992 for an in-depth review of the architectural program, in order to determine whether the School's national accreditation for the first professional Master of Architecture Degree should be renewed. The program passed this "inspection" with flying colors and was granted the maximum allowable five year extension of accreditation. The four-person accrediting team was joined by a two person team that evaluated the graduate program in architecture as an internal review for the Graduate School here at UNM. Members of the NAAB Team were: Gregory Palermo, FAIA, (Chair); Professor Linda Groat, College of Architecture & Urban Planning, University of Michigan; Norman K. Doft, AIA, Architect, Glen Cove, NY; and Malcolm D. Campbell, Graduate Student, University of Utah.

Members of the Graduate Review Team were: Dean Robert G. Hershberger, AIA, College of Architecture, University of Arizona; and Professor Patrick Nagatani, College of Fine Arts, University of New Mexico.

A brief summary of the Accrediting Report notes the following strengths of the program: Vigorous leadership; recent curriculum improvements; the computer laboratory; Design and Planning

Assistance Center; good rapport with the architectural profession; talented new faculty; strong enrichment programs, such as the lecture series, visiting foreign faculty, faculty seminars, summer program in Mexico and school publications; strong teaching bias of program; and strong school spirit.

"Design work and presentations display a solid integration of technical, structural and site issues in design thinking" was one of the statements as to the strength of the program.

Concerns expressed by the Team related to further theory course development, standards for thesis and independent projects, requirements for professional practice, the library situation, the need for a new building and budgetary support to address new demands, and the need for more support for faculty travel.

The report ends with a series of positive suggestions. We are in the process of addressing those we can internally, and are requesting financial support from the University.

The report by the Graduate Program Study Team states that the School of Architecture "has a high quality graduate first professional degree program in architecture" and that "the professional curriculum is competitive educationally with the best schools in the country". It ends with a very helpful list of prioritized recommendations and their associated costs.

#### Community & Regional Planning Accreditation and Graduate Review

In the Spring 1992 semester, the Community & Regional Planning Program successfully went through a national reaccreditation process for its Master of Community & Regional Planning degree by

the Planning Accreditation Board (PAB). Full five-year<sup>10</sup> accreditation was granted.

Members of the visiting team were: Professor Jerome L. Kaufman, Dept. of Urban & Regional Planning, University of Wisconsin (Chair); Dean Fritz W. Wagner, College of Urban & Public Affairs, University of New Orleans; and Florence Beck Kurdle, Vice President of Planning, Constellation Real Estate Group, Inc., Baltimore.

In its final report, the Accreditation Board gave excellent reviews of the Planning Program's mission, academic structure and emphasis on regional issues. In addition to calling for increased autonomy over budget, tenure, hiring and promotion decisions, the Board had insightful recommendations for the Planning Program's curriculum emphases, the structure of the advanced Planning studio and ways to support faculty research and scholarly activities. The faculty in the program will work on these issues over the next academic year.

At the same time, the program was evaluated internally for the UNM Graduate Studies. Members of this Review Team were: Professor Edward J. Blakely, Dept. of City & Regional Planning, University of California-Berkeley and Assistant Professor Denise Fort, Director of the University of New Mexico Water Resource Administration Program.

The Graduate Studies reviewers focused on the Program's external relations. Their final report was highly complementary, citing that the program is poised "...to develop a national and

international reputation in the areas that link its intellectual resource to problems of the southwest human and physical development." The reviewers noted that the Planning faculty may be the most ethnically diverse faculty in the nation, and made recommendations in the areas of research and creative work, faculty development programs, access to resources and autonomy, and student recruitment.

The planning faculty members are proud of the two reviews and the record of excellence established thus far.

#### The Architecture Curriculum

UNM as a whole is considering a Core Curriculum which would be required of all undergraduates. The idea of a Core Curriculum has come about across the country because of a concern that many university curricula have become essentially vocational curricula rather than the broad education implied by the term "university". The UNM Faculty Senate has voted to have a Core Curriculum. The format will be 24 credit hours. The actual content is still being debated.

The School of Architecture & Planning is supporting the Core Curriculum. Within the six year program, we already have one of the broadest arrays of courses (art to engineering) of any discipline. More than other professional schools, we have worked hard to leave room for electives, allowing students to pursue other interests. The most recent changes in our program have sought to be sure that required courses cover the core of all major architecture topics. Elective courses are available to pursue the

next level of detail in this broad range of architectural issues. 12

Another change instituted by the Architectural Curriculum Committee in Fall 1992 is the "vertical" undergraduate studio in which third and fourth year students are enrolled in the same studio. During those years, a student must take four studios: urban design, building design, interior architecture, and an elective studio. Elective studios include the Design and Planning Assistance Center (DPAC), and special topics determined by the instructor. In fall, the special topics studio will be focusing on educational facilities.

#### The Planning Curriculum

After a year-long, nation-wide search for a faculty member with expertise in natural resources and quantitative methods, David Henkel of Santa Fe was hired as Assistant Professor. David will be teaching in the areas of Regional Planning, Natural Resources Planning and Quantitative Methods. Kim Sorvig, ASLA, was hired jointly by the Architecture and Planning programs in a position to fulfill the School's needs for depth in urban design and natural resource analysis. Kim and David are joined by Min Kantrowitz, who was appointed as a halftime adjunct professor jointly to the Architecture and Planning programs. Min teaches CRP 510 and will take the lead in design and behavior studies.

Teresa Córdova has joined the faculty as an Assistant Professor with a joint appointment with Women Studies. She is teaching a research methods course and a course on the political economy of urban areas.

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The Fall 1992 class of students numbers 20 and represents students from all areas of the country -- east, northeast, west and southwest. The class participated in a day long orientation to the School, the Planning Program and our faculty. This year's orientation was coordinated by Assistant Professor Henkel.

Consistent with the Program's five-year Strategic Development Plan, the curriculum offers new and continuing students the ability to emphasize community development, natural resources, landscape planning and the built environment as well as taking the required core courses.

Associate Professor Paul Lusk received tenure after teaching at UNM for more than 15 years as an adjunct and part-time faculty member. He currently teaches Planning Communication Techniques and planning studios, as well as engaging in research in ecological design and sustainable development.

The first Spanish language short (intensive) course on Planning Theory and Environmental Planning was offered by the Planning Program in August '92, and was a success. It was attended by students from the City University in Juárez, Mexico, and from Argentina (English translators were available as needed.) Faculty who participated were David Henkel, Claudia Isaac, Paul Lusk, Paul Robinson and William Siembieda.

#### Continuing Education Evening Courses

These courses were offered by the School in conjunction with the Division of Continuing Education.

Fall 1991

Legal Issues for Architects, Stanley Sanger and Robert Perovich, instructors.

Interiors: Commercial. Instructor, Nilgun Turan.

Principles of Written Construction Documents. CSI Team, instructors.

Spring 1992

Architectural Photography. Instructor, Kirk Gittings.

Earthen Architecture. Instructor, Paul McHenry, Jr.

Interior Environments. Instructor, Nilgun Turan.

Geographical Information Systems. Instructor, Neil Weinberg.

ACTIVITIESMonday Lecture Series

The School's traditional lecture series has good attendance. It brings highly qualified architects, planners and landscape architects from this country and abroad. The lectures are supported by the John Gaw Meem Endowment, the Urban Enhancement Trust of Albuquerque, the Friends of the School of Architecture & Planning, the Albuquerque, Santa Fe and Southern New Mexico chapter of the AIA, the New Mexico Society of Planners and the New Mexico Chapter of the American Society of Landscape Architects.

Fall 1992

Bart Prince, Architecture, Albuquerque, New Mexico: "Works and Thoughts."

Eric Schmidt, Director, Urban Design, Boston Redevelopment Authority: "Governing Architecture and Planning Through Urban Design."

Dima Zaitsev, Russian Architect: "A New Generation of Russian Architects."

Sandra Rosenbloom, Director, the Drachman Institute, Professor of Planning, University of Arizona: "Family Friendly Cities. Can Architects and Planners Contribute?"

William P. Bruder, Architect, New River, Arizona: "Creating Functional Metaphors."

B.V. Doshi, Architect, Ahmedabad, India: "Recent Works."

George Dickie, Professor of Landscape Architecture, Penn State University: "Islamic Gardens, Landscape in Arid Lands."

F. Douglas Adams, Adams & Wolf, Architects, Belmont, Massachusetts: "Imagery, Means, and Poetics, an Architecture in Context."

Jerzy Soltan, Nelson Robinson Professor of Architecture and Urban Design, Emeritus, Harvard: "Space and Discipline of Modernists."

Evan A. Ferguson, Architect, London, England: "High Tech Primitives."

#### Spring 1992

Charles Moore, O'Neil Ford Centennial Professor of Architecture, University of Texas, Austin: "Recent Work." (Larry Licht Memorial Lecture.)



Ronald Altoon, partner, Altoon and Porter, Architects, Los Angeles: "Designing with Gorbachev: The Black Box and the Black Hand."

Mark B. Lapping, Professor and Dean of the Faculty of Planning & Public Policy, Rutgers University, New Jersey: "The Baltics: After the Fall."

Lorenz Moser, Architect, Zurich, Switzerland: "Recent Architecture in Switzerland."

Paul Rudolph, Architect, New York: "Enigmas in Architecture." Crego Block Lecture.

Anant Raje, Architect, Ahmedabad, India: "Recent Architecture in India."

Craig Ellwood, Architect, California, Italy: "Ellwood on Ellwood."

Bruce A. Joffe, Executive Consultant, Geographic Information Systems, PlanGraphics, Inc.: "Geographic Information Systems: Putting Technology to Work."

Vincente del Rio, Professor of Architecture & Planning, Universidade Federal do Rio de Janeiro: "Contemporary Architecture in Brazil: Beyond Brazilia."

Maria Luisa Garcia, Director of Urban Development Program, Institute of Engineering and Architecture, the Autonomous university of Juárez, Mexico: "The Planning of Social Services and housing in Mexico: The Conflict Between Clients and Bureaucracy."

Special Lectures

Beyond the regular Monday evening series, the following lectures were offered:

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Sheila Ornstein, Assistant Professor in Architectural Technology, College of Architecture and Urbanism, University of Sao Paulo, Brazil: "Design and Implementation of Social Housing in Brazil - Current Practice."

Ferenc Vidor, Hungarian Architecture and Planner, Professor, University of Budapest: "Changes in Architecture and Planning in Central Europe."

Kelly Robinson, Associate Professor of Planning, M.I.T.: "Environmental Regulations and Economic Performance in the 1990's."

David Henkel, Assistant Professor of Planning, UNM: "Bioregions of The Rio Grande: Some Impacts of Border Development."

Marco Cenzati, Consultant, Resources for Employment and Economic Development, Los Angeles: "Global Economic Restructuring and Development Activities."

Kate Berry, Program Advisor on Environmental Policy and Management, University of Denver: "The New Indian 'Treaties'. Emergence of Negotiated Settlements in Indian-Anglo Water Conflicts."

Dusko Bogunovic, Fulbright Scholar, University of California at Berkeley: "Environmental Planning in Yugoslavia."

Mark Lapping, Professor and Dean, Faculty of Planning,

Rutgers University: "Rural Planning and Development in the United States."

Geoffrey H. Baker, Professor, Tulane University: "The Sainsbury Wing Addition to the National Art Gallery in London, by Venturi and Scott Brown."

V.B. Price, Architectural Critic and Poet: "The Poet and the City."

Evan A. Ferguson, Architecture, England: "What Next?"

### Exhibits

Exhibits were sponsored by the Friends of the School of Architecture & Planning, and by the University of New Mexico Centennial Committee.

### Fall 1991

September 9-October 11, "Yemen, a Culture of Builders." Distributed by the American Architectural Foundation (The Octagon).

September 20, Peggy Crawford, Photographer, "Places and People of Yemen."

October 14-November 15, "Aldolph Loos, Architect, 1870-1933." Distributed by the Austrian Cultural Institute, New York.

### Spring 1992

February 3-February 21, "Architects Working Drawings" (from the School collection.)

March 2-spring semester: "Student and Faculty Work."

### The Annual Convocation

The School's 91/92 Convocation was held in Keller Hall at

the Fine Arts Center, UNM. The room, which holds 300 people was filled to overflowing by graduating students, friends and families, faculty and staff.

Antoine Predock, internationally recognized architect, was the recipient of the annual Distinguished Alumnus(ae) Award. He spoke about the spirit and responsibility of architects in our time. The program included a welcome by Dean Anselevicius, announcement of scholarships awards and fellowships by Associate Dean Dent and representatives of donors, as well as the address by Mr. Predock. Regent Arthur D. Melendrez joined the ceremony and wished our graduates success in their future activities. A President's reception on the patio of University House followed the completion of the ceremonies.

#### Third Annual Architecture Spring Break Trip

Assistant Professor Stephen Schreiber led the spring trip to San Francisco with a group of students, who explored the art, architecture, and urban design of the San Francisco region, including Berkeley, Palo Alto, Oakland and beach areas. They also visited the Bay Area's galleries and museums, buildings and parks, architecture schools and architects' offices.

#### Exhibit and Silent Auction

On May 2, 1992 the Albuquerque Chapter of the AIA and Flatow, Moore, Bryan, Shaffer and McCabe Architects sponsored an Exhibition and Silent Auction: "Art by Architects and Significant Others", to benefit the New Mexico Architectural Foundation, the UNM School of

Architecture & Planning, and the American Institute of Architects, Albuquerque Chapter. The exhibit was held at two locations, the AIA Chapter office and the new offices of FMBSM.

### Earthen Architecture Bibliography

In 1985, P.G. McHenry was commissioned for the compilation of a composite bibliography on earthen building by Dean Anselevicius and Gerald May. The staff at Zimmerman Library then combined these into a composite list of approximately 750 entries, and after a search of UNM libraries, prepared two lists; one of "Owned Resources" and another of "Non Owned Resources". Additionally, P.G. McHenry donated portions of his library on earthen architecture as a special collection for the John Gaw Meem Room, agreed to several years earlier. To date this comprises some 13 boxes.

Each year, students of the Earth Architecture classes have been cataloging and annotating the "owned" items to provide a comprehensive list, showing author, title, publisher, data, description, and key word index for each entry.

Parts of this information was recorded on a data base, so that search and retrieval could be easily accomplished, and a printout will be available to students and researchers at the Architecture Resource Room and to other institutions. Also being considered is the possibility that this material can be made available in diskette form. This bibliography is an ongoing project. Additional titles and items will be welcome. References should be sent to the Resource Room of the School of Architecture & Planning.

The Design & Planning Assistance Center (DPAC)

DPAC's clients are low-income individuals and families, community groups, non-profit organizations and rural communities throughout New Mexico who wish to solve problems of their physical environment but lack means to pay conventional professional fees. DPAC is an internship program in which students are exposed to many of the complexities and frustrations of the design and planning process in the real world that are not normally experienced in other academic course work. Students at the DPAC continue the tradition of community service initiated by the School in 1969. Projects undertaken this year include:

Fall 1991

Community planning for Taos, church addition in Albuquerque, building and landscape design for Madrid, economic development planning for Taos County, elementary school master plan in Española (Fairview), visitors center at Rancho Las Colondrinas at La Cienega, Rio Chama Acequias study - Rio Arriba County, and landscape design for a Rio Rancho neighborhood.

Spring 1992

Historic preservation documentation at San Fidel, Carlisle Gym remodel at UNM, amphitheater and food services at Rancho Las Golondrinas, planning for "Kids Count" Foundation in Albuquerque, health center additions for Santa Clara Pueblo, Youth Development Restaurant design and Karate Club remodel in Albuquerque, design of fire station and community center for Ocate and zoning review and

Summer 1992

Head Start playground for Isleta Pueblo, watershed graphics for Mimbres Valley, pre-school additions for Bernalillo, master plan for the Ramah Navajo Chapter, median landscaping for Deming, additions to Carrie Tingley Hospital at UNM; and in Albuquerque, Altamont Little League site and landscape design, Highlands sector planning and housing design for the Sawmill Neighborhood.

Students provide programming, design and cost analyses for each project undertaken. Students may work on individual projects, in teams, or all together on a single project depending upon project load and time constraints. DPAC is under the direction of faculty member Edward B. Norris.

Students Teaching in Albuquerque Elementary Schools

Based on Professor Anne Taylor's using architecture to teach math, science, social studies and art. A group of students taught at Oñate, Zuni, Cochiti and Marie Hughes Elementary schools. The Students were well received and acted like Pied Pipers. They were: Todd Bennett, Lemoyne Blackshear, Audrey Cartey, Julie Nolent, Matt Pacheco, Tina Patel, Marco Ramos, Steve Swanson and Olivia Tellez.

Models and drawings of the elementary students were exhibited at the School of Architecture & Planning.

Research & Development

Below is a statement by Associate Professor William Siembieda, Director of the Center of Research and Development (CRD):

CRD expects to promote, enhance, and disseminate academic,

creative, and applied work related to all aspects of the built environment.

The CRD program is organized into the activities following:

- 1) Faculty development through workshops in grant writing, written communication and computer literacy;
- 2) Research development through providing access to more research information and support services (e.g., Office of Research Administration and AIA/ACSA programs, and deadlines for proposals);
- 3) Coordination and centralization of research and grants proposals through the office of the Administrative Coordinator;
- 4) Working Papers Series. Working papers as a mechanism to get feedback on ideas and to disseminate work in a simple manner;
- 5) Establish a Research Agenda. As a long term activity, the Center will not be successful unless a research agenda can be established that provides some focus and structure to the mission statement;
- 6) Home for Visiting Scholar/Professionals who wish to spend some time at the School. At times, it is easier for outside people to get support (financial and institutional) if there is an administrative unit to house them;
- and 7) Special projects of research and service within the region and state.

#### Center for Research & Development of the Built Environment

This year's activities focused on faculty development, visiting lecturers and the Working Paper Series.

The Center assisted faculty members in preparing grant submissions and obtaining information on funding sources. With the assistance of Center staff, professors Henkel and Lusk submitted



proposals to the Southwest Center for Environmental Research Policy for applied projects along the US/Mexico border, and Professor Turan submitted a proposal to the Graham Foundation.

Architects Eduardo Lopez Moreno, Coordinator of the Architecture Research Sequence, School of Architecture, the University of Guadalajara, spent three weeks at the Center this summer doing research in the UNM libraries. Dr. Laury Moss, a Visiting Fellow in the Center, accepted a year appointment to teach resource planning at the Asian Institute of Technology, Bangkok, Thailand. The Center joint-sponsored visiting lecturers by two members of the City University of Juárez faculty: Maria Luisa Garcia and Manuel Loera.

Professor Steven Dent reports that the energy savings from the climatic based remodel of the School Annex Building saved some \$9,500 in utility costs the first year. More savings are expected next year. This demonstrates the value of energy conscious design.

Three new working papers were added to the Center's series, and two more are in progress. A list of working papers is available from William J. Siembieda, Ph.D., the Center's Director.

#### **PUBLICATIONS**

MASS, volume IX, an important issue entitled "Culture, Regionalism and Architecture" was partially supported by a grant of \$2500 from the Graham Foundation. The issue included the following articles: "Making One's Own Article and Some Personal Biases" by George Anselevicius; "Regionalism and Architecture" by Charles

Correa; "Building Sheltered Pathways through the Landscape" by Glenn Murcutt; "Australian Architecture" by Philip Drew; "Questions and Answers", an interview with Kenneth Frampton; "Cultures and Regionalism" by John B. Jackson; "Diversity versus Uniformity -- Tendencies in Architecture and Politics since the Late 1980's" by Udo Kultermann; "Weeds and Lions in our Social Imagination" by Baker H. Morrow; "An Interview" with Antoine Predock; "A Regionalism for the Future in New Mexico: Four Levels of Meaning", by V.B. Price; "Culture, Place and Region: The Mount of Olives in Jerusalem" by Arie Rahaminoff; "A Hypothesis on the Origin of the Russian Onion Dome" by Klaus Schindler and Mario Salvadori; "Architecture and Butterflies" by Rina Swentzell; "Appropriate Image: Wolf Girl, Date Unknown" by Ernest Wolfe. Editors of this issue were graduate student Rebecca Levine Quigley and Catherine Mullinax-Jones

**NEWS.** The annual issues are sent to all alumni(ae), Architects, Planners, Landscape Architects and Interior Designers in New Mexico, and Schools of Architecture and Planning in the U.S.A.

**PORTFOLIO.** A publication showing design projects by students is, to date, a biannual issue, and will again be published in 92/93.

All the above publications are fully or partially supported by the Friends of the School of Architecture & Planning.

**MEXICO & LATIN AMERICA**

Our School is working to implement the University-wide hemispheric initiative which calls for closer working contacts at the professional and academic levels in Latin America. Each year we have more students in architecture and community planning with interest in Latin America's built environment. This interest is expressed through design thesis projects, though field work, and through joint courses. These are healthy signs of our School's capacity to learn and share knowledge with the peoples of Latin America.

This year *Dean Anselevicius* met with the Dean of the Faculty of Architecture, University of Guadalajara (UdeG), *Arquitecto Hector Zapata*. UdeG is the second largest architecture school in Mexico with some 2,300 students and four graduate architecture programs. An agreement between the schools that calls for direct faculty exchange on an annual basis, plus other joint work, has been drafted.

Linkages with the University of Guadalajara continue to be strengthened through *Professor Siembieda's* work as Research Professor at the Center for Housing and Suburban Studies where he is working on a set of regional housing and planning studies that examine the land development process and the actors in the process.

*Dean Anselevicius* also ran the **Genesis of Form** summer program in San Miguel de Allende in the State of Guanajuato. San Miguel is famous as an international music center and the summer home to many foreign students learning the Spanish language.

*Professor William J. Siembieda* is teaching a bi-national

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course on land development that is held in Ciudad Juárez, Chihuahua, Mexico. Students from The School of Architecture & Planning and the City University of Juárez are enrolled in this course which examines planning, urban form and development issues through issues related to Juárez and El Paso, Texas. This course is offered as part of The School of Architecture & Planning's joint agreement for coursework between the planning programs of the two schools.

Professor *David Henkel* has submitted a proposal for construction of an ecological baseline model for small communities along the U.S. Mexico border. This proposal was submitted to the Southwest Center for Environmental Resource Policy. Professor *Paul Lusk* also submitted a proposal to the same Center to construct a sustainable rock marsh project for a small border community.

The Center for Health and Housing, Medical School, SUNY-Buffalo invited *Dean Anselevicius* and *Professor Siembieda* to attend the conference on Health and Housing in the Americas. Dean Anselevicius moderated a panel and Professor Siembieda presented a paper on The Land Subdivision Process for Low Income Settlements: The Logic of Development in the State of Jalisco, Mexico.

Professors *Lusk* and *Henkel* are conducting the advanced planning studio on the topic of sustainable development in small communities along the border. This fall, the studio focuses on Los Palomas, Mexico, Chihuahua and Columbus, New Mexico. They are producing a resource guide, and planning study of the bio-region.

Professor *Claudia Isaac* participated with a group of

distinguished Afro-American political activist in a special set of meetings with Mexican officials, including the President of Mexico Carlos Salinas de Gortari and the Director of Solidaridad, Lic. Carlos Rojas.

### Student Work

Glenn Pearce-Oroz, a joint degree student in Planning and Latin American Studies was chosen to be a member of an international team of urbanists who conducted a month-long study of progressive land subdivision practice in Mexico. His work led to an invitation to participate in the evaluation seminar conducted by the Habitat et Developpement program of the Catholic University of Louvain, Belgium.

James Knight, a Master of Architecture student, is conducting his architecture thesis research on industrial towns in the borderlands with the objective of designing a master plan and a sustainable economic structure for a community of ten thousand people. This is an exciting piece of work that is truly bi-national in scope.

Over the past three years we have enjoyed a growth in the number of dual degree students in Planning and Latin American Studies. This year there are about ten students in the dual degree program, and they have formed a GSA chapter called the Planner in Latin America. This special interest group will work on issues related to enhancing opportunities for all School of Architecture & Planning students who wish to conduct research and studies in Latin America.

### Visiting Faculty

This year we again enjoyed learning from a distinguished group of Latin American scholars including: *Dr. Sheila Ornstein*, Faculty of Architecture, University of Sao Paulo; *Dr. Vincente del Rio*, Faculty of Architecture, the Federal University of Rio de Janeiro; *Eduardo Lopez Moreno*, Coordinator of the Center for Housing and Suburban Studies, the University of Guadalajara; *Manuel Loera*, Assistant Director of Research in Social and Administrative Sciences, and *Maria Luisa Garcia*, Coordinator, the Master of Urban development Program, the Autonomous University of Ciudad Juárez.

### Genesis of Form - Mexico 1992

The School of Architecture & Planning held its second Design workshop/Seminar in San Miguel de Allende, Guanajuato from July 6 through August 7, 1992. Eleven students participated in this year's program. From our School: Abdoula Albloushi, Luis Carrazana, Gregory Chant, Stephen Cummings, Hiroyuki Isobe, James Knight, Robert McElheney, Frederick Robinson and Robert Stembridge. From the School of Architecture and Florida International University: Anna Maria Castano and Eduardo Leon.

Instructors for the Design Workshop/Seminar were: Charles Moore, O'Neil Ford Centennial Professor of Architecture, University of Texas at Austin; Jerzy Soltan, Nelson Robinson Professor of Architecture and Urban Design Emeritus, Harvard University; Ricardo Legorreta, Architect, Mexico City; George Anselevicius, Dean, School of Architecture & Planning, University of New Mexico; and Edward Norris, Director, Design and Planning Assistance Center,

University of New Mexico. Norris also served as Program Coordinator.

The studio focused on urban form with projects ranging from a sketch/essay project concerning the qualities of San Miguel as an urban center, to the design of a Museum for Folk Art in Guanajuato, to a design of house/studio and an educational facility both located in San Miguel. As part of the program, students made visits to Dolores Hidalgo, Guanajuato, Queretaro, Atotonilco and other nearby locations.

The following public lectures were given in the "Sala de Actos" at the Centro Cultural where classes were held: Anselevicius, "Architecture of the Soviet Union"; Moore, "Memory Palaces and Recent Work"; Legorreta, "Recent Work"; Soltan, "The Many Faces of the Modern Movement". The lecture series was well attended by the public.

An exhibition and presentation of student work was held at the School on September 8th. Plans are underway for Genesis of Form in San Miguel for summer '93.

#### **FACULTY**

##### New Faculty Appointments 92/93

David Henkel, Assistant Professor of Planning received his doctoral degree from Cornell University in 1984, where he was trained in regional development planning. His dissertation research focused on the impact of regional planning on sheep production systems in northwest Wales.

Henkel has held positions in the New Mexico state government,

including responsibility for planning along the Mexican border under the old State Planning Office, and for overall economic development statewide. He has taught as an adjunct faculty member at the School of Architecture and Planning since 1986 (and at the Anderson Schools of Management between 1988-91).

Since 1988 he has practiced as a planning consultant for projects in New Mexico, Bangladesh, the Caribbean and Mexico. (He has previous overseas experience in East and Southeast Asia, South America, and Western Europe, and has language abilities relevant to each of those areas.)

His appointment to the faculty strengthens the planning program's offerings in natural resource planning, quantitative analysis, and international development.

Professor Henkel's research interests include socio-environmental impact assessment, New Mexico, Chihuahua border development, and bio-regional modelling.

He lives in Santa Fe with his wife, Cleo Griffith, and their son Owen.

**Kim Sorvig, Assistant Professor in Architecture & Planning** will work to strengthen the environmental component of both programs, based on nearly fifteen years of experience in Landscape Architecture, Ecological Planning, botanical gardens, and related environmental fields. He will continue to ask the eternal question: "Can landscape architecture be properly practiced without armed revolution?"

Prior to moving to New Mexico in August, he completed the



Thematic Master Plan for the Hammond Museum in New York. The Master Plan involved a complete redesign of the unfinished Japanese gardens at the Museum, and transforms the whole facility into an institute for cross-cultural comparison of attitudes towards the landscape and the natural environment. The design of the gardens drew heavily on his experience in Japan, and on his 1990 New York Botanic Gardens lecture series, Zen Mind in the Garden.

Other consulting projects included an artist/landscape-architect collaboration to restore humane open space to Philadelphia neighborhoods decimated by urban "Renewal", with heavy public participation in the design process. He also served as a technical advisor to the Mayor's Transition Team on Parks and Recreation, which is attempting to restructure the administration of public open space and facilities throughout Philadelphia.

In addition to consulting work, Sorvig has been writing a regular column on Landscape Construction for the American Society of Landscape Architect's professional journal.

#### Joint Faculty Appointment

**Teresa Córdova** joined the Community & Regional Planning Faculty in Fall 1992, and has a joint appointment as Assistant Professor in Women Studies. She studies neighborhood change, affordable housing, community based organizations, urban Latinos, and community development. Her 1991-92 writings include "Community Intervention Efforts to Oppose Gentrification" in Nyden and Wiewel, Challenging Uneven Development: An Urban Agenda for the 1990s, Rutgers University Press; "Community Based Initiatives to Provide

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Affordable Housing" in Affordable Housing in Metropolitan Chicago, Center for Urban Research and Policy Studies, University of Chicago; "The Process of Incorporation of Latino Workers into the Chicago Economy" (with Juan Betancur and Maria de los Angeles Torres) in Bonilla and Morales, Latinos in the Changing U.S. Economy, Sage Publications. She is currently conducting research on neighborhood change in three of Chicago's Mexican neighborhoods and is directing graduate students on a project on free trade, infrastructure, and the New Mexico/Mexico border. She is completing an article on conflict over hazardous waste facility site location in Southern Colorado.

Full Time Faculty

Michael Borowski, Assistant Professor of Architecture taught the new Interior Architecture Design Studio as well as an advanced construction course. He is currently finishing a paper entitled "Louis Kahn and the Art of Making" which focuses on architectural technology theory. His design work was recently exhibited at the UNM School of Architecture & Planning.

Edie Cherry, Associate Professor of Architecture teaches undergraduate studios and architectural program, and is developing a seminar called The Faces of Regionalism for 1993. She continues to work on her programming textbook and on new studies entitled "Lessons from the dessert." She continues as the School's Faculty Senate representative and the General Honors Council and serves as the School's Affirmative Action Search Coordinator and chair of the architectural curriculum committee. She is also secretary to the

Friends of Arts and Vice Chair of the Cultural Properties review Committee for the New Mexico Historic Preservation Division. She is partner of the architectural office Edith Cherry/D. James See, which was nominated by the local AIA chapter to the Western Region AIA for the Firm of the Year award. The office is working on the Tomasita Elementary School, and an addition for Youth Development Inc. Construction was completed on the renovation of the historic Santa Barbara School as apartments for senior citizens. The firm's programming and planning projects include the remodelling of the existing library at N.M.S.U.; a museum for the Zuni Pueblo; and a master plan for T.V.I.

**Stephen Dent, Associate Dean** was the coordinator of two successful projects as the School: the Architectural Accrediting Team Visit in March and the completion of the remodelling of the Architecture Annex (formerly the TAC Building). The School was granted a full five year extension of its national accreditation thanks to the many and varied contributions by the faculty and the leadership of the Dean. The Architecture Annex remodel (preliminary design and partial construction grant of \$85,700 obtained by Professor Dent, final design and construction documents by Ray Trujillo & Associates) has been well received by its users. In addition, energy costs for the first year are down over 40% despite operational problems in the HVAC system. Professor Dent made recruiting trips to Los Angeles and Berkeley and spent three days at the General Electric Lighting Institute in Cleveland. GE offers a special workshop for lighting educators in order to update

instructors on the latest design methods and innovations in architectural lighting. A special one day lighting seminar for Interior Designers in New Mexico was taught by Professor Dent and attracted over 60 registrants. Dent and Nordhaus Architects completed designs for, and have houses under construction, in the Jemez Mountains and on Crooked Island in the Bahamas. Professor Dent continues to teach Environmental Controls, Lighting, and Design Studio and, as Associate Dean, has numerous administrative responsibilities.

**Teva Hesse, Visiting Assistant Professor of Architecture,** along with Kramer Woodard developed and taught the introductory design studio sequence as the first step towards implementing the extensive undergraduate curriculum changes at the School of Architecture & Planning. The second year studio sequence was expanded from one to two semesters and included a lecture course with assigned readings and workshops on drawing, modelbuilding, etc. The Fall semester focused on design theory/methodology while the emphasis during the Spring was on building materials and tectonics. In the Spring 1992 semester he also taught a seminar entitled "Aalto and the Scandinavian Tradition" along with a course on modelbuilding techniques.

Over the past year and summer Professor Hesse initiated and helped to plan a major (\$25,000) renovation in the SAAP woodshop which included expanding the existing space and adding a ventilation and sawdust removal system. For three weeks in August 1992 Professor Hesse conducted research on Modern Scandinavian

Landscape Architecture during a trip to Denmark. He plans to do some writing on the subject this year. He has been working with Assistant Professor Kramer Woodard as part of his internship under the IDP program and plans to take the licensing exam in June 1993.

**Claudia Isaac, Assistant Professor of Planning** spent the summer of 1992 as a Rockefeller Humanist In Residence at the Southwest Institute for Research on Women, University of Arizona. She participated in seminars on the contested ground of gender and culture, and worked on her writing on women's production cooperatives in Mexico. Isaac was also invited to participate in a delegation of African American scholars, politicians, artists and writers to Mexico City. The delegation, sponsored by the American Friends Service Committee, met with President Salinas de Gortari, Attorney General Ignacio Morales-Lechuga, Mexico City Mayor Manuel Camacho Solis, several members of the Senate and the Chamber of Deputies, and representatives of political parties, labor unions and human rights organizations.

Isaac has been involved in a number of seminars and symposia, including co-teaching a seminar in Spanish on planning theory and environmentalism for students from the Universidad Autonoma de Juárez; co-facilitating a symposium on interdepartmental planning coordination for the City of Albuquerque, and participating in the first gathering of the Southwest Network for Environmental and Economic Justice. She continues to coordinate the Dual Degree Program in Community & Regional Planning and Latin American Studies, which has grown this year to 14 students.

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**Ted Jojola, Associate Professor of Planning** has continued to serve in important initiatives related to Native American community development. Over the summer he serves on planning committees relating to Native American images and reactions to the 1992 Columbian Quincentennial. These special forums were conducted in such diverse settings as St. Augustine, FL, Lincoln Center, NYC and at the University of Hawaii (where he gave a keynote for a Summer Institute for Teachers) as well as other places in between. At UNM, he successfully received program monies to sponsor a series of major events and exhibits under the banner of "Muttonman Discovers Columbus" and for the fall, he was awarded the privilege of teaching a special course on "Native American Reactions: The Columbus Legacy" for the General Honors Program. He published a number of monographs including a special working paper on tourism for the Smithsonian Folklife Festival, a paper on Native American stereotyping -- which has been reprinted several times in various journals -- and another paper on southwest tribal economic development for the National Rural Development Association. He was recently awarded a major equipment grant from Apple Computer to pursue research relating to culture and language technology applications and just completed the design of a permanent exhibit entitled "Spirit & Place" for the Visitor's Center, Salinas National Monument.

**Paul Lusk, Associate Professor of Architecture & Planning** received a grant from the Graham Foundation to support his graduate design studio in Fall 1991 which led to an eighteen panel graphic

summary entitled: "Learning from Ancient and Contemporary Pueblos" and was presented by students at the International "Making Cities Livable" conference in San Francisco. He was advisor on the New Mexico State Energy Policy Project, a panel member of Albuquerque's Energy Conversation Forum, and lectured on Rural Environmental Planning and Urban Ecological Design at a Spanish language short course offered at the School. He completed work on a prototype wetland for his house, a research mini-forum. This system has been featured in the local press and television and provides education on environmental technology to citizens, APS students and has been visited by faculty from the Universidad Autonoma de Cuidad Juárez, Mexico.

**Richard Nordhaus, Professor of Architecture** continues to coordinate the 3-1/2 year graduate architecture (NAG) program, teaching the entry studio and seminar in the Fall, as well as a graduate design studio and computer graphics course in the Spring. He has also served as the coordinator for computing in the School, successfully negotiating with the Computing Center to expand the Computing Lab with an addition of 8 Mac Quadras, improving printing and color projection facilities. He serves as Chair of the School's Computing Committee and completed a term as Chair of the Personnel Committee. As Chair of the University Computer Information Policy Board he has been helping to draft a Strategic Plan for Computing and Information Services for the University.

Community service work includes continued services on the Albuquerque Goals Commission, which completed an active year

part-time basis.

James R. Richardson, Associate Professor of Planning, as Director of the Community & Regional Planning Program, led the Planning faculty through a series of strategic planning retreats and successfully completed the accreditation review of the Planning Program. Richardson continues to work with the US WEST Rural Economic Assistance Link (REAL), an intergovernmental, interuniversity consortium designed to deliver development and planning services to small towns and rural communities in New Mexico. The program was recently re-funded.

During the summer he taught an interdisciplinary course for the Water Resources Administration Program evaluating the water and environmental impacts of the proposed expansion of the Santa Fe Ski Basin. He is currently a consultant to the Hyde Park Neighborhood in Santa Fe on a collaborative planning effort to conserve Hyde Park Road, New Mexico's only National Scenic Bi-way. During the past year he was hired by the City of Albuquerque to mediate a dispute among downtown property owners and business interests on how to form an organization to lead the redevelopment of Central Avenue (Route 66). The City of Albuquerque Planning Department also funded his Land Use Planning class to develop a series of case studies of cities involved in image and identity projects.

Professor Richardson was re-elected to the Executive Committee of the Associate of Collegiate Schools of Planning (ACSP) and serves in that capacity to represent schools in the southwest and southeast region.



**Stephen Schreiber, Assistant Professor of Architecture** continued his teaching, design work and other research. He developed and ran a special topic seminar which studied the "Architecture of Border Cities: Miami, New Orleans, Albuquerque, and Los Angeles." He also taught two upper level design studios, and the "Introduction to Architecture" course. In February, he was named a finalist in the annual Rotch design competition. In March, he travelled with a group of students to San Francisco, on the third annual Spring Break architecture study trip. Schreiber participated in two ACSA meetings -- the West Regional meeting in Seattle (in October) and the Teachers' Seminar at the Cranbrook Academy (in June.)

**William J. Siembieda, Associate Professor of Planning** continues his research and teaching in Latin America -- Mexican context. Supported by a grant from the Lincoln Institute of Land Policy, he has been conducting field research on urban land policy in three Mexican cities: Guadalajara, Morelia and Juárez. He has also worked with an international evaluation team examining the performance of progressive subdivision programs in the state of Jalisco, Mexico. This work was presented at the International Conference on Health and Housing, the Center for Health & Housing, the Medical School, SUNY, Buffalo. He wrote a chapter on land market analysis which will be published in Peter Ward (ed) International Methodology for Land and Housing Analysis, 1992, London: University College Press.

Siembieda offers a special bi-national planning course at the

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City University of Juárez. Students from UNM and the City University work together in this course. Additionally, he coordinated a one week regional and environmental planning course taught in Spanish for students from Mexico and Argentina. He is serving as Asesor (thesis advisor) to students in the Master of Urban Development Program, City University of Juárez.

Siembieda was Chair of the national McClure Prize committee for the best paper written by a Master's student in a planning program, and he serves on the Associate of Collegiate Schools of Planning student committee on the Recruitment and Retention of Minorities in Planning. He was appointed Faculty Associate at the Lincoln Institute for Land Policy.

**Don Schlegel, Professor of Architecture** continues to serve as Chair of the School's Graduate Committee. He advises and interviews second year graduate architecture students, and serves on the Architecture Curriculum Committee. He teaches graduate studies and the required course in professional practice. He is a partner in the Architecture firm SLNB, Albuquerque. Their projects range from churches to housing to prototype fire stations. Professor Schlegel continues to serve on the New Mexico State Registration Board of Architecture.

**Anne Taylor, Professor of Architecture** completed a grant for Public Service Co. (PNM) in conjunction with the Albuquerque Public Schools and BPLW architectural firm. Architect students worked at Oñate, Zuni and Cochiti, and Marie Hughes elementary schools teaching children. They used the theme of architecture and design

to teach math, science, social studies and art. As a part of this grant, the Architecture and Children Southwest Curriculum posters were published by the UNM Press. Work continued on the pavilion design of the Head Start classroom of the future. Three constructed pavilions were installed, used, and evaluated at the Isleta Pueblo Head Start. The pavilions were brought to the School to be revised during the summer. Architect and co-director of the project, George Vlastos, worked with designer Peter Wrona and graduate student Tom Reidy on the revisions. An environmental handbook for teachers is also being revised and will be tested and evaluated with Head Start teachers. Jean Case assisted Taylor and Vlastos with the handbook revision.

Taylor trained 75 teachers in Seattle, Washington as part of the Architecture and Children Northwest Program. She expects a Rocky Mountain network of Schools of Architecture putting students in schools to teach built environment education.

**Mete Turan, Associate Professor of Architecture** received a Research Allocations Committee Grant to finish his book: Placemaking: Production of Build Environment in Two Cultures to be published by Avebury of England in 1993. The book is a comparative, theoretical study of the built environment in two cultures, the Cappadocia region in Turkey and the southwest in the U.S.A. He also received a Teaching Allocations sub committee grant to develop computer applications in the teaching of structures. A new research project, "Masonry domes and their structural behavior according to their support systems and architectural plans" is on

its way. Turan spent eight weeks in Turkey in summer 1992, gathering material and surveying some of the buildings that will be included in the study.

Kramer Woodard, Assistant Professor of Architecture's main efforts were directed towards the development of the new foundation course/studio and lecture series for architecture students in 201. He worked closely with Teva Hesse and Barry Langford and the strides taken were important and will, he believes, make this course within the undergraduate architecture program one of the best anywhere. Professor Woodward received commissions in Albuquerque, Alameda and Johnson City, Kansas, most of which is under construction. He also entered three competitions, beneficial to his growth as an architect. He looks forward to working in several research projects, which focus on the modern movement and its influence on American urbanism.

#### Permanent Part-Time Faculty

Barbara McReynolds, Lecturer in Architecture is teaching the first year architectural studios (104) as well as the NAG Graphics Seminar with Richard Nordhaus. She was juried into the Pastel Society of America, a national society of pastel artists. She exhibits her paintings at the Dartmouth Street Gallery, Brandywine Galleries and Concetta D. Galleries in Albuquerque; Laurel Seth Gallery in Santa Fe; and the Chimayo Trade & Mercantile in Chimayo. She was invited to exhibit work in the 10th Annual Invitational Show for Dartmouth Street Gallery, "Hands of the Artist", and in the New Mexico Arts & Crafts Fair in June 1992. Presbyterian

Hospital has commissioned her to paint three large works for their new hospital in Rio Rancho as a part of their permanent collection.

**Baker Morrow, Associate Professor of Architecture & Planning** continues to teach courses in landscape architecture. He spoke at the National Convention of the American Society of Landscape Architects (ASLA) in Kansas City in October, 1991. His topic was the organization of state registration efforts for the licensure of landscape architects. All but six states now mandate registration for landscape architects. Morrow and V.B. Price, also an instructor at the School, are currently editing Anasazi Architecture and American Design for the University of New Mexico Press. The book includes groundbreaking essays from, among others, six SAAP faculty members, and it is due out next fall. Morrow's firm, Morrow & Company Ltd., Landscape Architects, recently received an award from the Albuquerque Conservation Association for the unique design of the Spinal Cord Injury Unit Courtyard at Albuquerque's Veteran's Affairs Medical Center.

**Min Kantrowitz, Adjunct Associate Professor** continues her active consulting practice with local, state and national clients, as well as a variety of professional activities. Her co-authored book, People in Places, was translated into Japanese and published in Japan this year. An article she wrote examining three recent environment and behavior books was published in May in Progressive Architecture. Her review of the book Introduction to Energy: Resources, Technology and Society was published by Environment and Behavior Journal. She co-authored a chapter in Accountable Public

Architecture: Designing and Managing Public Buildings, a recent Butterworth book, and wrote a chapter appearing in the proceedings of the Anasazi Architecture and American Design Conference. She served on a panel on Professional Practice and Liability at the annual Environmental Design research Association Conference and coordinated a workshop on Energy and Matter Research. She was appointed to the New Mexico Energy and Minerals Department Technical Advisory Group on Energy Performance Standards; she recently completed her service on the National Academy of Science Committee of Facility Design to Minimize Premature Building Obsolescence. She continues serving on the editorial review boards of Environment and Behavior Journal and the Journal of Architectural and Planning Research. This year Ms. Kantrowitz taught the Planning communication studio, Introduction to Environment and Behavior, and Research Methods in Architecture and Planning.

#### Part-time Faculty

David Henkel, Adjunct Assistant Professor of Planning was involved in three projects, in addition to his teaching responsibilities. Under contract to a Santa Fe firm, he authored a development analysis for the Economic Development Bank of Puerto Rico. He also completed an industrial technology survey for Albuquerque Economic Development. During the summer of 1992, Henkel helped to manage the strategic planning session at the annual meeting of the Center for Holistic Resource Management.

Paul G. (Buzz) McHenry, with the help of students completed a

draft copy of the combined "Adobe" bibliography (1300 entries). It is annotated and on computer data base format disc. It will be available on disc later this year from: Earth Architecture International. McHenry also attended an international conference on Alternative Building Materials in Paraguay in June, sponsored by the Organization of American States.

Chris Wilson, Adjunct Assistant Professor of Architecture devoted the year to completing a book entitled: The Myth of Santa Fe: Tourism, Ethnic Identity and the Creation of a Modern Regional Culture.

Jonathan Siegel, Lecturer/Instructor in Architecture says that, as a studio instructor and part-time faculty member, private practice continues to be a major component of his professional life. Teaching stimulates his work with clients, and he is indebted to students and colleagues alike for this mix. His small office continues to work on a variety of interesting projects; the past year has included a church master plan with early schematics for the sanctuary and associate areas; a series of projects for a rural school district; a cafe; and houses ranging from New York to Palm Springs, to one four doors down the block. The work tends to synthesize vernacular insights from collective anonymous NOT! architects with contemporary sensibilities related to new materials and their impacts on form and space.

#### Associated Faculty

Christopher Mead, Associate Professor, College of Fine Arts continues to teach the required history courses to Architecture

students. His book, Charles Garniers Paris Opera: Architectural Empathy and the Renaissance of French Classicism, was published by M.I.T. Press/The Architectural History Foundation in the fall of 1991. In April, 1992 he was the local Chair for the 1992 annual meeting of the Society of Architectural Historians, which met in Albuquerque. He delivered an opening lecture to the Society on "New Mexico's Changing Architectural Landscape." In May he was awarded a Burlington Foundation Faculty Achievement Award for innovative teaching. He spent the summer on a Research Allocations Committee Grant conducting research in France on Victor Baltard, the nineteenth century archivist in Paris.

Faculty Seminars 1990 - 1992

In 90/91 the following faculty seminars took place: Stephen Dent, Associate Professor of Architecture, "Energy and Design"; Robert McCabe, Architect, "An Albuquerque Plan"; Teva Hesse, Visiting Assistant Professor of Architecture, "Densifying Suburbia".

In 91/92: Stephen Schreiber, Assistant Professor of Architecture, "Southwestern Influences in the Architecture of Miami"; Mete Turan, Associate Professor of Architecture, "Poetics and Policies of Placemaking"; Mick Davis, Instructor, Anderson School of Management, "Ethics and Professions".

These informal Seminars are hosted by faculty members of the School, and are held at their homes.



## **STUDENTS**

### Student Statistics

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#### Enrollment for Fall 1991

Undergraduate Architecture, 159  
Undergraduate Environmental Design, 3  
Graduate Architecture, 117  
Graduate Planning, 48  
Total in School, 327

#### Minority Statistics

Foreign Students, 8%  
Native Americans, 3%  
African Americans, 2%  
Asian Americans, 2%  
Hispanics, 18%  
Women, 20%

The following students graduated in 91/92:

#### **Fall 1991**

#### **BACHELOR OF ARTS IN ARCHITECTURE**

Anderson-Tuttle, Jennifer  
Bowen, Barton  
Delisop, Shawn  
Gonzales, Clemente  
Goodwin, Tom  
Henry, David  
Hopkins, William

Johnson, James

Mowles, Sherry Knapp

Osborn, Kelton

Pancake, Douglas

Patel, Jayesh

Rapaport, Janna

Reeves, Ian

Romero, Christopher

Spinks, Steven

Trujillo, Christopher

Weisberg, Christopher

Zimmerman, Karey

**BACHELOR OF ARTS IN ENVIRONMENTAL DESIGN**

Longoria, Zulema Gomez

**MASTER OF ARCHITECTURE**

Al-Hajji, Jamal

Badve, Sanjay

Blackshear, Lemoyne

Corder-Halvorson, Nancy

Faulhaber, Donna

Frank, Markus

Fu, Hong

Low, Nadine

Vichitpant, Yingsak

**MASTER OF COMMUNITY & REGIONAL PLANNING**

David, Mark

Degani, Brian

Smith, Karie Jo

Spring 1992

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**BACHELOR OF ARTS IN ARCHITECTURE**

Abbott, David

Allen, Charles

Arellano, Wilbert

Beeman, Robert

Brown, Anndee Wright

Buckley, Brian

Bulman, Luke

Darling, James

Harma, Sanna

Henrie, Randall

Howarth, Robert

Idoine, Aron

Jensen, Jerry

Kamps, James

Lovato, Randy

Martinez, Ralph

Mills, Marilyn

Minnie, Keith

Montoya, Jan Eran

Onderdonk, Timothy

Osborn, Connie

Pfatteicher, Claudia

Robinson, Frederick

Sacco, Sally

Sena, Alfred

Sprick, William

Strech, Douglas

**BACHELOR OF ENVIRONMENTAL DESIGN**

Dillon, Alice

LaFountain, Janice

Montoya, Fidel

Spinks, Steven

Strech, Douglas

**MASTER OF ARCHITECTURE**

Bellas, Kimberly

Cunningham, Andrea

Danks, Thomas

Dominguez, Steven

Donahue, Mark

Engineer, Rupal

Engineer, Sanjay

Heller, Catherine

Krupnick, Michael

Miller, Loren

Patil, Prunima

Staley, Ernest

Valdez, Arnold

Walter, Maureen

Williams, David

Willis, Stephanie

**MASTER OF COMMUNITY & REGIONAL PLANNING**

Lockhart, Ann

O'Brien, Katherine

**Summer 1992**

**BACHELOR OF ARCHITECTURE**

Ray, Kimberly

Sosa, Carlos

Vanderpool, Donald

**MASTER OF ARCHITECTURE**

Butterfield, Peter

Haffner, Robert

Holmes, Margaret

Odoko, Boyce

**MASTER OF COMMUNITY & REGIONAL PLANNING**

Quintero, Milton Ospina

Wero, Nathan

Wright, Christopher

**Dean's List**

**Fall 1991**

Bicknell, Timothy

Bloom, Thomas

Brito, Russell

Gadbaw, Ronald

Harle, Bianca

Harma, Sanna  
Henrie, Randall  
Horn, James  
Hudspeth, Roger  
Martinez, Ralph  
Noriega, Carmen  
Rehn, Peter

**Spring 1992**

Bergquist, John  
Birknell, Timothy  
Boyle, Steven  
Brito, Russell  
Calvet, Craig  
De La Torre, Carlos  
Eldridge, Michael  
Fritsch, Jonathan  
Gadbaw, Ronald  
Hall, Stephen  
Henrie, Randall  
Minnie, Keith  
Noriega, Carmen  
Onderdonk, Timothy  
Rehn, Peter  
Roybal, Lorianne  
Stech, Douglas

STUDENT AWARDS 91/92

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The School is pleased to announce both national and "in house" awards:

**National AIA Awards:**

Frank Markus, the Henry Adams Medal for the first ranked graduate architecture student;

Margaret Favour, Certificate of Merit, second ranked graduate architecture student;

Ernest Staley, Alpha Rho Chi Medal for the graduating architecture student who has shown leadership/service, merit.

**Friends of the School of Architecture & Planning Awards**

Meneses-Boone, Celeste - Book - Outstanding first year student

Robinson, Jack - Book - Outstanding first year student

Wright, Christopher - \$100 - Outstanding second year student

Harle, Biänca - \$100 - Outstanding third year student

Henrie, Randall - \$100 - Outstanding fourth year student

Isobe, Hiroyuki - \$100 - Outstanding fifth year student

Kess, Kathleen - \$100 - Outstanding NAG student

Calhoon, William - \$100 - Outstanding student in the Design Planning & Assistance Center

Riley, Pam - Outstanding first year Planning student

Knight, James - \$100 - Outstanding second year Planning student

SCHOLARSHIPS AND AWARDS

Berquist, John - \$250 - Holmes & Narver Award

Harma, Sanna - \$500 - Frontier Scholarship (outstanding 4th year)

student entering graduate program)

Prabhu, Vivek - \$350 - Abq. AIA Award - 5th year outstanding student

Donahue, Mark - \$250 - La Cienega Prize - Outstanding design student

Valdez, Arnold - \$350 - John Gaw Meem Award - Outstanding student

Miller, Loren - \$200 - Bazard Award for the outstanding Native American architecture student

#### **BPLW Graduate Student Award**

BPLW, a large Albuquerque firm, offers an annual Design Fellowship Award to a student in the fall semester graduate architecture studios. Three projects from each of the three studios were selected and juried by members of the BPLW firm. The winner was Vivek Prabhu from the Schlegel studio, his project being a National Aquarium of the Gulf Coast. The jury saw the scheme as a strong innovative design. Other projects which impressed the jury were the Urban Planning project by Jim Knight, Michael Scherfey and Ian Pinto, and a housing project in Al-Ain, U.A.E. by Abdoula Al-Bloushi.

#### **Passive Solar Heated/Photovoltaic Powered House Design Competition Award**

The New Mexico Solar Energy Industry Association sponsored a design competition at the School in which the goal was to design a passive solar heated house that utilized a photovoltaic electric power system. Michael Sherfey, a fourth year student, won the \$500 first prize with a design that included a mix of passive solar



techniques, partial earth sheltering, summer shading and a preliminary electrical load analysis and photovoltaic system design. Professor Steve Dent assisted the students in developing the program for the competition and lectures were presented by architect Mark Chalom on passive solar design and by Tom Volek on photovoltaic power systems. The School (and Michael) wish to thank the NM Solar Energy Industry Association for their assistance and sponsorship of the competition during the Spring 1992 semester and hope to work together again in the future.

#### **Crego Block Competition Award**

The second annual Crego Block Competition was offered in 91/92 as part of the Spring 302 Design Studio. The studio project was to design a visiting scholar research center at Bandelier National Monument using masonry (concrete block, brick, stone or adobe). The finished projects were displayed in the third year studio and judged by Michael Beltran of the Crego Block Company. First place winner was Bianca Härle, who received \$150. John Bergquist received \$100 for second place, and Olivia Tellez received \$50 for third place.

#### **Stamm Graduate Travel Scholarship Award**

This scholarship was awarded to architecture graduate student Robert Ransom, to make a study of Route 66 during summer, 1992.

Scott Wrasman, who had received the previous scholarship, gave a slide presentation in November of "España", historical and current architecture in Spain.

### **"Town and Gown", Urban Design Competition Award**

Four students received prize money in an urban design competition titled "Town and Gown". Town and Gown is the traditional term for the relationship between a university and its surrounding neighborhoods and the competition addressed the design issues of the campus edges as they affect the surrounding neighborhoods. A grant to Professor Stephen Dent from the City of Albuquerque's Urban Enhancement Trust Fund funded the competition. The four students receiving prize money were: First Prize, \$700, Jim Johnson; Second Prize, \$350, Philip A. Ortiz; Third Prize, \$100 each (tie), Wilbert Arellano and Jess Nguyen. Our thanks to the Federation of University Neighborhoods, Larry Rainosek, Steve Borbas, and Professor Paul Lusk for their time and advice.

### **"Excellence in Art" Award**

Robert Stembridge, graduate Architecture student, was selected as a product grant recipient for the 1992 Liquitex "Excellence in Art" student program. His work was selected from nearly 1500 applicants nationwide. Stembridge received \$500 in art products.

### **Architecture Student Association Activities (ASA)**

Film Series: "Beyond Utopia: Changing Attitudes in American Architecture."

"Butoh: Body on the Edge of Crisis."

"Tadao Ando."

Newsletter: A newsletter approached languages as texture; as a graphic tactile non-sequential poetic expression. Editors Kira Sowanick and Luke Bulman demanded that the reader actively

contribute to the article as it was being read. Unless the reader was engaged with the words and graphics, the "article" made even less "sense" than its appearance suggested.

National AIAS Conference: Officers Derek Fisher and Craig Calvert attended the FORUM Conference, held in New Orleans.

Halloween Costume Bash at Morningside and Central Avenues. A cheap, messy, loud, costumed and successful party.

#### Student Planner Association Activities (SPA)

The SPA (Student Planners Association) elected officers are: President, Daniel Gates; Vice President, Jim Knight; Secretary, Mike Kirkegaard; Treasurer, Pam Riley; APA reps, Mark Tibbets and Aleta Lawrence; GAS rep, Dan Gates.

Some issues raised in meetings were development of stronger department ties and possible increased input by student body concerning classes and anything else involving students, and maintaining contact with dual-degree departments, to be aware of classes given by other departments, especially in summer session.

The SPA secured \$496 from GSA funding, with \$250 going to equip the student lounge, the outfitting of which began in January, and the rest going towards phone costs, newsletter and other publications costs. Three newsletters were published, with Aleta Lawrence as "the most diligent reporter and editor."

#### **"Barrier Free Consultants"**

Four graduate architecture students have established a counseling practice, "Barrier-Free Consultants", which advises clients as to the effect of the "Americans with Disability Act" on

the physical environment. They are: Ralph Martinez, Keith Minnie, Gregory Kaslo and Alfred Sena. Their contracts, among others are with the City of Gallup and the First National Bank of Santa Fe.

#### NAG Student Chosen as Juror

The American Institute of Architectural Students provides many opportunities for student members, including the chance to serve as a student juror on national competitions. Heeding the call for student jury positions, Audrey Carty, a first year NAG student has been accepted for the competition, entitled "Environment 2". The jury for this competition is divided into two parts, the first in Washington, D.C. this June, and the second takes place as a 5-day design charrette at McMurdo Station in Antarctica next January. Antarctica has emerged as a harbinger of the 21st Century; this competition is centered on creating a design for a town in the most complex frontier of science, while maintaining the pristine character of the Antarctic continent. The objectives are to minimize the environmental impact on the vast polar region, meet the research needs of the scientific community while maximizing their comfort, and to utilize state-of-the-art technologies and capabilities. Ms. Carty is looking forward to serving on this jury.

#### Graduate Student Seminars

Two very special graduate student seminars were held at the School in 91,92, featuring distinguished professionals. John Brinkeshof Jackson, cultural geographer, spoke about the vernacular, and Edward T. Hall, anthropologist, dealt with issues

relating behavior to architecture.

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Annual Meeting with AIA Architects

The "free pizza and soda" luncheon meeting is now an annual fixture, and is always well-attended. As usual, it occurred in the fall semester of 1991, when the AIA awards to students were announced. Students have an opportunity to mingle with local professionals.

C O L L E G E   O F   A R T S   A N D   S C I E N C E S

A N N U A L   R E P O R T

July 1, 1991 - June 30, 1992

WILLIAM C. GORDON, INTERIM DEAN

## COLLEGE OF ARTS AND SCIENCES

Annual Report, July 1, 1991 - June 30, 1992

## T A B L E   O F   C O N T E N T S

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## I. OVERVIEW

The 1991-92 academic year in the College of Arts and Sciences saw increases both in the head count of students enrolled and in student credit hours recorded, continuing the trend of the past three years.

The ranks of the tenure-stream faculty in the College decreased by a net of eleven individuals as fifteen new faculty were hired and twenty-six resigned or retired. Funds budgeted for the College in the Spring of 1992 were sufficient to yield only a 2.7% average salary increase for faculty returning in 1992-93. Although all funds available to the College for 1992-93 exceed funds available in 1991-92, this increase is insufficient to support other aspects of the College's operations which remain very seriously underfunded.

## II. ADMINISTRATION

The College's administration continued in 1991-92 essentially as it was constituted in 1990-91, with the exception of the absence of Associate Dean Gordon Hodge who was on sabbatical leave during Semester II of the academic year. Associate Deans of the College accepted individual responsibilities similar to those identified in annual reports covering the previous two years.

Associate Dean Fleming assumed responsibility for the College's student advisement effort and for validation of curriculum changes and graduation requirements. Along with Associate Dean Jean Civikly, he was the College office's liaison with the College Undergraduate Education Committee. Associate Dean Jean Civikly's responsibilities also included various aspects of undergraduate education, campus life and faculty development, and improvement and codification of various administrative



procedures and policies involving academic personnel.

Associate Dean Robert Fleming continued to serve as the College office's liaison with the College Graduate Education Committee and to provide administration, at the College level, of requests for sabbatical leaves, the allocation of funds to support special faculty travel, visiting lecturers and the expenses of professional publications, and for oversight of the various scholarly publications that the College supports.

Associate Dean Kenneth Frandsen continued to provide assistance and information concerning Affirmative Action policies and data sources, liaison with the Equal Opportunity Programs office, and oversight of search and screening efforts in conjunction with the appointment of regular and temporary part-time faculty in departments of the College. Also, he served as Area Coordinator for the College's participation in the University United Way Campaign and as Search Coordinator for the recruitment of candidates for Faculty Contracts and Data Officer and for Assistant Vice President for Administrative Services.

Associate Dean Gordon Hodge had responsibility for the main campus Human Subjects Committee and for various aspects of research policy. Also he was involved in analyses of space utilization and human resources in the College's instructional efforts. Associate Dean Marilyn Salvador continued to provide oversight for the College's international education programs and liaison with the UNM Development Office at the UNM Foundation.

New Chairpersons were appointed for AY 1991-92 in Biology (David Ligon), Communicative Disorders (Linda Riensche), Geology (Barry Kues), Journalism (Robert Tiemens), Mathematics and Statistics (Alex Stone), Physics and Astronomy (David Wolfe) and Sociology (Gary LaFree). Robert

Tiemens of Communication and Journalism, Lee Bartlett of English, Stan Morain of Geography and Richard Gerdes of Modern and Classical Languages announced their intentions to relinquish their responsibilities as Chairpersons effective the beginning of AY 1992-93. William C. Gordon was appointed Interim Dean of the College of Arts and Sciences following the resignation of Hobson Wildenthal.

### III. AFFIRMATIVE ACTION

The College continued its efforts to increase the cultural and gender diversity among its faculty during AY 1991-92. Consistent with Regents' policy concerning diversification of search committee membership, several of the members of search committees were from ethnic groups currently underrepresented in the faculty and many of the search committee members were female.

Appointments resulting from conventional searches, conducted during AY 1990-91 and AY 1991-92, added fifteen new faculty to the College of Arts and Sciences ranks for AY 1992-93, eleven males and four females, including two Hispanic females, and one Asian female. Of the twenty-six separating faculty, two are women and four are Hispanic.

During AY 1991-92, the College continued efforts to ensure equity within the faculty salary structure for members of underrepresented groups and to provide support to those faculty for the purpose of career development at the individual level. These efforts to nurture and develop faculty already at UNM will continue during AY 1992-93.

### IV. RESEARCH AND SCHOLARLY ACTIVITY

The scholarly and creative achievements of Arts and Sciences faculty

that resulted in published works during 1991 are thoroughly documented in the annual volume of Faculty Publications and Creative Works issued by the Office of the Vice President for Research. The level of activity both in grant expenditures and new grant awards increased slightly in AY 1991-92 compared to AY 1990-91, as detailed in Table 10.

Two events of special significance to the College's research posture occurred during AY 1991-92. The first was the appointment of John McGraw as Professor of Physics and Astronomy and Director of the Institute for Astrophysics. McGraw's reputation as a senior scientist will provide leadership to new efforts with particular emphasis on astronomy and space sciences.

The second was the resignation of Hobson Wildenthal, Professor of Physics and Astronomy and Dean of the College of Arts and Sciences. His significant achievements and international reputation in the area of Nuclear Physics were important assets in one of the College's established doctoral programs.

#### V. TEACHING

Summary data on various aspects of the College's teaching efforts are presented in Tables 5, 6, 7, 8, and 9. Although classrooms with a better profile of capacities continue to be a requisite for improved efficiency of instructional delivery, the College's numerical productivity continues to increase. This increase is especially notable in the context of a reduction of the total FTE budgeted faculty for AY 1991-92 compared to AY 1990-91, as detailed in Table 4. Our analysis indicates that, in the context of student demand, the College faculty is seriously understaffed.

## VI. SPECIAL PROJECTS AND FUNCTIONS

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### Advisement and Record Center

Under the supervision of the Associate Dean for Student Academic Affairs, the A&S Advisement Center admits students to the College, advises them and monitors their performance (including placing students on probation or suspending them when necessary), and certifies that they have met requirements for graduation. Each year, advisors conduct 20,000 personal advisement sessions and handle another 15,000 telephone inquiries.

The center is open from 8 am until 5 pm Monday through Friday, including the lunch hour. In addition, advisors are often called upon to assist with new admissions and transfer students on Saturdays or after hours. In addition to routine matters, the center handles all student petitions for waivers and often the first steps in grievance procedures. Advisors are responsible for all pre-professional advisement and are most active--through the Health Sciences Advisory Committee--for screening the dossiers and interviewing candidates for admission to medical and dental schools. This committee, consisting of two professional advisors, one faculty member each from Biology and Chemistry, and the Associate Dean, writes official College letters of recommendation for those applicants who request them.

One or more advisors and the Associate Dean participated over the year in a number of extramural activities, including the annual Career Fair, Pre-Med Day, Advisement Centers Update Conferences, College Enrichment Program Orientation, monthly meetings of campus advising centers, and a committee on a new telephone registration system which will be initiated in

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Fall 1992. This year one advisor and the Associate Dean also participated in meetings of a College reallocation committee. Several useful suggestions of this committee have been implemented, most notably a system for notifying departments as soon as a student has declared his or her major.

This year saw the opening of a new suite of offices so that all advisors are housed in the same area, across the hall from the main College office. Files are now kept in one central filing room for easier access. The new offices have been in operation since mid-year and have resulted in much more efficient operation. Along with the physical changes, the new Associate Dean revised administrative procedures, delegating some operations previously done by the Associate Dean to the two Advisement Co-ordinators, Julie Bustamante and Monique Denzler.

Robert Fleming assumed the position of Associate Dean of Student Academic Affairs in summer 1991, replacing Vice Dean Julian E. White, who served the College for many years. Other new members of the advisement staff are Leonor Lucero, advisor, and Gertrude Brown, receptionist and computer operator. They join Carolyn Beske, Mary Lawton, Mary Lou Wilkerson, and the Advisement Co-ordinators.

#### Graduate Committee

The College Graduate Committee completed the graduate brochures mentioned in last year's report. A two-year supply of recruiting brochures, paid for by the College, designed by the committee, and written by the respective departments were printed and distributed to the departments of American Studies, Communication, English, Linguistics, Philosophy, and Sociology. Each 8 1/2 x 14 brochure featured a four-color

photo of the campus. The project allowed departments that have small recruiting budgets to do a more effective job of attracting the best graduate students to their programs.

In other business, the committee oversaw a number of curricular changes. Most of these were accomplished by the Curriculum Subcommittee, but when matters of widespread interest came up, the entire committee was consulted. Such was the case when Geology decided to drop its requirement for a foreign language for the PhD degree. The committee agreed to support the change after lengthy discussion and forwarded the matter to the College faculty, who were polled by mail ballot and passed the measure.

Handled by the Curriculum Subcommittee were several other major changes. As part of the combining of Communication and Journalism, several graduate courses of the new department were restructured. A new course, Arts & Sciences 500, was created to offer graduate credit for the Complex Systems Seminar offered annually at the Santa Fe Graduate Center. A new program in Volcanology was approved. In addition, there were a number of more routine changes in course numbering, new courses, and cancelled courses.

Other subcommittees functioned smoothly: the subcommittee on students selected nominees for fellowships and forwarded them to Graduate Studies; the Faculty Subcommittee screened sabbatical requests and suggested editorial changes in several applications before forwarding the requests to Associate Provost Richard Holder. The Evaluation Subcommittee discussed how it might best represent the College during the graduate program evaluations administered by the Senate Graduate Committee.

Subcommittee Assignments:

# Subcommittee on Faculty

John J. Bergen (M&CL)  
 Harry Stumpf (Political Science)  
 Robert Fiala/Beverly Burris (Soc)

# Subcommittee on Curriculum & Standards

Robert Cogburn (Math)  
 Michael Dougher (Psychology)  
 Don Lee (Philosophy)

# Subcommittee on Students

Brad Cullen (Geography)  
 Vera Norwood/Jane Caputi (Am Studies)  
 Mark Ondrias (Chemistry)

# Senate Graduate Committee Representatives

Fritz Allen (Chemistry)  
 Ken Frandsen (Communication)  
 Michael Fischer (English)

# A&S Committee Membership

Robert Fleming (A&S, Chair)  
 Vera Norwood (American Studies) semester I  
 Jane Caputi (American Studies) semester II  
 James Boone (Anthropology)  
 Oswald Baca (Biology)  
 Mark Ondrias (Chemistry)  
 Ken Frandsen (Communication)  
 Lloyd Lamb (Comm. Disorders)  
 Shaul Ben-David (Economics)  
 Michael Fischer (English)  
 Brad Cullen (Geography)  
 Wolf Elston (Geology)  
 Jane Slaughter (History)  
 Sherman Wilcox (Linguistics)  
 Robert Cogburn (Math & Statistics)  
 John Bergen (M & CL)  
 Donald C. Lee (Philosophy)  
 Bernd Bassalleck (Physics)  
 Harry Stumpf (Political Science)  
 Michael Dougher (Psychology)  
 Robert Fiala (Sociology) semester I  
 Beverly Burris (Sociology) semester II  
 Edward Desantis (Graduate Studies)

# Undergraduate Committee

The A&S Undergraduate Committee reviews requests from departments both

within and outside the college for curricular degree changes that may impact one or more A&S departments. The Committee also discusses issues of undergraduate curriculum and concerns with instructional support and effectiveness. Associate Dean Jean Civikly is Chair of the A&S Undergraduate Committee. Associate Dean Robert Fleming also attended the meetings for the purpose of facilitating any matters that might impact on the A&S Graduate Committee.

Departmental faculty representatives to the A&S Undergraduate Committee for 1991-92 were: Scott Altenbach (BIOL), Richard Holder (CHEM), Richard Hood (COMDIS), Richard Santos/Anok Bohara (ECON), Barry Gaines (ENGL), Rod Snead (GEOG), Laura Crossey (GEOL), Charles Steen (HIST), Charles Coates (JOURN), Garland Bills (LINGS), Cornelis Onneweer (MATH), Diana Rebolledo (M&CL), Abraham Anderson (PHIL), Stephen Gregory (PHYS), Harry Stumpf (POLSCI), John Gluck (PSYCH), and Pat McNamara (SOC).

During 1991-92, the Undergraduate Committee reviewed and approved Form B requests for the following new courses: BIOL 205 (Human Nature: The Darwinian Conception), BIOL 447 (Prosection on Human Gross Anatomy), BIOL 576 (Landscape Ecology), CHEM 105 (Chemistry for Nontechnical Majors), CHEM 466 (Scientific Computation), COMM 259 (Visual Communication in the Media), COMM 305 (Introduction to Public Relations), ENGL 559 (Irish Literature), GEOL 252 (Volcanoes, Benign), GEOL 450L (Volcanology), GEOL 451L (Field Volcanology), PHYS 162 (Exploring Physics and Astronomy), SOC 205 (Crime and Society), SOC 412 (Police and Society), SOC 418 (Topics in Criminology).

The A&S Undergraduate Committee also reviewed and approved the following Form C requests: Revision of the BA Degree in Communication and



Journalism (newly merged department), Revision of the concentration in Journalism and Mass Communication, the change of name for the MA degree from the MA in Linguistics to the MA in Language Sciences, the name change for the Department of Geology to the Department of Earth and Planetary Sciences, the change in B.S. degree requirements for Anthropology to allow a minor in remote sensing (Geog) or in comparative behavior (Psych), and the changes in the Department of Sociology's concentration statement that now specifies a GPA of 2.25 for admission as a Sociology major and a GPA of 2.5 in Sociology classes required for the Sociology major.

#### Dean's List - College of Arts and Sciences Honor Roll

The criteria for inclusion on the Dean's List are a semester GPA of 3.75 or higher while enrolled for 12 or more credit hours with letter grades, and a cumulative GPA for UNM coursework of at least 3.25. In Spring 1991, 306 students achieved this honor; in Fall 1991 the number of students was 333. Students who met the criteria for inclusion on the Dean's List received a letter of appreciation and congratulations signed by Dean Wildenthal and Associate Deans Civikly and Fleming. The Dean's List is compiled for Fall and Spring semesters and is printed each semester in a full page display ad in the Daily Lobo.

#### Human Subjects Committee

The College of Arts and Sciences Institutional Review Board (IRB) is one of the three IRBs at the University of New Mexico empowered by the U.S. Department of Health and Human Services and UNM to approve and certify all research using human subjects conducted by, for, or with faculty and students; the A&S IRB is responsible for all human research conducted under the auspices of the Colleges of Arts & Sciences, Engineering, and Fine

Arts, the School of Law, and the School of Architecture and Planning. The goal of the IRB is to promote and foster all types of human research while ensuring that subjects receive proper care and protection from research risk. Information regarding the board's responsibilities and functions is provided through mailings to deans, department chairpersons, and faculty, and from presentations by the IRB chair to departmental chairpersons and faculty.

The IRB, consisting of Gordon Hodge (Chairperson, A&S, Fall 1991), John P. Gluck (Chairperson, Psychology, Spring 1992), Beatrice Vigil (Secretary, A&S), Jan Brodie (Attorney at Law), Dolores Butt (Communicative Disorders), Richard Harris (Psychology), Janice Hildebrand (Businesswoman), Gill Woodall (Communication), Michael McKee (Economics), Mark Timms (Undergraduate), and Liane Donisthorpe (Law Student) reviewed a total of 172 proposals from the following units: American Studies (n = 9), Anthropology (8), Biology (1), Communication (9), Communicative Disorders (2), Economics (4), English (1), Linguistics (4), Mathematics (2), M&CL (1), Political Science (6), Psychology (105) Sociology (6), Women Studies (3), Engineering (1), Law (1), and other institutions (9). The majority of proposals were either ruled to be exempt from IRB review or received expedited approval from individual board members within two weeks of submission. Minutes of monthly meetings and records of the actions of the IRB are available in the Office of the Dean, College of Arts and Sciences.

#### Summer Session

The 1992 Summer session allocation to the College was slightly more than that of 1991, as detailed in Table 12. Our support of unique summer programs - intensive language institutes, study abroad programs and field

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schools continued. Consequently regular course offerings were reduced to a level below market demand.

#### Travel and Special College Funds

The College budgeted approximately \$170,000 for faculty travel during AY 1991-92, with approximately \$146,000 being distributed to departments to administer under their own individual guidelines and approximately \$24,000 retained at the College level to fund special initiatives. A summary of these distributions appears in Table 13. The College also disburses funds to reimburse faculty for the cost of reprints of their scholarly work and to provide honoraria for selected guest lecturers. Disbursements for these two purposes are presented in Table 14.

#### Arts and Sciences Women's Caucus

The A&S Women's Caucus was organized in Fall 1988 and has continued since that time to provide an avenue by which the A&S women faculty and the Dean meet and discuss issues of concern. Associate Deans Jean Civikly and MariLyn Salvador also participate in the Caucus discussions. Diana Robin (M&CL) has served well as the Chair of the A&S Women's Caucus for AY 1991-1992.

The A&S Women's Caucus held meetings during AY 1991-1992 on October 21, November 15, December 13, January 24, February 21, and April 24. Members of the Steering Committee (schedules permitting) also met with Dr. Sonia Ortega, Program Director for Faculty Awards for Women Scientists and Engineers, NSF, on Monday, November 18. The Caucus also devoted meeting time to discussions with UNM Regents (Art Melendres (12/13/91) and Roberta Ramo (2/21/92)).

During 1991-92, the range of topics discussed at these meetings was extensive: faculty recruitment and retention, partner hiring, tenure and

promotion procedures, mentoring, committee workloads, issues confronting women in the science disciplines, maternity/family leave policy, sexual harassment, honors education, underfunding of A&S, the National Association of Scholars (as well as the New Mexico Association of Scholars) and reallocation.

Members of the A&S Women's Caucus Steering Committee for 1991-1992 were Marta Weigle (AM ST), Diane Marshall (BIOL), Margaret Werner-Washburne (BIOL), Minrose Gwin (ENGL), Dianne Lamb (JOURN), Joan Bybee (LINGS), Jean Newman (LINGS), Carla Wofsy (MATH), Erlinda Gonzales-Berry (M&CL), Diana Rebolledo (M&CL), Diana Robin (M&CL), Karen Remmer (POL SCI), Lynette Cofer (PSYCH), and Beverly Burris (SOC). Jean Civikly (A&S) and MariLyn Salvador (A&S) represent the College.

#### Development Efforts

In Semester II of AY 1991-92, Christine Kozojet accepted appointment as College of Arts and Sciences Development Officer and began a program of development efforts in conjunction with the University of New Mexico Development Office. The results of her development efforts thus far include receipt of \$2,500 for scholarships in the Department of Geology's Volcanology Field Study Program, \$145,000 for computer equipment in the Department of Biology and \$1,820 for support of Presidential Young Investigators in the Department of Biology. In addition, verbal commitments of support have been obtained for a proposal submitted on behalf of the Maxwell Museum (\$15,000), and for a deferred bequest to the Department of English (\$500,000).

In subsequent years, the College of Arts and Sciences Development Officer will continue to provide assistance to academic departments and

faculty in the formulation and preparation of proposals and requests for gifts, in the identification and cultivation of donor prospects and in the stewardship of donors, corporations, foundations and individuals.

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#### **VII. DEPARTMENTAL REPORTS**

Detailed reports on activities in the twenty departments comprising the College of Arts and Sciences are forwarded along with this College report.

TABLE 1

**CHAIRPERSONS AND INTERDEPARTMENTAL  
PROGRAM DIRECTORS, 1991-92**

77

**AMERICAN STUDIES**  
Marta Weigle

**ANTHROPOLOGY**  
Karl Schwerin

**BIOLOGY**  
David Ligon

**CHEMISTRY**  
Cary Morrow

**COMMUNICATION**  
Robert Tiemens

**COMMUNICATIVE DISORDERS**  
Linda Riensche

**ECONOMICS**  
Ron Cummings

**ENGLISH**  
Lee Bartlett

**GEOGRAPHY**  
Stan Morain

**GEOLOGY**  
Barry Kues

**HISTORY**  
Jonathan Porter

**JOURNALISM**  
Robert Tiemens

**LINGUISTICS**  
Jean Newman

**MATHEMATICS & STATISTICS**  
Alex Stone

**MODERN & CLASSICAL LANGUAGES**  
Dick Gerdes

**PHILOSOPHY**  
Russell Goodman

**PHYSICS & ASTRONOMY**  
David Wolfe

**POLITICAL SCIENCE**  
Karen Remmer

**PSYCHOLOGY**  
William Gordon

**SOCIOLOGY**  
Gary LaFree

Interdepartmental Programs

**ASIAN STUDIES** (minor, major)  
Patricia Rizzo

**COMPARATIVE LITERATURE** (minor, major)  
Joseph Zavadil

**ECONOMICS-PHILOSOPHY** (major)  
Ron Cummings/Russell Goodman

**BIOCHEMISTRY** (major)  
Robert H. Glew

**CRIMINAL JUSTICE** (major)  
Gary LaFree

**ENGLISH-PHILOSOPHY** (major)  
Lee Bartlett/Russell Goodman

TABLE 1 (continued)

**EUROPEAN STUDIES (minor)**

Walter Putnam

**ITALIAN STUDIES (minor)**

Rachele Duke

**MEDIEVAL STUDIES (minor)**

Helen Damico

**PEACE STUDIES (minor)**

Donald Lee

**QUATERNARY STUDIES (minor)**

Roger Anderson

**RUSSIAN STUDIES AND EAST****EUROPEAN STUDIES (minor, major)**

Nataska Kolchevska

**SOCIAL WELFARE (minor)**

Richard Coughlin/Tomas Atencio

**IBERO-AMERICAN STUDIES (Ph.D.)**

Garland Bills

**LATIN AMERICAN STUDIES (minor, major)**

Garland Bills

**PALEOECOLOGY (minor)**

Roger Anderson

**PERIOD STUDIES (minor)**

Helen Damico

**RELIGIOUS STUDIES (minor, major)**

Andrew Burgess

**SCIENCE, TECHNOLOGY &****SOCIETY (minor)**

Ron Reichel

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TABLE 2

STANDING & SPECIAL COMMITTEES  
COLLEGE OF ARTS AND SCIENCES, 1991-92

79

A&S Graduate Committee

Robert E. Fleming, Arts and Sciences, Chairperson  
Vera Norwood, American Studies  
James Boone, Anthropology  
Oswald Baca, Biology  
Mark Ondrias, Chemistry  
Ken Frandsen, Communication  
Lloyd Lamb, Communicative Disorders  
Shaul Ben-David, Economics  
Michael Fisher, English  
Brad Cullen, Geography  
Wolf Elston, Geology  
Jane Slaughter, History  
Sherman Wilcox, Linguistics  
Robert Cogburn, Mathematics & Statistics  
John Bergen, Modern & Classical Languages  
Donald C. Lee, Philosophy  
Bernd Bassalleck, Physics & Astronomy  
Harry Stumpf, Political Science  
Michael Dougher, Psychology  
Robert Fiala, Sociology  
Edward DeSantis, Graduate Studies

A&S Undergraduate Committee

Jean Civikly, Arts and Sciences, Chairperson  
Scott Altenbach, Biology  
Richard Holder, Chemistry  
Richard Hood, Communicative Disorders  
Richard Santos/Anok Bohara, Economics  
Barry Gaines, English  
Rod Snead, Geography  
Laura Crossey, Geology  
Charles Steen, History  
Charles Coates, Journalism  
Garland Bills, Linguistics  
Cornelis Onneweer, Mathematics & Statistics  
Diana Rebolledo, Modern & Classical Languages  
Abraham Anderson, Philosophy  
Stephen Gregory, Psychology  
Harry Stumpf, Political Science  
John Gluck, Psychology  
Pat McNamara, Sociology

A&S Junior Faculty Promotion and Tenure Committee

Oswald Baca, Biology, Chairperson  
Peter Ogilby, Chemistry



Table 2 (continued)

80

Gill Woodall, Communication  
Antonio Marquez, English  
Brad Cullen, Geography  
Rod Ewing, Geology  
Ben Mann, Mathematics & Statistics  
Erlinda Gonzalez-Berry, Modern & Classical Languages  
Neil Mitchell, Political Science  
Jane Smith, Psychology  
Susan Tiano, Sociology

A&S Senior Faculty Promotion and Tenure Committee

Carla Wofsy, Mathematics & Statistics, Chairperson  
Kathryn Vogel, Biology  
Mark Ondrias, Chemistry  
David Brookshire, Economics  
Minrose Gwin, English  
Cornelius Klein, Geology  
Howard Rabinowitz, History  
Pramod Pathak, Mathematics & Statistics  
Anthony Cardenas, Modern & Classical Languages  
John Panitz, Physics & Astronomy  
Samuel Roll, Psychology

A&S Human Subjects Committee

Fall 1991

Gordon Hodge, College of Arts and Sciences, Chairperson  
Gill Woodall, Communication  
Dolores Butt, Communicative Disorders  
Mary E. Steir, Counseling & Family Studies  
Mike McKee, Economics  
John Gluck, Psychology  
Richard Harris, Psychology  
Jan M. Brodie, Community Representative  
Liane Donisthorpe, Student Representative  
Janice A. Hildebrand, Community Representative  
Mark Timms, Student Representative

Spring 1992

John P. Gluck, Psychology, Chairperson  
Gill Woodall, Communication  
Mike McKee, Economics  
Richard Harris, Psychology  
Jan M. Brodie, Community Representative  
Liane Donisthorpe, Student Representative  
Janice Hildebrand, Community Representative  
Mark Timms, Student Representative

TABLE 3

81

Changes in status of tenure-stream faculty in the College of Arts and Sciences: Decisions reached in AY 1991-92 to take effect in AY 1992-93.

Promotions to Full Professor

Garth Bawden	Anthropology
Stanley Rhine	Anthropology
Linda Riensche	Communicative Disorders
Patrick Gallacher	English
Barry Kues	Geology
Howard Fegan	Mathematics & Statistics
John Bergen	Modern & Classical Languages
Diana Robin	Modern & Classical Languages
W.D. Hart	Philosophy

Promotions to Associate Professor and Award of Tenure

James Boone	Anthropology
Jeff Long	Anthropology
Sylvia Rodriguez	Anthropology
Wirt Wills	Anthropology
Bruce Milne	Biology
Hector Torres	English
Laura Crossey	Geology
Edward Bedrick	Mathematics & Statistics
Pedro Embid	Mathematics & Statistics
Deborah Sulsky	Mathematics & Statistics
Walter Putnam	Modern & Classical Languages
Nebojsa Duric	Physics & Astronomy
Gregory Gleason	Political Science
* Byron Lindsey	Modern & Classical Languages
* already had tenure	

Awards of Tenure to Current Associate and Full Professors

Michael McKee	Economics
Richard Santos	Economics
Michael Campana	Geology
Betsy Jameson	History
Thomas Hagstrom	Mathematics & Statistics

Positive Mid-Probationary Reviews

Krystof Galicki	Mathematics & Statistics
Terry Loring	Mathematics & Statistics
Kristina Ciesielski	Psychology
Frank George	Psychology
Christipher Birkbeck	Sociology

Table 3 (continued)

82

Positive Third-Year Reviews

Stephen Stricker  
 Richard Crooks  
 David Keller  
 Phil Ganderton  
 Virginia Scharff  
 Alejandro Aceves  
 Yisong Yang  
 David Dunlap  
 Paul Amrhein  
 Judith Arroyo

Biology  
 Chemistry  
 Chemistry  
 Economics  
 History  
 Mathematics & Statistics  
 Mathematics & Statistics  
 Physics & Astronomy  
 Psychology  
 Psychology

1992-93 New Appointments

Ruth Salvaggio  
 Kim Hill  
 Magdalena Hurtado  
 Everett Rodgers  
 Gary Smith  
 William Isham  
 John Lipski  
 R. Cornejo-Parriego  
 Carleton Caves  
 John McGraw  
 Mark Peceny  
 Kenneth Roberts  
 William Stanley  
 David Hadwiger  
 Keiko Nakao

American Studies  
 Anthropology  
 Anthropology  
 Communication/Journalism  
 Geology  
 Linguistics  
 Spanish & Portuguese  
 Spanish & Portuguese  
 Physics & Astronomy  
 Physics & Astronomy  
 Political Science  
 Political Science  
 Political Science  
 Political Science  
 Sociology

Resignations/Retirements (effective 1992-93)

Chon Noriega  
 Richard Barrett  
 John Campbell  
 James Sebring  
 Jim Findley  
 Charles Wisdom  
 Ulrich Hollstein  
 Riley Schaeffer  
 Richard Jensen  
 Robert Tiemens  
 Richard Hood  
 Lloyd Lamb  
 Al Church  
 \* Joseph Zavadil  
 Wolf Elston  
 Michael Conniff  
 Richard Grassl  
 Richard Griego

American Studies  
 Anthropology  
 Anthropology  
 Anthropology  
 Biology  
 Biology  
 Chemistry  
 Chemistry  
 Communication/Journalism  
 Communication/Journalism  
 Communicative Disorders  
 Communicative Disorders  
 Economics  
 English  
 Geology  
 History  
 Mathematics & Statistics  
 Mathematics & Statistics

Table 3 (continued)

Pelayo Fernandez	Modern & Classical Languages
Rowena Rivera	Modern & Classical Languages
Lawrence Lynch	Modern & Classical Languages
David King	Physics & Astronomy
Daniel McGraw	Physics & Astronomy
Hobson Wildenthal	Physics & Astronomy
Alyson Brysk	Political Science
Martin Needler	Political Science

\* deceased

TABLE 4  
FTE BUDGETED FACULTY, 1991-92

Department	Regular Faculty	Residual Instruction	GAS/TAS
American Studies	4.83	0.10	2.50
Anthropology	23.84	0.10	7.50
Biology	35.16	0.00	20.25
Chemistry	19.33	1.00	8.00
Communicative Disorders	7.11	0.00	1.00
Communication/Journalism	16.33	0.77	2.50
Economics	17.75	0.00	7.00
English	36.44	2.38	28.50
Geography	4.50	0.10	1.50
Geology	16.50	0.10	6.50
History	24.50	0.48	10.50
Linguistics	10.01	0.71	1.50
Mathematics & Statistics	40.41	5.76	21.00
Modern & Classical Lang.	24.00	1.29	23.50
Philosophy	9.17	0.00	3.00
Physics & Astronomy	29.34	0.00	12.50
Political Science	15.50	3.05	3.00
Psychology	25.90	1.90	12.25
Sociology	16.28	1.71	6.00
A&S DIC	0.00	2.50	0.00
TOTAL	376.90	21.95	178.50

Date Source: College of Arts and Sciences Instructional Budget, 1991-92

TABLE 5

85

NUMBER OF STUDENTS ENROLLED  
COLLEGE OF ARTS AND SCIENCES

Year	Semester I	% Inc. Over Previous Year	Semester II	% Inc. Over Previous Year
1981-82	2,492	18.7	2,580	9.8
1982-83	2,725	9.3	2,896	12.2
1983-84	3,044	11.7	3,192	10.2
1984-85	3,139	3.1	3,238	1.4
1985-86	3,520	12.1	3,333	2.9
1986-87	3,509	-0.3	3,548	6.5
1987-88	3,648	4.0	3,730	5.1
1988-89	3,794	4.0	3,875	3.9
1989-90	3,984	5.0	4,214	8.7
1990-91	4,252	6.7	4,393	4.2
1991-92	4,434	4.2	4,598	4.6

Data Source: Arts and Sciences Registered Students Listing

TABLE 6

86

DEGREES AWARDED  
COLLEGE OF ARTS AND SCIENCES

	Bachelor's Degrees			Advanced Degrees				
Year Inc.	No. Degrees	% Inc. Over Prev. Yr.	Master's (a)		Doctor's		Total	
			No.	% Inc.	No.	% Inc.	No.	%
1983	523	15.5	153	7.3	55	7.8	208	-3.7
1984	460	-12.0	171	11.8	54	-1.8	225	8.2
1985	519	12.9	199	16.4	65	20.4	264	17.3
1986	587	13.1	127	-22.1	76	16.9	231	-12.5
1987	595	1.4	153	20.5	66	-13.2	229	-0.9
1988	665	11.8	164	7.2	62	-6.1	226	-0.9
1989	732	10.1	170	3.7	63	1.6	233	3.1
1990	763	4.2	155	-8.8	63	0.0	218	-6.4
1991	837	9.7	159	2.6	73	15.9	232	6.4
1992	856	2.3	226	42.1	74	1.4	300	29.3
10 Year Change	333	63.7	73	47.7	19	34.5	92	44.2

(a) These figures do not include Master of Arts in Teaching and Master of Education in Science degrees.

Bachelor's Degree double majors counted .5 in each department.

Data Sources: Bachelors taken from A&S final graduation lists. Advanced degrees taken from Graduate Studies final graduation lists.

TABLE 7

## DEGREES AWARDED BY DEPARTMENT\*

87

Department	Bachelor's			Master's			Doctoral		
	1990	1991	1992	1990	1991	1992	1990	1991	1992
American Studies	4	1	7	3	1	9	8	2	5
Anthropology	21	24	25	10	30	21	5	5	9
Astrophysics	4	5	1	-	-	-	-	-	-
Biochemistry	4	6	9	-	-	-	-	-	-
Biology	69	78	78	7	5	7	5	9	10
Chemistry	10	18	16	4	4	2	7	9	9
Communication	78	74	91	6	10	23	-	-	-
Comm. Disorders	19	18	15	17	20	20	-	-	15
Comp. Lit.	-	1	-	-	2	-	-	-	-
Creative Wrtg.	12	15	14	-	-	-	-	-	-
Criminal Justice	40	65	59	-	-	-	-	-	-
Economics	76	66	69	4	8	8	3	1	-
Econ-Phil	-	1	1	-	-	-	-	-	-
English	69	82	66	14	15	23	4	-	3
English-Phil.	6	5	6	-	-	-	-	5	-
Geography	14	18	8	5	3	4	-	-	-
Geology	6	10	9	11	2	9	4	-	3
History	47	55	60	2	7	8	3	1	6
Ibero-Amer. St.	-	-	-	-	-	-	1	-	-
Journalism	22	23	27	-	-	-	-	-	-
Linguistics	-	2	1	-	5	6	-	-	-
Lat.Amer.St. <sup>1</sup>	5	9	7	21	19	26	-	-	-
Math & Stat.	26	23	20	11	2	7	3	5	8
M&CL	54	38	53	12	8	17	6	6	8
Philosophy	6	3	3	3	5	2	-	-	1
Physics & Astr.	9	12	11	9	7	14	4	11	4
Political Sci.	97	102	86	4	7	4	2	-	1
Psychology	92	120	127	10	6	12	7	12	5
Religious St.	4	4	3	-	-	-	-	-	-
Russian St.	5	4	4	-	-	-	-	-	-
Sign Lang. Int	9	5	7	-	-	-	-	-	-
Sociology	32	30	30	2	3	4	1	2	2
	841	915	913	163	159	226	63	73	74

<sup>1</sup> Interdisciplinary program at the doctoral level.<sup>2</sup> Bachelor's degrees granted with double majors are counted once in each department, so this total will not agree with Table 6.

\* Includes summer, fall and spring graduates.

Data Sources: Bachelors from A&amp;S final graduation lists. Advanced degrees from Graduate Studies final graduation lists.



TABLE 8

88

## ACADEMIC PROBATIONS, SUSPENSIONS AND RELEASES

	1987-88		1988-89		1989-90		1990-91		1991-92	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
<u>Semester I</u>										
On Probation	296	8.1	311	8.2	159	3.9	194	4.6	144	-25.8
Suspended	65	1.7	70	1.9	61	1.5	49	1.2	55	12.2
Released	64	1.7	41	1.1	63	1.5	63	1.5	53	-15.9
<u>Semester II</u>										
On Probation	318	8.5	334	8.6	133	3.1	111	2.5	170	53.2
Suspended	69	1.8	86	2.3	74	1.7	72	1.6	60	-16.7
Released	71	1.9	67	1.7	60	1.4	32	0.7	72	125.0

## Number of Students Enrolled in Arts and Sciences

Semester I, 1991-92	4434
Semester II, 1991-92	4598

TABLE 9

## DEGREES GRANTED WITH HONORS\*

89

Honors in General Studies

Summa Cum Laude	6
Magna Cum Laude	18
Cum Laude	14

Departmental Honors

Biochemistry	1
Biology	4
Creative Writing	1
English	7
Geology	2
History	4
Mathematics & Statistics	2
Philosophy	1
Physics & Astronomy	4
Political Science	1
Psychology	4
Religious Studies	1
Sociology	1

Initiated into Phi Beta Kappa	58
Initiated into Phi Kappa Phi	83

\* Requirements completed Semester I, 1991-92; Semester II, 1991-92;  
Summer 1991

TABLE 10

## NEW RESEARCH AND TRAINING GRANTS, 1991-92

90

<u>Department</u>	<u>Dollars</u>	<u>Number of Faculty</u>	<u>Number of Grants</u>
American Studies	\$ 12,500	1	1
Anthropology	505,146	9	6
OCA	3,381,018	0	31
Biology	3,912,751	19	63
Chemistry	1,218,675	12	23
Communicative Dis.	527,815	2	6
Economics	209,804	4	7
English	55,000	1	1
Geology	1,409,448	14	38
Meteoritics	491,498	1	8
History	169,272	3	7
Mathematics & Stat.	798,406	18	22
Physics & Astronomy	1,982,250	22	45
CAS	233,247	1	3
Political Science	405,377	2	11
Psychology	64,440	2	2
Sociology	249,371	3	5
 TOTAL	 \$15,626,018	 114	 279

TABLE 11

91

**BUDGETED GAS/TAS, RESEARCH AND  
PROJECT ASSISTANTS, 1991-92**

<u>Department</u>	<u>GAS &amp; TAS</u>	<u>RAS &amp; PAS</u>
American Studies	21	0
Anthropology	26	1
Biology	54	44
Chemistry	52	43
Communication/Journalism	9	4
Communicative Disorders	6	19
Economics	21	9
English	81	1
Geography	3	0
Geology	41	36
History	25	2
Linguistics	4	7
Mathematics & Stat.	53	10
Modern & Classical Lang.	70	1
Philosophy	9	0
Physics & Astronomy	34	49
Political Science	26	16
Psychology	35	33
Sociology	32	1
 TOTAL	 602	 276

TABLE 12

## SUMMER SESSION DATA, 1991 AND 1992

92

<u>Department</u>	<u>Final 1991 Figures</u>		<u>Final 1992 Figures</u>	
	<u>Allocation</u>	<u>%</u>	<u>Allocation</u>	<u>%</u>
American Studies	\$ 11,558	1.54	\$ 14,617	1.91
Anthropology	14,150	1.89	25,750	3.36
Biology	32,736	4.36	27,300	3.56
Chemistry	55,799	7.44	42,650	5.56
Communication	25,914	3.46		
Communication/Journalism			31,000	4.04
Communicative Disorders	31,265	4.17	33,066	4.31
Economics	26,620	3.55	30,000	3.91
English	54,819	7.31	65,400	8.53
Geography	10,600	1.41	8,600	1.12
Geology	22,489	3.00	22,500	2.93
History	42,999	5.73	44,300	5.78
Journalism	9,908	1.32	(see Comm/Journ)	
Linguistics	9,267	1.24	7,200	0.94
Mathematics & Statistics	95,000	12.67	107,667	14.04
Modern & Classical Lang.	115,999	15.47	109,144	14.24
Philosophy	12,662	1.69	10,200	1.33
Physics & Astronomy	24,908	3.32	31,500	4.11
Political Science	20,172	2.69	20,969	2.73
Psychology	42,639	5.69	40,800	5.32
Sociology	21,388	2.85	21,900	2.86
International Programs	27,850	3.71	39,900	5.20
Admin.	37,638	5.02	32,247	4.21
Contingency	3,620	0.48		
TOTAL	*\$750,000	100.00	**\$766,710	100.00

\* Amount does not include EWDP allocation (\$34,000) and Continuing Education.

\*\* Amount does not include contributions from EWDP (\$14,000) Continuing Education (\$28,000) or other sources (\$32,108)

TABLE 13

## A&amp;S TRAVEL DISBURSEMENTS, 1991-92

93

<u>Department</u>	<u>General/Departmental Allocations</u>	<u>Special Request Allocations</u>
American Studies	\$ 2,000.00	\$ 900.00
Anthropology	10,000.00	400.00
Biology	13,000.00	3,647.00
Chemistry	9,000.00	1,300.00
Communication	5,000.00	250.00
Communicative Disorders	1,500.00	750.00
Economics	7,000.00	
English	14,000.00	2,250.00
Geography	2,000.00	
Geology	7,000.00	350.00
History	10,000.00	2,470.00
Journalism	2,000.00	
Linguistics	3,000.00	400.00
Mathematics & Statistics	15,000.00	2,350.00
M&CL	9,400.00	1,720.00
Philosophy	4,000.00	1,050.00
Physics & Astronomy	10,000.00	2,100.00
Political Science	6,000.00	1,014.00
Psychology	10,000.00	800.00
Sociology	6,500.00	2,150.00
 TOTAL	 \$ 146,400.00	 \$23,901.00

TABLE 14

## A&amp;S Disbursements of Special College Funds

	<u>Reprint Funds</u>	<u>Speakers' Fees</u>
Arts & Sciences	\$ 369.91	\$ 625.00
American Studies	424.95	
Anthropology	600.00	
Biology	1,233.75	
Chemistry	168.50	
Communication/Journalism	36.26	
Communicative Disorders	150.00	
Economics	298.99	500.00
English	2,782.25	2,250.00
Geology	977.50	
History	1,176.19	450.00
Linguistics		350.00
Mathematics & Statistics	154.00	
Modern & Classical Languages	5,188.66	1,100.00
Philosophy	389.00	1,200.00
Physics & Astronomy	2,830.00	900.00
Political Science	801.10	900.00
Psychology	924.50	
Sociology	831.71	375.00
<b>TOTAL</b>	<b>\$19,337.27</b>	<b>\$8,025.00</b>

THE REPORT OF THE DEPARTMENT OF AMERICAN STUDIES  
COLLEGE OF ARTS AND SCIENCES

95

July 1, 1991, to June 30, 1992

Marta Weigle, Chair

The American Studies Department continued to work effectively as a committee of the whole to guide the large graduate program, supervised by graduate advisers Professors Vera Norwood (fall) and Jane Caputi (spring), and the expanding undergraduate program, headed by undergraduate and Southwest Studies advisers Professors M. Jane Young (fall) and Ruth Salvaggio (spring). During the spring semester, a national search for a senior scholar in feminist theory, gender and science, and the history and language of science was conducted; Professor Ruth Salvaggio from Virginia Polytechnic Institute, this year a Visiting Associate Professor of American Studies, was chosen to fill the position as a tenured associate professor. Her addition is most welcome. The industry, dedication, and creativity of faculty, students and staff have more than compensated for the small size of the department, which is characterized by its collegiality and stimulating intellectual endeavor.



#### A. Significant Achievements

The faculty maintained a high level of professional activity. Each member published and delivered one or more papers during the year. Professor Chon Noriega edited Chicanos and Film: Essays on Chicano Representation and Resistance. Professor Marta Weigle served as co-editor of the University of Illinois Press's Folklore and Society Series and on the editorial boards of Journal of Anthropological Research and Journal of the Southwest and Professor M. Jane Young as consulting editor of Archaeoastronomy. Professor Chon Noriega was Co-Chair (and Co-Founder) of the Latino Caucus of the Society for Cinema Studies.

#### B. Significant Plans and Recommendations for the Future

The Department remains committed to developing a sound program in race and ethnicity, to augmenting resources in popular culture, an area with much student interest, and to strengthening work in science, technology and society. The addition of Professor Chon Noriega greatly helped the first two areas, while Visiting Associate Professor Ruth Salvaggio contributed to the latter. Southwest Studies remains an important concern of the program, and talks are

underway to expand this area, possibly including an association with Professor Jerry Williams (Geography) and the Southwest Institute. Additional faculty members are sorely needed, and various avenues to initiate hiring are being explored.

Fall 1991 marked the beginning of a new graduate requirement. The reading list was significantly revised and became the cornerstone for an American Culture Studies (ACS) component of required list, pro-seminar and exam, which must be passed by both doctoral and master's students before taking individualized comprehensive exams.

The expanding undergraduate program continues to pose the dilemma noted in previous reports: As graduate students teach good introductory-level sections, more undergraduates are attracted to the department as majors and minors. It then becomes difficult for this small faculty to meet the demands of required and specialized coursework at both graduate and undergraduate levels. Additional faculty are required, since undergraduate growth must continue. Much increased graduate student support remains imperative and crucial if this department is to maintain its good reputation as a strong doctoral and master's degree program.

The faculty has been considering the future of New America, a book series presently dormant but with a still-active publication agreement with the University of New Mexico Press. Plans for future volumes in a revived series are underway.

C. Appointments to Staff

Faculty percentage appointments in American Studies for 1991-92 were as follows: Caputi (1.00), Noriega (1.00), Norwood (1.00), Salvaggio (1.00), Weigle (.50), and Young (1.00)--a total of 5.50 FTEs. Biebel was on administrative leave to direct the Honors Program. Norwood was on LWOP in the spring semester and Young was on half-time sick leave. On June 16, 1992, Salvaggio accepted the University's offer of a full-time, tenured position as Associate Professor of American Studies.

Margaret Gilmore very ably served as staff assistant until her resignation. Justina Shoemaker began work as staff assistant on November 1, 1991. Work/Study students Teresa Abeyta and William Whitaker assisted in the demanding work of that position.

D. Separations from Staff

Professor Peter White returned to teach full-time in the English Department as of Fall 1991. He maintains tenure in the American Studies Department, however.

Margaret Gilmore resigned as staff assistant effective October 2, 1991.

E. Sponsored Research

Although three faculty members (Noriega, Weigle, Young) served as consultants on others' research projects, only Professor Ruth Salvaggio received outside funding from Los Alamos National Laboratory for a pilot project on Women and Science.

UNIVERSITY OF NEW MEXICO  
DEPARTMENT OF ANTHROPOLOGY  
Annual Report  
1 July 1991 - 30 June 1992



THE CHRONICLE OF HIGHER EDUCATION

June 17, 1991

CAROLE CABLE

*"What I hate most about this is the annual report."*

UNIVERSITY OF NEW MEXICO  
DEPARTMENT OF ANTHROPOLOGY

101

Annual Report  
1 July 1991 - 30 June 1992

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II JOURNAL OF ANTHROPOLOGICAL RESEARCH (JAR)

III MAXWELL MUSEUM OF ANTHROPOLOGY

IV OFFICE OF CONTRACT ARCHEOLOGY (OCA)

**I      GENERAL DEPARTMENT INFORMATION**



## ANNUAL REPORT OF THE DEPARTMENT OF ANTHROPOLOGY

1 July 1991 - 30 June 1992

Karl H. Schwerin, Chair

I. General Department InformationA. Significant Achievements During 1991-1992

During the past year extensive discussions were held throughout the university concerning fundamental issues of institutional structure and goals, including reallocation, the core curriculum, the Honors Program, and the Hemispheric Initiative. Partially in light of these developments, the department initiated a major review of its entire undergraduate program, as well as implementing lesser modifications in the structure of the graduate program. Faculty and graduate students maintained their usual active involvement in research, with a high success rate in winning grant awards. Faculty service in national professional organizations was at a level comparable to previous years. The visibility of the Department remained undiminished. The Department and/or the Maxwell Museum were mentioned in 14 out of 18 issues of the Campus

News, and both were also featured in the July 1991 issue of "New Mexico Technology Enterprise Forum." Once again, members of the Department were cited frequently in the local and regional press including several feature articles (see Attachment 8). Dr. Wills was quoted extensively in an article on the frozen remains of a Bronze Age man discovered in the Italian Alps. Prof. Ortiz was quoted several times on how development proposals would impact locales sacred to Native Americans. Prof. Basso continued to participate as a member of the Religious Freedom Coalition Committee, a group representing a variety of Native American interests, and testified on their behalf in opposing the proposed Mt. Graham telescope. Prof. Trinkaus was interviewed on film for the nationally broadcast PBS series "Infinite Voyage." A second interview on the same topic, modern human origins, was taped for BBC Radio.

#### 1. Changes in Faculty

No new permanent faculty joined us this year. We were, however, joined by Dr. Gerhard Baumann, from Brunel University, England who visited this Department while Prof. Richard Barrett was exchanged with that institution to serve in Dr. Baumann's place. Dr. Baumann received his Ph.D. in 1980 from Queen's University, Belfast, Ireland. He currently holds the position of Reader in Social Anthropology at Brunel. Dr. Baumann has conducted research in the Nuba Mountains of Sudan and in a multi-ethnic urban neighborhood of London. His research interests include

ethnomusicology, economic development; race, ethnicity and gender; and the nature of the state. While at UNM he completed a book on the the state and continued to write on the multi-ethnic community that he has been studying.

A long time service award was presented this year to Assoc. Professor Stanley Rhine for 20 years at UNM. Prof. Rhine was also recognized by receiving the T. Dale Stewart Award. Prof. Wirt H. Wills was named to a Regents' Lectureship for the coming academic year. Prof. Emeritus Lewis Binford received the 1991 Humanities Service Award from the New Mexico Endowment for the Humanities.

Four Assistant Professors, James Boone, Jeffrey Long, Sylvia Rodriguez, and Wirt H. Wills, were granted tenure and promotion to Associate Professor. Two Associate Professors, Garth Bawden and J. Stanley Rhine, were promoted to full Professor.

Prof. Schwerin announced that he would step down as Chair at the end of the 1992-93 academic year. In response the faculty initiated discussion of possible successors to the position of Chair, but no decision will be made until sometime during the coming academic year.

## 2. Salary

The Chair pursued his concern about inadequate faculty compensation, with no significant impact. Salary levels for the current year increased an average of 3.75 per cent. For next year the increase will be but a token 1.5 per cent. Our national ranking within the top ten nationally seems to make little

impression upon the university administration and those who make budget decisions. There is serious concern both that we will begin to slip in our relative standing, and that we will begin to lose some of our better known and more productive scholars. In particular, no progress has been made on improving the salaries of our Associate Professors (mean salary \$36,720), who are in danger of being overtaken by the Assistant Professors (mean salary \$31,470). Compare this to the 1990 salaries of 24 anthropology departments (including UNM) at large public universities in the United States, surveyed by the University of Pittsburgh. The study found mean salaries to be \$32,852 for Assistant Professors, \$41,665 for Associate Professors, and \$58,432 for Full Professors (\$53,335 at UNM). The only bright spot here is that mean salaries for women faculty are greater than the means for men.

### 3. Budget

There was a significant increase of \$9,500 in the 1991-92 budget for Supplies and Expenses, intended particularly to underwrite the costs of operating the increasing number of labs for research and teaching in archeology, primate paleontology and biological anthropology, as well as the general computer lab for student use. Nonetheless, present lab space is makeshift at best, and it will be necessary to provide more adequate laboratory space within three to five years, most probably through remodeling of present OCA space in the Anthropology Annex.

Dean Wildenthal also increased the departmental travel budget

by \$5,000 to \$10,000, most of which was spent in support of faculty travel to meetings. Sixteen faculty were assisted in attending 28 meetings. One thousand dollars of the travel budget was also spent on the visit of a distinguished archeologist who could be considered in future as a sole source hire in the Distinguished Leslie Spier Professorship vacated by Lewis Binford. Indirect cost returns were used to support visits by other eminent scholars from other campuses, and 15 graduate students were assisted with travel to pursue advanced research.

Work study support was increased by \$750 to \$6,000, which represented a mere token in terms of department needs. GA/TA support was increased by returning Binford's 1.5 FTE to the department account, plus an additional 0.5 FTE at \$8,000. With the increase in GA/TA funding the Chair was able to increase the 16 0.25 FTE appointments to 0.30 FTE. Seven support GA positions continued to be funded at 0.50 FTE.

#### **4. Subfield Programs & General Courses**

The Ethnology faculty continued to work with the Linguistic Anthropology faculty in developing a more integrated program linking the two subfields. Prof. Gerhard Baumann joined us from Brunel University in England while our Prof. Richard Barrett served as our exchange representative in Baumann's place at Brunel. The retirement of Profs. Barrett and Sebring at the end of the Spring semester stimulated discussion among the Ethnology faculty concerning programmatic goals and the kinds of hires that would

have to be made to maintain our present strength and achieve future goals. There were 52 graduate students in Ethnology for 1991-92.

Prof. Trinkaus returned from sabbatical. Several of his students are actively pursuing important research projects on early man. Toward the end of the academic year we succeeded in purchasing a trailer to be used by Prof. Froehlich for the primate paleontology lab. Plans for remodeling will be drawn up during the coming year. The Albuquerque Men project continued to dominate the efforts of the Biosocial program this year, although Prof. Kaplan initiated a new field research project in Botswana. The faculty voted that with new Biosocial faculty arriving in the Fall, the Biosocial program would be recognized at that time as a separate wing. Graduate enrollment in Biological Anthropology for 1991-92 was 17, and 17 in Biosocial.

The Archeology faculty devoted much of their energy this year to the identification of outstanding candidates who enjoy international standing comparable to that of Prof. Binford, and who might be brought to New Mexico as a stellar figure for the university. Some twenty potential candidates were identified, most of them members of the National Academy of Sciences. Three were finally invited to visit UNM. These were David Hurst Thomas from the American Museum of Natural History in New York, Patrick Kirch from the University of California at Berkeley, and Jane Buikstra, past President of the American Anthropological Assn., from the University of Chicago. All were extremely impressive, and after extensive consultation the Archeology faculty recommended, and the

whole faculty supported, that negotiations be pursued between UNM and Prof. Buikstra. It is hoped that a formal offer can be worked out during the coming Fall semester. During the year Prof. Leonard negotiated with the Zuni Tribe to establish a field station in pueblo facilities. Final arrangements were concluded in time to use those facilities as the base for the summer Archeology Field School. For 1991-92 there were 54 graduate students in Archeology.

The Linguistic Anthropology faculty continued to work on revising and strengthening their program. Implementation of the revised program will begin in Fall 1992. Graduate student enrollment in Linguistic Anthropology increased to six this year.

For Fall 1991 there were 131 undergraduate Anthropology majors in the College of Arts and Sciences, with another 37 majors (29 female, 24 male) listed in University College. Graduate enrollment for all four subfields totalled 146.

#### 5. Leaves

Prof. Louise Lamphere was on sabbatical leave during the year. She spent most of her time at the University of California, Berkeley, where she pursued her research and writing. She did return to UNM from time to time, however, to meet with students and to exercise her responsibilities as editor of the journal "Frontiers."

#### 6. Staff

Budgeting of an additional 0.5 FTE staff for fiscal 1991-92

made it possible for the Department to hire an additional secretary, which brought us back to a full complement of staffing for the department. Guadalupe Montoya was hired to fill this position, beginning 3 September 1991. Her duties include acting as receptionist and maintaining undergraduate information and files. This position has greatly improved distribution of the departmental workload and enhanced efficiency in the departmental office.

## 7. Space Modifications

Four rooms on the second floor of Bandelier Hall West were transferred to Anthropology this year. Three of these were assigned to nine GA/TAs as office space, while one was made available to the Albuquerque Men project for data storage and analysis.

After lengthy effort we were finally successful in obtaining a large trailer to be used for laboratory space by Prof. Froehlich in supporting the teaching and research activity generated by his paleontology courses. Remodeling of this space will be pursued in the Fall. Facilities made available through an agreement between the Zuni Pueblo and UNM were remodeled for use as the base of the summer Archeology Field School. This field station will be available year round for research support, and can also be used to house retreats and small conferences.

Space available to the department remains inadequate. the Chair continues to work with the Dean to seek answers to this problem. Expectations of additional space both in Bandelier Hall



West and in the Anthropology Annex with the removal of OCA offices to the Lomas facility have yet to materialize. The Chair continues to work with the Dean to seek answers to our myriad space problems.

#### 8. Research and Scholarship

Departmental research and scholarship was comparable to last year. Thirteen faculty presented papers at 22 professional meetings within the United States, four presented papers at international meetings. Prof. Wirt H. Wills was appointed to a UNM Regents' Lectureship. The American Academy of Forensic Sciences bestowed their highest honor on Prof. J. Stanley Rhine in naming him as the 15th recipient of the T. Dale Stewart Award. The award is given annually in recognition of meritorious service to the Academy and for significant contributions to forensic science. Five graduate students presented papers at professional meetings, with four receiving departmental subsidies for their travel.

Four graduate students were supported by NSF fellowships; Anthony Martinez was awarded an Opportunity Fellowship, Michael Alvard was named to a Challenge Assistantship, Felipe Montoya received a Graduate Achievement Award, while Susan Stratton and John Bock were awarded Graduate Tuition Fellowships. Cristina Davies and Arthur Martin were elected to Phi Kappa Phi, Honorary Society.

The Department recognized Trenton Holliday, a Masters level student, who presented the Frieda D. Butler Memorial Lecture on Thursday 14 November 1991, entitled "Coming in from the Cold:

Neanderthals and Modern Humans." Marilee Schmit was recognized with her presentation of the Ruth E. Kennedy Memorial Lecture on 28 April 1992, entitled "Dissertations and Distractions in the Ecuadorian Highlands or, My Secret Life in the Field." The 1991-92 MacCaulley Scholarship was awarded to Robert Lore.

Through the course of the year 28 presentations were made to the Anthropology Brown Bag lecture series, seven by faculty, 12 by advanced graduate students, and nine by visiting scholars. Eleven other visiting scholars gave public lectures (see Attachment 1). In addition, the three distinguished archeological scholars who visited during the year each presented at least one brown bag and one public lecture (see Attachment 2). Anthropology continued its collaboration with the Medieval Studies Program in co-sponsoring the annual Medieval Lecture series, 2-5 March. The topic this year was "Travel in the Middle Ages: Fabulous and Real," designed to provide background context for the Columbus voyages.

Twenty-two individuals held letters of academic title with the Department. Sixteen of these were adjuncts; three employed elsewhere within the university were named Senior Research Associates in Anthropology, one was a Visiting Scholar and two were Associate Professor (part-time) (see Attachment 7).

The tradition of a joint commencement ceremony continued with American Studies, Geography and Linguistics. This year Anthropology awarded 33 B.A. degrees, three B.S. degrees (see Attachments 4.a and 4.b); 19 M.A.s and two M.S.s (see Attachment 5). Seven doctoral students also completed their degrees (see

**B. Significant Plans and Recommendations for the Near Future**

With increasing laboratory instruction and laboratory based research departmental space needs have reached the crisis stage. This is further exacerbated by the arrival of new faculty, and the increasing instructional obligations of graduate teaching assistants. Promises of additional space in Bandelier Hall West and plans to move OCA from the Anthropology Annex to the Lomas building have not materialized (nor does it appear there will be any movement on these plans for at least another year). With the resignation of Dean Wildenthal it also appears unlikely that any progress will be made on the long term need for a new building.

Faculty salaries continue to lose ground in terms of their competitive position nationally. Aggressive representations to the Dean and the central administration of the seriousness of this issue have had no impact whatsoever. The Chair is at a loss how to turn the situation around. It is feared that very soon we will start to see an exodus of our best faculty who are lured away by better offers elsewhere.

With the support of the entire faculty, the archeology faculty succesfully identified a superb candidate in the person of Jane Buikstra, who could assume the Leslie Spier Distinguished Professorship vacated last year by Prof. Binford. We confidently

expect to finalize negotiations with Prof. Buikstra early in the coming academic year.

Since two of the recent retirements were in Ethnology, the faculty of that subfield has been reviewing its program with an eye to future programmatic objectives and needs. We will be seeking authorization to make at least one hire in Ethnology during the coming year.

The Undergraduate Committee, is continuing its assessment of the curriculum. Several alternative plans were discussed during the Spring semester, and these options will be explored more fully in the coming months, with the objective of improving, enhancing, streamlining, and strengthening the program's appeal to undergraduates and majors.

Three retirements, two sabbaticals and one LWOP have so severely reduced our teaching capabilities, that all 11 graduate assistants are being assigned full responsibility for teaching either a course or a lab. During the coming year, regardless of enrollments, there will be no graduate assistants available to aid faculty instructors with administration of their courses.

The Chair, Prof. Schwerin, has announced that he will step down at the end of the current academic year. During the Fall the faculty will be discussing a replacement for him.

**C. Appointments to Staff**

Guadalupe Montoya was hired as Department Secretary (CS V) 3 September 1991. Subsequent to completion of the Ph.D., Otto Santa Ana was issued a revised contract as Assistant Professor of Anthropology (Code 1) on 23 August 1991.

**D. Separations from Staff**

Prof. John M. Campbell, Assoc. Professor Richard Barrett and Assoc. Professor James M. Sebring all retired on 30 June 1992.

**E. Outside Sponsored Research**

Faculty research activity involved submission of 19 proposals to outside agencies by 10 faculty. Five faculty were successful in being awarded funding for 8 grants; seven faculty continued research on 11 projects for which funding had been approved in preceding years (see Attachments 9.a and 9.b). One adjunct faculty also continued research under extension of previous grants. There was an increase this year in research activity by graduate students, with at least nine receiving outside grants of \$4,500 or more. Twenty-four received smaller grants from internal sources of up to \$1,300 dollars apiece.

**F.        ATTACHMENTS**

ATTACHMENT 1.  
PUBLIC LECTURES  
1991/92

William de Buys, anthropologist, author, Pulitzer Prize finalist  
"River of Traps: Conversations Across Cultures"  
09/25/91

Sen. Mary Jane Garcia, anthropologist, New Mexico Senate  
"An Anthropologist Views the New Mexico State Legislature"  
09/26/91

Jean Clottes, President, International Rock Art Association  
Director of Prehistoric Antiquities for the Pyrenees  
Commissioner of Paleolithic Art, France  
11/01/91

Alan Rogers, University of Utah  
"Mitochondrial Evidence Concerning the Origin of Modern  
Humans"  
11/21/91

Jean-Jacques Hublin  
"Human Evolution in North Africa"  
03/13/92

William Hylander  
"The Primate Face"  
03/23/92

Christopher B. Ruff  
"Interpreting Postcranial Robusticity in Recent and Earlier  
Homo"  
03/30/92

Robert Shadow & Maria Rodriguez Shadow  
"Pilgrimage and Power: A Peasant Pilgrimage to the Shrine of  
Chalma, Mexico"  
04/08/92

Philip K. Bock  
"Troubadours of the Yucatan"  
Maxwell Museum Explorations in World Music series  
04/14/92

Patricia Crown  
"Salado Polychrome Pottery and the Southwestern Cult"  
Peoples of the Southwest Lecture,  
co-sponsored by the Maxwell Museum  
04/30/92

Debra Martin  
"Cycles of Life and Death in the Prehistoric Southwest"  
05/01/92

ATTACHMENT 2.  
DISTINGUISHED LECTURES IN ARCHEOLOGY  
1991/92

119

David Hurst Thomas, Curator, American Museum of Natural History,  
Member, National Academy of Sciences  
"Columbian Consequences Revealed by a Lost Spanish Mission:  
The Archeology of Santa Catalina de Guale"  
12/03/91

"What Ever Happened to Good Old Fashioned Archeological Data?"  
(seminar presentation)  
12/04/91

Patrick V. Kirch, Professor, University of California, Berkeley  
Member, National Academy of Sciences  
"Cooked Taro, Raw Men, and the Long Run of Manganian  
Prehistory"  
02/21/92

informal brown bag lectures: 02/19/92, 02/20/92, 02/21/92

Jane E. Buikstra, Harold H. Swift Distinguished Service Professor,  
University of Chicago  
Member, National Academy of Sciences  
Past President, American Anthropological Assn.  
"The Archeology of Death"  
03/23/92

"Diet and Disease in Pre-Columbian America" (seminar  
presentation)  
03/25/92

**FRIEDA D. BUTLER MEMORIAL LECTURE**

Trenton Holliday, M.A. student in Biological Anthropology  
"Coming in from the Cold: Neanderthals and Modern Humans."  
11/14/91

**RUTH E. KENNEDY MEMORIAL LECTURE**

Marilee Schmit, Ph.D. candidate  
"Dissertations and Distractions in the Ecuadorian Highlands  
or, My Secret Life in the Field."  
04/28/92



ATTACHMENT 3.  
ANTHROPOLOGY BROWN BAG LECTURE SERIES  
1991/92

120

Hillard Kaplan & Jane Lancaster, Ethnology & Biosocial faculty, UNM  
"Male Fertility and Parenting: Tests of Models Using a Sample  
of Over 2,500 Albuquerque Men"  
09/04/91

Brian Hansen, Prof. of Theater, UNM  
"Darwin and Dionsusus: An Evolutionary Approach to the  
Performing Arts"  
10/01/91

Hillard Kaplan, Ethnology faculty, UNM  
"Development, Conservation, and the Position of Traditional  
Peoples in Lowland South America"  
SOLAS Lecture  
11/08/91

Michelle Chino & Ada Melton, biosocial graduate students  
"Child Maltreatment and Child Protection in Native American  
Communities"  
11/13/91

Alan Rogers, University of Utah  
"The Evolution of Time Preference"  
11/22/91

Raymond Peterson & Jeffrey Long, biological graduate student &  
faculty, UNM  
"Demographic Analysis of a Small Human Population:  
The Ramah Navajo"  
01/27/92

Ken Juell, archeology graduate student  
"Exploring the Role of Small Animals in the Evolution  
of Human Hunting"  
02/10/92

Lawrence Straus, archeology faculty, UNM  
"Mousterian and Early Upper Paleolithic Excavations  
in Belgium"  
02/14/92

James Boone, archeology faculty, UNM  
"The Socio-biogeography of the Christian/Muslin Interface in  
the Mediterranean"  
02/24/92

Anna Backer, archeology graduate student  
"Castelperronian Spatial Distributions at St. Cesaire,  
Charente-Maritime, France"  
02/28/92

- Anna Steffen, archeology graduate student  
"Mounds Mounded Notions: Culture History and Mound  
Distribution in the Lower Mississippi Valley"  
03/06/92
- Michael Alvard, biosocial graduate student  
"Human Predators and Amazonian Fauna"  
03/09/92
- Gerhard Baumann, Visiting Professor, ethnology, UNM (Brunel Univ.,  
England)  
"Ethnography Across Community Boundaries: Disengaging Culture  
from Ethnos?"  
03/11/92
- Sharon Pochron, biosocial graduate student  
"A New Method of Analysis of Primate Life Histories"  
03/23/92
- Phil Letourneau, archeology graduate student  
"Folsom Raw Material use on the Southern Plains"  
04/02/92
- Ginny Munsick, Neonatal Intensive Care, UNMH  
"Newborn at Risk: Their Impact on Parental Fertility and Life  
History Strategies"  
04/06/92
- Robert Shadow & Maria Rodriguez Shadow, ethnology adjunct Professor  
"Peasant Pilgrimages in Central Mexico"  
04/08/92
- R.S. Sharma  
"Tribalism or Aspects of Anthropology, Ethnicity and Public  
Policy in India"  
04/10/92
- Peter Whiteley, Sarah Lawrence College  
"Burning Culture: Structure, Agency and Intentionality in Hopi  
Social Process"  
04/15/92
- David Batten, archeology graduate student  
"Cities, Transport and the Role of Food Supply: Critical  
Function or Minor Detail?"  
04/16/92
- Leah Albers, College of Nursing  
"Prenatal Care in the United States and New Mexico: A National  
Sample"  
04/20/92

- Robert Dello-Russo, archeology graduate student  
"Constructing a Faunal Assemblage Marginal Utility Curve to  
Predict Transport Distance"  
04/23/92
- Gary Paul Nabhan  
"Using Desert Foods to Control Diabetes Among Native  
Americans"  
04/27/92
- Nancy Yaw Davis, Cultural Dynamics, Anchorage, Alaska  
"The Zuni Enigma: 13th Century A.D. Asian Influence?"  
04/29/92
- Colleen Costin, biosocial graduate student  
"Adult Female Feeding Competition Among Captive Tufted  
Capuchins"  
05/04/92
- Rick Morris, OCA  
"Beans, Evaporated Milk, and Mutton: Islands of Navajo  
Consumerism During the Early 20th Century"  
05/08/92
- Galen Burgett, OCA  
"Views of the Archaic, From the Transwestern Pipeline R-O-W"  
05/22/92
- Jan Gish, OCA  
"Pollen Highlights from Pipeline Sites"  
06/05/92

ATTACHMENT 4.a  
1991/92 BACHELOR DEGREES CONFERRED  
ANTHROPOLOGY

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BACHELOR OF ARTS

Summer 1991, Semester III

James Felberg  
Sherry L. Marks  
Linnah Neidel  
Daniel Schultz

Fall 1991, Semester I

Stephanie Daw  
Terry Duncan  
Beverly Engelbrecht  
Elena Fernandez  
Roy Fetter  
Jeremy R. Kulisheck  
Anthony E. Martinez  
Marne Potter  
Laura L. Valdez

Spring 1992, Semester II

David J. Barklow  
David Carl Dusterhoff  
John Eastman  
Roy W. Fetter  
Theodore Ellis Friedman  
Caroline Haagenstad  
Michael D. Hannaford  
Cami Lyn Heald  
Bradley Humble  
Leslie Ann Kubler-Staggs  
Robert J. Lore  
Carol J. Martindale  
Christine McGarvin  
Janna Mueller  
Jo Petersen  
Stephen Post  
Dana Rhodes  
Caroline Wilder Turnbull  
Meredith Vener  
Eric Villegas

ATTACHMENT 4.b  
1991/92 BACHELOR DEGREES CONFERRED  
ANTHROPOLOGY

BACHELOR OF SCIENCE

Summer 1991

David Budai

Spring 1992

Pamela Folkner  
Joseph Gregory Trujillo

ATTACHMENT 5.a  
ANTHROPOLOGY MASTERS DEGREES CONFERRED  
1991/92

125

Master of Arts

Alysia L. Abbott  
Karen Archey  
Thomas Arthur Baker  
Mary M. Birkel  
Thomas F. Carter  
Diane D. Crumley  
Karen L. Daar  
Howard J. DeNike  
Jeanny Dhewayani  
John Robert Estes

Anne Gagnon-Stearns  
Russell T. Gould  
Lisa R. Kaplowitz  
Deborah Renee Mandel  
Livia Lorena Martinez  
Tina A. Quartaroli  
Francine C. Romero  
Mark R. Stenger  
Mark A. Sweeting

Master of Science

Sharon Lisa Gurskey

Sharon T. Pochron

DEPARTMENTAL HONORS

Graduate students who have  
demonstrated outstanding ability  
in the field of independent research

Alysia L. Abbot  
Karen Archey  
Mary M. Birkel

Howard J. DeNike  
Russell T. Gould  
Mark R. Stenger

Sharon T. Pochron

ATTACHMENT 6.  
ANTHROPOLOGY DOCTORAL DEGREES CONFERRED  
1991/92

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GRADUATE

DISSERTATION CHAIR

SUBFIELD

Summer 1991, Semester III

James G. Enloe                      Lewis R. Binford                      Archeology  
Subsistence Organization in the Upper Paleolithic:  
Carcass Refitting and Food Sharing at Pincevent

Robert L. Tompkins                      Erik Trinkaus                      Biological Anthropology  
Relative Dental Development in Upper Pleistocene Fossil  
Hominidae and Recent Humans

Fall 1991, Semester I

Jatna Supriatna                      Jeffery Froehlich                      Biological Anthropology  
Hybridization Between Macaca maurus and Macaca tonkeana: A  
test of species status using behavioral and morphogenetic  
analyses

Marilee Schmit                      Mari Lyn Salvador                      Ethnology  
Costume as a Means of Group and Self-Identification in the  
Ecuadorian Sierra

Spring 1992, Semester II

Neale Draper                      Lewis Binford                      Archeology  
Cape du Couedic Rockshelter and the Aboriginal Archeology of  
Kangaroo Island, South Australia

Bradley J. Vierra                      Lawrence Straus                      Archeology  
Subsistence Diversification and the Evolution of Microlithic  
Technologies: A Study of the Portuguese Mesolithic

D. Scott Wilson                      Louise Lamphere                      Ethnology  
Dog-Eat-Dog: Social Exchange Among Denver's Male Prostitutes  
and Their Clients

ATTACHMENT 7.  
1991/92 LETTERS OF ACADEMIC TITLE  
Anthropology

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<u>NAME</u>	<u>TITLE</u>	<u>1st APPOINTMENT</u>
BAUMANN, Gerhard	Vstg. Assoc. Professor Social anthropology, political anthropology, economic anthropology, ethnicity, ethnomusicology, urban culture; Africa, Sudan, England	1991/92
BECKER, Thomas	Asst. Professor (part-time) Epidemiology, disease ecology	1986/87
CAMILLI, Eileen	Adj. Asst. Professor Archeology, methodology; Southwest US, Great Basin	1986/87
CHAPMAN, Richard C.	Senior Res. Assoc. in Anthro Archeology, cultural resource management; Southwest US; Assoc. Director, OCA	1982/83
CHISHOLM, James S.	Adj. Assoc. Professor Biological anthropology, human ethology; Southwest U.S., Navajo, Australia	1990/91
DEAN, Glenna	Adj. Asst. Professor (part-time) Archeobotany, palynology, coprolite analysis, paleodiet, paleoecology; Southwest, Great Basin	1988/89
EL MAK, Ali	Adj. Asst. Professor Arabic literature, Black American literature, Native American mythology & literature, translation	1990/91
FRITZ, John M.	Adj. Assoc. Professor Archeology, theory and method; western North America, India	1980/81
HARRISON, Peter D.	Adj. Assoc. Professor Archeology, Mayan agriculture; Mesoamerica	1980/81
HOGAN, Patrick F.	Senior Res. Assoc. in Anthro Archeology, cultural ecology and evolution, paleo-environmental reconstruction; Southwest, Great Basin; Asst. Director OCA	1988/89
HOLLOWAY, Richard G.	Adj. Asst. Professor Palynology, ecology, Quaternary environments, plant systematics, biostatistics, paleoclimatology	1990/91
KNEEBONE, Ronald	Adj. Asst. Professor Spatial structure, mathematical symbology, assemblage formation, nonequilibrium thermodynamic models, human space economies; Mesoamerica, Southwest, Sub-Arctic	1990/91



<u>NAME</u>	<u>TITLE</u>	<u>1st APPOINTMENT</u>
KUHN, Steven Louis	Adj. Asst. Professor Paleolithic archeology and hominid evolution, hunter-gatherer foraging & technology, Quantitative methods, mathematical modeling, simulation	1990/91
RISSER, David R.	Adj. Assoc. Professor Epidemiology, biostatistics, evolutionary genetics, primate biology, human genetics and variation, environmental health	1990/91
SABLOFF, Jeremy A.	Adj. Professor Archeology, prehistory; Mesoamerica	1986/87
SEBASTIAN, Lynne	Adj. Asst. Professor Political anthropology, complex cultures, archeological theory and method, historic preservation; Southwest, Chacoan cultures	1990/91
SHADOW, Robert	Adj. Professor Popular religion, peasant commodity production, ethnohistory; central Mexico, northern New Mexico	1990/91
STINER, Mary C.	Adj. Asst. Professor Archeozoology and taphonomy, Old World prehistory, hunter-gather foraging and reproductive ecology, Neandertals, game theory, evolution of animal domestication	1990/91
TRINKAUS, Kathryn	Senior Res. Assoc. in Anthro. Old World archeology, lithics, complex societies; Research Associate-Staff II, Maxwell Museum	1983/84
WIGET, Andrew O.	Adj. Assoc. Professor	1991/92
WINTER, Joseph C.	Assoc. Professor (part-time) Archeology, cultural resource management; California, Southwest; Director OCA	1980/81
YU, Guodian	Visiting Scholar	1991/92

ATTACHMENT 8.  
DEPARTMENT OF ANTHROPOLOGY  
Feature Articles on UNM Anthropology  
1991-92

129

"A 4,000-Year-Old History Lesson," by Rick Nathanson. Albuquerque Journal, Monday, December 30, 1991, Section B, page 1 (Wirt "Chip" Wills)

"Sticks and Stones," by Rick Nathanson. Albuquerque, Journal, Monday, December 30, 1991, Section B, page 1 (Maxwell Museum)

"The Huerfano Holy War," by Leslie Linthicum. Albuquerque Journal, Sunday, June 14, 1992, Section F, pages 1-2 (Alfonso Ortiz)

"Pueblo Scholar Testifies Against Power Line in Jemez," Albuquerque Journal, Thursday, June 18, 1992, Section F, page 1 (Alfonso Ortiz)

ATTACHMENT 9.a  
DEPARTMENT OF ANTHROPOLOGY  
RESEARCH PROPOSALS SUBMITTED  
Fiscal Year 1991/92

130

NATIONAL GEOGRAPHIC SOCIETY

Lawrence Straus, Professor (Archeology)  
Middle and Upper Paleolithic Research in southern Belgium  
submitted 10/16/92 \$17,600

Jane Lancaster, Professor (Biosocial Anthropology)  
REU Supplement for Undergraduates  
submitted 01/29/92 \$4,000

Hillard Kaplan, Assoc. professor (Ethnology)  
REU Supplement for Undergraduates  
submitted 01/29/92 \$4,000

NATIONAL SCIENCE FOUNDATION (NSF)

Louise Lamphere, Professor (Ethnology)  
Phillip Montoya, graduate student (Ethnology)  
Cultural Innovation & Environmental Protection:  
Peasants in Costa Rica  
submitted 07/31/91 \$11,485

Jane B. Lancaster, Professor (Biosocial Anthropology)  
Lisa G. Rapaport, graduate student (Biological Anthropology)  
Social influence on the development of foraging  
behavior in golden lion tamarins  
submitted 11/07/91 \$10,182

Erik Trinkaus, Professor (Biological Anthropology)  
Dental Metrics and Dental Volume in Late Archaic  
and Recent Humans  
submitted 11/13/91 \$7,295

ATTACHMENT 9.b  
DEPARTMENT OF ANTHROPOLOGY  
RESEARCH PROPOSALS FUNDED  
Fiscal Year 1991/92

WILLIAM T. GRANT FOUNDATION

Jane B. Lancaster, Professor (Biological Anthropology)	
Hillard S. Kaplan, Assoc. Professor, (Ethnology)	
Male Fertility and Parenting in New Mexico:	
Phase II Interim Funding	
submitted 04/24/91	\$59,065
approved 06/12/91	\$59,470

L.S.B. LEAKEY FOUNDATION

Hillard Kaplan, Professor (Ethnology)	
Paula Ivey, graduate student (Biosocial Anthropology)	
Resource and labor assistance among Efe forager	
children of northeastern Zaire	
submitted 11/07/91	\$7,290
approved 11/12/91	\$5,000

Erik Trinkaus, Professor (Biological Anthropology)	
Steven Churchill, graduate student (Biological Anthropology)	
Human Upper Body Evolution in the Eurasian Later	
Pleistocene	
submitted 08/28/91	\$4,540
Approved 11/12/91	\$4,540

Lawrence Straus, Professor (Archeology)	
Middle and Upper Paleolithic Research in	
Southern Belgium	
approved 02/06/92	\$4,000

Hillard Kaplan, Assoc. Professor (Ethnology)	
The Ecology of Fertility and Labor in a hamBukushu	
Community, Botswana	
submitted 02/03/92	\$7,199
approved 02/13/92	\$5,000

Hillard Kaplan, Assoc. Professor (Ethnology)	
Martha Boden, graduate student (Biosocial Anthropology)	
Female Subsistence Strategies in an hamBukushu Village,	
Ngamiland, Botswana	
submitted 02/03/92	\$6,756
approved 02/13/92	\$5,500

MRS. CECILIA NADLER

132

John Fritz, Adjunct Assoc. Professor (Archeology)  
Imperial styles; Vijayanagara, A South Indian  
Case Study  
approved 10/22/91

\$9,764

NATIONAL ENDOWMENT FOR THE HUMANITIES (NEH)

John Fritz, Adjunct Assoc. Professor (Archeology)  
Imperial styles; Vijayanagara, A South Indian  
Case Study  
extension approved 10/16/91

\$2,185

NATIONAL SCIENCE FOUNDATION (NSF)

Karl H. Schwerin, Professor (Ethnology)  
REU Supplement: Dissertation Research:  
An Analysis of Peasant Recruitment to a  
Mexican Millenarian Sect  
submitted 01/30/91  
approved 03/12/91

\$1,875

\$1,875

Richard A. Barret, Assoc. Professor (Ethnology)  
Jorg Opherck, graduate student, Ethnology  
Gender Relations in Sweden: Ideology and Practice  
submitted 07/09/90  
approved 04/19/91  
10/30/91 supplement

\$7,994

\$7,001

\$1,388

James Boone, Asst. Professor (Archeology)  
Christopher Dore, graduate student (Archeology)  
Architectural variability and community  
organization at Xculoc, Campeche, Mexico  
submitted 04/01/91  
approved 05/30/91

\$12,000

\$12,000

Jeffrey C. Long, Asst. Professor (Biological Anthropology)  
Molecular and Demographic Population genetic  
Studies of Southwestern Indian Tribes  
submitted 01/04/91  
approved

\$94,746

\$67,641

Jane Lancaster, Professor (Biosocial Anthropology)  
Hillard Kaplan, Assoc. Professor (Ethnology)  
Male Fertility and Parenting in New Mexico -  
Phase II  
submitted 01/25/91 (\$367,830)  
submitted 05/22/91 (\$242,086)  
approved 07/01/91

\$151,083

\$120,721

\$120,721

Erik Trinkaus, Professor (Biological Anthropology)  
 Steven Churchill, graduate student (Biological Anthropology)  
 Dissertation Research: Human Upper Body  
 Evolution in the Eurasian Later Pleistocene  
 submitted 07/31/91 \$9,725  
 approved 01/23/92 \$8,726

Lewis Binford, Professor Emeritus (Archeology)  
 Rusty Greaves, graduate student (Archeology)  
 Subsistence and technological organization among  
 the Pumé of Venezuela  
 submitted 07/08/91 \$12,000  
 approved 12/18/91 \$12,000

Robert Santley, Professor (Archeology)  
 Specialized Craft Production in the Tuxtlas Mts.,  
 Veracruz, Mexico  
 approved 12/13/91 \$60,073

Jane Lancaster, Professor (Biological Anthropology)  
 Research Experiences for Undergraduates  
 (REU Supplements)  
 approved 03/03/92 \$8,000

#### WENNER-GREN FOUNDATION

James L. Boone, Asst. Professor (Archeology)  
 Medieval Rural Settlement History in the  
 Lower Alentejo of Portugal  
 submitted 05/01/91 \$11,045  
 approved 11/14/91 \$8,600

ATTACHMENT 10.a  
DEPARTMENT OF ANTHROPOLOGY  
STUDENT RESEARCH PROPOSALS SUBMITTED  
Fiscal Year 1991/92

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THE BRADLE GROUP

Robert G. Franciscus (Biological Anthro)  
The relationship between external and internal  
skeletal nasal variables in humans \$100

L.S.B. LEAKEY FOUNDATION

Kenneth E. Juell (Archeology)  
Small Animal Hunting in the Okavango Delta,  
Ngamiland District, Botswana  
submitted 09/12/91 \$6,775  
submitted 12/01/91

Michael Alvard (Biosocial Anthropology)  
Foraging Peoples of Sulawesi, Indonesia:  
Exploratory Research  
submitted 02/24/92 \$5,380

Charles E. Hilton (Biological Anthropology)  
Locomotor Kinesiology in Modern Human Foragers  
submitted 03/02/92 \$8,075

NATIONAL SCIENCE FOUNDATION (NSF)

Veronica Agabashian (Ethnology)  
Mutual Assistance Associations: The Internal and External  
Dynamics of Refugee Adjustment  
submitted 10/23/91 \$10,850

Steven E. Churchill (Biological Anthro)  
Human Upper Body Evolution in the Eurasian Later  
Pleistocene \$9,723

Phillip J. Montoya (Ethnology)  
Environmental Discourse and Practice: Costa  
Rican Peasantry  
submitted 03/17/92 \$11,238

NEW MEXICO OFFICE OF THE GOVERNOR--Quincentenary Commission

Melissa Payne (Archeology)  
Colonial Hispano Settlement and Material Patterns  
submitted 01/29/92 \$6,332  
submitted 02/06/92 \$9,900

WENNER-GREN FOUNDATION

Veronica Agabashian (Ethnology)

Mutual Assistance Associations: The Internal and External

Dynamics of Refugee Adjustment

submitted 10/25/91

\$10,850



ATTACHMENT 10.b  
DEPARTMENT OF ANTHROPOLOGY  
STUDENT RESEARCH PROPOSALS FUNDED  
Fiscal Year 1991/92

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L.S.B. LEAKEY FOUNDATION

Russell D. Greaves (Archeology)

Subsistence and technological organization among  
the Pumé of Venezuela

submitted 09/09/91

\$15,000

approved 02/13/92, subject to NSF funding

\$4,500

Martha Boden (Biosocial Anthropology)

Determinants of Women's Subsistence Contributions  
in Mogotho, Ngamiland, Botswana

submitted 09/16/91

\$5,185

submitted 12/01/91

\$6,756

approved

\$5,500

John Bock (Biosocial Anthropology)

The Cost of Children and Contract Labor in  
a Southern African Community

submitted 09/16/91

\$9,962

approved 02/13/92

\$9,000

NATIONAL SCIENCE FOUNDATION (NSF)

William Troy Tucker (Biosocial Anthropology)

Graduate Fellowship Award (for 3 years) \$12,300/annum

Lisa Rapaport (Biological Anthropology)

Social Influence on the Development of Foraging  
Behavior in Golden Lion Tamarins

SWEDISH INSTITUTE

Jorg Opherck (Ethnology)

Gender Relations in Sweden: Ideology and Practice

submitted January 1990

approved

\$8,400

USDA - Forest Service

Lance Trask (Archeology)

Ancient Billboard Project

approved 05/15/91

\$9,000

approved 03/19/92

\$9,180

UNM - LATIN AMERICAN INSTITUTE

137

Thomas Barrett (Archeology)	
travel to Veracruz, Mexico for field research	\$620
Pamela Kogler (Archeology)	
travel to Veracruz, Mexico for field research	\$603
Shawn Penman (Archeology)	
travel to south coastal Peru for field research	\$1,229
Richard Reycraft (Archeology)	
travel to south coastal Peru for field research	\$1,280

## UNM - STUDENT RESEARCH ALLOCATIONS COMMITTEE

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	SRAC Award	VPGRF Award
Rani T. Alexander	\$84 \$125	
Michael S. Alvard	\$125	
Thomas Patrick Barrett	\$50	
Thomas Berger	\$150	\$100
Martha Boden	\$150	\$150
Steve Byers	\$100	
Michele Scally Church	\$150	\$100
Steven E. Churchill	\$150	\$200
Kathryn L. Davis	\$100	
Russel T. Gould	\$150	\$200
Russell D. Greaves	\$125	
Julie A. Heller	\$150	\$100
Charles E. Hilton	\$125	
Kenneth Juell	\$150	\$150
Pamela Price Kogler	\$100	
Karen Kramer	\$100	
Philippe D. LeTourneau	\$150 \$75	\$50
Garnett P. McMillan	\$50	
Thomas M. Morales	\$88	
Richard M. Reycraft	\$75	
Camille Sayer	\$50	
Susan K. Stratton	\$50	

II JOURNAL OF ANTHROPOLOGICAL RESEARCH (JAR)

The Journal of Anthropological Research continued to fulfill its mission, publishing four issues totaling nearly 400 pages, including a special issue on "The Legacy of Hortense Powdermaker" (Vol 47, No. 4) that has attracted considerable attention. There were no changes in staff. Increasing printing and mailing costs made it necessary to raise individual subscriptions from \$20 to \$24 annually; it is hoped that this will continue to cover expenses.

III      MAXWELL MUSEUM OF ANTHROPOLOGY

MAXWELL MUSEUM OF ANTHROPOLOGY

July, 1991 - June, 1992

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Dr. Garth L. Bawden, Director

The past year has been one of consolidation following the major construction project associated with installation of the permanent exhibits. However, while most of this activity has now been completed the last phase of Museum Store renovations is still continuing and should end in this (1992-3) year.

In other areas, the chief thrust has been toward consolidating the museum's internal and support structure in order to fully utilize its expanded potentials. Thus, a new research position - Senior Research Co-ordinator - has been created, to be filled by a Southwestern archaeologist of national status. This position, the first to be solely allocated to research potentials, working with the collection curators to generate and fund projects relating to the archaeological holdings. Ultimately the position will be responsible for administering the Hibben Research Center on behalf of the Maxwell Museum.

Dean Wildenthal and Provost Risser have agreed to the creation of a new Advisory Council for the museum which will include prominent members of the UNM and national museum academic, professional and public constituencies. This will attract valuable input from the various constituencies of this museum, a necessary addition in light of its wide-ranging programs, and provide a forum for channeling broadbased advice for the Dean and Director. Implementation of this body will occur in the coming year.

Finally the Maxwell Museum Association, the Maxwell's local public support body, is intensifying its efforts to fund the museum's public programs. An ongoing process of planning has involved retreats, the expansion of the Board to include greater representation from the business community and the Development Office of the College of Arts and Sciences. The MMA has already increased its efforts to include corporate funding and will continue this developmental process.

In terms of programs, both public and collections-oriented programs have expanded. The NSF-funded upgrade of the collections documentation computer system continues in its second year while collaborative planning with the National Park Service and the Provost's Office towards implementation of a new archaeological research-storage center continues to make headway in its preliminary phase. The educational outreach program continues to expand while the public program division has provided a previously unmatched variety and quantity of cultural events for the general public. The museum has again presented a full program of temporary cultural exhibits and the galleries have been increasingly used by other divisions of UNM and its affiliated organizations public oriented reception.

Appointments to staff.

Sherryl G. Barth December 12, 1991      Margaret Duran April 1, 1992

Separation from staff.

Paula Morgan June 1, 1991

Publications

Bawden, Garth - Continuity and disruption in the Ancient Hejaz: an



Maxwell Museum of Anthropology  
July, 1991 - June, 1992

assessment of current archaeological strategies in northwest Arabia.  
Arabian archaeology and epigraphy 2:14-33, 1991.

Tumilaca, Un Sitio de las Fases Tiwanaky y Estiquinia en el Valle  
de Moquegua. Gaceta, Arqueologica Andina 18/19:105-113, 1991.

Book Review. Inka Settlement Planning. John Syslop. University of  
Texas Press. American Anthropologist 94(1):202-203.

Book Review. The Evolution of Political Systems: Sociopolitics  
in small-scale sedentary societies. ed. Steadman Upham. Cambridge  
University Press American Anthropologist 94(2):513-514.

Kosse, Krisztina - Review of Perspectives on Anthropological Collections  
from the Southwest: Proceedings of a Symposium. Ann Lane (ed). in  
American Quarterly Wintyer 1992, 1995-116.

Smith, Mary (ed) "Koryak's Spear", Maxwell Museum of Anthropology  
Educational Publications.

Rhine, Stanley (ed) with George W. Gill - Skeletal Attributions of  
Race. Anthropological Papers, Maxwell Museum of Anthropology 4, 1991.  
Non-metric Skull Racing. In. Skeletal Attributions of Race. ed.  
G. Gill and S. Rhine, 9-21. Anthropology Papers, Maxwell Museum of  
Anthropology 4.

Trinkaus, Kathryn - Mortuary Behavior, Labor Organization and Social  
Rank. In Recent Approaches to Mortuary Studies. Cambridge University  
Press.

#### Papers presented.

Kosse, Krisztina - Middle Range Societies from a scalar perspective.  
rd. Southwest Archaeology Symposium, Tucson.  
Systematic Collecting in Anthropological Museums. Mountain Plains  
Association Annual Meetings.

IV      OFFICE OF CONTRACT ARCHEOLOGY (OCA)

**Annual Report of  
The Office of Contract Archeology  
July 1, 1991 - June 30, 1992**

**by**

**Joseph C. Winter, Director,  
Richard C. Chapman, Associate Director,  
and Patrick F. Hogan, Assistant Director**

**8/31/92**

**A. Review of Activities and Achievements**

FY 90-91 was a year of mixed blessings. On the one hand, it was very productive, with over \$3.3 million in new contracts brought in, 262 employees working for us, and a number of major projects carried out, with important research contributions. However, because of the large size of our staff and the high turnover due to the completion of various projects, a tremendous amount of effort was spent dealing with personnel, affirmative action, and related issues. Details of our accomplishments, problems, and goals are discussed below.

**1. Publications and Projects**

Major publications produced this year, with R. Chapman as Principal investigator, include *Landscape Archeology in the Southern Tularosa Basin, Volume 2: Testing, Excavation, and Analysis* edited by William H. Doleman, Richard C. Chapman, Jeanne A. Schutt, Marilyn K. Swift, and Kathleen D. Morrison; *Landscape Archeology in the Southern Tularosa Basin, Volume 3: Archeological Distributions and Prehistoric Human Ecology* edited by William H. Doleman, Richard C.

reevaluation of regional chronologies, analysis emphasized experimental ceramic replication and refiring studies using local temper and clays; ecofactual studies to identify the sequencing and seasonality of local occupational events; and comparative ceramic, architectural and settlement studies to address issues of territorial ranges and boundaries at the currently defined periphery of the Mogollon and Jornada Mogollon culture areas.

During the summer and later fall of 1991, OCA conducted a Class III cultural resources inventory of 13,407.23 acres of public land in the Bureau of Land Management's Socorro Resource area in west-central New Mexico for the Boyd land exchange. Peggy A. Gerow was the Project Director and Patrick Hogan served as Principal Investigator. The survey recorded a total of 108 sites and 1013 isolated occurrences. The sites comprise 137 components representing 44 Anasazi/Mogollon, 29 possible Archaic, 28 Archaic, 25 unknown lithic scatters, 9 historical, 1 possible Apache, and 1 unknown rockshelter. The 57 Archaic/possible Archaic components appear to represent hunting sites which span the entire sequence of the Oshara and Cochise traditions. One of the largest known concentrations of early Archaic sites also was documented during this survey. Of the 44 Anasazi/Mogollon components, 35 appear to represent incidental limited use loci while the remainder consist of four seasonal fieldhouses, three habitations, one possible pottery kiln, and one petroglyph. All appear to date to the Pueblo II-Pueblo III periods. The nine historical components encompass three 1930s homesteads, two 1920s/30s mines, two 1930s trash scatters, one 1930s lumber camp, and one 1930s/40s sheep camp.

Between July and November 1991, Patrick Hogan, Principal Investigator, and Janette Elyea, Project director, completed the first of three phases on the MacBeth Data Recovery Program for the Bureau of Land Management. The project, located along the Rio Puerco River west of Albuquerque, is investigating sites that date from the middle Archaic to the Basketmaker II periods and includes temporary encampment and structural habitation sites. Investigated sites

Christopher Dore (with Charles Amsden as Principal Investigator) carried out a reevaluation of 33 archeological sites in the Trinidad Dam and Reservoir area, southeastern Colorado. The majority of these sites are lithic scatters, some with stone circle features. All of the sites for which cultural/temporal affiliation could be determined date to the last one thousand years. In addition, 11 previously unrecorded sites were identified, including one with a possible Eden type projectile point.

David Batten and Robert Dello-Russo (with Charles Amsden as Principal Investigator) reevaluated 20 archeological sites in the Galisteo Dam and Reservoir area south of Santa Fe, New Mexico. Most of these sites are artifact scatters, and some have evidence of small surface structures and/or extramural features. Although there are historic components at three of the sites, and two appear to represent Middle Archaic occupations, the majority date to the Pueblo IV period. The research focused primarily on documenting the natural and cultural processes which continue to affect the sites since they were first recorded.

Susan Perlman (with Charles Amsden as Principal Investigator) initiated a traditional cultural properties survey of the Fort Wingate Depot Activity near Gallup. Residents of three neighboring Navajo communities and Zuni Pueblo have indicated, through interviews and visits to the depot, several localities of traditional importance to the Native American groups. Localities identified so far include homesteads, grazing and agriculture areas, plant gathering areas, shrines, and trails. The project is continuing in FY 1992/93.

Jeanne A. Schutt (With Charles Amsden as Principal Investigator) completed a 10% Class II archeological survey of 20 eighty acre stratified random sample quadrants and a 100% survey of 515 acres in Fenced-up Horse Valley within the Fort Wingate Army Depot near Gallup, New Mexico. A total of 88 sites were recorded in the sample survey and 72 sites were identified in the 100% survey area. These sites include both limited activity and residential sites dating to

The 160 sites represent 174 presently recognized components: 60 Aceramic, 53 Anasazi, 17 Patayan, 14 Sinagua, and 30 Euro-American and Navajo. Site and regional chronologies are being refined through dendrochronology, radiocarbon, archeomagnetic, and ceramic dating techniques.

The earliest sites include one Paleoindian site and a number of Middle Archaic components dating to approximately 6,000 BP. The most commonly occurring Anasazi sites date to the Basketmaker III, Pueblo I, and Pueblo II periods, organized in communities along Indian Creek and Standing Rock Wash in the San Juan basin, near Ram Mesa in the upper Rio Puerco (of the West) Valley, in Wide Ruin Canyon, and in the Hopi Buttes area. The Sinagua sites include a number of large pre-Sunset Crater Eruption components east of Flagstaff, organized in multiple pitstructure villages, with abundant evidence of cultigens. The post-eruptive components include one site with many clay and masonry lined pits dug down into cinders.

The Patayan cultural area is represented by a series of seasonal, short term occupations, primarily hunting and gathering camps. The majority of the sites are ephemeral in nature, although two contain multi-component, more permanent structures. Most are along Willow Creek.

Historic sites are represented by Navajo residential, herding, agricultural and ceremonial (including Enemyway and Nightway) loci. Euro-American sites include lumber camps near Flagstaff, and the Gold Road mining town near Kingman. Several dozen Navajo traditional cultural properties were also encountered, included residences, camps, graves, shrines, and ceremonial locations. Treatment included avoidance, ritual mitigation, ethnological data recovery, and negotiations between the pipeline company and owners/users.

**Table 1**  
**Summary of OCA Activities**  
**7/1/91-6/31/92**

PROJECT	SPONSOR	BRIEF DESCRIPTION	STATUS
185-272	FAA	Excavation of 14 sites at Sierra Blanca	Final Report in Preparation
185-247U	BLM	Excavation of Bolack Navajo Sites	Completed
185-324C	U.S. Army Corps	Geomorphological Study at White Sands	Completed
185-324D	U.S. Army Corps	Survey of Oro Grande	Completed
185-363	BLM	Excavation of Bolack Archaic Sites	Draft Final Report in Preparation
185-364E/M	BLM	Cox Ranch Exchange Survey	Draft Final Report in Preparation
185-372	Office of Military Affairs	Hawk Missile Excavations	Final Report in Preparation
185-385	BLM	Guadalupe Mt. Excavation	Final Report in Preparation
185-388	BLM	Santa Teresa Monitoring	Completed
185-400/400A	Museum of NM	Valencia Excavation	Analysis Ongoing
185-401/401B	Nature Conservancy	Cox Ranch Excavations	Draft Final Report in Preparation
185-403/403A 403B/403C/403D/ 403E/403F	Corps of Engineers	Cuchillo Negro Surveying, Excavation, Monitoring, and Analysis	Draft Final Report Completed and Under Review
185-408	BLM	Pueblito Survey	Completed
185-412/412B	Wilson & Co.	Belen RR Yard Testing	Draft Report Near Completion
185-417	BLM	Bolack Data Recovery (Archaic)	Draft Final Report in Preparation
185-423	ENRON	San Juan Basin Pipeline Survey	Field Work of Original Route Complete; Final Report Being Prepared
185-428	BLM	Crow Canyon Survey	Completed
185-429A	Fluor Construction	GBFEL Vol. 2 Report Production	Completed

Table 1 - Continued

PROJECT	SPONSOR	BRIEF DESCRIPTION	STATUS
185-552 (452)	ENRON	Minor Reroute Along San Juan Pipeline	Draft Report Almost Complete (part of 185-442 project)
185-458A	Bohannon-Huston	Church Rock Industrial Park Testing	Completed
185-461B	ENRON	Mitigation Project For Both Pipelines	Field Work Complete; 14 Draft Reports in Preparation
185-465	Office of Military Affairs	Survey of Hawk Battalion Facility-Bernalillo	Completed
185-467	BLM	Survey of Socorro Resource Area, Phase I	Draft Report In Preparation
185-471A	BLM	Phase II Survey in Las Cruces District	Draft Report in Preparation
185-473	U.S. Army Corps	Additional Survey Melrose Bombing Range	Draft Report Under Review
185-474A	U.S. Army Corps	Survey at Three Rivers	Draft Report Under Review
185-474B	U.S. Army Corps	Two Rivers Dam Historic Management Plan	Draft Report Under Review
185-474C	U.S. Army Corps	Trinidad Dam Survey	Draft Report Under Review
185-474D	U.S. Army Corps	Galisteo Dam Survey	Draft Report Under Review
185-475A	U.S. Army Corps	Holloman AFB Historic Management Plan	Draft Report Under Review
185-475B	U.S. Army Corps	Holloman AFB Survey	Draft Report In Preparation
185-475C	U.S. Army Corps	Holloman AFB Survey	Draft Report Under Review
185-477A	U.S. Army Corps	Ft. Wingate Survey	Draft Report In Preparation
185-477B	U.S. Army Corps	Ft. Wingate Ethnology Study	Draft Report In Preparation



## Contract and Grant Awards Received FY 1992

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## Office of Contract Archeology

09/26/91	Chapman	Museum of New Mexico	26546	3-19786	185-439A
07/02/91	Chapman	BLM	5747	3-21521	185-438D
08/21/91	Chapman	BLM	5747	3-21521	185-438E
08/06/91	Chapman	Museum of New Mexico	276298	3-21686	185-468
08/31/91	Chapman	BLM	36032	3-21687	185-469A
06/16/92	Chapman	BLM	35046	3-21687	185-469B
09/06/91	Chapman	Army	51410	3-21688	185-474A
09/16/91	Chapman	Army	-14354	3-21688	185-474A
09/06/91	Chapman	Army	33683	3-21689	185-474C
09/06/91	Chapman	Army	19693	3-23681	185-474D
09/16/91	Chapman	Army	14354	3-23682	185-474B
09/26/91	Chapman	Army	2465	3-23682	185-475C
10/02/91	Chapman	Army	19281	3-23684	185-473A
10/10/91	Chapman	Army	28066	3-23685	185-475A
10/10/91	Chapman	Army	7952	3-23686	185-475B
10/17/91	Chapman	Army	95993	3-23687	185-477A
10/17/91	Chapman	Army	37517	3-23688	185-477B
07/01/91	Hogan	NM Office of Militar	4608	3-20886	185-465
08/31/91	Hogan	BLM	90889	3-20887	185-466
09/11/91	Hogan	BLM	127079	3-20888	185-471A
10/07/91	Hogan	BLM	15486	3-20889	185-472A
10/04/91	Hogan	BLM	12740	3-23941	185-478
10/04/91	Hogan	BLM	25582	3-23942	185-479
12/20/91	Hogan	BLM	31339	3-23943	185-481
01/14/92	Hogan	Texas-New Mexico Pow	11026	3-23944	185-482
02/17/92	Hogan	BLM	92745	3-23945	185-483A
04/09/92	Hogan	BLM	42230	3-23946	185-485A
11/01/91	Winter	Museum of New Mexico	50853	3-12154	185-480
09/24/91	Winter	ENRON	976865	3-21526	185-461C
12/09/91	Winter	ENRON	757986	3-21526	185-461E
04/13/92	Winter	ENRON	460114	3-21526	185-461F

Total

3381018

Table 2 - Continued

PDS#	ACCOUNT #	AGENT	PROJECT	AMOUNT	OVERHEAD
185-473A	3-23684-	U.S. Army Corps of Engineers, ABQ	Additional Class III Survey at Melrose Bombing Range	\$19,280.64	\$5,702.00
185-474A	3-21688-	U.S. Army Corps of Engineers, ABQ	Survey and Site Re- Evaluation at Two Rivers Dam	\$37,055.00	\$10,960.00
185-474B	3-23682-	U.S. Army Corps of Engineers, ABQ	Historic Management Plan at Two Rivers Dam	\$14,354.53	\$4,246.00
185-474C	3-21689-	U.S. Army Corps of Engineers, ABQ	Class III Cultural Resource Evaluation, Trinidad Dam	\$33,682.52	\$9,962.00
185-474D	3-23681-	U.S. Army Corps of Engineers, ABQ	Class III Cultural Resource Evaluation Galisteo Dam	\$19,693.00	\$5,825.00
185-475A	3-23685-	U.S. Army Corps of Engineers, ABQ	Historic Management Plan for Holloman AFB	\$28,066.33	\$8,301.00
185-475B	3-23688-	U.S. Army Corps of Engineers, ABQ	Survey of 160 Acres on Holloman AFB	\$7,952.72	\$2,352.00
185-475C	3-23683-	U.S. Army Corps of Engineers, ABQ	Survey of 7 Acres on Holloman AFB	\$2,465.84	\$729.00
185-477A	3-23687-	U.S. Army Corps of Engineers, ABQ	Ft. Wingate Surveys (2212 Acres, Class II and 640 Acres Class III)	\$95,995.03	\$28,392.00
185-477B	3-23688-	U.S. Army Corps of Engineers, ABQ	Ft. Wingate Ethnography	\$37,517.00	\$11,096.00

FY 1992 Indirect Costs Recovered By Org Code

Account	Total IDC	Split Code	Amount	Primary Department
10237	CONTRACT ARCHEOLOGY			
312154 9110	1781.77	50.00 R	890.89	CONTRACT ARCHEOLOGY
312157 9110	2532.83	50.00 R	1266.42	CONTRACT ARCHEOLOGY
313722 9110	286.88	50.00 R	143.44	CONTRACT ARCHEOLOGY
313724 9110	2230.79	50.00 R	1115.40	CONTRACT ARCHEOLOGY
313725 9110	89.99	50.00 R	45.00	CONTRACT ARCHEOLOGY
313726 9110	2102.32	50.00 R	1051.16	CONTRACT ARCHEOLOGY
313729 9110	-441.34	50.00 R	-220.67	CONTRACT ARCHEOLOGY
314949 9110	31.96	50.00 R	15.98	CONTRACT ARCHEOLOGY
317003 9110	1016.63	50.00 R	508.32	CONTRACT ARCHEOLOGY
317006 9110	705.37	50.00 R	352.69	CONTRACT ARCHEOLOGY
317008 9110	10784.59	50.00 R	5392.30	CONTRACT ARCHEOLOGY
317178 9110	535.00	50.00 R	267.50	CONTRACT ARCHEOLOGY
317682 9110	0.68	50.00 R	0.34	CONTRACT ARCHEOLOGY
317684 9110	-590.78	50.00 R	-295.39	CONTRACT ARCHEOLOGY
319424 9110	-2.10	50.00 R	-1.05	CONTRACT ARCHEOLOGY
319425 9110	514.42	50.00 R	257.21	CONTRACT ARCHEOLOGY
319426 9110	521.97	50.00 R	260.99	CONTRACT ARCHEOLOGY
319427 9110	-378.96	50.00 R	-189.48	CONTRACT ARCHEOLOGY
319428 9110	-232.44	50.00 R	-116.22	CONTRACT ARCHEOLOGY
319782 9110	28652.76	50.00 R	14326.38	CONTRACT ARCHEOLOGY
319783 9110	-11.91	50.00 R	-5.96	CONTRACT ARCHEOLOGY
319785 9110	166.63	50.00 R	83.32	CONTRACT ARCHEOLOGY
319786 9110	3565.46	50.00 R	1782.73	CONTRACT ARCHEOLOGY
319787 9110	87.53	50.00 R	43.77	CONTRACT ARCHEOLOGY
319788 9110	-181.60	50.00 R	-90.80	CONTRACT ARCHEOLOGY
320881 9110	-288.34	50.00 R	-144.17	CONTRACT ARCHEOLOGY
320882 9110	1900.57	50.00 R	950.29	CONTRACT ARCHEOLOGY
320883 9110	2170.47	50.00 R	1085.24	CONTRACT ARCHEOLOGY
320884 9110	18327.02	50.00 R	9163.51	CONTRACT ARCHEOLOGY
320885 9110	15973.63	50.00 R	7986.82	CONTRACT ARCHEOLOGY
320886 9110	923.87	50.00 R	461.94	CONTRACT ARCHEOLOGY
320887 9110	3972.49	50.00 R	1986.25	CONTRACT ARCHEOLOGY
320888 9110	23692.66	50.00 R	11846.33	CONTRACT ARCHEOLOGY
320889 9110	1856.66	50.00 R	928.33	CONTRACT ARCHEOLOGY
321521 9110	3509.72	50.00 R	1754.86	CONTRACT ARCHEOLOGY
321523 9110	2551.89	50.00 R	1275.95	CONTRACT ARCHEOLOGY
321524 9110	38335.35	50.00 R	19167.68	CONTRACT ARCHEOLOGY
321525 9110	1946.06	50.00 R	973.03	CONTRACT ARCHEOLOGY
321526 9110	1437086.12	50.00 R	718543.06	CONTRACT ARCHEOLOGY
321681 9110	1089.48	50.00 R	544.74	CONTRACT ARCHEOLOGY
321682 9110	100.83	50.00 R	50.42	CONTRACT ARCHEOLOGY
321683 9110	780.85	50.00 R	390.43	CONTRACT ARCHEOLOGY
321685 9110	4176.54	50.00 R	2088.27	CONTRACT ARCHEOLOGY
321686 9110	8.58	50.00 R	4.29	CONTRACT ARCHEOLOGY
321687 9110	982.92	50.00 R	491.46	CONTRACT ARCHEOLOGY
321688 9110	8009.03	50.00 R	4004.52	CONTRACT ARCHEOLOGY
321689 9110	8796.91	50.00 R	4398.46	CONTRACT ARCHEOLOGY
323681 9110	3652.50	50.00 R	1826.25	CONTRACT ARCHEOLOGY

Table 3

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General Account Finances FY 91-92

Total 1-18065 - General Account Budget	-\$136,229.00
Total Salary Charges Transferred to 1-18065-	+\$13,745.00
Total IDC Recovered	+\$1,675,228.88

Other staff members who made contributions include Richard C. Chapman, who lectured at the New Mexico Archeological Society's field school, and Peggy Gerow, who presented a paper at the Society For American Archaeology Meetings.

## B. Plans, Problems, and Recommendations

In my last fiscal year report, I proposed a number of goals that we hoped to meet this year. They are summarized below, and the progress for each is discussed.

1. *Continue procuring large, multi-million dollar contracts* - We submitted a \$9 million proposal for the Animas-La Plata Project, but the contract was awarded to another institution with an unrealistically low bid. We have therefore had to terminate 185 out of the 262 employees who worked for us this past year. Our new contract awards remain fairly high at \$3,269,545.52 in FY 91-92, but this does reflect a decrease from FY 90-91. As the ENRON Project has moved from the field to the lab, we had to lay off 185 of our workers. However, we are still at a healthy level of work (77 employees), with a large number of new contacts brought in, so it is probably better in the long run to stabilize at the current level.
2. *Provide more UNM students with employment and research opportunities* - This goal has been met, since many of the 262 employees were graduate, work study, and undergraduate employees. Also, we have generated more than enough research data to keep dozens of students busy for many years to come.
3. *Generate more master's theses and PhD dissertations* - This was another year of disappointment, with regard to theses and dissertations. As stated previously on a number of occasions, we are never going to be able to generate theses and dissertations, as long as the OCA director, associate director, and assistant director have to work full time as principal investigators on many large projects, as well as work as OCA administrators. There is not enough time as it is to carry out both of these tasks, and in order to work with graduate students, we need to be able to teach regularly and work on our own research. Also, the

In short, OCA has had a very successful year in terms of the number of projects it has been awarded and carried out, the money it has brought in, the number of staff it has employed, and the research contributions it has made. Considerable progress, however, remains to be made in the application of its data to theses and dissertations, and its relations with the department.

### **Staff Appointments**

Tables 4.1 through 4.8 list all of the various staff who worked for OCA in any capacity this past year. They numbered 262. Of these, 77 are still working for us, and 185 have left, primarily because their tasks on contracts were completed. The tables break down the staff by permanent, non-permanent, work study, N-Group, and other.

### **D. Sponsored Research/Other Projects**

See Section A, Above.

Table 4.1 Continued

PONCZYNSKI, JR	JOHN	C	02/19/91	06/30/93
PONKO	CHRISTINE	I	04/17/91	11/27/91
PRINCE	JENNIFER	I	04/17/91	11/13/91
PUDWILL	RICHARD	K	05/05/91	06/30/92
RAMIREZ	DAVID	C	07/29/91	10/30/92
REDD	INGRID	N	12/01/90	12/31/99
RHOADES	RANDALL	I	04/17/91	06/30/92
RITTS-BENALLY	KAREN	C	08/28/91	08/31/92
ROBERTSON	PAULA	I	07/29/91	07/06/92
ROBINSON	DANA		09/01/90	12/01/91
ROHMAN	PETER	I	04/17/91	09/04/91
ROHMAN	MARION	I	04/17/91	09/04/91
ROMANNKOE	JOBE	K	07/29/91	10/02/91
ROMERO	LOUIS	C	04/17/91	12/31/92
ROTTACH	LESLIE	K	07/01/91	11/29/91
SAIS	HENRY	I	04/17/91	06/30/92
SALE	MARK	C	04/08/91	11/07/91
SANDOVAL	ANDREW	C	12/01/90	07/28/91
SCHUETTE	TERRI	C	04/17/91	07/24/91
SCURLOCK	DAN	I	11/19/90	11/01/91
SHEPARD	RUTH	C	04/17/91	10/10/91
SHIFRIN	LISA	C	06/01/91	01/10/92
SHOGREN	MICHAEL	K	08/12/91	02/12/92
SINCLAIR	DAVID	K	07/30/91	11/13/92
SMITH	AUDREY	C	05/13/91	10/01/91
SMITH	SUSAN	C	01/10/92	02/14/92
STARCH	CHRISTOPHER	C	04/17/91	11/14/91
STAUBER	RON	N	06/30/91	03/01/93
STEPHEN	LINDA	C	04/01/91	04/17/92
STIPE-DAVIS	ROBIN	C	04/17/91	11/04/91
STOKER	KAROL	C	04/17/91	06/19/92
STRANCE	CHRISTOPHER	C	04/17/91	10/09/91
SULLIVAN	RICHARD	C	03/25/91	06/30/93
TAMIR	ORIT	C	10/15/90	08/31/92
TAYLOR	K'DE	W	03/01/91	06/30/92
TITLA, JR.	AUSTIN	C	04/17/91	11/13/91
TURNER	SHERRI	K	07/01/91	03/31/92
VALDEZ	LAURA	C	05/08/91	08/22/91
VALENZUELA	IRA	I	04/17/91	11/21/91
VIERRA	BRADLEY	C	06/01/92	06/30/93
VILLEGAS	ERIC	I	06/28/91	12/31/93
WADSWORTH	SERENA	C	04/29/91	06/30/92
WALLS	SCOTT	C	04/17/91	10/02/91
WALSH	BRIAN		07/01/91	01/14/92
WASETA	JEFFERY	C	04/17/91	08/15/91
WEEKOOTY	JASON	I	04/17/91	06/30/92
WEINKENWEDER	BRIAN	W	10/28/91	05/17/92
WELLMAN	KEVIN	N	12/01/90	12/31/99
WELLS	DIANA	W	03/19/92	01/01/93
WERNER	MARTIN	I	04/17/91	06/30/92
WHITE	MICHELLE	C	04/17/91	02/19/92
WILLIAM	JERRY	C	06/01/91	06/30/92
WINTER	JOSEPH	C	06/30/90	03/01/93
WOODARD	FARRELL	I	05/06/91	01/30/92
WOZNIAK	STEVEN	C	04/29/91	08/16/91
WYNNE, JR.	PAUL	C	04/12/91	01/13/92
YORK	FRED	C	06/30/90	07/31/91
ZUNIE	JEROME	C	04/17/91	08/21/91

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## WORKSTUDY EMPLOYEES (7/1/91 thru 6/30/92) general office account

MARTIN	RUTH	WS		05/17/92
MARTINEZ	SHARON	WS	06/01/92	06/12/92
SANDOVAL	CHRISTINE	WS		07/31/92
WEINKENWEDER	BRIAN	WS		05/17/92

## KEY FOR JOB GROUP:

C = REGULAR MONTHLY      G = Graduate Students  
 W = REGULAR BI-WEEKLY    N = N-Group  
 K = TEMPORARY  
 I = ON-CALL  
 WS = WORKSTUDY

Table 4.2

NON-PERMANENT STAFF FOR THE OFFICE OF CONTRACT ARCHEOLOGY CURRENTLY WORKING IN THE MAIN OFFICE	
Alexander, Robert	
Chapin, Nicholas	
Church, Michele	
Dean, Glenna	
Donaldson, Cindy	
Felix-Kludt, Brigitte*	
Franklin, Hayward	
McEnany, Timothy	
Perlman, Susan	
Phippen, George*	
Pudwill, Richard*	
Medlock, Linda*	

\* Also listed with ENRON Branch of OCA



Table 4.4

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PERMANENT STAFF CURRENTLY WITH THE MAIN OFFICE OF THE OFFICE OF CONTRACT ARCHEOLOGY	
Amsden, Charles*	
Chapman, Richard	
Daniel, Carolyn	
Doleman, William	
Elyea, Janette	
Eschman, Peter*	
Gerow, Peggy	
Herder, Eric	
Hogan, Patrick	
Lasusky, Donna	
Menke, Kurt	
Redd, Ingrid	
Schutt, Jeanne	
Silberberg, Amy	
Stauber, Ronald	
Wellman, Kevin*	
Winter, Joseph*	

\* Also listed with ENRON Branch of OCA

Table 4.5

PERMANENT STAFF THAT HAVE TERMINATED WITH THE MAIN OFFICE OF THE OFFICE OF CONTRACT ARCHEOLOGY	
Johnson, Colleen*	6/26/92

\* Also listed with ENRON Branch of OCA

Table 4.6

WORKSTUDY AND GRADUATE STUDENTS CURRENTLY WORKING WITH THE MAIN OFFICE OF THE OFFICE OF CONTRACT ARCHEOLOGY	
WORKSTUDY	GRADUATE
	Dello-Russo, Robert
	Tubiolo, Sam
	Batten, Dave*

EXTRA COMP to Non-OCA Staff  
Who Work Elsewhere at UNM

7/1/91-6/30/92

ENRON Project

GA/TA/RA/PA

Dana Perry  
Charles Hilton

Work Study

Marsha Ogilvie

Faculty

Robert Leonard

MAXWELL MUSEUM OF ANTHROPOLOGY

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July, 1991 - June, 1992

Dr. Garth L. Bawden, Director

The past year has been one of consolidation following the major construction project associated with installation of the permanent exhibits. However, while most of this activity has now been completed the last phase of Museum Store renovations is still continuing and should end in this (1992-3) year.

In other areas, the chief thrust has been toward consolidating the museum's internal and support structure in order to fully utilize its expanded potentials. Thus, a new research position - Senior Research Co-ordinator - has been created, to be filled by a Southwestern archaeologist of national status. This position, the first to be solely allocated to research potentials, working with the collection curators to generate and fund projects relating to the archaeological holdings. Ultimately the position will be responsible for administering the Hibben Research Center on behalf of the Maxwell Museum.

Dean Wildenthal and Provost Risser have agreed to the creation of a new Advisory Council for the museum which will include prominent members of the UNM and national museum academic, professional and public constituencies. This will attract valuable input from the various constituencies of this museum, a necessary addition in light of its wide-ranging programs, and provide a forum for channeling broadbased advice for the Dean and Director. Implementation of this body will occur in the coming year.

Finally the Maxwell Museum Association, the Maxwell's local public support body, is intensifying its efforts to fund the museum's public programs. An ongoing process of planning has involved retreats, the expansion of the Board to include greater representation from the business community and the Development Office of the College of Arts and Sciences. The MMA has already increased its efforts to include corporate funding and will continue this developmental process.

In terms of programs, both public and collections-oriented programs have expanded. The NSF-funded upgrade of the collections documentation computer system continues in its second year while collaborative planning with the National Park Service and the Provost's Office towards implementation of a new archaeological research-storage center continues to make headway in its preliminary phase. The educational outreach program continues to expand while the public program division has provided a previously unmatched variety and quantity of cultural events for the general public. The museum has again presented a full program of temporary cultural exhibits and the galleries have been increasingly used by other divisions of UNM and its affiliated organizations public oriented reception.

Appointments to staff.

Sherryl G. Barth December 12, 1991      Margaret Duran April 1, 1992

Separation from staff.

Paula Morgan June 1, 1991

Publications

Bawden, Garth - Continuity and disruption in the Ancient Hejaz: an

assessment of current archaeological strategies in northwest Arabia.  
Arabian archaeology and epigraphy 2:14-33, 1991.

Tumilaca, Un Sitio de las Fases Tiwanaky y Estiquinia en el Valle  
de Moquegua. Gaceta, Arqueologica Andina 18/19:105-113, 1991.

Book Review. Inka Settlement Planning. John Syslop. University of  
Teaxas Press. American Anthropologist 94(1):202-203.

Book Review. The Evolution of Political Systems: Sociopolitics  
in small-scale sedentary socieities. ed. Steadman Upham. Cambridge  
University Press American Anthropologist 94(2):513-514.

Kosse, Krisztina - Review of Perspectives on Anthropological Collections  
from the Southwest: Proceedings of a Symposium. Ann Lane (ed). in  
American Quarterly Wintyer 1992, 1995-116.

Smith, Mary (ed) "Koryak's Spear", Maxwell Museum of Anthropology  
Educational Publications.

Rhine, Stanley (ed) with George W. Gill - Skeletal Attributions of  
Race. Anthropological Papers, Maxwell Museum of Anthropology 4, 1991.  
Non-metric Skull Racing. In. Skeletal Attributions of Race. ed.  
G. Gill and S. Rhine, 9-21. Anthropology Papers, Maxwell Museum of  
Anthropology 4.

Trinkaas, Kathrytn - Mortuary Behavior, Labor Organization and Social  
Rank. In Recent Approaches to Mortuary Studies. Cambridge University  
Press.

Papers presented.

Kosse, Krisztina - Middle Range Societies from a scalar perspective.  
rd. Southwest Archaeology Symposium, Tucson.  
Systematic Collecting in Anthropological Museums. Mountain Plains  
Association Annual Meetings.

Rodee, Marian - History of Navajo Weaving (School of American Research)  
Fetish Carvers of Zuni (Los Angeles); Navajo Dry Painting Rugs  
(Netherlands).

Smith, Mary - Diversity and Real-life: Miguel Antonio Otero. University  
of Colorado.

Reaching Prehistory in the Southwest. National Social Studies  
Conference, Denver.

The writing on the wall: Inexpensive methods for evaluating exhibits  
before you build. Mountain Plains Association Annual Meetings.  
Bringing the Museum into the Classroom. New Mexico Statewide Cultural  
Resources Workshop.

Professional activities.

Kosse, Krisztina - Treasurer of New Mexico Association of Museums

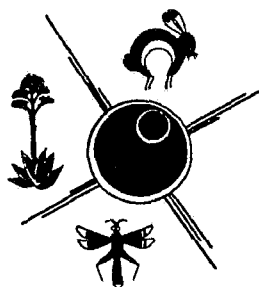
Smith, Mary - Secretary of New Mexico Association of Museums; Coordinator  
of National Native American Very Special Arts.

Pomonis, Katherine - President of New Mexico Association of Museums.

Grants.

Albuquerque Public Schools	\$2,225.00
Maxwell Museum Association	\$3,000.00
Natl. Science Foundation	\$101,283

***ANNUAL REPORT  
OF THE  
DEPARTMENT OF BIOLOGY***



**July 1, 1991 — June 30, 1992**

**J. David Ligon**

**Professor and Chair**

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## I. INTRODUCTION

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I assumed the chair in August 1991. In this past year, we have accomplished several important tasks and have broken new ground in upgrading our research facilities in the areas of cell and molecular biology, and in increasing our efforts to encourage more minority students to investigate the discipline of Biology. We soon will be able to provide them, and all of our students, with state-of-the-art learning experiences. Much of our success in this past year can be attributed to some highly motivated and talented faculty members.

I gratefully acknowledge with thanks the support and hard work of my Associate Chairs, Professors Cliff Crawford, Sam Loker, Howard Snell and Kathryn Vogel, of my Departmental Administrator, Mrs. Sharon Kubler, and of a marvelous group of professional staff including (but not limited to) Vivian Kent, Julie Alberti, Beth Dennis, Peter Curtiss, Bill Gannon, Karl Malivuk, Carol Martindale, Dee McDonnell, Jane Mygatt, Anne Rice, Keith Ricci and Roy Ricci.

### A. Significant Developments and Achievements.

1. Research Day. We held our first ever "Research Day" (Appendix A), which was conceived and headed by Dr. Kathryn Vogel of the Department of Biology, and funded by the La Jolla Cancer Research Foundation. Both undergraduates and graduate students produced either oral presentations or posters. The level of enthusiasm and general excitement by the students was not anticipated either by me or other faculty members. It was truly a special day, and one we hope to repeat in the future. Special guests included UNM President Richard Peck, Provost Paul Risser, Vice President for Research Ellen Goldberg and A&S Dean Hobson Wildenthal.

2. Grant from the Howard Hughes Medical Institute. The Department of Biology was awarded \$1 million by the Howard Hughes Medical Institute (Appendix B). This five-year grant is to support a program to strengthen undergraduate education in the sciences. Although obtaining this award is a great plus for our department, it also places many additional

responsibilities and demands on our faculty members in the area of cellular and molecular biology.

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3. The Undergraduate Program. Biology remains one of the most popular majors in the College of Arts and Sciences. As of Spring 1992 there were 624 Biology majors, with 417 in A & S and 122 in the General College (a 53 percent increase over the previous year).

We added one new lower division course (Biology 190, Darwinism and Human Nature, approximately 50 students) to our undergraduate curriculum during the FY. We have enough courses during late afternoon and evening hours so that non-traditional students can begin working on a minor or a major in biology.

During the FY, Biology generated 20,944 semester credit hours (565, Summer 1991; 10,504, Fall 1991; 9,876, Spring 1992) and awarded 80 B.S. degrees. This number was 62 percent of the 130 B.S. degrees awarded by A & S for the FY. We also awarded six B.A. degrees during this period. The degree were distributed as follows: Summer 1991, 6; Fall 1991, 32; Spring 1992, 48. An additional 23 students who received B.S. or B.A. degrees in other majors graduated with minors in Biology. Our undergraduate advisors for the FY were Scott Altenbach, Gordon Johnson, Manuel Molles and Margaret Werner-Washburne.

4. The Graduate Program.

a) Graduate courses. We added no new graduate courses to our curriculum this past year.

b) Graduate student recruitment. This FY we brought in and interviewed three outstanding potential graduate students in an effort to entice them to enter our graduate program: J. Hnida, K. Moberg and J. Hagelin. Funds for recruiting these students were provided by the Biological Society of New Mexico. In the ten years we have been actively

soliciting "blue chip" graduate students, approximately half of those students have chosen to enter our Ph.D. program.

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c) Degrees awarded.

During the FY 1991-92, we awarded seven Ph.D. and six M.S. (I) and four M.S. (II) degrees. The students who received these degrees, their major professors and the current whereabouts of each (if known) follow:

Ph.D.s:

Cox, Evelyn Fenton (Molles), employed at Woodward Community College and Hawaii  
Institute of Marine Biology.

Hartman, Gregory David (Yates), employed at the Savannah River Ecology Lab, Aiken,  
SC.

Hawkins, Lauraine (Brown), employed at Pennsylvania State University, Mont Alto  
Campus, Mont Alto, PA.

Lyons, Timothy Patrick (Riedesel), employed at the U.S. Army Research Institute of  
Environmental Mediums.

Nicoletto, Paul (Kodric-Brown), employed at the Shippensburg University, Shippens-  
burg, PA.

Sabourin, Carol Lee (Natvig).

Sugg, Derrick (Snell), employed at the Savannah River Ecology Lab, Aiken, SC.

M.S. (I):

Barlow, Patricia (Lowrey), employed at the Botanical Consortium, Albuquerque, NM.

Doherty, Patrick (Werner-Washburne).

Huybrechts, Miette (Barton), Ph.D. candidate at UNM.

Saiz, Bernadette (Barton), employed at the Office of Medical Investigators, Albuquerque, NM.

Vester, Craig (Barton), Ph.D. candidate at UNM.

M.S. (II):

Alvarado-Zink, Alejandra (Johnson, G).

Christner, Robert (Baca), Ph.D. candidate at UNM.

Romero, Karen (Riedesel), employed at the UNM Biochemistry Department.

Sherrell, Kenneth (Vogel).

Valle, Lisa (Brown), teacher's certification program in the College of Education at UNM.

d) Graduate student teaching awards. This year's winners of our department's "Out-standing Graduate Student" teaching awards were: Summer 1991, Sam Loftin; Fall 1991, Jim Markweise and Ken Sylvester; Spring 1992, Toby Bennett.

e) Graduate student committee service. During the FY, the following graduate students served the department as members of important standing committees: Graduate Policy—T. Crocker and G. Farley; Representatives to Faculty Meetings—J. Frey and M. Patrick; Research Allocations (GRAC)—T. Crocker, S. Evanko, J. Frey and P. Stone; Graduate Student Selection—K. Ernest; Seminar—D. Kelt; SRAC Representatives—S. Evanko, L. Hawkins and G. Venable; Undergraduate Policy—C. Vester.

f) Graduate student professional accomplishments. During the FY, our graduate students made numerous professional contributions and received professional recognition *exclusive* of formal collaborations with their major professors. These included 5 papers presented at regional, national and international meetings; 11 publications in refereed journals; awards for either travel for abstracts submitted or for outstanding student papers



presented at scientific meetings; 6 grants/awards received for research support from professional societies/state or federal or private granting agencies (J. Stuart—2 awards; P. Stone—2 awards; L. Fitzgerald—2 awards). For example, awards and grants came from Sigma Xi (M. Skupski), the World Wildlife Fund (L. Fitzgerald), NSF (S. Mistry and D. Haines) and the Los Alamos National Laboratories (L. Pierce). Our students also won a Graduate Fellowship Act Fellowship (S. Merino), a Fulbright Scholarship (M. Huybrechts), a Fulbright-Hayes Fellowship (L. Fitzgerald), a Regents' Endowed Fellowship (C. Padilla) and 10 grants funded by LAI/SRAC/VPGRF/A&S at UNM. These achievements are in addition to departmental teaching awards and jobs/postdocs secured by our degree recipients.

5. Building Additions Completed. The Biology Department opened its new research greenhouse on November 8, 1991. With a total of 2,520 sq. ft., the new greenhouse is twice as large as the old one it replaced. This project was funded in part by an NSF grant, written by seven members of the department, and in part by UNM.

The new Biology Department Field Research Station opened on November 23, 1991. The field station is the base of the Long-Term Ecological Research (LTER) Program, located on the Sevilleta National Wildlife Refuge. The station provides residences, laboratory and conference room facilities in central New Mexico for scientists involved with field research projects in biology, geology, anthropology and hydrology.

6. Biology Faculty, Scholarly and Professional Activities, CY 1991. See Appendix C for a complete account of all professional, scholarly and teaching accomplishments of the Biology FTE faculty for the CY 1991.

7. The Biological Society of New Mexico (BSNM). In December 1991, the BSNM sent its seventh annual newsletter (Appendix D) to nearly 2,000 alumni and supporters of our program in Biology. During FY 1990-1991, funds in the Society's account were used 1) to sponsor recruitment of prospective graduate students; 2) as awards to teaching assistants for demonstrated excellence; 3) to help graduate students research projects; 4) to assist in sponsoring departmental seminar speakers; 5) to pay for the production of our annual newsletter; 6) to complete construction of the department's 200-gallon display/teaching marine aquarium; 7) to pay for part of the expenses incurred by our annual departmental graduation exercise (May 16, 1992); and 8) to provide cash award to the graduating senior Biology major(s) selected as Outstanding Undergraduate for the FY. Ms. Melanie Marshall received this award during our May 16th Commencement Ceremony (Appendix E).

8. Museum of Southwestern Biology (MSB). The MSB consists of six divisions, each with its own curator: Herbarium (T. Lowrey), Herpetology (H. Snell), Ichthyology (M. Molles), Invertebrates (C. Crawford), Mammalogy and Ornithology (T. Yates). The functions of the MSB are research, education and service. The annual reports that were submitted this year from various divisions are presented in Appendix F.

9. National Ecology Center, Denver Fish and Wildlife Service (NEC/DFWS). Details of this cooperative agreement with NEC/DFWS, of the U.S. Fish and Wildlife Service, were noted in the 1986-87 departmental annual report. The annual report of the NEC/DFWS for this past FY is attached (Appendix G).

10. Long-Term Ecological Research (LTER) Program. The annual report of Biology LTER is attached (Appendix H).

11. Land Holdings. See the 1984-85 departmental annual report for current land holdings that belong to the Biology Department. No new land was acquired in FY 1991-92.

12. Loren D. Potter Endowed Chair, Plant Ecology. A detailed history of the develop- 178  
ment of the Potter Chair is given in the 1984-85 departmental annual report. Currently, the  
Potter Chairs exists under the name "The Ross-Brown Endowment (No. 067002, subcode  
3620) in the General Accounting Office. As of June 30, 1992, this fund was worth \$130,690.  
Dr. Diane L. Marshall was the First Recipient of the Potter Chair in Plant Ecology, a title she  
will hold through June 30, 1996. As holder of the Potter Chair, Dr. Marshall receives all the  
rights and responsibilities that accompany that title.

13. Melinda Bealmear Memorial Scholarship Fund. The development of this scholarship  
fund was detailed in a the 1986-87 departmental annual report. The balance of this fund as of  
June 30, 1992 was approximately \$2,975.

14. Faculty Excellence Fund. During the FY, this special departmental fund continued to  
slowly grow. The balance in this account as of June 30, 1992, was approximately \$965.

15. Departmental Seminar Series. We devote about \$5,000 of our overhead return each  
year to support a strong seminar program that features distinguished outside speakers in many  
disciplines. Appendix I lists the individual seminar speakers hosted during FY 1991-92.

#### **B. Significant Plans and Recommendations.**

Several major endeavors were completed during the past year, namely the new green-  
house and the Sevilleta Research Station.

This year we have embarked on a major new effort with regard to training students,  
focusing in particular on minority students, in the biological laboratory sciences. The new  
million-dollar award from the Howard Hughes Foundation will allow us to offer for the first  
time state-of-the-art laboratory training for our undergraduate students. This major award  
would never have been obtained without the vigorous efforts of several faculty members.

**C. Faculty and Graduate Students, FY 1991-1992.**

A complete roster of all Department of Biology faculty and graduate students for FY 1991-92 is included (Appendix J).

**D. Faculty Promotion.**

During the FY, Dr. Bruce Milne was granted tenure and promoted from assistant to associate professor. This promotion became effective on July 1, 1992.

**E. Ancillary Faculty.**

Several of our faculty hold joint appointments in other departments and a number of professionals in other academic units, the private sector, industry and in government labs hold appointments in Biology. Our joint appointments and other ancillary faculty lend breadth and strength to our overall program (Appendix K).

**F. Professional and Technical Support Staff.**

One of the most important components of our department is our support staff. The department could not function without this group of dedicated professionals. During the FY, approximately 50 individuals worked in, with or for the department in a variety of capacities that ranged from post-docs and professionals supported by outside grants to FTE line item personnel in our departmental budget allocation from the College (Appendix L).

**G. Appointments to and Separations from Staff.**

All appointments to our staff during the FY are noted in **bold face type** in Appendix L. All separations from our staff during the FY are noted at the end of Appendix L.

#### **H. Course Offerings, Department of Biology, FY 1991-92.**

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Included is a complete listing of all courses and laboratories offered by Biology during FY 1991-92 (Appendix M). The total number of student credit hours may differ somewhat from those provided by the Office of Institutional Research because the latter are based on the "21 day count," whereas the figures in Appendix M are taken from final grade reports issued at the end of each semester.

#### **I. Sponsored Research.**

During 1991, 20 FTE professors, and a number of our adjuncts and associates, received 39 new awards/contracts from private, state and federal agencies outside UNM (see Appendices N and C [Sec. 3]). Also during 1991, 20 of our 32 FTE professors, and a number of our adjuncts and associates, submitted 66 proposals to various granting agencies (see Appendix O). The current year funds from outside contracts that were in force in Biology during FY 1991-92 totalled \$5,015,555; these represented \$13,955,262 in cumulative research funds committed to Biology over the life of these grants.

#### **J. Affirmative Action.**

It is the policy of the Department of Biology to provide equal opportunity in all personnel actions, institutionally-sponsored education, training, tuition assistance, social and recreational programs and advancement, without regard to race, color, religion, national origin, sex, handicap, age, weight or veteran's status.

Hiring procedures for Biology Department faculty and staff are conducted within Affirmative Action guidelines with respect to advertising, search committees, interviewing and selection. Student employee, work-study and other job opportunities are advertised on campus and within the department.

Job descriptions are periodically reviewed and revised for accuracy in relation to actual functions and duties; reclassifications are now in process for two staff employees. Employees are also encouraged to upgrade their skills through participation in university-sponsored seminars and training programs.

# **APPENDICES**

***1991-92 ANNUAL REPORT***

***DEPARTMENT OF BIOLOGY***

# **APPENDIX A**

## ***PROGRAM OF THE FIRST ANNUAL BIOLOGY RESEARCH DAY***



# First Annual BIOLOGY RESEARCH DAY

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A Presentation of Graduate  
and Undergraduate  
Student Research



GUEST SPEAKER:

*Dr. Margo Haygood*

Scripps Institution  
of Oceanography  
La Jolla, California

"BIOLUMINESCENT  
SYMBIOSES"

The University of New Mexico  
Biology Department  
Friday, April 3, 1992

We wish to thank the **LA JOLLA CANCER RESEARCH FOUNDATION**, La Jolla, CA, for their financial support of this First Annual Biology Research Day. Their willingness to invest in the undergraduate and graduate Biology students at the University of New Mexico, as a way of encouraging biological research by students who will be the next generation of research scientists, is greatly appreciated.

The La Jolla Cancer Research Foundation was founded in 1978 and is currently the home of more than 100 research scientists. Investigators at the Foundation are particularly well recognized for their contributions to defining and understanding the interactions between cell membrane receptors and extracellular molecules of the cellular environment, as related to normal differentiation and to cancer.

As an additional prize, two students were invited to La Jolla to attend the Fourteenth Annual Symposium sponsored by the Foundation, to meet with scientists at the Foundation, and to tour the laboratories. This symposium on "Hematopoiesis in Normal and Abnormal Development" was held February 25, 1992. The two students selected to attend were:

Robert Christner, graduate student  
Susanna Gonzales, undergraduate student

Special recognition is due to Dr. Eva Engvall, La Jolla Cancer Research Foundation, through whom the idea for all of these events was developed and realized.

# ***SCHEDULE OF EVENTS***

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- 9 a.m.—5 p.m.                      **Student Posters** displayed in the main hallway of the Biology Building
- 9 a.m.—11 a.m.                    **Judging of Student Posters**
- 10:30 a.m.—11:30 a.m.           **Student Slide Presentations: Session 1, Room 100**  
Moderators: Dr. Howard Snell, Associate Professor  
Stephen Evanko, graduate student
- 11:45 a.m.—1 p.m.                **Lunch**, Room 83 and adjoining central courtyard
- 1 p.m.—2:30 p.m.                **Student Slide Presentations: Session 2, Room 100**  
Moderators: Dr. Margaret Werner-Washburne,  
Assistant Professor  
Robert Harrison, graduate student
- 3 p.m.—4 p.m.                    **Guest Lecture, *Dr. Margo G. Haygood***  
"Bioluminescent Symbioses," Room 100
- 4 p.m.—4:30 p.m.                **Awards Ceremony**  
Moderator: Dr. Kathryn Vogel, Professor
- 5 p.m.—6:30 p.m.                **Reception**, University House, 1901 Roma Ave., NE
-

# **RESEARCH DAY ORGANIZATION**

## **COMMITTEE:**

Dr. Kathryn Vogel, Professor  
Dr. Mary Anne Nelson, Asst. Professor  
Dr. Diane Marshall, Assoc. Professor  
Dr. Marvin Riedesel, Professor  
Debra Tull, graduate student  
Patrick Zwartjes, graduate student

## **JUDGES for SLIDE PRESENTATIONS:**

Dr. Astrid Kodric-Brown, Assoc. Professor  
Dr. Clifford Dahm, Assoc. Professor  
Dr. Donald Natvig, Assoc. Professor  
Robert Christner, graduate student

## **JUDGES for POSTER PRESENTATIONS:**

Dr. Scott Altenbach, Professor  
Dr. Ann Evans, Asst. Professor  
Dr. Margo Haygood, Scripps Institution  
of Oceanography  
Dr. Gordon Johnson, Assoc. Professor  
Dr. Bruce Milne, Asst. Professor  
Dr. Stephen Stricker, Asst. Professor  
Dr. Eric Toolson, Professor  
Dr. John Trujillo, Assoc. Professor  
Dr. Mark Taper, Research Associate  
Dr. Randy Thornhill, Professor  
Lauraine Hawkins, graduate student  
David Bleakly, graduate student

Additional thanks are extended to Dr. David Ligon, Chairman of the Department of Biology, for supporting this event, and Ms. Anne Rice for artistic preparation of this booklet.

## ABOUT THE SPEAKER

The invited speaker for the First Annual Biology Research Day is **DR. MARGO G. HAYGOOD** of the Marine Biology Research Division, Scripps Institution of Oceanography (University of California at San Diego).

Dr. Haygood graduated *magna cum laude* from Harvard University with a B.A. in History and Science. She conducted her graduate studies with Dr. Kenneth H. Nealson at Scripps Institution of Oceanography, during which time she was a Monbusho scholar at the Misaki Marine Biological Station, University of Tokyo. She received her Ph.D. in Marine Biology from Scripps in 1984. Dr. Haygood worked as a post-doctoral fellow with Dr. Mary E. Lidstrom in the Department of Microbiology and Immunology at the University of Washington, and then went on to serve as a Scientific Officer in the Molecular Biology Program at the Office of Naval Research. Since 1987, Dr. Haygood has been a faculty member at Scripps Institution of Oceanography.

Dr. Haygood's research centers on marine microbiology and bacterial symbioses. Her diverse interests, however, lead her to span many disciplines in her work. She uses molecular techniques to analyze bacterial symbioses, and studies bacterial iron physiology and regulation, as well as genetic divergence among the luminous bacterial symbionts of flashlight fish.

# SLIDE PRESENTATIONS

- 10:30 "ASSESSMENT OF BREEDING STRUCTURE OF THE CHROMOSOMALLY POLYMORPHIC SPECIES, *Ctenomys boliviensis*, WITH DNA FINGERPRINTS."  
Forrest W. Davis and Terry L. Yates
- 10:45 "INTERACTIONS BETWEEN GROWTH REGULATING PROTEIN KINASES IN YEAST."  
Edward Braun and Margaret Werner-Washburne
- 11:00 "THE EFFECT OF PLANT AGE AND FLOWER AGE ON THE MATING SUCCESS OF POLLEN DONORS IN WILD RADISH."  
Joy J. Avritt and Diana M. Oliveras
- 11:15 "LICHEN COMMUNITY VARIATION AND THE EFFECTS OF SCALE ON ECOLOGICAL MEASUREMENTS."  
Joran Viers and Bruce Milne
- 1 PM "THE COST OF REPRODUCTION IN THE LIZARD *Urosaurus ornatus*."  
Allan J. Landwer and Howard J. Snell
- 1:15 "REPRODUCTIVE BIOLOGY OF A GUILD OF PECOS RIVER CYPRINIDS (OSTEICHTHYES: CYPRINIFORMES): BIOLOGICAL IMPLICATIONS FOR CONSERVATION."  
Chris S. Altenbach
- 1:30 "TEMPORAL CONSISTENCY OF CREOSOTE BUSH SUSCEPTIBILITY TO JACKRABBIT DAMAGE."  
Kristina A. Ernest
- 1:45 "MORPHOLOGICAL DIVERSITY IN TERRESTRIAL MAMMAL COMMUNITIES ALONG AN ELEVATIONAL GRADIENT AT DEEP CANYON, CALIFORNIA."  
Ursula Shepherd
- 2:00 "PHYSICAL AND CHEMICAL PROPERTIES OF AN EPHEMERAL FLOOD IN NEW MEXICO."  
Tad Crocker, Clifford N. Dahm and Manual C. Molles, Jr.
- 2:15 "VEGETATIONAL RESPONSES TO SEWAGE SLUDGE APPLICATION IN A SEMI-ARID GRASSLAND."  
Sam Loftin, Richard Aguilar and James S. Gosz

# POSTER PRESENTATIONS

- 1 "REMOTE MONITORING OF STREAM GROUNDWATERS WITH INEXPENSIVE PRESSURE TRANSDUCER-DATA ACQUISITION SYSTEMS."  
K.S. Henry, G.J. Wroblicky, M.E. Campana and S.L. Matyk
- 2 "REFINING METHODS OF CLEANING AND PRESERVATION OF LARGE MAMMAL SKELETONS."  
Guy W. Herbert and William L. Gannon
- 3 "INSTALLING A WELL NETWORK TO SAMPLE THE HYPORHEIC ZONE IN STREAM ECOSYSTEMS."  
J.A. Morrice, C.N. Dahm, H.M. Valett and G.J. Wroblicky
- 4 "A SURVEY OF POTENTIAL ANTHROPOGENIC FACTORS AFFECTING GRAY FOXES IN A RURAL AREA."  
Robert Harrison
- 5 "DEVELOPMENT OF APPLICATION PLAN TO BIOREMEDIATE CYANIDE AND NITRATE CONTAMINATION USING A CARBON AMENDMENT."  
James T. Markwiese
- 6 "I FOUND THIS SKULL AND WAS WONDERING 'WHAT IS IT?'"  
William L. Gannon
- 7 "SELECTIVITY OF HORIZONTAL OPENINGS BY THE BAT, *Plecotus townsendii*, DURING VERTICAL FLIGHT."  
Stephen Davenport and J. Scott Altenbach
- 8 "LOCALIZATION OF ACID PHOSPHATASE IN *Coxiella burnetii*."  
Robert Christner and Oswald G. Baca
- 9 "ISOLATION AND CHARACTERIZATION OF METAL-RESISTANCE BACTERIA."  
Miette M.E. Huybrechts and Larry L. Barton
- 10 "STATIONARY PHASE GENE EXPRESSION IN YEAST AND THE REGULATION OF ENTRY INTO STATIONARY PHASE."  
Braeden Butler and Margaret Werner-Washburne
- 11 "PROTEOGLYCAN SYNTHESIS BY CULTURED BOVINE FETAL TENDON IS ALTERED BY CYCLIC LOADING."  
Stephen Evanko and Kathryn Vogel

# POSTER PRESENTATIONS

Continued

- 12 "MICROBIAL RESISTANCE TO CHROMIUM."  
Susanna M. Gonzales and Larry L. Barton
- 13 "CLONING AND CHARACTERIZATION OF THE *Neurospora crassa* GENE FOR MANGANESE SUPEROXIDE DISMUTASE (*SOD-1*)."  
William H. Dvorachek, Jr., and Donald O. Natvig
- 14 "LIGHT-LEVEL MORPHOLOGY AND AUTORADIOGRAPHY OF FIBROCAR-  
TILAGINOUS REGION OF BOVINE TENDON."  
Ronica Martinez and Kathryn G. Vogel
- 15 "BACTERIAL PRODUCTION OF BISMUTH COLLOIDS."  
Mahesh C. Pant and Larry L. Barton
- 16 "REGULATION OF *BCY1* EXPRESSION BY cAMP AND CARBON SOURCE."  
Patrick O. Doherty and Margaret Werner-Washburne
- 17 "EXPRESSION OF mRNA FOR CARTILAGE-SPECIFIC MACROMOLECULES  
IN TENDON."  
James Robbins and Kathryn Vogel
- 18 "CIGARETTE SMOKE/NICOTINE-INDUCED IMMUNOSUPPRESSION."  
Yue-mei Geng and Mohan Soporì
- 19 "LEAD TRANSFORMATION BY BACTERIA."  
Bernadette Saiz and Larry L. Barton
- 20 "THE MORPHOLOGICAL CHANGES OCCURRING IN YEAST CELLS  
DURING ENTRY INTO STATIONARY PHASE."  
Rina Maldonado and Margaret Werner-Washburne
- 21 "40-HOUR GLYCEROL-INDUCED HYPERHYDRATION."  
P. Koenigsberg and K. Martin
- 22 "CLONING OF HUMAN LIVER PHOSPHOFRUCTOKINASE-1 INTO  
DIFFERENT VECTORS FOR PROTEIN EXPRESSION IN *E. coli*."  
Lara G. Hays, Ed Weeber and John L. Trujillo



# POSTER PRESENTATIONS

Continued

- 23 "METABOLISM OF IRON BY *Rhizobium meliloti*, THE ALFALFA SYMBIOTIC BACTERIA."  
Craig R. Vester and Larry L. Barton
- 24 "EFFECTS OF TGF-beta ON CELL PROLIFERATION AND PROTEOGLYCAN SYNTHESIS OF BOVINE TENDON FIBROBLASTS IN CULTURE."  
Bernice Galloway and Kathryn G. Vogel
- 25 "GENOMIC VARIABILITY AND WEATHER INFLUENCE IN ROTAVIRAL INFECTION: A CASE OF STUDY IN LA PAZ, BOLIVA."  
Jacqueline Miralles and Volga Iniguez
- 26 "EFFECTS OF VARIABLE MOISTURE AVAILABILITY ON SEED GERMINATION IN THREE POPULATIONS OF *Larrea tridentata*."  
Kathleen McGee and Diane Marshall
- 27 "DEVELOPMENTAL ASYMMETRY IN TWO POPULATIONS OF THE MUSTARD *Brassica campestris*."  
Melanie Marshall and Ann S. Evans
- 28 "EFFECTS OF PLANTS ON THE ABUNDANCE AND DISTRIBUTION OF A DESERT STICK INSECT."  
Katelijne C. Flies
- 29 "PATTERNS OF ATTACK BY MURICID AND NATICID GASTROPODS ON RECENT AND FOSSIL *Turritella*."  
Debra S. Tull and Katrin Böhning-Gaese
- 30 "ROOSTING BEHAVIOR IN *Campylorhynchus* WRENS: AN INTERACTION BETWEEN PHYLOGENY AND CURRENT ENVIRONMENTAL CONDITIONS."  
Greg Farley
- 31 "SPIDER RECOLONIZATION OF RECLAIMED MINES IN WESTERN WYOMING: FAUNAL COMMUNITY STRUCTURE AND SUCCESSION."  
Sandra L. Brantley, M.R. Mesch, J.A. MacMahon and R.R. Parmenter
- 32 "EVOLUTIONARY CONSEQUENCES OF MODES OF PERIPHERAL ISOLATE FORMATION UNDER ALTERNATIVE MODES OF SPECIATION."  
Jennifer K. Frey

# POSTER PRESENTATIONS

Continued

- 33 "LARVAL COMMUNITY STRUCTURE OF TEMPORARY POND BREEDING FROGS FROM TROPICAL DECIDUOUS AND ARROYO FORESTS IN WESTERN MEXICO."  
Paulette L. Ford and Norman J. Scott, Jr.
- 34 "INTRA- AND INTERSPECIFIC GENETIC VARIABILITY IN *Ctenomys* (RODENTIA: CTENOMYIDAE)."  
Eduardo Palma and Milton Gallardo
- 35 "A COMPARISON OF MAMMALIAN ASSEMBLAGES FROM ECOREGIONS OF BOLIVA."  
Jorge A. Salazar, Sydney Anderson and Terry L. Yates
- 36 "EFFECT OF INDIVIDUAL CONSTRAINTS ON POPULATIONS, COMMUNITIES AND BIOTAS."  
Pablo A. Marquet and Mark L. Taper

10:30

ASSESSMENT OF BREEDING STRUCTURE OF THE CHROMOSOMALLY POLYMORPHIC SPECIES, *CTENOMYS BOLIVIENSIS*, WITH DNA FINGERPRINTS.  
Forrest W. Davis and Terry L. Yates.

Tuco-tucos (genus *Ctenomys*) are endemic South American subterranean rodents that are one of the most chromosomally variable mammals, with diploid numbers that range from 10-70. In particular, *Ctenomys boliviensis* is chromosomally polymorphic ( $2n=36, 42, 43, 44, 45$ , and 46) and exhibits intrapopulation variation in numerous populations. In 1987, 1988, and 1991, 10 populations of *C. boliviensis* were examined by extirpation and grid analyses. DNA fingerprinting was used to determine parentage of embryos, to assess breeding structure in two populations of *C. boliviensis*. Fingerprinting experiments were conducted with cloned human and M13 phage repeat sequences to examine variable number tandem repeat sequence variation in DNA samples. There were several instances, where a putative father sired young with several females during the same breeding period, which suggests a polygamous mating system. In some cases, these mated pairs co-occupied the same tunnel system as in the eusocial naked mole-rat.

10:45

INTERACTIONS BETWEEN GROWTH REGULATING PROTEIN KINASES IN YEAST.  
E. Braun and M. Werner-Washburne

Our laboratory is identifying control points involved in regulating starvation-induced growth arrest or entry into stationary phase in the budding yeast, *Saccharomyces cerevisiae*. Proper response to nutrient limitation in yeast is known to be regulated in part by the activity of cAMP-dependent protein kinase. cAMP-dependent protein kinase is made up of four subunits, including two regulatory subunits encoded by the *BCY1* gene. Bcy1 protein from stationary phase cells exhibits at least five 5 isoforms with different apparent molecular weights when resolved using 1-dimensional SDS-PAGE and an approximately 8-fold increase in accumulation when compared with Bcy1 protein from exponential phase cells. The accumulation of the two highest molecular weight isoforms is eliminated in *yak1* mutants, which lack a second protein kinase encoded by the *YAK1* gene. Analysis of proteins from *yak1* mutants lacking catalytic subunits of the cAMP-dependent protein kinase indicates that accumulation of some Bcy1 isoforms are not dependent upon the presence of either the Yak1 or cAMP-dependent protein kinase. We are now examining the *yak1* mutants to determine whether they display a phenotype associated with stationary phase.

11 AM

THE EFFECT OF PLANT AGE AND FLOWER AGE ON THE MATING SUCCESS OF POLLEN DONORS IN WILD RADISH. Avritt, JJ and Oliveras, DM.

Sexual selection in plants may occur by competition among males for access to ovules or by the non-random filling of fruits and seeds by maternal plants. Previous research has shown that mating in wild radish is often non-random. This non-random seed paternity could lead to sexual selection. Mating patterns may change as plants age because resources for reproduction are fewer and as plants age because the physiological mechanisms of non-random mating may break down. In this experiment the influence of plant and flower age on mating success among compatible pollen donors was examined. Ten unrelated maternal plants and three pollen donors selected. First and second day flowers were pollinated early (no prior fruit set on the branch) and late (prior fruit set on the branch) on these maternal plants. Seed paternity following mixed pollination was determined by starch gel electrophoresis. The three pollen donors differed significantly in seed paternity. Patterns of paternity differed with plant age, but not with flower age. The pollen donor that sired the most seeds did so on old plants and old flowers on young plants.

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11:15

LICHEN COMMUNITY VARIATION AND THE EFFECTS OF SCALE ON ECOLOGICAL MEASUREMENTS. Joran Viers and Bruce Milne

This study looks at lichen species assemblages on two distinct rock substrates on the Sevilleta National Wildlife Refuge. Two sampling methods were used to investigate the effect of sampling scale on ecological interpretation. Both substrate geology and morphology are shown to affect lichen species distributions.

1 PM

The Cost of Reproduction in the lizard *Urosaurus ornatus*

Allan J. Landwer and Howard L. Snell

Current theories attempting to explain variation in the life-histories of organisms concentrate on trade-offs between current and future reproduction. Life history theory predicts that the allocation of energy to current reproduction is associated with a decrement in future fecundity, future survival, or both. We treat this notion as the "cost hypothesis." The assumption that current reproduction extracts a "cost" in future survival and fecundity will be manipulatively tested. Reproductive investment was directly manipulated in populations of the tree lizard *Urosaurus ornatus* by surgical yolkectomy. This surgical technique reduces reproductive investment (clutch size) dramatically (40-60%). These experiments are being carried out in the field where a biologically relevant assessment of reproductive costs is possible. Our preliminary data demonstrate 58% increases in survival after a 50% decrease in reproductive investment.

1:15

REPRODUCTIVE BIOLOGY OF A GUILD OF PECOS RIVER CYPRINIDS  
(OSTEICHTHYES:CYPRINIFORMES): BIOLOGICAL IMPLICATIONS FOR  
CONSERVATION. Chris S. Altenbach

As part of the University of New Mexico's Ichthyofaunal Studies Program (Dept. of Biology/MSB), I undertook a project to determine the reproductive mechanisms and strategies of a guild of seven Pecos River cyprinids.

The seven species were induced to spawn in a laboratory environment where data were collected on mating behavior, spawning mechanisms, egg dispersal strategies, hatching time, developmental biology, and larval fish growth. For two of the species, Notropis jemezanus and N. simus pecosensis, both federally protected, these were the first observations of their reproductive biology. This research provides valuable information for their conservation.

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1:30

TEMPORAL CONSISTENCY OF CREOSOTEBUSH SUSCEPTIBILITY TO  
JACKRABBIT DAMAGE. Kristina A. Ernest.

Plants often show intraspecific variability in their resistance to herbivory. I have investigated patterns of herbivory on creosotebush (Larrea tridentata) to document consistency through time in resistance vs. susceptibility to jackrabbit (Lepus californicus) browsing. Within a population of creosotebush, individuals vary tremendously in their susceptibility to jackrabbit damage. Some shrubs seem to be completely resistant to jackrabbit browsing, while others may lose up to 80% of their leaf biomass when rabbits clip stems. Shrubs tend to show consistent levels of susceptibility over time; shrubs browsed in one year are likely to be browsed again in subsequent years. Shrubs responded to experimentally simulated browsing by an apparent increase in resistance one year later. These results suggest a genetic component to resistance, with short-term induced resistance in response to browsing.

1:45

MORPHOLOGICAL DIVERSITY IN TERRESTRIAL MAMMAL COMMUNITIES  
ALONG AN ELEVATIONAL GRADIENT AT DEEP CANYON, CALIFORNIA.  
Ursula Shepherd

This study examined species richness and morphological diversity of terrestrial mammal communities sampled along an elevational transect in Deep Canyon, California. The study area is in the Sonoran Desert and encompasses three life zones and elevations from 200ft. to 8000ft. Principal Components Analysis (PCA) was used to describe the morphological diversity of the various communities. This study was the first attempt to conduct an ecomorphological study of diverse mammalian communities (i.e., communities of more than one mammalian order). Data will be presented which shows that PCA is capable of dealing with multiple mammalian orders. Results suggest a relationship between elevation and the morphological diversity of the communities at those elevations.

2:00

PHYSICAL AND CHEMICAL PROPERTIES OF AN EPHEMERAL FLOOD IN NEW MEXICO. M. Tad Crocker, Clifford N. Dahm, and Manuel C. Molles, Jr. Department of Biology, University of New Mexico, Albuquerque, New Mexico 87131.

Water represents both an agent of physical disturbance and a critical resource within ephemeral streams in semi-arid regions. Riparian plants are removed during periodic floods and dense stands of recruits quickly colonize newly disturbed streambed surfaces. Water directly controls ecological processes and, as a solvent, indirectly controls the availability of nutrients. The ephemeral nature of these brief floods severely limits the opportunity to observe and quantify flood and water properties. On July 17, 1991, researchers were trapped within the Sevilleta LTER Ladrón Mountain Study Basins by an intense thunderstorm. The most extensive flooding during four years of observations ensued. Remote video imaging systems recorded flooding at two sites. Storm intensity and flood hydrographs were estimated from these video data. Stream velocity was measured at the leading edge of the flood (the bore) and during near peak discharge. Grab samples of stream water were taken for analyses from one location prior to the bore (local flow), the bore, 5 min after peak flow, and at verylow flow (samples 1-4). These samples were divided into four size classes. Basin response time was 5 min at the upstream site (11 ha) and 20 min at the downstream site (76 ha). The bore progressed at 1.2 m/s and stream velocity was 2.3 m/s 4 min. after peak discharge. Flood water properties and videos records will be presented.

2:15

VEGETATIONAL RESPONSES TO SEWAGE SLUDGE APPLICATION IN A SEMI-ARID GRASSLAND. Sam Loftin, Richard Aguilar and Jim Gosz.

Overgrazing has lead to a reduction in plant cover and a subsequent increase in soil erosion potential in many areas of the Southwest. New techniques are needed to aid in the restoration of degraded grassland soils. Perhaps the most important objective in soils restoration is to increase the soil organic matter content. In this study we are using Albuquerque municipal sewage sludge as a soil organic matter and nutrient amendment. We hypothesize that sewage sludge application will improve soil conditions and stimulate biological activity within treated areas. Above and belowground plant response will be discussed.

# POSTER ABSTRACTS

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1

REMOTE MONITORING OF STREAM GROUNDWATERS WITH INEXPENSIVE PRESSURE TRANSDUCER-DATA ACQUISITION SYSTEMS. K.S. Henry, G.J. Wroblicky, M.E. Campana, and S.L. Matyk.

Acquisition of continuously monitored, real time hydrologic data is critical in the assessment and modeling of short and long term stream/groundwater hydrodynamics. We are installing inexpensive pressure-transducer data acquisition systems to monitor stream/shallow groundwater flow systems in remote first-order montane catchments in New Mexico. The monitoring system consists of 2-inch ID shallow piezometers, each equipped with a Fujikura solid-state pressure sensor (transducer) connected to a datalogger and powered by a deep-cycle 6 volt battery. The datalogger is a single board microcontroller-based system containing 32K of static RAM along with an analog-digital converter, two serial ports and several digital I/O lines. The transducer/datalogger unit can be assembled for approximately \$60/transducer and \$80/datalogger. The low cost permits the dedication of one datalogger per piezometer. Two months hydraulic head data can be stored with sampling at 5 minute intervals. Field performance of the system is currently being evaluated. A demonstration of the system will be presented at the poster session.

2

REFINING METHODS OF CLEANING AND PRESERVATION OF LARGE MAMMAL SKELETONS. Guy W. Herbert and William L. Gannon, Museum of Southwestern Biology.

New techniques have been developed for preparation of large mammal specimens. Large skeletal preparations have, in the past, presented problems for museum curators because of non-routine procedures. We have developed techniques which substantially reduce the time needed for specimen processing. Boiling in a dilute solution of  $\text{NH}_4\text{OH}$ ,  $\text{H}_2\text{O}_2$ , and detergent can clean an entire wolf-sized specimen in 16 hours in contrast to 3 weeks in a dermestid beetle colony. Comparisons of preservation methods after specimens have been prepared include Butvar, paints, and glues. Different methods profoundly affect the long-term survivability of large mammal skeletons. Refining these techniques, as well as evaluating preparation techniques in general, can prolong specimen duration considerably for research and education purposes.

3

INSTALLING A WELL NETWORK TO SAMPLE THE HYPORHEIC ZONE IN STREAM ECOSYSTEMS. J.A. Morrice, C.N. Dahm, H.M. Valett, and G.J. Wroblicky

We have installed a network of 25 groundwater sampling wells beneath and adjacent to the wetted perimeter in two small streams. The well networks allow us to study the hyporheic zone biogeochemistry. Wells of 1-3 m depth were constructed from 2" PVC casing. After the insertion of the sampling well, the borehole was back-filled with sand to the top of the screened portion of the well. The remainder of the borehole was filled with soil, followed by a 20-30 cm seal of bentonite clay pellets to prevent infiltration of surface water. Interstitial water is routinely sampled for nitrate, ammonium, soluble reactive phosphate, dissolved organic carbon, dissolved inorganic carbon, methane, dissolved oxygen, temperature, and pH. This flexible and durable system provides for long-term sampling of hyporheic zone biogeochemistry in stream ecosystems.

4

A SURVEY OF POTENTIAL ANTHROPOGENIC FACTORS AFFECTING GRAY FOXES IN A RURAL AREA. Robert Harrison, Biology Department, University of New Mexico.

Approximately 5000 questionnaires were mailed to human residents of the rural suburban communities of Cedar Crest, Tijeras, and Sandia Park, NM in order to assess the extent of potential impacts of human residences on the ecology of gray foxes (*Urocyon cinereoargenteus*). Preliminary results indicate that most residents have dogs (potential predators) and that loose dogs are ubiquitous, although few respondents allow their dogs to run free. Gardens and compost piles are commonly available food resources for foxes. Pet food dishes and water sources are less available. Respondents' attitudes are overwhelmingly positive toward the presence of foxes in their neighborhoods, favoring the possibility of peaceful coexistence of gray foxes with humans.

5

Development of Application Plan to Bioremediate Cyanide and Nitrate Contamination using a Carbon Amendment. James T. Markwiese

A heap leach mining operation for gold in Santa Fe County is faced with serious cyanide contamination problems as a result of mining operations. A study was performed to assess the feasibility of in situ bioremediation of the soil/ground water system there. The study identified surprisingly high numbers of cyanide degrading microorganisms capable of growth on media with cyanide as the sole source of carbon and nitrogen. The rate of cyanide and nitrate degradation using a carbon amendment, in the form of glucose, was performed on the indigenous microbial community. After 38 days of incubation, the highest carbon amendments significantly reduced the nitrate and cyanide levels in the cultures.



I FOUND THIS SKULL AND WAS WONDERING WHAT IS IT? A STATISTICAL TECHNIQUE FOR SPECIMEN IDENTIFICATION. William L. Gannon, Museum of Southwestern Biology.

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Often times the Museum receives material that may be difficult or impossible to identify. Material may be received from casual hikers, wildlife enthusiasts, or researchers. At times specimens may be received without data (e.g., specific locality, date collected, field notes). Specimens without data are substantially of less worth than those with data. Twelve hares were received from Hidalgo Co, New Mexico of the genus Lepus. These specimens are from an area of the state that could include a Federally listed endangered species, Lepus callootis, the black-sided jack rabbit. Without an observation of the skin it is unlikely to identify these unknown specimens with certainty. Lepus californicus is the only other Lepus likely to occur in Hidalgo County. Thirty characters from skulls of known Lepus callootis and Lepus californicus were measured. Unknown specimens were classified by discriminant function analysis. What they are you will have to come and see!

SELECTIVITY OF HORIZONTAL OPENINGS BY THE BAT, Plecotus townsendii, DURING VERTICAL FLIGHT. Stephen Davenport and J. Scott Altenbach. Museum of Southwestern Biology.

Attempts to conserve the Townsend's big-eared bat will require bat-compatible closures of mine shaft openings. To generate data on acceptable opening size, ten bats were acclimated to fly a vertical course. When acclimation was completed, the flyway was blocked by obstacles of varying size to imitate the obstacles presented by a horizontal shaft-closure grating. Bat conservation concerns are also addressed.

#### LOCALIZATION OF ACID PHOSPHATASE IN COXIELLA BURNETII.

Robert Christner, and Oswald G. Baca.  
University of New Mexico Department of Biology

*Coxiella burnetii* is an obligate intracellular gram negative bacillus, and is the etiologic of Q fever in both humans and animals. This organism produces an enzyme which disables host cell defense mechanisms allowing proliferation of the organism within host cells. Initial evidence suggests that this enzyme is an acid phosphatase produced by *Coxiella burnetii*. Using electron microscopy, and cytochemical staining, the enzyme has been detected in the organism's periplasmic space. We believe this enzyme to be a contributing factor to the organisms virulence.

- 9 ISOLATION AND CHARACTERIZATION OF METAL-RESISTANT BACTERIA. Miette M.E. Huybrechts and Larry L. Barton.

Fifty-four bacterial strains were isolated from eight sites using nutrient medium with 5 mM Cr(VI), Pb(II), Hg(II), Zn(II) or Cu(II). Most of these isolates were Gram-negative, non-sporeforming pleomorphs or rods. These metal-resistant strains displayed co-tolerance to other metals or metalloids and were insensitive to a broad range of antibiotics. Additionally, many isolates were found to harbor plasmids. Biotransformation was observed in those strains which displayed tolerance to Bi, Pb, Se and Te. Metal-resistant bacteria were present in all sites examined including those not contaminated with toxic elements.

- 10 Stationary phase gene expression in yeast and the regulation of entry into stationary phase.

Braeden Butler and Margaret Werner-Washburne

In culture, yeast cells will grow exponentially until nutrients are limited and cells will enter stationary phase. Starvation of the yeast *Saccharomyces cerevisiae* stimulates physiological changes that allow the cell to survive starvation induced arrest without added nutrients. Our goal is to clone and characterize genes that are explicitly expressed during stationary phase. Towards this end, we have isolated RNA from cells in different stages of the growth cycle, including stationary phase. Isolated mRNA will be amplified using reverse transcriptase (to synthesize cDNA) and the Polymerase Chain Reaction. Genes expressed during stationary phase will be isolated as recombinant clones by probing a genomic library with radiolabelled amplified cDNA. Our long term goal is to use stationary phase gene expression to study the regulation of entry into and the mechanism of survival during stationary phase.

- 11 PROTEOGLYCAN SYNTHESIS BY CULTURED BOVINE FETAL TENDON IS ALTERED BY CYCLIC LOADING. Stephen Evanko and Kathryn Vogel

Fibrocartilage is found in tendons in locations where the tendons wrap around a bone in a joint. This study was done to test the hypothesis that mechanical forces cause differentiation of tendon fibroblasts into chondrocyte-like cells. Fetal bovine tendon explants from the region which will become fibrocartilage and from the tensional region of tendon were cultured for 3 days and then subjected to 3 days of continuous cyclic uniaxial compression to 30% strain at a frequency of 0.16 Hz (1 cycle/6 seconds). Tissue was radiolabelled with [35S]-sulfate and incorporation of radiolabel into proteoglycans was measured. Incorporation into large proteoglycan by compressed tissue doubled while incorporation into biglycan was increased 50-75% over controls. Decorin synthesis was unchanged. Similar results were seen in both the prefibrocartilaginous region and the tensional region which does not normally develop into fibrocartilage. Since large proteoglycan and biglycan are found in mature fibrocartilaginous tissues, these changes are consistent with the hypothesis that compressive force can stimulate differentiation of young fibroblasts into chondrocyte-like cells.

- 12 MICROBIAL RESISTANCE TO CHROMIUM. Susanna M. Gonzales and Larry L. Barton.

Chromium binding and reduction studies were conducted using cells of *Pseudomonas* sp. *Corynebacterium* sp. and *Rhodotorula glutinins*. The reduction of Cr(VI) to Cr(III) was evaluated using the diphenylcarbazine colorimetric reagent. To optimize the rate of reduction, ethylenediaminetetraacetic acid (EDTA) or citrate was added to the reduction assay or the cells were treated with EDTA. Binding of Cr(VI) to bacterial or yeast cells was a non-energy dependent process and was followed by the use of the diphenylcarbazine reagent. Cr(III) binding was also non-energy dependent and determined by the use of Cr-51. Binding, rather than reduction, appears to be important in microbial resistance to chromium.

- 13 CLONING AND CHARACTERIZATION OF THE NEUROSPORA CRASSA GENE FOR MANGANESE SUPEROXIDE DISMUTASE (SOD-1). William H. Dvorachek, Jr. and Donald O. Natvig

Manganese superoxide dismutase (MnSOD) and Copper-Zinc superoxide dismutase (CuZn SOD) are two enzymes believed to be important in defending cells from toxic by-products of oxygen metabolism. We have recently isolated the gene that encodes mitochondrial MnSOD in the filamentous fungus *N. crassa*. Genetic analysis maps this gene to linkage-group VR. Blot hybridization analysis with the cloned gene demonstrated that *N. crassa* strains bearing a non-functional gene for cytosolic CuZn SOD possess elevated levels of the sod-2 transcript compared to strains having a functional CuZn SOD gene.

The sod-2 gene has been sequenced to initiate studies of gene fine structure and evolutionary history. We are also studying the expression of sod-2, the function of MnSOD, and the interaction of MnSOD with CuZn SOD. Towards this end, efforts are underway to construct an *N. crassa* mutant strain that lacks a functional sod-2 gene.

- 14 LIGHT LEVEL MORPHOLOGY AND AUTORADIOGRAPHY OF FIBROCARILLAGINOUS REGION OF BOVINE TENDON.  
Ronica Martinez and Kathryn G. Vogel

Fibrocartilaginous tissue develops in the region of bovine tendon that passes under bone and is subjected to compressive force. Discs of tendon fibrocartilage were incubated in the presence of  $^3\text{H}$ -thymidine or  $\text{Na}_2^{35}\text{SO}_4$ . Autoradiography was used to localize cell proliferation and proteoglycan synthesis. Very few cells incorporated  $^3\text{H}$ -thymidine on day 0-2, 7-9, or 14-16. When cell proliferation was noted, it was localized to the natural surface of the tissue or to the cut edges where a new layer of cells formed, as if to heal the wound. Two appearances of silver grain distributions were seen in the  $^{35}\text{SO}_4$  labelled tissue. First, grains were evenly distributed over the tissue matrix. In addition, cells in lacunae were surrounded by clusters of silver grains. These studies show that cell populations synthesizing DNA or proteoglycans can be localized in cultured tissue. It is concluded that cells in the fibrocartilaginous region of bovine tendon producing proteoglycans that cluster around the cell have not proliferated during the culture period.

(Supported by NIH, GM08139 and AR36110)

- 15 BACTERIAL PRODUCTION OF BISMUTH COLLOIDS. Mahesh C. Pant and Larry L. Barton.

We have investigated the transformation of Bi(III) to black Bi<sup>0</sup> colloids by *Pseudomonas maltophilia*. The addition of Bi(III) to the culture does not inhibit the growth of *P. maltophilia* and reduction occurs as the culture enters the stationary phase. Electron microscopy of samples taken from the culture revealed that Bi is taken into the cells where the Bi colloid is produced. The metal colloids accumulate in the media in the stationary phase, presumably due to cell lysis. Analysis of the Bi colloids for zeta potentials and electrophoretic mobilities indicate that the colloids have a surface covering similar to the bacterial cells.

- 16 Regulation of *BCY1* Expression by cAMP and Carbon Source. P. O. Doherty and M. Werner-Washburne.

The *BCY1* gene product in yeast, through its interaction with cAMP and the catalytic subunits of cAMP-dependent protein kinase, mediates the passage between exponential growth and starvation-induced arrest (stationary phase). In studies designed to identify and characterize the events that regulate entry into stationary phase, we have observed that *BCY1* mRNA levels exhibit a transient increase at the diauxic shift, when both glucose and cAMP levels decrease dramatically. Using *cyr1<sup>-</sup>* cells, lacking adenylate cyclase and therefore, dependent of exogenous cAMP, we examined the effects of cAMP and carbon source on the expression of the *BCY1* gene. Northern analysis of RNA isolated from cells grown on glucose or glycerol based medium, with or without added cAMP, clearly indicate that *BCY1* mRNA accumulation is induced both by depletion of cAMP, and growth on glycerol. Based on *b*-galactosidase assays using a *BCY1* promoter-*lacZ* fusion, regulation appears to be at the level of transcription. Studies to identify promoter elements involved in this regulation will be described.

- 17 EXPRESSION OF mRNA FOR CARTILAGE SPECIFIC MACROMOLECULES IN TENDON. James Robbins and Kathryn Vogel.

This study was conducted to define the mRNA expression of matrix macromolecules within a region of tendon subjected to both compressional and tensional forces *in situ*. Northern blot analyses performed on total RNA isolated from cells within this region demonstrated a high level of mRNA for aggrecan (the large "cartilage specific" proteoglycan) and detectable levels of mRNA for type II collagen. Surprisingly these cells expressed little or no mRNA for alpha1 type I collagen. Neither aggrecan or type II collagen mRNA was detected in total RNA from this region of fetal tendon. Cells isolated from this region were also put into culture. Total RNA isolated after two and six weeks showed that aggrecan and type II collagen mRNA was diminished after two weeks and undetectable after six weeks. This study suggests that cells within a tendon subjected to compressional and tensional forces express a cartilage phenotype and, when put into culture, this phenotype is lost. Future experiments will investigate mechanical induction of cartilage molecules within tendon.

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## Cigarette Smoke/Nicotine-Induced Immunosuppression

Geng, Yue-mei et al.

Chronic exposure of rats to cigarette smoke profoundly affects some very important immunological responses. By comparing the differences of the immunoresponses between the smoking rats and sham control rats, we suggest that the step(s) affected by cigarette smoke lie between antigen binding to B cells and activation of protein kinase C in the pathway.

By implanting the animals with nicotine-release pellets, our results also suggest that nicotine (a major component of the particulate fraction of cigarette smoke) may contribute to many of the immunotoxicological effects of cigarette smoke.

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## LEAD TRANSFORMATION BY BACTERIA. Bernadette Saiz and Larry L. Barton.

*Moraxella bovis* is capable of transforming Pb(II) to gray-black insoluble granules. The metabolism of lead by this bacterial strain, isolated from groundwater, appears to be a two step process: rapid binding of Pb(II) to the cells followed by slow reduction to Pb<sup>0</sup>. *M. bovis* will deplete Pb(II) from media containing EDTA, citrate or carbonate and the process occurs at pH 7 or 8 but not at pH 6. The process of lead transformation is not constitutive and induction requires protein synthesis and energy. The product of this lead transformation is found external to the cells in the stationary phase of growth and electron microscopy reveals that individual spherical granules are smaller than 200 nmeters.

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## THE MORPHOLOGICAL CHANGES OCCURING IN YEAST CELLS DURING ENTRY INTO STATIONARY PHASE

R. Maldonado and M. Werner-Washburne

When the yeast cells *Saccharomyces cerevisiae* enter stationary phase, they undergo a variety of physiological, biochemical and morphological changes. These changes include: accumulation of storage carbohydrates and lipid vesicles in the cytoplasm, deposition of electron dense material in the vacuole, thickening of the cell wall, development of thermotolerance, and growth arrest. I am using Transmission Electron Microscopy to examine the regulation of entry into stationary phase. My research goal is to examine yeast cells at different stages during entry into stationary phase to determine the coordination or correlation of the morphological changes that are known to occur. Understanding the timing these morphological changes occur is essential for identifying metabolic pathways that may regulate entry into stationary phase.

- 21 40 Hour Glycerol-Induced Hyperhydration. P. Koenigsberg and K. Martin. Dept. of Biology, Univ. of New Mexico, Albuquerque, NM 87131-1091.
- Our previous studies (JAP 63:2262-2268, Med. Sci. Sports Exer. 22:477-483) describe glycerol-induced hyperhydration for 4 to 8 h and included advantages of GIH for subjects exercising in the heat. Studies conducted 6/90 on 7 males experienced in monitoring fluid intake and urine volume demonstrate extension of GIH to 40h. GIH decreases urine volumes ( $p < 0.05$ ) by 21.1% after 16h and by 14.6% after 40h when compared to controls. Blood samples demonstrate no change in Hb, Hct, or plasma osmolality from GIH. Similar studies conducted 6/91 to 8/91 revealed similar reductions in urine volumes following GIH.
- 22 CLONING OF HUMAN LIVER PHOSPHOFRUCTOKINASE-1 INTO DIFFERENT VECTORS FOR PROTEIN EXPRESSION IN *E. COLI*. L.G. Hays, E. Weeber, and J.L. Trujillo---PFK-1 is the main rate limiting enzyme in glycolysis. Expression of human liver PFK-1 in *E. coli* will allow structure/function studies by site-directed mutagenesis. The cDNA coding region has been cloned into Bluescript with Hind III and Eco RI sites. The pIN and pET vectors will be used for expression in *E. coli*. The pIN vector lipoprotein promoter is one of the most powerful found in *E. coli*. It can be used with or without a signal sequence. The pET vector contains a T-7 phage promoter and does not allow unwanted protein to be produced which often times compromises the host. The final vector to be used is the Baculovirus, which relies on recombination of the transferring vector and subsequent infection of insect cells. The polyhedrin promoter allows for maximum protein production. Expression with these vectors will be quantified to determine efficiency.
- 23 METABOLISM OF IRON BY *RHIZOBIUM MELILOTI*, A SYMBIOTIC BACTERIUM. Craig V. Vester and Larry L. Barton.
- Several Tn5 derived mutants of *Rhizobium meliloti* were examined for physiological activities which would reflect the capacity of these strains for efficient iron metabolism. When the various strains were grown under different levels of iron and examined for ferric reductase, the enzyme was determined to be constitutively present in all strains. The ferric reductase of *R. meliloti* was examined and it was determined that the stimulation of the reductase occurred in the presence of FMN or  $MgCl_2$  and  $Zn^{2+}$  was an inhibitor. The apparent  $K_{max}$  for ferric citrate and NADH was 178 and 139 nmoles/min/mg protein, respectively. The apparent  $K_M$  for Fe(III) was determined to be 48  $\mu M$  while for NADH the apparent  $K_M$  was 50  $\mu M$ .

# **EFFECTS OF TGF-beta ON CELL PROLIFERATION AND PROTEOGLYCAN SYNTHESIS OF BOVINE TENDON FIBROBLASTS IN CULTURE.** Bernice Galloway and Kathryn G. Vogel

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Cell cultures were initiated from the fibrocartilaginous region of bovine tendon and maintained in medium containing 1% or 10% Fetal Bovine Serum (FBS), plus or minus Transforming Growth Factor-beta (1 ng/ml or 5 ng/ml). Proteoglycan synthesis was determined by incorporation of  $^{35}\text{S}$ -sulfate for 24-hours. The amount and type of proteoglycan was measured by ion-exchange chromatography, sieve chromatography, SDS/PAGE and fluorography. When TGF-beta was added to the cultures in 1% serum, proliferation was stimulated. Proteoglycan synthesis increased 2-3 fold in cultures maintained in 10% FBS over those in 1% FBS. Incorporation of  $^{35}\text{S}$ -sulfate into proteoglycan by cultures in either 1% or 10% serum further increased with the addition of TGF-beta. For both proliferation and proteoglycan synthesis, TGF-beta at 1 ng/ml appears to compensate for the low concentration of serum. Of the two small proteoglycans assessed by SDS/PAGE and fluorography, synthesis of biglycan was increased more than synthesis of decorin. (Supported by NIH, GM08139 and AR36110)

# **GENOMIC VARIABILITY AND WEATHER INFLUENCE IN ROTAVIRAL INFECTION: A CASE OF STUDY IN LA PAZ - BOLIVIA.** Jacqueline Miralles and Volga Iniguez

Rotavirus is one of the most important agents of acute enteritis in infants and young children. Employing techniques of polyacrylamide gel electrophoresis of viral RNA segments, we studied the genetic variability of the rotaviral genome and correlated it to the influence of weather in rotaviral infection. During the period of the study (1988-1989) we detected 38.2% rotavirus positive cases, with a striking seasonal variation (71% of all cases) in winter. The infection frequency is highest in cold and dry months and appeared to be related to temperature and relative humidity but not to precipitation.

During the winter of 1989, seven electropherotypes were detected: one short strain, three coinfection strains and three large strains. The incidence of the large strain was the highest (61.2% of cases). Although the intratype variation was elevated in the coinfection strain.

# **EFFECTS OF VARIABLE MOISTURE AVAILABILITY ON SEED GERMINATION IN THREE POPULATIONS OF LARREA TRIDENTATA.** Kathleen McGee and Diane Marshall.

The northward expansion of creosote bush (Larrea tridentata) has been of general concern, and precipitation could be a possible factor contributing to this movement. To evaluate this possibility, seeds from three populations (Jornada, Sevilleta, and Isleta) were planted in five different watering treatments. Subsequent germination was significantly different, both among populations and among treatments. Seed flats receiving intermediate moisture fared best, while flats receiving the highest amounts of moisture fared worst. The Isleta seeds had the highest germination overall, suggesting that germination ability is not reduced at the margin of the range. However, since these seeds were collected approximately two months later than those of the other populations, a subsequent experiment was performed to see if seed age influenced germination. Fresh Jornada seeds were compared to seeds collected six months earlier and were found to have a significantly higher percentage of germination. This suggests that germination differences among populations may have been solely due to seed age and requires further study.

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# DEVELOPMENTAL ASYMMETRY IN TWO POPULATIONS OF THE MUSTARD *BRASSICA CAMPESTRIS*. Melanie Marshall and Ann S. Evans.

Asymmetry of morphology within an individual may be an indicator of genetic or environmental stress since it provides a reasonable measure of developmental stability. This concept has been well documented in animal research, but little is known about asymmetry in plants, particularly in relation to growth and reproduction.

We designed an experiment to measure the relationship of asymmetry (in cotyledons and flower petals) to disease susceptibility and flower production in two populations of the mustard *Brassica campestris*. For both a wild and a cultivated population, 4 replicates of each of 39 families were grown, for a total of 312 plants.

Preliminary results indicated significant differences in cotyledon asymmetry between the two populations. In addition, cotyledon asymmetry was negatively correlated with cotyledon size. This suggests that the degree of asymmetry was indicative of growth early in development. Current analyses are focusing on whether this pattern holds later in development (for petal dimensions) and whether asymmetry is correlated with disease susceptibility and flower production.

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# EFFECTS OF PLANTS ON THE ABUNDANCE AND DISTRIBUTION OF A DESERT STICK INSECT. Katelijne C. Flies.

I am studying the influences of plant distribution, diversity, density, and architecture on abundance and distribution of large, apterous, phytophagous insects. This work is based on the Resource Concentration Hypothesis of Root (1973) which states that specialized herbivorous insects reach higher numbers in monocultures than in polycultures. This hypothesis has only been tested in man-made environments with cultivated crops and non-native insect pests. This study, however, uses a natural ecosystem with its native plants and insects. A local walking stick, *Diaperomera veliei* spends most of its time on the leguminous shrub, *Dalea scoparia*, and the tall grass *Sporobolus giganteus*. Does *D. veliei* prefer either *Dalea* or *Sporobolus*? Does the distribution, and relative density and surface area of *Dalea* and *Sporobolus* affect the distribution and abundance of *D. veliei*?

Thirty plots (10 m X 10 m) were set up in the sand dunes of the Sevilleta National Wildlife Refuge near Socorro, New Mexico. Following selected removals, 10 of these plots consisted of *Dalea* only, 10 more of *Sporobolus* only, and the last 10 consisted of a natural mixture of both these plant species. Walking sticks were censused in all plots during the summers of 1989 and 1990. All plants in these plots were counted and measured.

The data suggest that 1) walking sticks prefer *Dalea* to *Sporobolus*, and 2) densely vegetated plots with large plants support higher numbers of walking sticks than sparsely vegetated plots with small-canopied plants.

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# Patterns of Attack by Muricid and Naticid Gastropods on Recent and Fossil *Turritella*. Debra S. Tull and Katrin Böhning-Gaese.

The predatory behavior and success of drilling gastropod predators on the gastropod *Turritella* was examined. We analyzed prey shells from Pleistocene and contemporary storm deposits and found no evidence of change in any aspect of predatory behavior over the past 100,000 years. Both naticid and muricid predators, identified by the shape of their respective boreholes, preferred *T. leucostoma* over *T. gonostoma*. Naticids preferentially drilled prey in the 4 to 7 cm size class. Prey over 10 cm in length were relatively safe from all drilling predators. This suggests that drilling, gastropod predators exhibit an optimal prey selection behavior for both prey species and size. Predator size (borehole diameter) in naticids was correlated with prey size in both species, but predators were proportionally larger in *T. gonostoma*. Unsuccessful attempts (scars) were started on the suture more often than completed holes for both predator families on both prey species. Naticids were more successful at drilling *Turritella* than were muricids.



ROOSTING BEHAVIOR IN Campylorhynchus WRENS: AN INTERACTION BETWEEN PHYLOGENY AND CURRENT ENVIRONMENTAL CONDITIONS. Greg Farley.

Species in this avian genus share the unusual behavior of year-round obligate cavity roosting. I investigated this phenomenon in 3 congeneric wrens to assess how a trait may vary within a lineage and across environments. Energetic savings were measured using the difference between ambient and within-roost temperatures, and varied both within and across species. Measurements from populations of each species taken at a similar latitude in central Mexico are significantly different, as are populations from a single species measured near the northern and southern range boundaries. The interspecific pattern appears to be the result of differences in social organization, whereas the intraspecific difference may be due to variation in thermal physiology and/or nest-building behavior.

SPIDER RECOLONIZATION OF RECLAIMED MINES IN WESTERN WYOMING: FAUNAL COMMUNITY STRUCTURE AND SUCCESSION. Sandra L. Brantley, M.R. Mesch, J.A. MacMahon and R.R. Parmenter.

Ground-dwelling spider faunas were assessed in seven revegetated coal mines and an undisturbed sagebrush-steppe site using pitfall traps. Sites varied in age and represented typical successional stages: bare ground, forb-dominated vegetation, grass-dominated vegetation and undisturbed.

In total, 76 spider species (17 families) were collected. Relative dominance differed among sites. A cluster analysis revealed four distinct spider assemblages that were associated with the four successional stages listed above.

Positive correlations existed between dictynid abundance and grass cover, and between thomisid abundance and forb cover. Measurement of spider communities may provide a useful mechanism for evaluating reclamation success.

EVOLUTIONARY CONSEQUENCES OF MODES OF PERIPHERAL ISOLATE FORMATION UNDER ALTERNATIVE MODES OF SPECIATION. Jennifer K. Frey

Peripheral isolates are small, isolated populations around the periphery of a large, central portion of a species' range. Peripheral isolates may form through long-distance dispersal across inhospitable habitat, or through a general range retraction which isolates populations to patches of suitable habitat. Two modes of speciation involve peripheral isolates: the peripheral isolates model and the centrifugal speciation model. Alternative modes of peripheral isolate formation result in different predicted phylogenetic patterns under each of the alternative modes of speciation. The centrifugal speciation model is a more common mode of speciation than the peripheral isolates model.

LARVAL COMMUNITY STRUCTURE OF TEMPORARY POND BREEDING  
FROGS FROM TROPICAL DECIDUOUS AND ARROYO FORESTS  
IN WESTERN MEXICO

Paulette L. Ford and Norman J. Scott Jr.

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During the summer of 1991, tadpoles of temporary-pond breeding frogs were collected from tropical deciduous and arroyo forests in western Mexico. The study was designed to gain a better understanding of the habitat structure and community ecology of the frogs. The oral structures of the tadpoles and how they relate to the within and between pond distribution of the tadpole species were also studied.

INTRA- AND INTERSPECIFIC GENETIC VARIABILITY IN CTENOMYS  
(RODENTIA, CTENOMYIDAE). Eduardo Palma and Milton Gallardo.

Electrophoretic variation in proteins encoded by 23 loci was analyzed in nine populations of Ctenomys along Chilean Andes. Mean polymorphism and heterozygosity were 24.6% and 2.65%, respectively. Moderate levels of interpopulational genetic differentiation were found ( $S = 0.86$ ,  $D = 0.103$ ). Genetic distances were calibrated with the fossil record to estimate dates of divergence of taxa.  $F_{ST}$  indicate variable degrees of demic structuration, magnified by the ecological and physical discontinuity of the Andes. The amount of molecular differentiation is unrelated to speciation and depends on degree of isolation between populations, in spite of sporadic gene flow.

Speciation in highland Ctenomys was triggered by historical events stemming from the orogenesis of the Andes, and from cycles of Pleistocene glaciations resulting in floral replacements and extinctions.

A COMPARISON OF MAMMALIAN ASSEMBLAGES FROM ECOREGIONS OF BOLIVIA.  
Jorge A. Salazar and Sydney Anderson, and Terry Yates

Until recently Bolivia was one of the poorest studied countries regarding its mammalian faunal characteristics. Recently both field studies and revisions of some groups of mammals have yielded an increasing knowledge of the mammals of Bolivia. It now appears to be one of the richest countries regarding mammalian composition in the Neotropics with 283 species of mammals, including 100 species of bats (of 182 in all South America) and 183 of other mammals (of 627 in all South America).

Based on a simplified map of the ecoregions (distinct ecological and geomorphological geographic units) of Bolivia by Heinz Ellenberg, we plotted the presence/absence of Bolivian mammals for each ecoregion and used similarity indices (simple matching coefficient) to construct similarity matrices for ecoregion. It is concluded that different groups of mammals contribute differentially to each ecoregion, depending upon their habits and ecological preferences.

EFFECT OF INDIVIDUALS CONSTRAINTS ON POPULATIONS  
COMMUNITIES AND BIOTAS. *Pablo A. Marquet and Mark L. Taper.*  
A synthetic approach relating basic processes at the  
individual level to patterns arising at the level of  
populations, communities, and biotas is presented. It is  
shown that physiological constraints on the energy  
acquisition of individuals and their use of space: 1) set  
an upper limit to the density of local species populations,  
2) are translated into the general pattern of maximum  
population density scaling observed within communities, and  
3) affect the extinction and origination of the largest and  
smallest species within biotas.

There are currently 90 graduate students and 537 undergraduate Biology majors in the Department of Biology. B.S., B.A., M.S. and Ph.D. degrees are offered in the areas of Molecular/Cellular Biology, Zoology, Botany, Evolution/Ecology, Microbiology, and Physiology.

With 36 full-time faculty members and nearly 90 adjunct professors, the Department of Biology includes a diverse range of experience and knowledge.

Undergraduate research opportunities in the department are supported by the National Science Foundation and many other programs. Any student who would like to participate in an undergraduate research project is urged to do well in lower-division course work and then to speak directly with a professor working in an area of interest. If space is unavailable in that project at the moment, the student will be referred to someone else.

Students considering study toward an advanced degree should obtain information about required preparation and tests as soon as possible. Graduate school applications are due January 31 for admission the following Fall.

Further information about all programs in the department can be obtained from the departmental office:

DEPARTMENT OF BIOLOGY  
THE UNIVERSITY OF NEW MEXICO  
ALBUQUERQUE, NM 87131-1091  
505/277-3411

# **APPENDIX B**

***LETTER TO  
PRESIDENT RICHARD PECK  
ANNOUNCING THE AWARD FROM THE  
HOWARD HUGHES MEDICAL INSTITUTE***



Howard Hughes Medical Institute

Purnell W. Choppin, M.D.  
President

6701 Rockledge Drive  
Bethesda, Maryland 20817  
(301) 571-0305

May 7, 1992

Dr. Richard E. Peck  
President  
University of New Mexico  
Scholes Hall, Room 160  
Albuquerque, New Mexico 87131-0001

Dear Dr. Peck:

In response to our invitation last fall, the University of New Mexico submitted a grant proposal to the Undergraduate Biological Sciences Education Program of the Howard Hughes Medical Institute. I am pleased to inform you that the Institute has approved a grant to the University of New Mexico in the amount of \$1,000,000.

This five-year grant is to support a program to strengthen undergraduate education in the sciences at your institution. Grant payments will be made in June 1992 and 1993. With this round of grant awards, the Institute, to date, has committed a total of approximately \$176 million for undergraduate science education at 181 public and private research and doctorate-granting universities, comprehensive institutions, and liberal arts colleges.

Because of the large number of excellent proposals received in this round of competition and the Institute's desire to have a broad impact on undergraduate science education, it was necessary to make difficult choices among the proposals, the components of proposals to be funded, and the level of support. To evaluate the proposals submitted, the Institute convened an external panel of distinguished scientists and educators from institutions not participating in this year's competition. An internal Institute committee then reviewed the panel's evaluations and, in light of the Institute's objectives and requirements, made recommendations to our Trustees who authorized funding.

As part of the evaluation of proposals, the external review panel and internal committee recommended programmatic and budgetary adjustments for most of the programs approved for funding. Proposed budgets were analyzed in terms of allocations to categories designated in your proposal. These included student development and broadening access for minorities and women, faculty development, curriculum and laboratory development, and precollege and outreach programs.

Dr. Richard E. Peck  
May 7, 1992  
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Enclosed in this mailing you will also find from Dr. Joseph Perpich, Vice President for Grants and Special Programs, a terms and conditions document with appendices relating to the recommended budget of the grant award. These documents must be completed, signed, and returned to Dr. Perpich by Monday, June 8, 1992 so that the award payment can be made. Please contact Dr. Perpich (301-571-0335) or Stephen Barkanic, Program Officer (301-571-0324), with any questions concerning these documents.

The Institute plans to issue a press announcement of the 1992 undergraduate awards, to be released the week of May 25. We request that you defer any public disclosure of the awards until after the press announcement. The Institute will coordinate the press announcement with the public relations office at your institution.

The programs proposed by the universities in this round of competition reflect the vitality of undergraduate science education today. Through reports and meetings of our undergraduate program directors, we are beginning to see the dividends of the Institute's singular investment in undergraduate science education. We will follow with great interest your progress in addressing the important objectives of this initiative, especially the goal of attracting and retaining capable students in careers in research and science education.

Yours sincerely,

  
Purnell W. Choppin

cc: Joseph G. Perpich, M.D., J.D.

Enclosures

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# **APPENDIX C**

***BIOLOGY FACULTY,  
SCHOLARLY AND PROFESSIONAL  
ACTIVITIES, CY 1991***

UNM DEPARTMENT OF BIOLOGY

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FACULTY SCHOLARLY and PROFESSIONAL ACTIVITIES

for the CY 1991

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I. SCHOLARLY ACTIVITIES

A. BOOKS AUTHORED.

None.

B. BOOKS EDITED.

**BROWN**

Real, L.A. and J.H. Brown, eds. 1991. Foundations of Ecology: Classic Papers with Commentaries. Chicago: University of Chicago Press.

**FINDLEY**

Findley, J.S. and T.L. Yates, eds. 1991. The Biology of the Soricidae. Museum of South-western Biology Special Publication 1:1-91 + iv.

C. CHAPTERS IN BOOKS OR MAJOR SYNTHETIC REVIEWS.

**BACA**

Baca, O.G. 1991. Pathogenesis of rickettsial infections: Emphasis on Q fever. Eur. J. of Epidemiol. 7:222-228.

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Baca, O., M. Roman, W. Samsonoff, H. Crissman and K. Hechemy. 1991. Analysis of *Coxiella burnetii* isolates in cell culture. Pp. 221-231 in J. Kazar and D. Raoult, eds., Rickettsiae and Rickettsial Diseases. Bratislava: VEDA Publishing House of the Slovak Academy of Sciences.

Frazier, M., R. Heinzen, L. Mallavia, and O. Baca. 1991. DNA probes for detecting *Coxiella burnetii* strains. Pp. 623-631 in J. Kazar and D. Raoult, eds., Rickettsiae and Rickettsial Diseases. Bratislava: VEDA Publishing House of the Slovak Academy of Sciences.



**BROWN**

- Brown, J.H. 1991. New approaches and methods in ecology. Pp. 445-455 in L.A. Real and J.H. Brown, eds., Foundations of Ecology: Classic Papers with Commentaries. Chicago: University of Chicago Press.

**CRAWFORD**

- Crawford, C.S. 1991. Macroarthropod detritivores. Pp. 89-112 in G.A. Polis, ed., Ecology of Desert Communities. Tucson, AZ: University of Arizona Press.

**DAHM**

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**LIGON**

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**MARSHALL**

- Marshall, D.L. and Folsom, M.W. 1991. Mate choice in plants: An anatomical to population perspective. Ann. Rev. Ecol. Syst. 22:37-63.

**MILNE**

- Milne, B.T. 1991. Lessons from applying fractal models to landscape patterns. Pp. 199-235 in M.G. Turner and R.H. Gardner, eds., Quantitative Methods in Landscape Ecology. NY: Springer-Verlag.
- Milne, B.T. 1991. Heterogeneity as a multi-scale phenomenon in landscapes. Pp. 69-84 in J. Kolasa and S.T.A. Pickett, eds., Ecological Heterogeneity. NY: Springer-Verlag.
- O'Neill, R.V., R.H. Gardner, B.T. Milne, M.G. Turner and B. Jackson. 1991. Heterogeneity and spatial hierarchies. Pp. 85-96 in J. Kolasa and S.T.A. Pickett, eds., Ecological Heterogeneity. NY: Springer-Verlag.

**STRICKER**

- Confocal microscopy of living eggs and embryos, Stephen A. Stricker, In J.K. Stevens, L.R. Mills, and J.E. Trogadis, eds., Three Dimensional Confocal Microscopy. San Diego: Academic Press (invited review, in press).

Brachiopoda, John A. Long, and Stephen A. Stricker. 1991. Pp. 47-84 in A.C. Giese, J.S. Pearse, and V.B. Pearse, eds., Reproduction of Marine Invertebrates, Vol. 6: Echinoderms and Lophophorates. Boston, MA: Blackwell Scientific.

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#### **TRUJILLO**

Reader: MacNeill & Sander, Concepts of Biology, Chapters 11-16.

#### **D. ARTICLES IN REFEREED JOURNALS.**

##### **BACA**

Yeaman, M.R. and O.G. Baca. 1991. Mechanisms that may account for differential antibiotic susceptibilities among *Coxiella burnetii* isolates. Antimicrob. Agents Chemother. 35:948-954.

##### **BARTON**

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##### **BROWN**

Thompson, D.B., J.H. Brown, and W.D. Spencer. 1991. Indirect facilitation of granivorous birds by desert rodents and ants: Experimental evidence from foraging patterns and microhabitat use. Ecology 72:852-863.

Brown, J.H., and P.F. Nicoletto. 1991. Spatial scaling of species assemblages: Body masses of North American land mammals. American Naturalist 138:1478-1512.

Patterson, B.D., and J.H. Brown. 1991. Regionally nested patterns of species composition in granivorous rodent assemblages. Journal of Biogeography 18:395-402.

##### **CRAWFORD**

Crawford, C.S. 1991. Animal adaptations and ecological processes in desert dunefields. Journal of Arid Environments 21:245-260.

##### **DAHM**

Watwood, M.E., C.S. White and C.N. Dahm. 1991. Methodological modifications for accurate and efficient determination of contaminant biodegradation in unsaturated calcareous soils. Applied and Environmental Microbiology 57:717-720.

Dahm, C.N., D.L. Carr and R.L. Coleman. 1991. Anaerobic carbon cycling in stream ecosystems. Verhandlungen Internationale Vereinigung Limnologie 24:1600-1604.

**DUSZYNSKI**

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Ligon, J.D., S.H. Ligon and H.A. Ford. 1991. An experimental study of the bases of male philopatry in the cooperatively breeding superb fairy-wren, *Malurus cyaneus*. Ethology 87:134-148.

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**LOKER**

Hofkin, B.V., Stryker, G.A., Ouma, J.H., Koech, D.K. and Loker, E.S. 1991. Consumption of *Biomphalaria glabrata* egg masses and juveniles by the ampullariid snails *Pila ovata*, *Lanistes carinatus* and *Marisa cornuarietis*. Acta Tropica 49:37-44.

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#### **LOWREY**

P.W. Lucas, T.K. Lowrey, B. Pereira, V. Sarafis and W. Kuhn. 1991. The ecology of *Mezzetia leptopoda* (Hk. et Thomas) Oliv. (Annonaceae) seeds as viewed from a mechanical perspective. Functional Ecology 5:545-553.

V.T. Wong, A.M.L. Fones and T.K. Lowrey. 1991. Electroelution and purification of chloroplast DNA suitable for restriction analyses. Analytical Biochemistry 194:378-380.

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- Stricker, S.A., V.E. Centonze, S.W. Paddock and G. Schatten. 1992. Confocal microscopy of fertilization-induced calcium dynamics in sea urchin eggs. Developmental Biology 149:370-380.
- Stricker, S.A., A.M. Welford and C.A. Morris. 1992 Somatic cell-oocyte interactions during oogenesis in the acoel flatworm *Childia groenlandica*. Int. J. of Invertebrate Reproduction and Development 21:57-77.

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- Thornhill, R. and K.P. Sauer. 1991. The notal organ of the scorpionfly (*Panorpa vulgaris*): An adaptation to coerce mating duration. Behavioral Ecology 2:156-164.
- Thornhill, N.W. and R. Thornhill. 1991. Evolutionary analysis of psychological pain following rape IV: The effect of the nature of the sex act. Journal of Comparative Psychology 105:243-252.
- Thornhill, R. 1991. Teleonomy and the study of sexual selection. Acta XX Congressus Internationalis Ornithologici 3:1361-1366.

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- Toolson, E.C. and E.K. Toolson. 1991. Evaporative cooling and endothermy in the 13-year periodical cicada, *Magicicada tredecem* (Homoptera: Cicadidae). J. Comp. Physiol. B. 161:109-115.
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Genetics, Russell, 3rd ed.

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Biology of Cell Organelles, Jones and Bartlett Publishers, 837 pp.

Molecular Cell Biology, 2nd ed., Darnell, Lodish and Baltimore, W.H. Freeman and Co. (Publishers), 1,105 pp.

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T.K. Lowrey. 1991. Review of: Conservation Atlas of Southeast Asia and the Pacific. Plant Science Bulletin 37(3):3-4.

**F. ARTICLES IN NON-SCHOLARLY JOURNALS.****FINDLEY**

A number of popular articles on local natural history in the Corrales Comment.

**THORNHILL**

Austad, S. and R. Thornhill. 1991. The bug's for you. Natural History 12:44-49.

**G. QUASI-PUBLIC REPORTS FOR INTERNAL/EXTERNAL CIRCULATION.****ALTENBACH**

Reports on bat use and occupancy of abandoned mines in New Mexico, submitted to Homer Milford, Environmental Coordinator, Minerals and Natural Resources, Abandoned Mine Lands Bureau, Department of Energy.

**BARTON**

"Application of Biotechnology in Management of Industrial Wastes Containing Toxic Metals," a report to DOE with circulation to regional laboratories.

**DUSZYNSKI**

Editor of Vol. 7, Department of Biology Annual Newsletter (1991) mailed to more than 2,100 alumni, friends and supporters of Biology.

Wrote and prepared camera ready copy of the Call For Papers booklet announcing the 66th Annual Meeting of the American Society of Parasitologists.

Prepared and edited the Program And Abstracts booklet for the 66th Annual Meeting of the American Society of Parasitologists, August 4-8, 1991, at the University of Wisconsin, Madison, WI.

**MILNE**

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**SNELL**

H.L. Snell, Final Report, "Follow-on Course for Park Management Personnel, Isla de la Plata, Ecuador," September 1-3, 1991, AID Agency (Developmental Associates/Andean Peach Program), Washington, D.C.

H.L. Snell and A. Landwer, Results of Preliminary Research on "Effects of Shinnery Oak Removal on the Sand Dune Lizard, *Sceloporus graciosus arenicolous* in New Mexico," technical report submitted to the N.M. Department of Game and Fish, December 1991.

**H. ABSTRACTS (REFEREED OR INVITED).****BACA**

Yeaman, M., M. Roman and O. Baca. 1991. *Coxiella burnetii*: Antibiotic susceptibility and possible resistance mechanisms. Abstract No. 9, Abstracts of the Ninth Sesqui-Annual Meeting of the American Society for Rickettsiology and Rickettsial Disease, May 1-5, 1991, Galveston, TX.

**BARTON**

Barton, L.L., F.A. Fekete, H.E. Nuttall and R. Jain. Production and partial characterization of selenium colloids. 65th Colloid and Surface Science Symposium, June 17-19, University of Oklahoma, Norman, OK.

Fekete, F.A. and L.L. Barton. Metal mimicry on a chromium-resistant *Pseudomonas* sp. influences pseudobactin synthesis. Vth International Iron Symposium, July 14-19, Utah State University, Logan, UT.

Barton, L.L., F.A. Fekete, C.R. Vester, P.R. Gill, Jr., and J.B. Neilands. Physiological characteristics of *Rhizobium meliloti* 1021 Tn5 mutants with altered rhizobactin. Vth International Iron Symposium, July 14-19, Utah State University, Logan, UT.

Huybrechts, M.M.E., F.A. Fekete and L.L. Barton. Tolerance and transformation of metals and metalloids by bacteria. Annual Meeting of American Society for Microbiology, May 5-9, Dallas, TX.

Barton, L.L., F.A. Fekete and B. Saiz. Characteristics of lead and selenium colloids produced by bacteria. Fourth International IGT Symposium on Gas, Oil and Environmental Biotechnology, December 9-11, Colorado Springs, CO.

#### **DAHM**

Crocker, M.T., M.C. Molles, Jr., and C.N. Dahm. 1991. Particulate organic matter redistribution within semi-arid, ephemeral, or intermittent stream networks. Bulletin of the North American Benthological Society 8:75-76.

Coleman, R.L. and C.N. Dahm. 1991. Stream geomorphology: Effects on benthic primary production. Bulletin of the North American Benthological Society 8:84.

Molles, M.C., Jr., C.N. Dahm and M.T. Crocker. 1991. Responses of streams in a semi-arid region to climatic variation: The Sevilleta Long-term Ecological Research site. Bulletin of the North American Benthological Society 8:99-100.

Campana, M.E. and C.N. Dahm. 1991. An approach to modeling and validating hyporheic flow dynamics in montane catchments with variable parent lithologies. Bulletin of the North American Benthological Society 8:107.

Valett, H.M., S.G. Fisher, C.N. Dahm and N.B. Grimm. 1991. Influence of the hyporheic zone on stream ecosystem dynamics. American Geophysical Union (Eos), p. 167.

Campana, M.E. and C.N. Dahm. 1991. The hyporheic zone and catchment hydrology. American Geophysical Meeting (Eos), p. 199.

#### **LOKER**

Loker, E.S., Hofkin, B.V., Mkoji, G.M., Kihara, J.H., Mungai, F.K., Mungai, B.N. and Koech, D.K. 1991. *Procambarus clarkii* in Kenya: Does it have a role to play in the control of schistosomiasis? PSTC/CDR Aquaculture Meetings, Manila, Phillipines, August 1991.

Mkoji, G.M., Hofkin, B.V., Mungai, B.N., Kihara, J.H., Mungai, F.K., Ouma, J.H., Koech, D.K. and Loker, E.S. 1991. Control of natural populations of schistosome-transmitting snails by the crayfish *Procambarus clarkii* in temporary man-made ponds in Kenya. PSTC/CDR Aquaculture Meetings, Manila, Phillipines, August 1991.



**MILNE**

- Milne, B.T. 1991. Renormalization relations for spatial models. Bull. Ecol. Soc. Amer. 72:196.

**MOLLES**

- Molles, M.C., Jr., C.N. Dahm and M.T. Crocker. 1991. Responses of streams in a semi-arid region to climatic variation: The Sevilleta Long-term Ecological Research site. Bulletin of the North American Benthological Society 8:99-100.
- Crocker, M.T., M.C. Molles, Jr., and C.N. Dahm. 1991. Particulate organic matter redistribution within semi-arid, ephemeral, or intermittent stream networks. Bulletin of the North American Benthological Society 8:75-76.

**NATVIG**

- Natvig, D.O. 1991. Superoxide dismutases and catalases in *Neurospora crassa*. Fungal Genetics Newsletter 38:14. (Abstract of invited talk, 16th Fungal Genetics Conference, Asilomar, CA, April.)

**NELSON**

- Nelson, M.A. 1991. Mating-specific genes of *Neurospora crassa*: Isolation and functional analysis. Fungal Genetics Newsletter 38:13.

**RIEDELSEL**

- Invited: M.L. Riedesel, T.P. Lyons and M.C. McNamera. Glycerol-induced Hyperhydration. NASA Conference Publ. No. 10088, Proceedings of the First Joint NASA Cardiopulmonary Workshop, S. Fortney and A.R. Hargens, eds., April, 1991.

**STRICKER**

- Stricker, S.A., Paddock, S.W., and Schatten, G. 1991. Confocal microscopy of the fertilization-induced calcium wave in sea urchins. Pp. 392-393 in G.W. Bailey and E.L. Hall, eds., Proceedings Forty-ninth Annual Meeting Electron Microscopy Society of America. San Francisco: San Francisco Press.

**VOGEL**

- T.J. Koob, K.G. Vogel and F.A. Thurmond. 1991. Compression loading *in vitro* regulates proteoglycan synthesis by fibrocartilage in tendon. Transactions of the 37th Annual Meeting, Orthopaedic Research Society 16:49.
- Vogel, K.G. 1991. Proteoglycans accumulate in a region of human tibialis posterior tendon subjected to compressive force *in vivo* and in ligaments. Transactions of the Combined Meeting of the Orthopaedic Research Societies of USA, Japan and Canada, p. 58.

**BACA**

Roman, M.J., A. Saha, R.F. Christner, J.E. Buhler, R.H. Glew and O.G. Baca. 1991. Acid phosphatase activity in *Coxiella burnetii*. Abstracts of the American Society for Microbiology, NM Branch, Los Alamos, NM, October 26, 1991.

Yeaman, M., M. Roman and O. Baca. 1991. Mechanisms that account for drug resistance in *Coxiella burnetii* strains. Abstracts of the Third BIT Symposium on Molecular and Cellular Dynamics, Santa Fe, NM, April 5, 1991.

**DAHM**

Carr, D.L., C.N. Dahm and D.B. Dail. 1991. An intersite comparison of methane cycling rates in streams from three LTER sites. Bulletin of the North American Benthological Society 8:126.

Dail, D.B., D.L. Carr and C.N. Dahm. 1991. A comparison of interstitial methane and DOC concentrations in small streams throughout North America. Bulletin of the North American Benthological Society 8:134-135.

Gosz, J.R., C.N. Dahm and R.I. Hill. 1991. Use of long-path FTIR spectrometry in conjunction with scintillometry to measure gas fluxes. Second International Symposium on Field Screening Methods for Hazardous Wastes and Toxic Chemicals, p. 70.

Carr, D., M.E. Watwood and C.N. Dahm. 1991. Microbial degradation of benzene in regional subsurface material. Fourth Annual Hazardous Waste Management Conference and Exhibition, p. 29.

Dahm, C.N., M.E. Watwood and C.S. White. 1991. Role of various electron acceptors in contaminant bioremediation in soils and groundwater. Fourth Annual Hazardous Waste Management Conference and Exhibition, p. 31.

**JOHNSON, G.**

Hudson, D.C. and G.V. Johnson. 1991. Effect of iron nutrition on nodulation and nitrogen fixation by soybean cultivars differing in efficiency of iron use. 6th International Symposium on Iron Nutrition and Interactions in Plants, Logan, UT, July 14-19, 1991.

Johnson, G.V. 1991. Nitrogen fixation studies of Russian olive (*Elaeagnus angustifolia* L.) by acetylene reduction. Plant Physiol. 96S:33.

Johnson, G.V. 1991. Diurnal fluctuations of organic acids in crassulacean acid metabolism (CAM) plants: A laboratory exercise. Plant Physiol. 96S:45.

**KODRIC-BROWN**

Kodric-Brown, A. 1991. "Phenotypically-plastic sexually-selected traits, male vigor, and female choice in pupfish," Abstracts of Animal Behavior Society. Wilmington, NC: University of North Carolina.

**LIGON**

Ligon, J.D. 1991. Female red jungle fowl do not prefer red males. American Ornithologists' Union meeting, Montreal, August 1991.

**LOWREY**

T.K. Lowrey. 1991. Chromosome and Isozyme Number in *Nepenthes*. American Journal of Botany 78(6):200-201.

**MILNE**

Milne, B.T. and S. Watson. 1991. A fractal filter for the manipulation of resource patterns. Third International Symposium on Landscape Ecology, International Association for Landscape Ecology. Ottawa, Canada.

**NATVIG**

Chary, P. and D.O. Natvig. 1991. Construction and characterization of *Neurospora crassa* mutants lacking CuZn superoxide dismutase. Fungal Genetics Newsletter 38:51. (Abstract of poster presentation at the 16th Fungal Genetics Conference, Asilomar, CA, April.)

Dvorachek, W.H., Jr., J. Baldwin and D.O. Natvig. 1991. Characterization and regulation of genes for manganese and copper-zinc superoxide dismutase in *Neurospora crassa*. Fungal Genetics Newsletter 38:51. (Abstract of poster presentation at the 16th Fungal Genetics Conference, Asilomar, CA, April.)

Davis, F.W., J.A. Cook, T.L. Yates and D.O. Natvig. 1991. Breeding structure of the chromosomally polymorphic species *Ctenomys boliviensis* (Rodentia: Ctenomyidae). Abstracts of the Annual Meeting, Southwestern Association of Naturalists, Denton, TX (presentation by F. Davis).

**MARSHALL**

Marshall, D.L. and Folsom, M.W. 1991. The potential for interference competition among pollen grains of wild radish. Amer. J. Bot. Supplement 78(6):62-63.

Folsom, M.W. and Marshall, D.L. 1991. Maternal and paternal effects on the mating process in California wild radish, *Raphanus sativus* L. Amer. J. Bot. Supplement 78(6):55-56.

**LOKER**

- Loker, E.S. and Uchikawa, R. 1991. Lectin-binding properties of the surfaces of *in vitro*-transformed *Schistosoma mansoni* and *Echinostoma paraensei* sporocysts. 24th Annual Meeting of the Southwestern Association of Parasitologists, Lake Texoma, OK, April 4-6, 1991.
- Uchikawa, R. and Loker, E.S. 1991. Phagocytosis of latex beads by heocytes of the snail *Biomphalaria glabrata*: Effects of snail strain, plasma components and exposure to trematode infection. 24th Annual Meeting of the Southwestern Association of Parasitologists, Lake Texoma, OK, April 4-6, 1991.
- Hertel, L., Monroy, F. and Loker, E.S. 1991. Biochemical and functional properties of trematode-induced polypeptides from the hemolymph of the snail *Biomphalaria glabrata*. 24th Annual Meeting of the Southwestern Association of Parasitologists, Lake Texoma, OK, April 4-6, 1991.
- Bandoni, S.M., Mulvey, M. and Loker, E.S. 1991. Phylogenetic relationships in the genus *Biomphalaria* Preston, 1910 (Gastropoda: Planorbidae). 66th Annual Meeting of the American Society of Parasitologists, Madison, WI, August 4-8, 1991.
- Uchikawa, R. and Loker, E.S. 1991. Phagocytosis of latex beads by heocytes of the snail *Biomphalaria glabrata*: Effects of snail strain, plasma components and exposure to trematode infection. 66th Annual Meeting of the American Society of Parasitologists, Madison, WI, August 4-8, 1991.
- Monroy, F., Hertel, L.A. and Loker, E.S. 1991. Carbohydrate-binding proteins from *Biomphalaria glabrata*: Effects of strain and trematode infection. 66th Annual Meeting of the American Society of Parasitologists, Madison, WI, August 4-8, 1991.
- Monroy, F. and Loker, E.S. 1991. Biochemical properties of trematode-induced carbohydrates binding proteins from the hemolymph of the snail *Biomphalaria glabrata*. 66th Annual Meeting of the American Society of Parasitologists, Madison, WI, August 4-8, 1991.
- Hokfin, B.V., Koech, D.K. and Loker, E.S. 1991. Interactions between the North American crayfish *Procambarus clarkii* and schistosome-transmitting snails in Kenya. 66th Annual Meeting of the American Society of Parasitologists, Madison, WI, August 4-8, 1991.

**NELSON**

- Nelson, M.A. 1991. "Sexual development in *Neurospora crassa*." Annual Meeting of the New Mexico Branch of the American Society for Microbiology, Los Alamos National Laboratories.

**RIEDELSEL**

Koenigsberg P., T.P. Lyons and M.L. Riedesel. "Forty-hour glycerol-induced hyperhydration," FASBEB 5:A768, Research poster presented at Federation of American Society of Experimental Biology meeting, April 21-25, 1991.

**SNELL**

Snell, H.L., H.M. Snell and M. Altomirano, "Interspecific variation of the role of natural selection in the evolution of sexual size-dimorphism: Examples from Galápagos Lava Lizards," Annual Meeting of the Southwestern Association of Biologists, Prescott, AZ, November 1991.

Stone, P.A., H.L. Snell and H.M. Snell, "Increased wariness in Galápagos lava lizards (*Tropidurus* spp.) on islands inhabited by cats," Annual Meeting of the Southwestern Association of Biologists, Prescott, AZ, November 1991.

Landwer, A. and H.L. Snell, "The cost of reproduction in the lizard *Urosaurus ornatus*: Preliminary results," Annual Meeting of the Southwestern Association of Biologists, Prescott, AZ, November 1991.

Pierce, L.A. and H.L. Snell, "Nest defense by female leopard geckos, *Eublepharis maculata*," Annual Meeting of the Southwestern Association of Biologists, Prescott, AZ, November 1991.

Jennings, R.D. and H.L. Snell, "Adaptive plasticity in tadpoles of the Chiricahua leopard frog," Joint Annual Meeting of the Society for the Study of Reptiles and Amphibians and the Herpetologists' League, Pennsylvania State University, August 1991.

Sugg, D.W., L.A. Fitzgerald and H.L. Snell, "The role of energy allocation in determining sexual dimorphism in size of the greater earless lizard (*Cophosaurus texanus*)," Annual Meeting of the Southwestern Association of Biologists, Prescott, AZ, November 1991.

**STRICKER**

Stricker, S.A., Centonze, V.E., and Schatten, G. 1991. Confocal microscopy of fertilization-induced calcium dynamics in sea urchins. J. Cell Biol. 115, 321a.

**VOGEL**

Bernice Galloway and Kathryn G. Vogel. "Effects of TGF-beta on cell proliferation and proteoglycan synthesis of bovine tendon fibroblasts in culture." NIGMS Minority Programs Symposium, November, 1991, Washington, D.C.

Ronica Martinez and Kathryn G. Vogel. "Light level morphology and autoradiography of fibrocartilaginous region of bovine tendon." NIGMS Minority Programs Symposium, November, 1991, Washington, D.C.

K.G. Vogel and D. J. Hernandez. 1991. Proteoglycan synthesis by the fibrocartilaginous region of tendon in culture is sensitive to serum and TGF-beta. J. Cell Biol. 115:127a.

#### **WERNER-WASHBURNE**

Werner-Washburne, M., D. Brown and E. Braun. Bcy1, the regulatory subunit of cAMP-dependent protein kinase in yeast, is differentially modified in response to the physiological status of the cell. Yeast Cell Biology meetings, August, Cold Spring Harbor Laboratory, CSH, New York.

Werner-Washburne, M., D. Brown, C. Padilla and E. Braun. Bcy1, the regulatory subunit of cAMP-dependent protein kinase, is differentially modified during the yeast life cycle. Yeast Genetics and Molecular Biology meeting, May, San Francisco.

Caprioglio, D.R., R. Maldonado and M. Werner-Washburne. Isolation and characterization of SPR5, a gene involved in regulation of a stationary phase-specific promoter. Yeast Genetics and Molecular Biology meeting, May, San Francisco.

Doherty P.O. and M. Werner-Washburne. Regulation of BCY1 expression by cAMP and carbon source. Yeast Genetics and Molecular Biology meeting, May, San Francisco.

Werner-Washburne, M., D. Brown and C. Padilla. \* The Regulatory Subunit of cAMP-dependent protein kinase is differentially modified during the yeast life cycle. Society for Native Americans and Chicanos in the Sciences meeting, January, UC-Irvine.

#### **J. OTHER.**

##### **BACA**

Australian Patent No. 611630, issued November 5, 1991, "Detection and Differentiation of *Coxiella burnetii* in Biological Fluids (with DNA probes)." With M. Frazier, J. Samuel and L. Mallavia.

##### **CRAWFORD**

Reviewed grant proposals for: The Charles A. Lindberg Fund (1), NSF (1) and the Foundation for Research Development (South Africa) (1).

##### **DUSZYNSKI**

Travelled to the University of Pennsylvania, Philadelphia, PA, to site visit their convention facilities for the 1992 Annual Meeting of the American Society of Parasitologists, to be held there in August, 1992.

Research Affiliate, The Harold W. Manter Laboratory of Parasitology, University of Nebraska State Museum, Lincoln, NE.

**MILNE**

National Science Foundation proposals (5)  
Environmental Protection Agency center proposals (13)

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**STRICKER**

Reviewed chapter in book: Invertebrate Zoology.  
Reviewed two grant proposals for N.S.F., Division of Developmental Biology.

**II. PROFESSIONAL PUBLIC ACTIVITIES**

**A. COLLOQUIUM PRESENTATIONS, UNM AND ELSEWHERE.**

**DAHM**

Oral presentation for the USDA Forest Service Centennial Celebration, "Regional effects of global warming," Las Cruces, New Mexico, November 9, 1991.

Oral presentation at the Idaho Nuclear Engineering Laboratory, "Microbial co-metabolism in bioremediation," Idaho Falls, Idaho, November 21, 1991.

**THORNHILL**

Colloquia, Lab of Entomology, Nagoya University, Japan, May and June 1991.  
Colloquium, Lab of Entomology, Shinshu University, Japan, July 1991.  
Colloquium, Lab of Ethology, Kyoto University, Japan, August 1991.  
Colloquium, Department of Zoology, University of Oklahoma, February 1991.

**B. SEMINAR PRESENTATIONS, UNM AND ELSEWHERE.**

**BACA**

"Morbidity/mortality in the Tome area, 1793-1846," Southwest Hispanic Research Institute, UNM, November 13, 1991.

**BARTON**

"Biotransformation of metals," presented to Jacobs Engineering Co., Albuquerque, December 6.

"Bioremediation of metals," a Tel-Video seminar program for the state of New Mexico, June 15.

A 4 1/2-hour Tel-Video broadcast to 80 receiving sites throughout the United States,  
"Bioremediation of toxic wastes," Waste Management Education Consortium, DOE.

**BROWN**

"Experimental community ecology: The desert granivore system," Oregon State University, Corvallis, OR, February 4, 1991.

"Macroecology: The assembly of continental biotas," U.S. Environmental Protection Agency, Corvallis, OR, February 5, 1991.

"Experimental community ecology: The desert granivore system," University of Nebraska, Lincoln, NE, April 18, 1991.

"Experimental community ecology: the desert granivore system," Boston University, Boston, MA, April 22, 1991.

"Experimental community ecology: The desert granivore system," University of New South Wales, Sydney, Australia, August 5, 1991.

"Experimental community ecology: The desert granivore system," C.S.I.R.O. Centre for Arid Zone Research, Alice Springs, Australia, September 27, 1991.

"Macroecology: The assembly of continental biotas," CSIRO, Division of Wildlife and Ecology, Darwin, Australia, December 3, 1991.

"Macroecology: The assembly of continental biotas," CSIRO, Centre for Arid Zone Research, Alice Springs, Australia, December 20, 1991.

**DAHLM**

"Ocean/atmosphere and land/atmosphere interactions affecting Northern Mexico and the Southwestern U.S.," Centro de Investigacion Cientifica y Educacion Superior de Ensenada, Ensenada, Mexico, April 22, 1991.

"Remediation of heap leach mining contamination," Idaho State University, November 22, 1991.

"Watershed research on the Sevilleta LTER project," Sevilleta National Wildlife Refuge, June 18, 1991.

**EVANS**

Wednesday Noon Seminar, "The genetic basis of species differences in the composite genus *Townsendia*," UNM Department of Biology, April, 1991 (in collaboration with Dr. T. Lowrey).

Wednesday Noon Seminar, "Evolutionary physiological ecology: The state of the art," UNM Department of Biology, October, 1991.



**JOHNSON, G.**

Seminar for summer research students at Sevilleta LTER, "Nitrogen cycling in arid ecosystems," Sevilleta Field Station, July 24, 1991.

Talk, new graduate student seminar, "Nutritional Physiology of Plants," October 25, 1991.

**KODRIC-BROWN**

"Function of male breeding coloration in pupfish," University of New South Wales, Sydney, Australia, August 8, 1991.

"Sexual selection: Mechanisms and Processes," Macquarie University, Sydney, Australia, August 15, 1991.

"Fish communities at Dalhousie Springs, South Australia—Implications for conservation," CSIRO at Alice Springs, Australia, November 22, 1991, and CSIRO at Darwin, Australia, December 5, 1991.

**LOWREY**

Ecology Brownbag Seminar, "Genetic studies in *Townsendia* (Asteraceae)," Dept. of Biology, UNM, May 1991.

Invited Seminar, "Systematics and evolution of *Tetramolopium* (Asteraceae)," Dept. of Botany, University of Wyoming, March 1991.

Invited Seminary, "Biology and systematics of *Nepenthes* in Southeast Asia, Dept. of Botany, University of Kansas, October 1991.

**MARSHALL**

Seminar, University of California at Santa Cruz, May 1991.

Seminar, University of Miami, April, 1991.

Seminar, New Mexico State University, October, 1991.

**MILNE**

Keynote Lecturer, "Seeing nature with new eyes: Lessons from studies of fractals," University of Virginia, Charlottesville, VA, 1991.

"Lessons from Fractal Studies of Landscapes," Texas A&M University, College Station, TX, 1991.

## **SNELL**

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Seminar, "Dimorfismo sexual y la ecología de las lagartijas de lava en las islas Galápagos," Charles Darwin Research Station, Isla Santa Cruz, Galápagos, Ecuador, August 1991.

Seminar, Noon Seminar Series, "Sexual and natural selection in the evolution of sexual dimorphism in Galápagos lava lizards," Savannah River Ecology Laboratory, Aiken, SC, September 1991.

Seminar, Evening Seminar Series, "Biological diversity of the Galápagos Islands," Savannah River Ecology Laboratory, Aiken, SC, September 1991.

Seminar, "Natural selection and body-size of Galápagos land iguanas: Trade-offs of survival and reproduction, Savannah River Ecology Laboratory, Aiken, SC, September 1991.

Seminar, Biology Department Seminar Series, "Sexual and natural selection in the evolution of sexual dimorphism in Galápagos lava lizards," Biology Department, University of California—Santa Cruz, Santa Cruz, CA, November 1991.

Seminar, Biology Department Seminar Series, "Reptiles of the Galápagos," Biology Department, Santa Clara University, San Jose, CA, November 1991.

Seminar, New Graduate Student Seminar, "Herpetology at UNM," Department of Biology, UNM, December 1991.

## **STRICKER**

"Imaging fertilization-induced calcium dynamics in sea urchins," Dept. of Biology, UNM, Nov., 1991.

## **TOOLSON**

"Quantitative genetics of body size and cuticle permeability in *Drosophila buzzatii*," Department of Animal Science, University of New England, Armidale, N.S.W.

"Thermobiology of Australian cicadas," Department of Biology, Australian National University, Canberra.

"Biochemistry and evolution of thermoregulatory function in cicadas," Biology Department, Northern Arizona University.

"Biochemistry and evolution of thermoregulatory function in cicadas," Entomology Department, University of California, Riverside.

**VOGEL**

Weizmann Institute, Isotope Department, Rehovot, Israel, January, 1991.

Israel Institute of Technology, Dept. of Biomedical Engineering, Haifa, Israel, January, 1991.

Department of Anatomy, Cell Biology Group, UNM, October, 1991.

Department of Biology, Cell/Molecular Seminar, UNM, November, 1991.

**WERNER-WASHBURNE**

"Regulation of entry into stationary phase in yeast," Lovelace Research Institute, Albuquerque, June, 1991.

"Regulation of Entry into Stationary Phase in *Saccharomyces cerevisiae*," Cell Biology Department, UNM Medical School, February, 1991.

"Undergraduate Research and Teaching," Lafayette College, Pennsylvania, April, 1991.

**C. INVITED AND PLENARY TALKS AT PROFESSIONAL MEETINGS, WORKSHOPS, ETC.****ALTENBACH**

"The bats of New Mexico," presented for the Continuing Education program, N.M. Museum of Natural History, April 16, 1991.

**BROWN**

Invited paper, Presidential Address, American Society of Naturalists, "Homage to Joseph Grinnell, or Why *are* there so many species?", Hilo, HI, August 1, 1991.

**DAHM**

"Use of long-path FTIR spectrometry in conjunction with scintillometry to measure gas fluxes," Second International Symposium on Field Screening Methods for Hazardous Wastes and Toxic Chemicals, Las Vegas, Nevada, February 14, 1991.

**LOKER**

Loker, E.S., Hofkin, B.V., Mkoji, G.M., Kihara, J.H., Mungai, F.K., Mungai, B.N. and Koech, D.K. 1991. "*Procambarus clarkii* in Kenya: Does it have a role to play in the control of schistosomiasis?", PSTC/CDR Aquaculture Meetings, Manila, Phillipines, August 1991.

Mkoji, G.M., Hofkin, B.V., Mungai, B.N., Kihara, J.H., Mungai, F.K., Ouma, J.H., Koech, D.K. and Loker, E.S. 1991. "Control of natural populations of schistosome-

transmitting snails by the crayfish *Procambarus clarkii* in temporary man-made ponds in Kenya," PSTC/CDR Aquaculture Meetings, Manila, Phillipines, August 1991. 235

#### **LOWREY**

Invited talk, Workshop on LTER Research Methods, Annual Meeting of the Ecological Society of America, "Baseline data and methods for herbarium collections," San Antonio, TX, August 1991.

#### **MILNE**

Invited symposium speaker, Ecological Society of America, "Renormalization relations for spatial models," San Antonio, TX, August 1991.

#### **MOLLES**

Invited talk, Annual Meeting of the North American Benthological Society, M.C. Molles, Jr., M.T. Crocker and C.N. Dahm, "Responses of streams in a semi-arid region to climatic variation: The Sevilleta Long Term Ecological Research Site," Santa Fe, NM, May 23, 1991.

#### **NATVIG**

Invited talk, "Superoxide dismutases and catalases in *Neurospora crassa*," 16th Fungal Genetics Conference, Asilomar, CA, April. (Natvig, D.O. 1991. Fungal Genetics Newsletter 38:14.)

#### **MARSHALL**

Invited symposium presentation, "Mechanisms of non-random mating in wild radish," presented at a meeting on Ecology and Evolution of Plant Reproduction: New Approaches, Athens, Georgia, April, 12-14, 1991.

#### **NELSON**

Talk at professional meeting, "Mating-specific genes of *Neurospora crassa*: Isolation and functional analysis," 16th Fungal Genetics Conference, Asilomar, California, March 31-April 4, 1991.

#### **RIEDELSEL**

Invited, M.L. Riedesel, T.P. Lyons and M.C. McNamera, "Glycerol-induced Hyperhydration," NASA Conference Publ. No. 10088, Proceedings of the First Joint NASA Cardiopulmonary Workshop, S. Fortney and A.R. Hargens (eds.), April, 1991.

Plenary address, Annual Meeting of the Rio Grandé Zoological Society, "Biological diversity in the Galápagos Islands," Albuquerque, NM, December 1991.

Invited paper, L. Cayot and H.L. Snell, Symposium on Conservation of Reptiles in Honor of Roger Conant, "Conservation biology of Galápagos reptiles: Twenty-five years of successful repatriation," Joint Annual Meeting of the Society for the Study of Reptiles and Amphibians and the Herpetologists' League, Penn State University, August 1991.

**STRICKER**

"Confocal microscopy of fertilization-induced calcium dynamics in sea urchin eggs," Forty-Ninth Annual Meeting of the Electron Microscopy Society of America, San Jose, CA, 1991.

**TRUJILLO**

Invited Speaker, UNM Medical School Motivational Workshop for Minority Students.

**VOGEL**

Organizer and Moderator, Workshop on "Biological basis of micromechanical models of ligaments and tendons to help understand their physiology and pathology," Combined meeting of Orthopaedic Research Societies of USA, Japan and Canada, Banff, Alberta, Canada, October, 1991.

Speaker at Workshop on Biological Basis of Micromechanical Models of Ligaments and Tendons, "In vitro compression on tendon in organ culture," combined meeting of Orthopaedic Research Societies of USA, Japan and Canada, October, 1991.

**WERNER-WASHBURNE**

Braun, E., D. Brown and M. Werner-Washburne, "The regulatory subunit of cAMP-dependent protein kinase in yeast is modified in response to the physiological status of the cell," New Mexico Branch, American Society for Microbiology, October, 1991.

**D. CONTRIBUTED TALKS AT PROFESSIONAL MEETINGS, WORKSHOPS, ETC.****ALTENBACH**

Paper presented, "A program to evaluate bat use and occupancy of abandoned mines in New Mexico," North American Symposium on Bat Research, Austin, TX, October 1991.

## **BACA**

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Yeaman, M., M. Roman and O. Baca, "*Coxiella burnetii*: Antibiotic susceptibility and possible resistance mechanisms," Ninth Meeting of the American Society for Rickettsiology and Rickettsial Disease, May 1-5, 1991, Galveston, TX.

Yeaman, M., M. Roman and O. Baca, "Mechanisms that account for drug resistance in *Coxiella burnetii* strains," Third BIT Symposium on Molecular and Cellular Dynamics, Santa Fe, NM, April 5, 1991.

Roman, M., A. Saha, R. Christner, J. Buhler, R. Glew and O. Baca, "Acid phosphatase activity in *Coxiella burnetii*," American Society for Microbiology, NM Branch, Los Alamos, NM, October 26, 1991.

## **BROWN**

Contributed paper, Annual Meeting of American Society of Mammalogists, "Experiments with desert rodents: Constant competition in a fluctuating environment," Manhattan, KS, June 19, 1991.

Contributed paper, annual meeting of American Society of Naturalists/Society for the Study of Evolution, "Experiments with desert rodents: Constant competition in a fluctuating environment," Hilo, HI, July 31, 1991 (given by co-author, M.L. Taper).

Contributed paper, Annual Meeting of Southwestern Association of Biologists, "Thirteen years of desert rodent competition," Prescott, AZ, November 9, 1991 (given by co-author, E.J. Heske).

## **CRAWFORD**

Invited contributor at the NSF-supported workshop, Desertification: A Landscape-Ecosystem Perspective, "Detritivores in desert ecosystems," La Serena, Chile, 30 September-4 October.

## **DAHM**

39th Annual Meeting of the North American Benthological Society, "An intersite comparison of methane cycling rates in streams from three LTER sites," Santa Fe, New Mexico, May 24, 1991.

4th Annual Hazardous Waste Management Conference and Exhibition, "Role of various electron acceptors in contaminant bioremediation in soils and groundwater," Albuquerque, New Mexico, March 15, 1991.

## **DUSZYNSKI**

Presented at 24th Annual Meeting of Southwestern Association of Parasitologists, Patrick, M.J., D.W. Duszynski and W. Wilson, "Ecological relationships between mesic and

xeric habitats and coccidian diversity on the Sevilleta National Wildlife Refuge," Lake Texoma, OK, April 5.

#### **JOHNSON, G.**

Talk, 6th International Symposium on Iron Nutrition and Interactions in Plants, Hudson, D.C. and G.V. Johnson, "Effect of iron nutrition on nodulation and nitrogen fixation by soybean cultivars differing in efficiency of iron use," Logan, UT, July 14-19, 1991.

Talk, Annual Meeting of the American Society of Plant Physiologists, Johnson, G.V., "Nitrogen fixation studies of Russian Olive (*Elaeagnus angustifolia* L.) by acetylene reduction, Albuquerque, NM, July 28-August 1, 1991.

Poster presentation, Annual Meeting of the American Society of Plant Physiologists, Johnson, G.V., "Diurnal fluctuations of organic acids in Crassulacean acid metabolism (CAM) plants: A laboratory exercise," Albuquerque, NM July 28-August 1, 1991.

#### **KODRIC-BROWN**

Animal Behavior Society meeting, "Phenotypically-plastic sexually-selected traits, male vigor and female choice in pupfish," University of North Carolina, Wilmington, NC.

#### **LIGON**

Paper presented: American Ornithologists' Union, "Female red jungle fowl do not prefer red males," Montreal, August 1991.

#### **LOKER**

24th Annual Meeting of the Southwestern Association of Parasitologists, Loker, E.S. and Uchikawa, R., "Lectin-binding properties of the surfaces of *in vitro*-transformed *Schistosoma mansoni* and *Echinostoma paraensei* sporocysts," Lake Texoma, OK, April 4-6, 1991.

24th Annual Meeting of the Southwestern Association of Parasitologists, Uchikawa, R. and Loker, E.S., "Phagocytosis of latex beads by heocytes of the snail *Biomphalaria glabrata*: Effects of snail strain, plasma components and exposure to trematode infection," Lake Texoma, OK, April 4-6, 1991.

24th Annual Meeting of the Southwestern Association of Parasitologists, Hertel, L., Monroy, F. and Loker, E.S., "Biochemical and functional properties of trematode-induced polypeptides from the hemolymph of the snail *Biomphalaria glabrata*," Lake Texoma, OK, April 4-6, 1991.

66th Annual Meeting of the American Society of Parasitologists, Bandoni, S.M., Mulvey, M. and Loker, E.S., "Phylogenetic relationships in the genus *Biomphalaria* Preston, 1910 (Gastropoda: Planorbidae)," Madison, WI, August 4-8, 1991.

66th Annual Meeting of the American Society of Parasitologists, Uchikawa, R. and Loker, E.S., "Phagocytosis of latex beads by heocytes of the snail *Biomphalaria glabrata*: Effects of snail strain, plasma components and exposure to trematode infection," Madison, WI, August 4-8, 1991. 239

66th Annual Meeting of the American Society of Parasitologists, Monroy, F., Hertel, L.A. and Loker, E.S., "Carbohydrate-binding proteins from *Biomphalaria glabrata*: Effects of strain and trematode infection," Madison, WI, August 4-8, 1991.

66th Annual Meeting of the American Society of Parasitologists, Monroy, F. and Loker, E.S., "Biochemical properties of trematode-induced carbohydrates binding proteins from the hemolymph of the snail *Biomphalaria glabrata*," Madison, WI, August 4-8, 1991.

66th Annual Meeting of the American Society of Parasitologists, Hokfin, B.V., Koech, D.K. and Loker, E.S., "Interactions between the North American crayfish *Procambarus clarkii* and schistosome-transmitting snails in Kenya," Madison, WI, August 4-8, 1991.

#### **LOWREY**

Contributed Talk, Annual Meeting of the Botanical Society of America and American Society of Plant Taxonomists, "Chromosome number and isozyme number in *Nepenthes*," AIBS Meetings, San Antonio, TX, August 1991.

#### **MARSHALL**

Presented to the international meeting on Angiosperm Pollen and Ovules, "The potential for interference among pollen grains of wild radish," Como, Italy, June 23-27, 1991.

Presented to the annual meeting of the Botanical Society of America, "The potential for interference competition among the pollen grains of wild radish," San Antonio, Texas, August 4-8, 1991.

Presented to the annual meeting of the Guild of Rocky Mountain Population Biologists, "Interference competition among pollen grains of wild radish," Boulder, CO, September, 1991.

#### **MILNE**

Contributed talk, International Association for Landscape Ecology, "A fractal filter for the manipulation of resources," Ottawa, Canada, 1991.

#### **MOLLES**

Contributed talk, Annual Meeting of the North American Benthological Society, Crocker, T.M., M.C. Molles, Jr., and C.N. Dahm, "Particulate organic matter redistribution



within semi-arid, ephemeral, or intermittent stream networks," Santa Fe, NM, May 22, 1991.

Contributed poster, Pacific Climate Conference, "Fish populations and La Niña," Asilomar, CA, March 1991.

### **NELSON**

Talk, Annual Meeting of the New Mexico Branch of the American Society for Microbiology, "Sexual development in *Neurospora crassa*," Los Alamos National Laboratories, October 25-26, 1991.

### **SNELL**

Annual Meeting of the Southwestern Association of Biologists, Snell, H.L., H.M. Snell and M. Altomirano, "Interspecific variation of the role of natural selection in the evolution of sexual size-dimorphism: Examples from Galápagos Lava Lizards," Prescott, AZ, November 1991.

Annual Meeting of the Southwestern Association of Biologists, Stone, P.A., H.L. Snell and H.M. Snell, "Increased wariness in Galápagos lava lizards (*Tropidurus* spp.) on islands inhabited by cats," Prescott, AZ, November 1991.

Annual Meeting of the Southwestern Association of Biologists, Landwer, A. and H.L. Snell, "The cost of reproduction in the lizard *Urosaurus ornatus*: Preliminary results," Prescott, AZ, November 1991.

Annual Meeting of the Southwestern Association of Biologists, Pierce, L.A. and H.L. Snell, "Nest defense by female leopard geckos, *Eublepharis maculata*," Prescott, AZ, November 1991.

Joint Annual Meeting of the Society for the Study of Reptiles and Amphibians and the Herpetologists' League, Jennings, R.D. and H.L. Snell, "Adaptive plasticity in tadpoles of the Chiricahua leopard frog," Pennsylvania State University, August 1991.

Annual Meeting of the Southwestern Association of Biologists, Sugg, D.W., L.A. Fitzgerald and H.L. Snell, "The role of energy allocation in determining sexual dimorphism in size of the greater earless lizard (*Cophosaurus texanus*)," Prescott, AZ, November 1991.

### **STRICKER**

Southwest Regional Developmental Biology, "Laser scanning confocal microscopy of living sea urchin embryos," College Station, TX, March, 1991.

Annual Meetings, American Society for Cell Biology, "Confocal microscopy of fertilization-induced calcium dynamics in sea urchins," Boston, MA, December, 1991.

### **THORNHILL**

22nd International Ethological Congress, "Fluctuating asymmetry and sexual selection,"  
Kyoto, Japan, August 1991.

### **TOOLSON**

Australian Entomological Society, "Behavioral Thermoregulation in Two Grassland Cicada Species," Melbourne, Australia.

Australian Ecological Society, "Physiology of Thermoregulation in *Fimea russelli* (Lepidoptera: Noctuidae)," Brisbane, Australia.

### **VOGEL**

Platform talk, combined meeting of Orthopaedic Research Societies of USA, Japan and Canada, "Proteoglycans accumulate in a region of human tibialis posterior tendon subjected to compressive force *in vivo* and in ligaments," Banff, Alberta, Canada, October, 1991.

Poster presentation, Annual Meeting of the American Society for Cell Biology, "Proteoglycan synthesis by the fibrocartilaginous region of tendon in culture is sensitive to serum and to TGF-beta," Boston, MA, December, 1991.

### **E. ATTENDANCE AT PROFESSIONAL MEETINGS, WORKSHOPS, ETC.**

#### **ALTENBACH**

North American Symposium on Bat Research, Austin, TX, October 1991.

#### **BACA**

Meeting of the American Society for Rickettsiology and Rickettsial Diseases, May 1-5, 1991, Galveston, TX.

Annual Meeting of the American Society for Microbiology, NM Branch, October 26, 1991, Los Alamos, NM.

Third Annual Meeting of BIT Symposium on Molecular and Cellular Dynamics, April 5, 1991, Santa Fe, NM.

Symposium on "The History of Immunogenetics," October 10-12, 1991, Albuquerque, NM.

#### **BARTON**

Attended a workshop to plan a program for bioremediation of oil-associated wastes in New Mexico, Petroleum Institute, Socorro, NM, April 20.

**BOURNE**

Human Anatomy and Physiology Society

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**BROWN**

Annual meetings of the two societies of which I am president: American Society of Mammalogists and American Society of Naturalists (with Society for the Study of Evolution, Society of Systematic Biology).

**CRAWFORD**

Desert Ecosystem Workshop, chaired "Animal Group" (Sponsor: EPA), Utah State University, Logan, UT, September 15-17.

**DAHM**

4th Annual Hazardous Waste Management Conference and Exhibition. Albuquerque, New Mexico, March 13-15, 1991.

Second International Symposium on Field Screening Methods for Hazardous Wastes and Toxic Chemicals. Las Vegas, Nevada, February 12-14, 1991.

39th Annual Meeting of the North American Benthological Society. Santa Fe, New Mexico, May 20-25, 1991.

36th Annual Water Resources Research Institute Conference. Las Cruces, New Mexico, November 7-8, 1991.

Workshop on the Antarctic Dry Valleys. Cary Arboretum, New York, October 6-9, 1991.

**DUSZYNSKI**

24th Annual Meeting, Southwestern Association of Parasitologists (SWAP), Lake Texoma, OK, April 4-6.

66th Annual Meeting, American Society of Parasitologists (ASP), University of Wisconsin, Madison, WI, August 4-8.

**FINDLEY**

American Society of Mammalogists, Manhattan, KS, June.  
North American Bat Research Symposium, Austin, TX, October.

**JOHNSON, G.**

6th International Symposium on Iron Nutrition and Interactions in Plants, Logan, UT, July 14-19, 1991.

Annual Meeting of the American Society of Plant Physiologists, Albuquerque, NM, July 28-August 1, 1991.

**KERKOF**

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FASEB Federation of American Societies for Experimental Biology, 75th Annual Convention in Atlanta, GA, April 21-25, 1991.

Participant in the Biotechnology Education, Training and Research (BETR) Molecular Biology Course on the Polymerase Chain Reaction.

**KODRIC-BROWN**

Annual meeting, American Society of Naturalists, Hilo, HI, July 28-August 2, 1991.

**LIGON**

Attended Annual Meeting of the American Ornithologists' Union, Montreal, August 1991.

**LOKER**

PSTC/CDR Aquaculture Meetings, Manila, Phillipines, August 6-10, 1991.

24th Annual Meeting of the Southwestern Association of Parasitologists, Lake Texoma, OK, April 4-6, 1991.

66th Annual Meeting of the American Society of Parasitologists, Madison, WI, August 4-8, 1991.

**LOWREY**

Rancho Santa Ana Botanic Gardens Annual Symposium, "Plant Speciation," Claremont, CA, May 1991.

American Institute of Biological Sciences Joint Meetings, San Antonio, TX, August 1991.

Missouri Botanical Garden Annual Symposium, "Information Brokering in Botany," St. Louis, MO, October 1991.

**MARSHALL**

Attended the international meeting on "Angiosperm Pollen and Ovules," Como, Italy, June 23-27, 1991.

Attended, Annual Meeting of the Ecological Society of America and the Botanical Society of America, San Antonio, TX, August 1991.

Attended, Annual Meeting of the Guild of Rocky Mountain Population Biologists, Boulder, CO, September 1991.

#### **MILNE**

Annual Meeting of the Ecological Society of America, San Antonio, TX.

Third International Meeting of the International Association for Landscape Ecology, Ottawa, Canada.

#### **MOLLES**

International Robotics Conference, Albuquerque, NM, February 26, 1991.

Pacific Climate Conference, Asilomar, CA, March 1991.

North American Benthological Society, Santa Fe, NM, May 1991.

Ecological Society of America Annual Meetings, San Antonio, TX, August 1991.

Oregon Rivers Council Workshop on National Rivers Policy, Eugene, OR, September 1991.

Desert Ecosystem Workshop, Utah State University, Logan, UT, September 1991.

#### **NATVIG**

Attended 16th Fungal Genetics Conference, Asilomar, CA, April.

Attended Albany Conference on Molecular and Cellular Responses to Oxygen, Rensselaerville, NY, September.

Attended West-Coast *Neurospora* Conference, University of California, Irvine, August.

#### **NELSON**

16th Fungal Genetics Conference, Asilomar, California, March 31-April 4, 1991.

Annual Meeting of the New Mexico Branch of the American Society for Microbiology, Los Alamos National Laboratories, October 25-26, 1991.

#### **RIEDELSEL**

Interactions of the Endocrine and Cardiovascular Systems in Health and Disease, American Physiological Society Conference, San Antonio, TX, September 29-October 3, 1991.

#### **SNELL**

Annual Meeting of the Southwestern Association of Biologists, Prescott, AZ, November 8-10, 1991.

**STRICKER**

Southwest Regional Developmental Biology, College Station, TX, March, 1991.

Annual Meeting of the Biological Imaging Technology, Santa Fe, NM, April, 1991.

Annual Meeting of the American Society for Cell Biology, Boston, MA, December, 1991.

**THORNHILL**

Program co-chair, Annual Meeting of the Human Behavior and Evolution Society,  
McMaster University, Hamilton, Ontario, August 1991.

**VOGEL**

Combined meeting of Orthopaedic Research Societies of USA, Japan and Canada, Banff,  
Alberta, Canada, October 21-23, 1991.

Annual Meeting of American Society for Cell Biology, Boston, MA, December 8-12,  
1991.

**WERNER-WASHBURNE**

Attended Yeast Molecular Genetics Meetings, May 1991, San Francisco.

New Mexico ASM, October 1991, Los Alamos.

**F. TESTIMONY IN A SCHOLARLY CAPACITY AT HEARINGS OF COMMISSIONS, LEGISLATIVE  
COMMITTEES, ETC.**

**CRAWFORD**

Presented oral progress report to Regional Office, U.S. Fish and Wildlife Service, on  
Bosque del Apache flooding research, Albuquerque, 20 August (with Manuel Molles).

Made two presentations on Rio Grande bosque research on field trips with Senator  
Domenici's Rio Grande Task Force, October, November.

**MOLLES**

Presentation to NSF LTER site review team, July 8-9, 1991.

Presentation of flooding experiments to U.S. Fish and Wildlife Service, August 19, 1991.  
Tour of Middle Rio Grande Bosque, Senator Pete Domenici and Bosque Task Force,  
October 12, 1991.

**G. PRESENTATIONS TO GENERAL AUDIENCE IN A SCHOLARLY CAPACITY.**

**ALTENBACH**

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A series of lectures, "Environmental and Population Biology," Academic Decathlon program, Highlands High School, Albuquerque, NM, December 1991.

High-speed motion picture sequence of bats in flight and catching prey, filmed for the Moody Institute of Science, Whittier, CA, December 1991.

**BACA**

Invited speaker, UNM School of Medicine's Motivational Workshop Program, Summer 1991.

**CRAWFORD**

Presented paper, the Third Annual Bosque Symposium (with Manuel Molles), "Arthropod assemblages across a patchy riparian landscape," Rio Grande Nature Center, Albuquerque, February 16. (Molles and I co-organize this symposium annually with the Nature Center.)

Gave invited talk, the Friends of Albuquerque Petroglyphs, "Natural History of Petroglyph National Monument," Museum of Albuquerque, April 13.

**KODRIC-BROWN**

BBC radio program, "Desert fishes of Dalhousie Springs, Australia."

**LOWREY**

Invited lecture, Outward Bound Program, SIPI, "Research opportunities in botany." Albuquerque, NM, June 1991.

Invited Lecture, New Mexico Native Plant Society, "The UNM Herbarium and its activities," Albuquerque, NM, October 1991.

**MOLLES**

Bosque Symposium, "Arthropod Communities of the Bosque," Rio Grande Nature Center, Albuquerque, NM, February 1991.

Volunteer education, "Ecology of the Rio Grande Nature Center," Rio Grande Nature Center, July 23, 1991.

Belen Rotary Club, "Climate Research at UNM," August 28, 1991.

## **NATVIG**

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"Construction and characterization of *Neurospora crassa* mutants lacking CuZn superoxide dismutase." Chary, P. and D.O. Natvig. Fungal Genetics Newsletter 38:51. (Abstract of poster presentation at the 16th Fungal Genetics Conference, Asilomar, CA, April.)

"Characterization and regulation of genes for manganese and copper-zinc superoxide dismutase in *Neurospora crassa*." Dvorachek, W.H., Jr., J. Baldwin and D.O. Natvig. Fungal Genetics Newsletter 38:51. (Abstract of poster presentation at the 16th Fungal Genetics Conference, Asilomar, CA, April.)

## **SNELL**

Plenary address, Annual Meeting of the Rio Grandé Zoological Society, "Biological diversity in the Galápagos Islands, Albuquerque, NM, December 1991.

## **THORNHILL**

Public lecture, 22nd International Ethological Congress, "Mate choice," Kyoto, Japan.

## **TRUJILLO**

Guest Instructor, Education 481, Changing Technology and Society (Dr. Edwin Weber, instructor), three-hour talk on "Genetic Engineering and Medicine."

## **WERNER-WASHBURNE**

Invited talk to the UNM Regents, Deans and Vice Presidents of UNM, "Using Yeast to Study Cancer," June 1991.

Town and Gown Breakfast, UNM, "Yeast: From Beer to Breast Cancer," August 1991.

- H. SERVICE IN A SCHOLARLY CAPACITY AS MEMBER OF LOCAL, STATE OR NATIONAL PANEL, COMMITTEE, OR COMMISSION, FOR PURPOSE OF REVIEWS OF PUBLIC POLICY ISSUES, SCIENTIFIC EVALUATIONS, AWARDS OF GRANTS OR FELLOWSHIPS OR PRIZES, ETC.

## **BACA**

Appointed to serve on the GFA/OFP Fellowships Selection Committee, UNM Office of Graduate Studies.

Member, UNM BRSG and SURP committees to evaluate research proposals.

## **BARTON**

Reviewed research proposals for the National Research Council of Canada and the U.S. Department of Agriculture.



**BROWN**

National Institutes of the Environment Liaison Committee, Chair, Ecological Society of America.

Committee on the "Integrative Role of Systematics and Ecology," part of Systematics Agenda 2000.

Steering Committee, Fifth Carey Conference on "Linking Population, Community and Ecosystem Ecology," to be held in 1993.

Scientific Advisory Committee, Southwest Research Station, American Museum of Natural History, Portal, AZ.

**CRAWFORD**

Member, Technical Planning Group, Bosque Improvement Plan, Open Space Division, City of Albuquerque.

Member, Steering Committee, Middle Rio Grande Research Proposal, U.S. Fish and Wildlife Service.

**DUSZYNSKI**

External Peer Reviewer, Natural Sciences and Engineering Research Council of Canada. Refereed one grant proposal.

External Peer Reviewer, NSF. Refereed three grant proposals.

TVI Advisory Committee for Arts and Sciences. Appointed.

**FINDLEY**

Vice Chair, Corrales Bosque Advisory Commission.  
Board of Directors, The Natural Conservancy, N.M. Chapter.

**JOHNSON, G.**

Judge, State Science Fair, Chairman of Junior Botany Division, New Mexico Tech., Socorro, NM, April 6, 1991.

**LIGON**

Chair, American Ornithologists' Union Committee for the Conservation of the Red-cockaded Woodpecker.

NSF Panel, Dissertation Improvement Grants, Washington, D.C., May 1991.

**LOWREY**

Elected member of New Mexico Plant Recovery Team, U.S. Fish and Wildlife Service, Annual Meeting, May 1991.

**MARSHALL**

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Served on the NSF panel to review grants in Population Biology and Physiological Ecology, April 1991.

**MILNE**

Milne, B.T., D.J. Rapport and J. Walker. Report of the Terrestrial Advisory Panel. Environmental Protection Agency Environmental Monitoring And Assessment Program.

Panel Member, Exploratory Research Centers, Environmental Protection Agency.

**MOLLES**

Technical advisor, City of Albuquerque Open Space Division, management of Rio Grande Valley State Park.

Consultant, Tingley Aquatic Park Design, G. Robert Johns, Landscape Architect, Albuquerque, NM.

Member, National Task Force for Senator Mark Hatfield and Oregon Rivers Council for development of National River Policy.

**NATVIG**

Panel member, National Science Foundation Prokaryotic Genetics, April 25-27, 1991.

Study section member, National Institutes of Health, Microbial Physiology and Genetics, October 23-25, 1991.

Reviewer, NSF Systematic Biology and Population biology, approximately seven proposals.

**SNELL**

Panel member, International panel organized by the Charles Darwin Foundation to plan the future management of the Biological Diversity of the Galápagos Archipelago.

Panel member, National Science Foundation, Division of Biotic Systems and Resources, Population Biology and Physiological Ecology Program.

**VOGEL**

Member of selection committee for Presidential Awards to High School and Jr. High School Science Teachers, New Mexico State Dept. of Education, Santa Fe, NM.

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**WERNER-WASHBURN**

NSF panel to evaluate Minority Post Doctoral Fellow proposals, February 1991.

Ad Hoc reviewer for NSF Cell Biology program and Genetics program.

**I. SERVICE AS EDITOR OF SCHOLARLY JOURNAL.**

**BARTON**

Editor, Biology of Metals.

**CRAWFORD**

Associate Editor, Desert Ecology Series, University of Arizona Press.

**MARSHALL**

Associate editor, American Midland Naturalist.

**SNELL**

Associate editor, Noticias de Galápagos.

**J. SERVICE ON EDITORIAL BOARD OF SCHOLARLY JOURNAL.**

**BROWN**

Editorial Board, Evolutionary Ecology.

**CRAWFORD**

Journal of Arid Environments

Consulting Editor, Madoqua.

**LOKER**

Member, Editorial Board, Journal of Invertebrate Pathology.

**SNELL**

Associate editor, Noticias de Galápagos.

**THORNHILL**

Associate Editor, Evolution.  
Consulting Editor, Journal of Comparative Psychology.

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**VOGEL**

Co-Editor, European Journal of Cell Biology.

**K. SERVICE AS OFFICER OF PROFESSIONAL ORGANIZATION (INDICATE WHETHER ELECTED OR APPOINTED).**

**BACA**

Alternate Councilor, American Society for Microbiology, NM Branch. Elected.

**BARTON**

Elected treasurer of Chapter of Sigma Xi.

**BROWN**

President, American Society of Naturalists.  
President, American Society of Mammalogists.

**DUSZYNSKI**

National Program Officer, American Society of Parasitologists. Appointed and confirmed by ASP Council.  
Archivist, Annual Coccidiosis Conference. Appointed.  
Archivist, Southwestern Association of Parasitologists. Appointed.  
Member, Meeting-Site Selection Committee for 1993-1996, American Society of Parasitologists. Appointed.

**FINDLEY**

Board of Trustees, American Society of Mammalogists. Elected.

**JOHNSON, G.**

Member (1985- ) of the Steering Committee for International Symposia on Iron Nutrition and Interactions in Plants. Appointed.

**LIGON**

Elective Councilor, American Ornithologists' Union.

**LOKER**

Member, Nominating Committee, American Society of Parasitologists, 1991. Elected.  
Member, Nominating Committee, Southwestern Association of Parasitologists, 1991.  
Appointed.

**LOWREY**

Elected Chairman, Systematics Section, Botanical Society of America, AIBS Meeting, San Antonio, TX, August 1991.

**MILNE**

Completed service as elected treasurer of the U.S. chapter of the International Association for Landscape Ecology.

**SNELL**

Councilor, Charles Darwin Foundation.

**STRICKER**

Local Arrangements Committee, Southwest Developmental Biology. Appointed.

**THORNHILL**

North American Councilor, International Society for Behavioral Ecology. Elected.

**L. LIST JOURNALS AND THE NUMBER OF PAPERS YOU REFEREED FOR EACH IN 1991.**

**ALTENBACH**

Journal of Mammalogy (2)

**BACA**

Antimicrobial Agents and Chemotherapy (1)

The Journal of Clinical Investigation (1)

**BARTON**

Microbiology Reviews (1)

CRC Reviews, Food Technology (1)

**BROWN**

Ecology

Conservation Biology

Ecology  
American Naturalist  
Oikos

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**CRAWFORD**

The Southwestern Naturalist (1)  
Journal of Morphology (1)  
The Southwestern Naturalist (1)

**DUSZYNSKI**

Journal of Parasitology (4)  
Journal of the Helminthological Society of Washington (1)  
Canadian Journal of Zoology (2)  
Texas Journal of Science (1)

**EVANS**

Book: Symposium on Herpetology of the Galapagos, edited by H. Snell (1)  
American Journal of Botany (1)  
The American Midland Naturalist (1)

**FINDLEY**

Ecology  
Journal of Mammalogy  
Fieldiana  
American Naturalist  
Caribbean Journal of Science

**KERKOF**

Toxicology and Applied Pharmacology (1)

**KODRIC-BROWN**

Animal Behavior Society (6)  
Behavioral Ecology and Sociobiology (8)  
Evolution (4)  
Environmental Biology of Fishes (2)  
Canadian Journal of Zoology (1)  
American Naturalist (4)  
Copeia (2)  
Southwestern Naturalist (1)

## **LIGON**

Journal of Field Ornithology (1)  
Wilson Bulletin (1)

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## **LOKER**

Journal of Parasitology (3)  
Journal of Invertebrate Pathology (5)  
Developmental and Comparative Immunology (3)  
National Science Foundation (*ad hoc*) (2)

## **LOWREY**

Systematic Botany (1)

## **MARSHALL**

National Science Foundation (32)  
Ecology (1)  
American Journal of Botany (3)  
Oecologia (1)

## **MILNE**

American Midland Naturalist (1)  
American Naturalist (1)  
Ecological Applications (1)  
Landscape Ecology (1)  
Journal of Vegetation Science (1)  
University of Washington (1)

## **MOLLES**

Freshwater Biology (1)  
Ecology (1)

## **NATVIG**

Applied and Environmental Microbiology (2)  
Journal of Bacteriology (1)  
Experimental Mycology (1)

## **NELSON**

Genetics (1)

**RIEDEL**

Medicine and Science in Sports and Exercise (1)

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**SNELL**

American Naturalist (1)

Herpetologica (1)

**STRICKER**

Developmental Biology (5)

Biological Bulletin (1)

**TAYLOR**

Evolution (1)

**TOOLSON**

Journal of Comparative Physiology (1)

Evolution (1)

Annals of the Entomological Society of America (2)

**VOGEL**

Archives for Biochemistry and Biophysics (6)

European Journal of Cell Biology (5)

Journal of Orthopaedic Research (3)

Connective Tissue Research (1)

Journal of Histochemistry and Cytochemistry (1)

Digestive Diseases and Sciences (1)

**WERNER-WASHBURNE**

Journal of Bacteriology (1)

Cancer Research (a journal) (1)

**III. GRANTS, EXTRAMURAL AND INTRAMURAL**

**A. SUBMITTED TO ALL AGENCIES IN 1991.**

**BACA**

"Morbidity and Mortality in Tome-Valencia-Peralta Area, Late 1700s through the 1940s,"

O. Baca, P.I., UNM Center for Regional Studies, \$5,000, Summer 1991-Spring 1992.



"Phosphatase as a Virulence Factor," O. Baca, P.I., Public Health Service, NIH, \$587,909, April 1992-1996, \$150,000 annually.

#### **BARTON**

256

"Investigation of Microbial Reduction of Uranium below Uranium Mill Tailing Piles," L.L. Barton and B. Thomson, WERC-DOE, \$198,428, January 1992-December 1994, Year 1—\$73,928, Year 2—\$66,000, Year 3—\$72,500.

"Slurry-phase Bioremediation of Oilfield Production Pit Sludges, L.L. Barton, WERC-DOE, \$40,683, January 1992-December 1993, Year 1—\$20,683.

"Engineering Research Equipment: LaB6 Electron Source for an Environmental SEM for Bioengineering Research," T.R. Ross and L.L. Barton, NSF, \$15,900, January 1991-December 1991.

"Purchase of Environmental Scanning Electron Microscope," L.L. Barton and T. Ross, DOE, \$237,300, October 1991-October 1992.

"Biocorrosion and Flocculation of Biomolecules," L.L. Barton and T. Ross, WERC-DOE-NMSU, \$60,000, February 1992-February 1993.

"Applications of Biotechnology to the Management of Toxic Wastes," L.L. Barton, WERC-DOE-NMSU, \$61,200, February 1992-February 1993.

"Imaging Live Cells by Fast/Wet Electron Microscopy," L.L. Barton and T. Ross, NIH, \$451,093, July 1992-July 1993.

#### **CRAWFORD**

"The Sevilleta Field Station: Laboratory Equipment for Ecological Research," C.S. Crawford (PI), J.H. Brown, J.R. Gosz, T.K. Lowrey, D.L. Marshall, and R.R. Parmenter; NSF; \$119,834, September 1991-August 31, 1993.

"Symposium: The Evolution of Isopods to Life on Land," C.S. Crawford (PI); NSF; \$91,288, September 1992-September 1993.

"The Effects of Annual Flooding on Rio Grande Forests," M.C. Molles and C.S. Crawford (Co-PIs); U.S. Fish and Wildlife Service; \$80,000, May 1991-May 1992.

#### **DAHM**

Manipulation of aquifer environmental factors to enhance biodegradation of organic contaminants. Water Resources Research Research Institute. July 1, 1991-June 30, 1992. \$24,922. C.N. Dahm and M.E. Watwood.

Harbingers of anthropogenic ecosystem stress: Mycorrhizal fungi and weedy plants.  
Environmental Protection Agency. November 1, 1991-October 31, 1993. \$215,000. M.  
Allen, C. Dahm, and E. Allen.

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#### **DUSZYNSKI**

"Parasite Composition and Population Structure of Galapagos Island Lava Lizards." D.W. Duszynski, P.I. UNM-Latin American Institute. \$2,000, August 1-31, 1991.

"Host Genetic Factors Affecting Specificity of Parasites of Small Mammals." T.L. Yates and D.W. Duszynski, Co-P.I.s. NIH-MBRS. \$80,000+, January 1, 1992-December 31, 1995, @ about \$20,000/year.

"Laser Scanning Confocal Microscope." S. Stricker, E. Loker, J. Oliver, S. Rogers, K. Vogel, Co-PIs; I am a minor-user Co-P.I. DHHS-PHS, DRR-BRS Shared Instrument Grant. \$156,592, August 1, 1992-March 31, 1993.

"Mammalian Diversity in Bolivia - The Yungas and Valles." J.A. Cook and D.W. Duszynski, Co-P.I.s. \$17,081, May, 1991-August, 1992.

"Community Ecology of Parasites from Merriam's Kangaroo Rat (*Dipodomys merriami*)." D.W. Duszynski and M.J. Patrick, Co-P.I.s. NSF. \$8,675, March, 1992-February, 1994.

#### **EVANS**

"A genetic comparison of wild and cultivated populations of the mustard *Brassica campestris*," Evans, A.S., UNM Research Allocation Committee, \$2,494, December, 1991-December, 1992, \$2,494 per year.

"Evolutionary ecophysiology of adaptations to low water and nutrient availability in the desert composite, *Townsendia annua*," Evans, A.S., National Science Foundation, \$18,000, August, 1992-August, 1993, \$18,000 per year.

"REU in ecological studies: Establishment of an REU site with the Sevilleta LTER program," Gosz, J.R., Evans, A.S. and Parmenter, R.R., National Science Foundation, \$151,800, May, 1992-May, 1994, \$50,600 per year.

"Improving beginning biology at the University of New Mexico: A plan for evaluating educational effectiveness and increasing minority student retention," Loker, E.S., Evans, A.S., Ligon, S.H., Nelson, M.A., Stevens, G., Vogel, K and Werner-Washburne, M., National Science Foundation, \$400,146, June, 1992-June, 1994, \$133,382 per year.

#### **KODRIC-BROWN**

NSF MidCareer Fellowship in Environmental Biology (BSR-9106227), "Behavior, Ecology and Biogeography of Australian Desert Fishes."

**LOKER**

"Small Instrumentation Grant," E.S. Loker, P.I., NIH, \$10,401, September 1991-August 1992.

"Improving Beginning Biology at the University of New Mexico," E.S. Loker, Co-P.I. (with several others), NSF, approx. \$500,000.

REMI Grant, M. Werner-Washburne, P.I., E.S. Loker, Co-P.I., NSF.

**LOWREY**

"Evolutionary Genetics of Adaptive Radiation in *Tetramolopium*: A model system for the conservation of genetic diversity in rare species," Timothy K. Lowrey, P.I., Richard Whitkus, U.C.—Riverside, Co-P.I., National Science Foundation, Special Competition in Conservation Biology, \$462,054, July 1, 1992-May 31, 1994.

"Genetic Analysis of Adaptive Radiation in *Tetramolopium* (Asteraceae)," Timothy K. Lowrey, P.I., National Science Foundation, Systematic Biology Program, \$293,211, June 1, 1992-May 31, 1994.

"Rare Plant Species Reintroduction," Timothy K. Lowrey, P.I., National Wildflower Research Center, Austin, TX, \$2,500, December 1, 1991-December 31, 1992.

**MARSHALL**

REU supplement to "Mechanisms of nonrandom mating in wild radish", D.L. Marshall, NSF, \$5,088, 6/1/91-12/31/91.

RIMI proposal for "Molecular Biology Facility", M.W. Washburne, (P.I.), D.L. Marshall (one of 4 co-PI's), NSF, \$380,000, 6/1/91 to 5/31/94.

RIMI proposal for "Confocal Microscopy Facility", S. Stricker (P.I.), D.L. Marshall (one of 4 co-PI's), \$120,000, 6/1/91 to 5/31/92.

**MILNE**

"Toward an Integrated System for Fractal Design, Ecological Analysis, and Geographic Information Management," B.T. Milne, Water Resources Research Institute, June 1991—May 1992, \$39,040/yr (requested as contribution toward Presidential Young Investigator Award). Not funded.

"Fractal Indications of Ecological Responses to Climate Change," B.T. Milne, Electric Power Research Institute, November 1991—October 1994, \$112,500 contribution to Presidential Young Investigator Award, \$37,500/yr, awarded with 1992 start date.

## **MOLLES**

"The Influence of Annual Flooding on the Rio Grande Riparian Forest," M.C. Molles, Jr. and C.S. Crawford, P.I.s, U.S. Fish and Wildlife Service, \$80,000, April 1991-April 1992.

"The Ecological Effects of Introduced Plants: Do they follow established ecological principles?", M.C. Molles, Jr., NSF, \$48,290, July 1992-September 1993.

## **NATVIG**

"Establishment of a Molecular Biology Facility," M. Werner-Washburne, M. A. Nelson, D. Marshall, D.O. Natvig, and E.S. Loker, National Science Foundation, \$321,000, June 1, 1992-May 30, 1995.

## **NELSON**

"Genes Required for Sexual Development of the Filamentous Fungi," Mary Anne Nelson, P.I., Biomedical Research Support Grant. Total requested \$7,031, from May 1, 1991 through December 31, 1991; approved in the amount of \$4,290.

"Genes Involved in Sexual Development of the Filamentous Fungi," Mary Anne Nelson, P.I., Research Allocations Committee. Total requested \$2,500, from May 1, 1991 through September 30, 1991; approved in the amount of \$2,500.

"Molecular Analysis of Sexual Development in *Neurospora*," Mary Anne Nelson, P.I., National Science Foundation. Total requested \$769,935, from January 1, 1992 through December 31, 1996: Year 1—\$139,338; Year 2—\$146,304; Year 3—\$153,622; Year 4—\$161,302; Year 5—\$169,369. (These sums reflect direct plus indirect costs.) This grant has been approved in the amount of \$95,000 per year (indirect plus direct costs) for three years (total \$285,000); the grant has not yet been accepted, pending notification of the fate of the NIH grant for the same research project.

"Molecular Analysis of Sexual Development in *Neurospora*," Mary Anne Nelson, P.I., National Institutes of Health. Total requested \$519,577, from April 1, 1992 through March 31, 1997: Year 1—\$94,029; Year 2—\$98,730; Year 3—\$103,669; Year 4—\$108,853; Year 5—\$114,296. (These sums reflect direct plus indirect costs.) Awarded with full funding and approved; start date was May 1, 1992.

"Sexual Development in the Filamentous Fungi: Mating-specific Genes of *Neurospora* and *Podospora*," N. Louise Glass, Mary Anne Nelson and Marguerite Picard, Co-P.I.s, Human Frontier Science Program. Total requested \$184,710, 1992—1995: Year 1—\$58,590; Year 2—\$61,550; Year 3—\$64,570. (These sums reflect direct plus indirect costs.) Awarded and accepted, with start date of Sept. 1, 1992. Year 1—\$47,000; Year 2—\$50,000; Year 3—\$50,000, for a total of \$147,000.

"Improving Beginning Biology at the University of New Mexico: A Plan for Evaluating Educational Effectiveness and Increasing Minority Student Retention," Eric S. Loker,

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Ann Evans, Sandra H. Ligon, Mary Anne Nelson, George Stevens, Kathryn Vogel and Margaret Werner-Washburne, Co-P.I.s, National Science Foundation. Total requested \$400,146, from June 1, 1992—May 31, 1995: Year 1—\$120,967; Year 2—\$135,092; Year 3—\$144,087. (These sums reflect direct plus indirect costs.) Denied.

"Establishment of a Molecular Biology Facility," Margaret Werner-Washburne, Mary Anne Nelson, Diane Marshall, Donald O. Natvig and Eric S. Loker, Co-P.I.s, National Science Foundation. Total requested \$321,000, June 1, 1992—May 31, 1995: Year 1—\$244,135; Year 2—\$37,290; Year 3—\$39,575. (These sums reflect direct plus indirect costs.) This grant is pending.

#### **RIEDEL**

"Effects of Glycerol-induced Hyperhydration on Lower-body Negative Pressure Responses: A Combined Cerebral-vascular and Cardiovascular Study," NASA, awarded for one year, June 1, 1992, \$78,700.

#### **SNELL**

The Roles of Sexual and Natural Selection in the Evolution of Sexual Size-Dimorphism," H.L. Snell and D.B. Miles, NSF, \$329,000, June 1991—December 1996, approx. \$80,000/year.

Continuation of Studies on the Status of *Sceloporus graciosus arenicolous* in the Mescalero Sands of Southeastern New Mexico, H.L. Snell and A. Landwer, N.M. Department of Game and Fish, July 1992—June 1993, \$34,000.

#### **STRICKER**

Nuclear-Cytoskeletal Interactions during Development, RAC, University of New Mexico, 1990-91, \$2,292.

Acquisition of a Confocal Microscope, N.I.H. Shared Instrumentation Grant, Division of Research Resources, 1992-93, \$156,592.

Confocal Microscope, N.S.F., Instrumentation and Instrument Development, 1992-93, \$106,592, (Co-PIs: E. Loker, D. Marshall, K. Vogel, and M. Werner-Washburne).

Intranuclear Calcium Dynamics During Early Development, N.I.H., 1992-95, \$449,786.

Confocal Microscopy Facility, N.S.F., R.I.M.I., 1993-1996, \$180,000 (Co-PIs: E. Loker, D. Marshall, K. Vogel, and M. Werner-Washburne).

Intranuclear Calcium Dynamics during Fertilization and Early Development, UNM RAC, \$1,935, 1991-92.

## **TOOLSON**

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"Epicuticular hydrocarbons of *Drosophila melanogaster*: Direct and correlated responses to selection," NSF Grant DEB 90-20315, 1991-94, \$288,858.

"Ecological Correlates and Evolutionary Consequences of Acclimation Responses in Insects and Arachnids," NSF Grant DEB 92-08003, 1992-97, \$573,220.

## **TRUJILLO**

Participant applicant of the NSF RIMI\HRD Grant for Molecular Biology Facility

Participant applicant of NSF RIMI\HRD Grant for Confocal Microscope.

## **VOGEL**

"The Interaction of Proteoglycans with Collagen in Tendon," Kathryn Vogel, Associate Investigator NIGMS of National Institutes of Health, Minority Biomedical Research Support, \$18,000, 1/1/92-12/31/95.

"Improving Beginning Biology at the University of New Mexico: A Plan for Evaluating Educational Effectiveness and Increasing Minority Student Retention," Eric S. Loker, PI, Kathryn G. Vogel, Co-PI (one of six), National Science Foundation, \$400,146 for three years, start June, 1992.

"Laser Scanning Confocal Microscope," Stephen Stricker, PI, Kathryn Vogel, Co-PI (one of four), National Institutes of Health, \$156,592, start April, 1992.

"Laser Scanning Confocal Microscope," Stephen Stricker, PI, Kathryn Vogel, Co-PI, Research Improvement in Minority Institutions, National Science Foundation, \$156,000, July, 1992.

"Laboratory Education and Research in Biology," Kathryn Vogel, PI, Howard Hughes Medical Institute, Undergraduate Biological Sciences Education Initiative, \$897,553 over five years, June, 1992-June, 1997.

## **WERNER-WASHBURNE**

"The regulation of gene expression during starvation-induced arrest in yeast," M. Werner-Washburne, P.I., Johnson and Johnson. Total requested \$159,960 from 5/1/92 through 4/30/96: Year 1—\$37,500, Year 2—\$39,525, Year 3—\$40,627, Year 4—\$42,308. (There are no indirect costs for this grant; it is to match my PYI.)

"Improving Beginning Biology at the University of New Mexico: A Plan for Evaluating Educational Effectiveness and Increasing Minority Student Retention," E.S. Loker, A. Evans, S.H. Ligon, M.A. Nelson, G. Stevens, K. Vogel and M. Werner-Washburne, Co-P.I.s, National Science Foundation. Total requested \$400,146 from 6/1/92 through 5/31/95: Year 1—\$120,967, Year 2—\$135,092, Year 3—\$144,087.

"Establishment of a Molecular Biology Facility," M. Werner-Washburne, M.A. Nelson, D. Marshall, D.O. Natvig and E.S. Loker, Co-P.I.s, National Science Foundation. Total requested \$321,000 from 6/1/92 to 5/31/95: Year 1—\$244,135, Year 2—\$37,290, Year 3—\$39,575. (These sums reflect direct plus indirect costs.)

"Acquisition of a Confocal Microscope," S.A. Stricker, E.S. Loker, D.L. Marshall, K.G. Vogel and M. Werner-Washburne, National Science Foundation. Total requested \$189,000 from 6/1/92 to 5/31/95.

**B. AWARDED WITH 1991 INITIAL START DATE.**

**ALTENBACH**

Professional Services Contract, "Evaluation of Abandoned Mines for Bat Habitat," Minerals and Natural Resources, Abandoned Mines Land Bureau, N.M. Department of Energy, July 1991—June 1992, \$5,000.

Preparation of a bat exhibit contract, N.M. Museum of Natural History, 1991 budget: \$1,000.

**BACA**

"Morbidity and Mortality in Tome-Valencia-Peralta Area, Late 1700s through the 1940s," O. Baca, P.I., UNM Center for Regional Studies, \$5,000, Summer 1991-Spring 1992.

**BARTON**

"Purchase of Environmental Scanning Electron Microscope," L.L. Barton and T. Ross, DOE, \$237,300, October 1991-October 1992.

"Biocorrosion and Flocculation of Biomolecules," L.L. Barton and T. Ross, WERC-DOE-NMSU, \$60,000, February 1992-February 1993.

"Applications of Biotechnology to the Management of Toxic Wastes," L.L. Barton, WERC-DOE-NMSU, \$61,200, February 1992-February 1993.

**BROWN**

Fellowship, John Simon Guggenheim Memorial Foundation, \$26,000, 1991-1992.

**CRAWFORD**

"The Sevilleta Field Station: Laboratory Equipment for Ecological Research," C.S. Crawford (PI), J.H. Brown, J.R. Gosz, T.K. Lowrey, D.L. Marshall, and R.R. Parmenter; NSF; \$119,834, 09/01/91-08/31/93.

"The Effects of Annual Flooding on Rio Grande Forests," M.C. Molles and C.S. Crawford (Co-PIs); U.S. Fish and Wildlife Service; \$80,000, 05/91-05/92.

Stream hyporheic zones: Hydrology, biogeochemistry, and links to surface waters and riparian plant communities. National Science Foundation, Ecosystem Studies Program. March 1, 1991-August 31, 1994. \$568,909. C.N. Dahm and M.E. Campana.

Harbingers of anthropogenic ecosystem stress: Mycorrhizal fungi and weedy plants. Environmental Protection Agency. The award for two years was made to Mike Allen at San Diego State University for \$215,000. A subcontract for \$26,261 was made to UNM for Year 1 of the project.

Supplemental awards from NSF for Research Education for Undergraduates (REU) for \$10,000 and Minority High School Science Education Program for \$6,000 for award.

**DUSZYNSKI**

"The Sevilleta Field Station: Development of a Regional Research Center in New Mexico." NSF (DIR-9013190). \$140,000 plus 50% cost-sharing from UNM. C.S. Crawford, J.H. Brown, J.R. Gosz, D.L. Marshall, R. Parmenter, D.W. Duszynski, T.L. Yates, Co-P.I.s.

"Renovation of Facilities for Integrated Research in Biology." NSF (RFO-90-21724). \$150,000 plus 50% cost-sharing from UNM. D.L. Marshall, M. Werner-Washburne, C.S. Wisdom, D.W. Duszynski, K. Vogel, Co-P.I.s.

"Parasite Composition and Population Structure of Galapagos Lava Lizards." UNM-LAI. \$2,000, August, 1991. D.W. Duszynski, P.I.

"Mammalian Diversity in Bolivia—The Yungas and Valles." NSF-REU Program. \$17,081, May, 1991-April, 1992. J.A. Cook and D.W. Duszynski, Co-P.I.s.

**EVANS**

"Phenological responses of herbaceous plants to environmental variation," Evans, A.S., Sevilleta Long-term Ecological Research (funded through National Science Foundation), \$3,000, January 1991-January 1992, \$3,000 per year.

"Facility renovation for integrated research in biology," Marshall, D.L., Duszynski, D.W., Evans, A.S., Lowrey, T., Werner-Washburne, M., Vogel, K., Wisdom, C.S., National Science Foundation (RFO-90-21724), \$150,000, February 1991-February 1992, \$150,000 per year.

**KODRIC-BROWN**

NSF MidCareer Fellowship in Environmental Biology (BSR-9106227), "Behavior, Ecology and Biogeography of Australian Desert Fishes," Fall 1991.



**LOKER**

"Small Instrumentation Grant," E.S. Loker, P.I., NIH, \$10,401, September 1991-August 1992.

**LOWREY**

"Rare Plant Species Reintroduction," Timothy K. Lowrey, P.I., National Wildflower Research Center, Austin, TX, \$2,500, December 1, 1991-December 31, 1992.

"Botanical Inventory of Taiwan." Robbin Moran, Missouri Botanical Garden, P.I., Timothy K. Lowrey (UNM), Thomas Lammers (Field Museum, Chicago), Warren Wagner (Smithsonian Institution), Bruce Bartholemew (Cal. Acad. Sciences, San Francisco), Co-P.I.s, National Geographic Society, \$27,000, July 1, 1991-June 30, 1992.

**MARSHALL**

Renovation of facilities for integrated research in biological science, D.L. Marshall (P.I.), (Co-PI's) A.S. Evans, T. Lowrey, C.S. Wisdom, M. Werner-Washburne, D.W. Duszynski, K.G. Vogel, National Science Foundation, \$150,000, February 1, 1991-February 1, 1992.

REU supplement to NSF grant, \$5,088, June 15, 1991-December 31, 1991.

**MILNE**

"Phase Transitions and Critical Phenomena in Woodland Ecotones," B.T. Milne and A.R. Johnson, National Science Foundation, June 1, 1991-May 1994, \$300,000, approximately \$100,000/yr.

**MOLLES**

"The Influence of Annual Flooding on the Rio Grande Riparian Forest," M.C. Molles, Jr. and C.S. Crawford, P.I.s, U.S. Fish and Wildlife Service, \$80,000, April 1991-April 1992.

**NATVIG**

"Cellular responses to superoxide-mediated stress in *N. crassa*," D.O. Natvig, National Science Foundation, \$124,000, Feb. 1, 1991-January 31, 1993. (This award includes an REU supplemental award of \$4,000 and a minority graduate student award of \$20,000.)

## **NELSON**

"Genes Required for Sexual Development of the Filamentous Fungi," Mary Anne Nelson, P.I., Biomedical Research Support Grant. Total requested \$7,031, from May 1, 1991—December 31, 1991. This grant was approved in the amount of \$4,290.

"Genes Involved in Sexual Development of the Filamentous Fungi," Mary Anne Nelson, P.I., Research Allocations Committee. Total requested \$2,500, from May 1, 1991—September 30, 1991. This grant was approved in the amount of \$2,500.

## **RIEDEL**

"Glycerol-induced Hyperhydration," third year renewal, \$78,509.

## **SNELL**

Monitoring of Selected Endangered Species in New Mexico, H.L. Snell, R.D. Jennings and N. Scott, N.M. Department of Game and Fish, January 1991—December 1992, \$30,000, approx. \$20,000/year.

Status of *Sceloporus graciosus arenicolous* in the Mescalero Sands of Southeastern New Mexico, H.L. Snell, N.M. Department of Game and Fish, July 1991—June 1992, \$10,000, approx. \$5,000/year.

Status of Jemez Mountain Salamanders, H.L. Snell and M. Altenbach, N.M. Department of Game and Fish, July—September 1991, \$4,000.

Human Impact on Biological Diversity: Techniques for Measurement and Management, H.L. Snell and A. Carasco, U.S. Agency for International Development Program in Science and Technology Cooperation, \$23,000, December 1991—March 1993. (This grant is administered through AID in Quito, Ecuador.)

Research and Conservation in the Galápagos Islands," H.L. Snell, UNM Foundation, \$30,000 in donations with matching grants from IBM Corp.

## **STRICKER**

Intranuclear Calcium Dynamics during Fertilization and Early Development, UNM RAC, \$1,935, 1991-92.

## **TRUJILLO**

"Cloning an Expression of PEPCK from Rat Liver in *E. coli*," Research Allocation Grant, funded for \$2,900, March 1991-March 1992.

Minority Access Research Career for Dominic Gabaldon, an undergraduate in my laboratory.

"Collagen packing in tissues: Relation to chemical environment and function," Alice Maroudas, PI, Kathryn Vogel, American Partner, United States-Israel Binational Science Foundation, \$121,050, September 1, 1991-August 31, 1994, Year 1 \$40,350 with \$2,500 to Prof. Vogel for travel to Israel.

**C. IN FORCE FROM PREVIOUS YEARS.**

**BARTON**

"Applications of Biotechnology to the Management of Toxic Wastes," L.L. Barton, WERC-DOE-NMSU, \$79,800, February 1991-February 1992.

"Biocorrosion and Flocculation of Biomolecules," L.L. Barton and T. Ross, WERC-DOE-NMSU, \$55,000, February 1991-February 1992.

**BROWN**

"LTREB Long-term monitoring and manipulation of the desert granivore system" J. H. Brown, NSF, \$76,648, January 1, 1988-December 31, 1992.

"Large-scale spatial and temporal variation in populations and assemblages of breeding birds," J.H. Brown, NSF, \$230,000, October 15, 1988-April 15, 1992.

**CRAWFORD**

"The Sevilleta Field Station: Development of a Regional Research Station in New Mexico," C.S. Crawford (PI), J.H. Brown, D.W. Duszynski, J.R. Gosz, D.L. Marshall, R.R. Parmenter and T.L. Yates, NSF, \$140,000, August 1, 1990-July 31, 1992, all expenditures in first year.

"Use of Strontium Isotope Ratios to Determine Points of Origin of Desert Detritus," C.S. Crawford and D. Brookins, UNM-RAC, \$2,480, all expenditures in first year (1991-1992).

**DAHM**

Long-path FTIR analysis of varying ecosystem processes over varying landscapes and spatial scales. National Science Foundation, Ecosystem Studies Program. 1990-1993. \$650,000. co-principal investigator with J.R. Gosz and P.G. Risser.

Long-term ecological research on climatic and ecological gradients: Sevilleta National Wildlife Refuge. National Science Foundation. 1988-1994. J.R. Gosz + 17 co-PI's of which I am one. \$2,400,000 (\$400,000 annually).

Manipulation of aquifer environmental factors to enhance biodegradation of organic contaminants. Water Resources Research Institute. July 1, 1990-June 30, 1991.  
\$24,922. C.N. Dahm and M.E. Watwood.

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#### **DUSZYNSKI**

"Host Genetic Factors Affecting Specificity of the Coccidia of Small Mammals." T.L. Yates and D.W. Duszynski Co-P.I.s, NIH-MBRS, approx. \$21,830/year, 1991 was 4th year of a 4-year award.

"Ecological-Climatic Gradients on the Sevilleta National Wildlife Refuge-A Long Term Ecological Research (LTER) Site." J.H. Brown, J.R. Gosz, B.T. Milne, M.C. Molles (P.I.s). I am one of 12 Co-P.I.s listed, N.S.F., \$2,400,000, 1988-1993, \$400,000/yr.

#### **JOHNSON, G.**

LTER Sevilleta Project, J.R. Gosz, B. Milne, J.H. Brown, G.V. Johnson, et al., NSF, \$2,400,000, October 1988-October 1994.

#### **KERKOF**

"Minority Access to Research Careers (MARC)," P.R. Kerkof, A. Atencio, and M. Garerina, P.I.s, National Institute of General Medicine Science (NIGMS), Total amount unspecified, June 1989-June 1994; yearly expenditure rate: \$10,500.

#### **LOKER**

"The Role of Biotic and Abiotic Factors in Controlling Disease-Transmitting Snails in Kenya: An experimental study," E.S. Loker, P.I., U.S. Agency for International Development, \$118,347 (direct costs), August 1989-August 1992.

"The Role of Lectins in Snail-Trematode Associations," E.S. Loker, P.I., NIH, \$575,022 (direct costs), December 1989-November 1994.

"Small Instrumentation Grant," E.S. Loker, P.I., NIH, \$12,100, September 1990-August 1991.

#### **MARSHALL**

"Long-term Ecological Research on the Sevilleta Wildlife Refuge," One of 16 Co-Principal Investigators, National Science Foundation, \$2,400,000, October 15, 1988-October 14, 1994. Yearly expenditure \$400,000.

Presidential Young Investigator Award, D. L. Marshall, National Science Foundation, \$25,000 to \$100,000 per year, October 15, 1989-October 14, 1994.

"The Sevilleta Field Station: Development of a Regional Research Center in New Mexico," Crawford, C.S., Brown, J.H., Duszynski, D.W., Gosz, J.R., Marshall, D.L.,

Parmenter, R.R., and Yates, T.L. National Science Foundation, August 1, 1990—July 31, 1992, \$140,000.

"Mechanisms of Non-random Mating in Wild Radish," D.L. Marshall, National Science Foundation, \$174,000, March 1, 1989—December 31, 1991.

#### **MILNE**

"Spatial Scaling: Animal Movements in Semiarid Landscape Mosaics," B.T. Milne, Department of Energy, August 1988—September 1991, \$150,000.

"Collaborative Research: Spatial Scaling and the Effects of Patch Mosaic Structure in Semiarid Ecosystems," B.T. Milne and J.A. Wiens, National Science Foundation, September 1988—August 1991, \$204,076, including \$6,000 supplied for Research Experience for Undergraduates.

"LTER: Long Term Ecological Research on Ecological/climatic Gradients on the Sevilleta," Gosz, J., J. Brown, B.T. Milne, M. Molles, and 12 co-principal investigators, National Science Foundation, October 1988—September 1994, \$2,400,000.

"Presidential Young Investigator Award," B.T. Milne, National Science Foundation, July 15, 1990—July 14, 1995, \$125,000 + contributions + matching.

#### **MOLLES**

"Long Term Ecological Research on Climatic and Ecological Gradients: Sevilleta National Wildlife Refuge," J.R. Gosz, R. Anderson, J.H. Brown, C. Crawford, C. Dahm, D. Duszynski, J. Findley, H. Grover, G. Johnson, T. Keift, D. Marshall, B. Milne, M.C. Molles, B. Musick, H.L. Snell, S. Wells, C. Wisdom and T. Yates, Co-P.I.s, NSF, \$2,400,000, October 1988–September 1993, \$400,000/year.

#### **RIEDEL**

"Glycerol-induced Hyperhydration," third year renewal, \$78,509.

#### **SNELL**

"The Galápagos Islands Biosphere Reserve: An Analysis of Biological Diversity and Human Impact," H.L. Snell, C. MacFarland, F. Cepeda, D. Evans, G. Machlis, The U.S. Man and the Biosphere Program, \$55,000, September 1990—August 1992, approx. \$25,000/year.

"The Herpetology of the Galápagos Islands: Research and Conservation," H.L. Snell and T.H. Fritts, The Tinker Foundation Inc., \$50,000, August 1987—June 1989, Year 1—\$5,000, Year 2—\$30,000, Year 3—\$10,000. Extended until December 1992 to spend remaining \$7,000.

"Long Term Ecological Research on Climatic and Ecological Gradients: Sevilleta National Wildlife Refuge," J.R. Gosz, R. Anderson, J.H. Brown, C. Crawford, C. Dahm, D. Duszynski, J. Findley, H. Grover, G. Johnson, T. Keift, D. Marshall, B. Milne, M.C. Molles, B. Musick, H.L. Snell, S. Wells, C. Wisdom and T. Yates, Co-P.I.s, NSF, \$2,500,000, October 1988-September 1993, \$400,000/year.

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#### **TOOLSON**

"Thermal Physiology of Cicadas and Regulation of Cuticular Permeability in Insects," NSF Grant DCB 88-11900, 1989-92, \$159,000.

Visiting Scholar Research Award, University of New England (Armidale, N.S.W., Australia), 1990-91, \$10,000.

"Natural and Sexual Selection and the Cactiphilic *Drosophila*-Epicuticular Hydrocarbon System," NSF Grant BSR 89-19957, 1990-92, \$68,883.

"Ecological Genetics of Cuticle Permeability and Epicuticular Hydrocarbon Composition in *Drosophila buzzatii* and Thermobiology of Australian Cicadas (Homoptera: Cicadidae)," NSF Mid-Career Fellowship in Environmental Biology (BSR 90-04284), 1990-91, \$42,638.

NSF Research Experience for Undergraduates Award (DCB 90-46954), 1990-91, \$2,818.

#### **VOGEL**

"Proteoglycan structure, metabolism and role in tendon," National Institutes of Health, RO1 AR36110-07, Kathryn G. Vogel, P.I., September 32, 1985-August 31, 1993, Year 7 award \$174,180.

"Fibroblast Proteoglycans and Collagen in Extracellular Matrix," Kathryn Vogel, Associate Investigator, NIGMS, NIH, Minority Biosciences Research Support, direct costs \$16,800, January 1, 1991-December 31, 1991.

#### **WERNER-WASHBURNE**

"The Role of Gene Regulation in Starvation-Induced Arrest in the Yeast *Saccharomyces cerevisiae*," M. Werner-Washburne, National Science Foundation. Approximately \$450,000 3-year MRI grant with 2-year, non-competitive extension November 15, 1989-November 15, 1994 (including IDC): Year 1—\$90,000 plus approximately \$25,000 in supplements; Year 2—\$111,575 plus approximately \$25,000 in supplements; Year 3—\$90,000 plus approximately \$15,000 in supplements so far; Years 4 and 5 are part of a creative extension written into MRI grants and will be for approximately \$100,000 per year.

"The Role of Gene Regulation in Starvation-Induced Arrest in the Yeast *Saccharomyces cerevisiae*," M. Werner-Washburne, National Science Foundation (PVI). Total costs between \$125,000 and \$500,000 from July 1, 1990-June 31, 1995: Year 1—\$25,000

base plus \$57,000 cash, donations, and matching; Year 2—\$25,000 base; Year 3—\$25,000 base; Year 4—\$25,000 base; Year 5—\$25,000 base.

**IV. GRADUATE EDUCATION. Include student's name, title of thesis or dissertation, semester awarded.**

**A. M.S. DEGREES AWARDED**

**JOHNSON, G.**

Sally Fortner, Plan II, Spring 1991.

**LIGON**

Lisa Ellis, "Delayed plumage maturation in Black-headed grosbeaks: A consequence of constraints on the first pre-alternate molt," Spring 1991.

**VOGEL**

Kenneth Sherrell, Plan II, November 1991.

**B. PH.D. DEGREES AWARDED.**

**BROWN**

K. Mangin (University of Arizona)

**LOKER**

Susan M. Bandoni, "Evolutionary relationships in the genus *Biomphalaria* Preston 1910 (Gastropoda: Planorbidae), Summer 1991.

Bruce V. Hofkin, "The role of the North American crayfish *Precambarus clarkii* in the biological control of schistosomiasis in Kenya," Summer 1991.

**LOWREY**

Colin Dyer, "Biosystematic Revision of African *Olea* (Oleaceae)," University of the Witwatersrand, South Africa, June 1991.

**MARSHALL**

Diana Oliveras, "Sexual selection and natural selection: Testing the nature of their interaction using a *Drosophila melanogaster* model system," August 1991.

## **MOLLES**

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Evelyn Cox, "Interactions between trophic levels on coral reefs: Scleractinian corals and corallivorous butterfly fishes in Hawaii," Fall 1991.

## **NATVIG**

Carol Lee Sabourin, "Molecular characterization of ultraviolet radiation-induced corneal tumors in a South American opossum, *Monodelphis domestica*," Fall 1991.

## **RIEDEL**

Timothy P. Lyons, "The effects of glycerol solutions on fluid compartments and hemodynamics in the rat," December 1991.

## **SNELL**

Randy D. Jennings, "The adaptive significance of morphological plasticity in tadpoles of the Chiricahua leopard frog, *Rana chiricahuensis*," Spring 1991.

## **TAYLOR**

Ted Nusbaum, "Ontogenetic integration in the Milkweed bug, *Oncopeltis fasciarias*," Spring 1991.

## **THORNHILL**

Barbara Hagar, "Reproductive allocation in sawflies and humans," Summer 1991.

### **C. GRADUATE COURSES AND NUMBER OF STUDENTS ENROLLED. NEW COURSES INDICATED WITH AN ASTERISK.**

#### **BARTON**

Biology 460L, Microbial Physiology, 16 students.

Biology 502, Biotechnology, 2 students.

Biology 502, Cell Molecular Seminar, 4 students.

#### **BROWN**

Biol. 515, Research in Field Biology, 8 students.

#### **CRAWFORD**

Fall: Biol. 507, 5 students.



**DUSZYNSKI**

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Fall: Biol. 651, Advanced Field Biology, 1 student.

**FINDLEY**

Biol. 489, History and Philosophy of Science.

**KERKOF**

Spring: Biol. 549, Molecular Cell Biology II.

Fall: Biol. 502, ST/Cell/Molecular Seminar, 5 students.

**KODRIC-BROWN**

Spring: Biol. 515, Research in Field Ecology, 6 students.

**LIGON**

Spring: Biol. 502, Avian Social Systems, 5 students.

Fall: Biol. 502, Avian Social Systems, 5 students.

**LOKER**

Spring: Biol. 402/502, Parasites and Hosts, 8 students.

Fall: Biol. 402/502, Parasites and Hosts, 8 students.

**LOWREY**

Spring: \* Biol. 502, Systematics and Evolution of the Compositae, 3 students.

**MARSHALL**

Spring: Biol. 568, Evolutionary Plant Ecology, 11 students.

Fall: Biol. 502, Topics in Plant Reproductive Ecology, 2 students.

**MOLLES**

Spring: Biol. 507, Bosque Biology, 3 students.

Fall: Biol. 507, Bosque Biology, 6 students.

**NATVIG**

Spring: Sabbatical leave.

Fall: Biology 502, Advanced Fungal Genetics (1 credit seminar), 6 students.

**NELSON**

Fall: \* Biol. 402/502, Advanced Fungal Genetics, 8 students.

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**RIEDEL**

Spring: \* Biol. 402-502, Space Physiology, 5 students.

**SNELL**

Biol. 402/502, Field Herpetology, 2 graduate students.

\* Biol. 500, New Graduate Student Seminar, 25 students.

Biol. 513, Physiological and Behavioral Ecology, 14 students.

**STRICKER**

Biol. 548, Scanning Electron Microscopy, 8 students.

\* Biol. 502, Ultrastructural Methods, 1 student.

\* Biol. 547, Advanced Techniques in Light Microscopy, 8 students.

**TAYLOR**

Biol. 557, 10 students.

**THORNHILL**

Biology 521, Advanced Behavioral Ecology, 7 students.

**TOOLSON**

Biol. 513, Physiological Ecology, 12 students.

**TRUJILLO**

Spring: Biol. 520, Energy and Metabolism, 18 students.

Biol. 502, Molecular Biology of the Endocrine Hormones, 4 students.

**VOGEL**

Biology 581 (Advanced Cell Biology), co-taught with Janet Oliver and Carolyn Mold, 25 students.

**WERNER-WASHBURNE**

Spring: Biology 402/502, Yeast Molecular Genetics, 12 students (9 graduate students).

Fall: \* Biology 402/502, Advanced Fungal Genetics, 8 students (6 graduate students).

Biology 444, 20 students (1 graduate student, 8 post-B.S. students).

**D. 551, 599 AND 699 STUDENTS.**

**BACA**

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Spring and Fall, Biol. 551, Robert Christner.

**BARTON**

Fall: Biol. 551, Bernadette Saiz.  
Biol. 599, Bernadette Saiz.  
Spring: Biol. 551, Miette Huybrechts.  
Biol. 599, Bernadette Saiz, Miette Huybrechts, Craig Vester.

**BROWN**

Q.-F. Guo, P. Marquet, Sommer, L. Hawkins, S. Mistry, K. Ernest, U. Shepherd,  
D. Kelt, W. Gannon, L. Valle, M. Skupski.

**CRAWFORD**

Spring: Biol. 551, R.L. Harrison, C.A. Blanco-Montero.  
Biol. 699, K.C. Flies.  
Fall: Biol. 551, C.A. Blanco-Montero, S. Brantley, U. Shephard.  
Biol. 699, K.C. Flies.

**DUSZYNSKI**

Fall: Biol. 551, Patty Wilber.

**JOHNSON, G.**

Spring: Biol. 551, Robert J. Cabin.  
Biol. 599, Glen L. Dennis.  
Fall: Biol. 551, Sean T. Dundon, Sheryl A. Henry, Dean F. Triebel.  
Biol. 599, Glen L. Dennis.

**KERKOF**

Spring: Biol. 551, Dean Argyres.  
Summer: Biol. 551, Dean Argyres.  
Fall: Biol. 551, Jenipher Jones.

**LIGON**

Spring: Biol. 551, Shawn Nordell.  
Biol. 699, Greg Farley, Rebecca Kimball.  
Fall: Biol. 551, Jean-Luc Cartron.  
Biol. 699, Greg Farley, Rebecca Kimball, Doug Kelt.

**LOKER**

Spring: Biol. 699, Susan Bandoni, Bruce Hofkin.  
Fall: Biol. 551, Tracy Boyce.

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**LOWREY**

Spring: Biol. 551, William Dvoracek.  
Summer: Biol. 551, Jannifer Gish.  
Fall: Biol. 551, William Dvoracek and Stephen Reed.

**MARSHALL**

Spring: Biol. 699, Diana Oliveras.  
Biol. 551, Robert Cabin.  
Fall: Biol. 551, Robert Cabin, Toby Bennett.

**MILNE**

Sterling Grogan, Colleen Hatfield, Quinfeng Guo.

**MOLLES**

Spring: Biol. 551, Ursula Sheperd.  
Biol. 599, James Daly.  
Biol. 699, Evelyn Cox.  
Fall: Biol. 599, James Daly.  
Biol. 699, Evelyn Cox.

**NATVIG**

Spring: Biology 551, James Baldwin (3 cr).  
Biology 551, William Dvorachek (3 cr).  
Biology 699, Carol Sabourin (12 cr).  
Summer: Biology 699, Carol Sabourin (12 cr).  
Fall: Biology 551, William Dvorachek (3 cr).  
Biology 551, James Baldwin (3 cr).  
Biology 551, Kenneth Sylvester (2 cr).

**NELSON**

Summer: Biol. 551, Tyler Sandra Merino and James Lawrence Baldwin.  
Fall: Biol. 551, Tyler Sandra Merino.

**RIEDEL**

Summer: Biol. 551, Karen Romero.  
Fall: Biol. 551, Karen Romero.

**SNELL**

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- Spring: Biol. 551, Lee Pierce, Alexis Schuler, James Stuart.  
Biol. 699, Lee Fitzgerald, Randy Jennings, Derrick Sugg.  
Fall: Biol. 551, Paul Stone.  
Biol. 699, Lee Fitzgerald and Derrick Sugg.

**STRICKER**

- Fall: Biol. 551, Patrick Doherty.

**TAYLOR**

- Spring: Biol. 599, Steve Kucera.  
Biol. 699, Ted Nusbaum.  
Fall: Biol. 599, Steve Kucera.

**TOOLSON**

- Spring: John Roach.  
Fall: Patricia Ashby, Todd Thompson.

**TRUJILLO**

- Spring: Biol. 699, Karen Adams.  
Fall: Biol. 699, Karen Adams.  
Biol. 551, Jeffery Landwer.

**VOGEL**

- Spring: Biol. 551 students, Stephen Evanko and James Robbins.  
Summer: Biol. 551 students, Stephen Evanko and James Robbins.  
Fall: Biol. 502 (Proteoglycans), 3 students.  
Biol. 551 students, Stephen Evanko and James Robbins.

**WERNER-WASHBURNE**

- Spring: Biol. 551, Christopher Padilla.  
Biol. 599, Patrick Doherty and Christopher Padilla.  
Fall: Biol. 551, James Baldwin and Ed Braun.  
Biol. 599, Patrick Doherty and Christopher Padilla.

- E. SERVICE ON GRADUATE STUDENT COMMITTEES, NOT AS CHAIR, IN SEMESTER ORAL EXAM WAS GIVEN.

**BARTON**

- Robert Sharp, II, M.S. in Civil Engineering, UNM.

**BROWN**

S. Grogan, F. Davis.

**EVANS**

Fall: David Bleakley, M.A.  
Robert Cabin, Ph.D.  
Douglas Kelt, Ph.D.  
Pablo Marquet, Ph.D.  
Spring: Pablo Marquet, Ph.D.  
Teresa Newberry, Ph.D.

**LOKER**

Summer: Steve Evanko (he was absent).  
Fall: Michael Patrick.

**LOWREY**

Spring: Ph.D. Committee member for Susan Bandoni's Oral Exam.

**MARSHALL**

Spring: Doug Kelt, Sharoukh Mistry, Alan Mabry.  
Fall: Fenny Cox.

**MILNE**

Sterling Grogan, Quinfeng Guo, Scott Watson (Electrical Engineering, Computer Engineering).

**MOLLES**

Spring: Ursula Sheperd, Yorgos Marinakis.  
Fall: Michael Patrick, Carlos Montero-Blanco.

**NATVIG**

Susan Bandoni (Doctoral final).  
Edwina Fuge (Doctoral final).

**STRICKER**

Summer: Steve Evanko, oral exam.

Yoron Gershovitz, Exercise Physiology, Health Promotion & Education Dept.  
 Yoav Meckel, Exercise Physiology, Health Promotion & Education Dept.  
 Wendy Wilson, Exercise Physiology, Health Promotion & Education Dept.

**WERNER-WASHBURNE**

Wendy Fuge, Ph.D. exam, February 1991.  
 Carol Sabourin, Ph.D. exam, July 1991.

**F. PROFESSIONAL ACCOMPLISHMENTS AND AWARDS OF YOUR GRADUATE STUDENTS,  
 EXCLUSIVE OF THOSE ON WHICH YOU WERE A CO-AUTHOR OR PARTICIPANT.**

**BARTON**

Miette Huybrechts has passed the first review at the national level for a Fulbright Scholarship.

**BROWN**

S. Mistry, NSF Doctoral Dissertation Award.  
 M. Skupski, Sigma Xi Grant-in-Aid of Research.

**CRAWFORD**

Papers presented by Carlos A. Blanco-Montero at the Southwestern Branch, Entomological Society of America meeting, February 11-13, College Station, TX (C.R. Ward, co-author):  
 a) "Denver billbug as a new turf pest for New Mexico."  
 b) "Population trends and control of white grubs in lawns."

**DUSZYNSKI**

Wilber, J.P., P.G. Hannon (Wilber) and W.E. Grant. 1991. Effects of seasonally varying diet quality on collared peccary population dynamics—a simulation study. Ecological Modelling 53:109-129.

Hannon (Wilber) P.G., D.M. Dowdell, R.L. Lochmiller and W.E. Grant. 1991. Dorsal-gland activity in peccaries at various physiological states. Journal of Mammalogy 72:825-827.

Patrick, M.J. 1991. Distribution of enteric helminths in Glaucomys volans L. (Sciuridae): A test for competition. Ecology 72:755-758.

Patrick, M.J. 1991. Occurrence of *Strongyloides robustus* (Rhabditata: Strongyloididae) in squirrels (Sciuridae) from Indiana County, Pennsylvania. Journal of the Pennsylvania Academy of Science 65:48-50.

**LOWREY**

David Haines, former M.S. student, Awarded NSF Doctoral Dissertatation Grant, Fall 1991. Now enrolled as Ph.D. student at Ohio State University. Presented paper at AIBS meetings, San Antonio, TX, August 1991.

**MARSHALL**

Contributed paper, Robert Cabin, Guild of Rocky Mountain Population Biologists, September, 1991.

Contributed paper, Joy Avritt, Guild of Rocky Mountain Population Biologists, September, 1991.

**MOLLES**

M. Tad Crocker, Honors, Executive Committee Member, North American Benthological Society.

**NELSON**

Tyler Sandra Merino awarded a Graduate Fellowship Act Fellowship in the amount of \$7,200 per academic year.

**SNELL**

Lee Fitzgerald:

PUBLICATIONS: 1

1991 GRANTS AND FELLOWSHIPS: World Wildlife Fund, \$10,000, continuing research on the biology of *Tupinambus* in Argentina; Fulbright Hayes Fellowship, \$15,000, 6-month support for field work in Argentina; Fellowship from the Grassroots Development Fund, \$7,000; LAI Travel Grant for field work in the Galápagos Islands, \$1,300; SRAC and GRAC grants for field work in the Galápagos, \$400.

INTERNATIONAL TRAVEL: Several months of field work in Argentina; additional field trips to Mexico and the Galápagos.

Allan Landwer:

GRANTS: "The cost of reproduction in three New Mexico lizard species (*Cnemidophorus tigris*, *Urosaurus ornatus*, and *Uta stansburiana*)," Summer 1991, LTER Fellowship—\$1,000 (LTER program, UNM Department of Biology); Spring 1991, UNM GRAC—\$250; Spring 1991, UNM SRAC—\$100.



PRESENTATIONS: "The cost of reproduction in the lizard *Urosaurus ornatus*: Preliminary results," Fifth Annual Meeting of the Southwestern Association of Biologists, Prescott, AZ, November 8-10, 1991.

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MEETINGS ATTENDED: Joint Annual Meeting of the 34th Annual Meeting of the Society for the Study of Amphibians and Reptiles and the 39th Annual Meeting of the Herpetologists League, August 6-11, 1991.

Lee Pierce:

AWARDS: Received a year-long research assistantship from Los Alamos National Laboratories, Los Alamos, NM.

Alexis Schuler:

PUBLISHED PAPERS: LOSOS, J.B. R.M. Andrew, O.J. Sexton and A.L. Schuler. 1991. Behavior, ecology and locomotor performance of the giant anole, *Anolis frenatus*. Caribbean Journal of Science 27:173-179.

GRANTS: "Phylogenetic analysis of the Galápagos lava lizards (genus *Tropidurus*) and its evolutionary implications," LAI Field Research Grant—\$2,000, GRAC—\$400, UNM Graduate Student Association—\$300.

INTERNATIONAL FIELD WORK: Spent four months in the Galápagos Islands.

Paul Stone:

GRANTS AND PROPOSALS: 1) "Effects of cat predation on lava lizard (*Tropidurus* spp.) behavior and morphology," LAI—\$2,000, UNM GRAC—\$250, UNM SRAC—\$250; 2) "Sexual selection in lava lizards (*Tropidurus* spp.): A pilot study," Animal Behavior Society Research Grant, \$1,000, pending, and Society for the Study of Amphibians and Reptiles, Grants-in-Herpetology, \$300, pending.

INTERNATIONAL FIELD WORK: Spent four months in the Galápagos Islands.

James N. Stuart:

Stuart, J.N. 1991. A note on defensive behavior in the New Mexico garter snake. Bulletin of the Maryland Herpetology Society 27(1):31-32.

Stuart, J.N. 1991. Partial albinism in a New Mexico population of *Bufo woodhousei*. Bulletin of the Maryland Herpetology Society 27(1):33.

Stuart, J.N. 1991. *Cnemidophorus exanguis*. Catalog of American Amphibians and Reptiles species account #516:1-4

Stuart, J.N. and C.S. Clark. 1991. Geographic distribution: *Chelydra serpentina serpentina* (common snapping turtle). Herpetological Review 22(4):134.

TECHNICAL REPORTS: Stuart, J.N., N.J. Scott and G.H. Farley. 1991. Use of riparian revegetation sites along the Rio Grandé by terrestrial vertebrates. Progress report, submitted to National Ecology Research Center, U.S. Fish and Wildlife Service, Ft. Collins, CO.

GRANTS: 1) "Status Survey of the Spotted Chorus Frog (*Pseudacris clarkii*) in New Mexico," New Mexico Share with Wildlife Program, 1992-93, approx. \$2,000; 2) "Preliminary Status Survey of the State-endangered Great Plains Narrowmouth Toad (*Gastrophryne olivacea*) in New Mexico," Endangered Species Program, N.M. Department of Game and Fish, 1992, approx. \$2,000.

Derrick Sugg:

TECHNICAL REPORTS: Sugg, D.W. 1991. Report of Activities at Elephant Butte Reservoir (1991), Bureau of Reclamation, Truth or Consequences, NM.

**THORNHILL**

Barbara Hagar, Post-doctoral award (2 years), College of Forestry, Syracuse University.

**TRUJILLO**

Ms. Sang Hsu, my Master's student, is presently a graduate student with Dr. Tonegawa (awarded Nobel Prize in 1987) at MIT.

**VOGEL**

Stephen Evanko, Young Investigator Award, the Orthopaedic Research Society for a paper to be presented in February 1992.

**WERNER-WASHBURNE**

Chris Padilla, Regent's Endowed Fellowship, Fall 1990 and Spring 1991.

Dan Caprioglio, Post Doctoral Fellow, was awarded an NSF Minority Post Doctoral Fellowship in June, 1991-1995.

Paul Melendres, an undergraduate in my laboratory, won the State Science Fair and won third place in the International Science Fair.

## V. UNDERGRADUATE EDUCATION.

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### A. UNDERGRADUATE COURSES TAUGHT EACH SEMESTER AND NUMBER OF STUDENTS ENROLLED. NEW COURSE INDICATED WITH AN ASTERISK.

#### **ALTENBACH**

- Spring: Biol. 110, Biology for Non-Mjaors, 80 students.  
Biol. 435, Animal Physiology, 20 students.  
Fall: Biol. 110, Biology for Non-Mjaors, 140 students.  
Biol. 421, Comparative Vertebrate Anatomy, 10 students.

#### **BACA**

- Spring: Biol. 239, Microbiology for Health Science, 97 students.  
Biol. 454, Pathogenic Bacteriology, 32 students.  
Fall: Biol. 239, Microbiology for Health Sciences, 94 students.

#### **BOURNE**

- Spring: Biol. 237-001, Human Anatomy and Physiology I, 169 students.  
Biol. 238-001, Human Anatomy and Physiology II, 229 students.  
Biol. 416-001, Histology, 34 students.  
Fall: Biol. 237-001, Human Anatomy and Physiology I, 231 students.  
Biol. 237-002, Human Anatomy and Physiology I, 118 students.  
Biol. 238-001, Human Anatomy and Physiology II, 104 students.

#### **BARTON**

- Biol. 350L, General Microbiology, 66 students.  
Biol. 402, Biotechnology, 1 student.

#### **BROWN**

- \* Biol. 386, General Vertebrate Zoology, 48 students.

#### **CRAWFORD**

- Spring: Biol. 407/507, 18 students; \* Biol. 402/502 (Desert Field Biology), 13 students.  
Fall: Biol. 407, 18 students.

#### **DUSZYNSKI**

- Fall: Biol. 404L, Marine Invertebrate Lab, 17 students.

#### **FINDLEY**

- Fall: Biol. 224, Natural History of the Southwest, 26 students.

**JOHNSON, G.**

- Spring: Biol. 478, Plant Physiology, 8 students.  
Biol. 478L, Plant Physiology Lab, 8 students.  
Fall: Biol. 491, Radiobiology, 5 students.  
Biol. 491L, Radiobiology Lab, 5 students.

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**JOHNSON, W.**

- Spring: Biol. 123-001, Biology for Health-Related Sciences and Non-Majors, 113 students  
Biol. 221-001, Introd. Genetics, 114 students  
Biol. 222-001, Introd. to Genetic Problems, 51 students  
Biol. 223-001, Introd. Genetics Laboratory, 16 students  
Biol. 223-002, Introd. Genetics Laboratory, 11 students  
Fall: Biol. 221-001, Introd. Genetics, 96 students.  
Biol. 222-001, Introd. to Genetic Problems, 36 students.  
Biol. 223-001, Introd. Genetics Laboratory, 23 students.  
Biol. 223-002, Introd. Genetics Laboratory, 19 students.  
Biol. 428-001, Human Heredity, 23 students.

**KERKOF**

- Spring: Biol. 429, Molecular Cell Biology, 102 students.  
Biol. 439, Molecular Cell Biology Lab, 17 students.  
Fall: Biol. 449, Molecular Cell Biology, 36 students.

**LIGON**

- Spring: Biol. 379, Conservation Biology, 24 students.

**LOKER**

- Fall: Biol. 371, Invertebrate Zoology (with Dr. S. Stricker), 40 students.

**LOWREY**

- Spring: \* Biol. 402, Evolution and Systematics of the Compositae, 2 students.  
Fall: Biol. 363, Flora of New Mexico, 20 students. Course completely revised and lab manual under development.

**MARSHALL**

- Spring: Biol. 468, Plant Reproductive Ecology, 2 students.  
Fall: Biol. 200, Principles of Ecology, 30 students.  
Biol. 402, Special Topics in Biology, 1 student.

**MILNE**

- Spring: Biol. 401, Biometry, 18 students.  
Fall: Biol. 260, Principles of Botany, 17 students.

**MOLLES**

- Spring: Biol. 122, Principles of Biology, 182 students.  
Biol. 407, Bosque Biology, 12 students.  
Fall: Biol. 407, Bosque Biology, 14 students.

**NATVIG**

- Spring: Sabbatical leave.  
Fall: Biology 121, Principles of Biology, 547 students.  
Biology 402, Advanced Fungal Genetics (1 credit seminar), 3 students.

**NELSON**

- Fall: \* Biol. 221, Introductory Genetics, 100 students.  
\* Supervised Biol. 222, Introductory Genetics Problems, 40 students.  
\* Biol. 402/502, Advanced Fungal Genetics, 8 students.

**RIEDEL**

- Spring: Biol. 430, Vertebrate Physiology, 19 students.  
Fall: Biol. 430, Vertebrate Physiology, 13 students.  
Biol. 431L, Vertebrate Physiology Lab, 3 students.

**SNELL**

- Fall: Biol. 402/502, Field Herpetology, 6 students.  
Spring: Biol. 488, Herpetology, 16 students.

**STRICKER**

- Fall: \* Biol. 371, Invertebrate Biology, 38 students.

**TAYLOR**

- Spring: Biol. 402, Special Topics in Biology, 5 students.  
Fall: Biol. 300, Evolution, 45 students.

**THORNHILL**

- \* Biology 365, The Evolution of Human Sexuality, 65 students.

**TRUJILLO**

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- Fall: Biol. 412, Developmental Biology, 23 students.  
Biol. 452, Vertebrate Endocrinology, 24 students.  
Spring: Biol. 402, Molecular Biology of the Endocrine Hormones, 8 students.

**VOGEL**

- Spring: Biology 121, Principles of Biology, 250 (?) students  
Fall: Biol. 402 (Proteoglycans) and laboratory research: Ronica Martinez and Bernice Galloway.  
Fall: Biology 456, Immunology, 58 students.  
Summer: Biol. 402 (Proteoglycans) and laboratory research: Ronica Martinez and Bernice Galloway.

**WERNER-WASHBURNE**

- Spring: Biol. 402/502, Yeast Molecular Genetics, 12 students (3 undergraduates).  
Fall: Biol. 402/502, Advanced Fungal Genetics, 8 students (2 undergraduates).  
Biol. 444, Molecular Biology, 20 students (11 undergraduates).

**B. NAMES OF BIOLOGY 400 AND 499 STUDENTS SUPERVISED.****BACA**

- Spring: Biol. 499, Lise Michelle Prewitt.  
Summer: Biol. 499, Julie Ann Kubler.

**BARTON**

- Fall: Biol. 400, Eric Marietta, Victoria Vasilion.  
Biol. 499, Wendy Jewell.  
Spring: Biol. 400, Eric Marietta, Mahesh Pant, Rob Yorkin.  
Biol. 499, Deborah Bearden.

**BROWN**

Kelly Burks (Honors Advisor).

**CRAWFORD**

- Spring: Biol. 499, P. Ashby, S. Brantley, F. Heinzelmann, M. Parker.  
Fall: Biol. 499, F. Heinzelmann.

**DUSZYNSKI**

- Spring: Biol. 499, C. Altenbach, E. Boyer.

### **EVANS**

Fall: Biol. 400, Melanie Marshall.

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### **JOHNSON, G.**

Spring: Biol. 499, Jaime E. Escobar, Edward D. Vigil.

### **KERKOF**

Spring: Biol. 499, Michael Sapeta, Chris Sundberg.

Fall: Biol. 499, Josh Shook, Debbie Zamora.

### **LIGON**

Spring: Biol. 499, Carol Breslin.

Summer: Biol. 499, J. Hise, C. Vincent.

### **MARSHALL**

Spring: Biol. 499, Kathleen McGee.

Fall: Biol. 400, Kathleen McGee.

Biol. 499, Joy Avritt.

### **NATVIG**

Spring: Biology 499, Ken Sylvester (2 cr).

### **NELSON**

Summer: Biol. 499, Jenipher Marie Jones.

### **RIEDELSEL**

Spring: Biol. 499, Peter Koenigsberg.

Fall: Biol. 499, Kitrian Martin.

### **SNELL**

Spring: Biol. 400, Craig Clark.

Biol. 499, Regina Gorum.

Summer: Biol. 499, David Stricker.

Fall: Biol. 499, Yvonne Chauvin.

### **STRICKER**

Summer: Biol. 499, Craig Gillas, Kenneth Conwell.

Fall: Biol. 400, Sheryl Barker.

### **TOOLSON**

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Spring: Biol. 499, Patricia Ashby.  
Fall: Biol. 499, Michelle Parker.

### **TRUJILLO**

Spring: Biol. 499, Ken Conwell, Kimberly Fincher, Ken Colbeck, Devona Ratliff, Danielle Reynolds, Audrey Romero, Nicholas Elliott, Dominic Gaboldon, Lara Hays, Joan Stearly.  
Fall: Biol. 499, Ken Conwell, Kimberly Fincher, Ken Colbeck, Devona Ratliff, Danielle Reynolds, Audrey Romero, Nicholas Elliott, Dominic Gaboldon, Lara Hays, Joan Stearly.

### **WERNER-WASHBURN**

Fall: Biol. 499, Braeden Butler.  
Spring: Biol. 499, Rina Maldonado.

## **VI. DEPARTMENTAL HIGHLIGHTS.**

### **A. SYMPOSIA, WORKSHOPS, CONFERENCES, ETC., SPONSORED, HOSTED, ORGANIZED.**

#### **LOWREY**

Member, Organizing Committee and Chairman of Keynote Speaker Subcommittee, Southwest Symposium on Rare and Endangered Plants, held in Santa Fe, NM, March 1992.

#### **MOLLES**

Student Awards Chair, 39th Annual Meeting of the North American Benthological Society, Santa Fe, NM, May 20-25, 1991.

#### **SNELL**

Organized the Biology Graduation Ceremony.

#### **STRICKER**

Co-organizer, Southwest Developmental Biology Conference, to be held 22-24 May 1992.  
Co-organizer of Symposium: "Reproduction and Development of Marine Invertebrates" to be held June 9-12, 1992.



**B. INDIVIDUAL HONORS: AWARDS, PRIZES, FELLOWSHIPS, LECTURESHIPS, TEACHING DISTINCTION, ETC.**

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**BACA**

Invited, Associate of the Southwest Hispanic Research Institute, UNM.

Australian Patent No. 611630, issued November 5, 1991, "Detection and Differentiation of *Coxiella burnetii* in Biological Fluids (with DNA probes)." With M. Frazier, J. Samuel and L. Mallavia.

**BROWN**

University of New Mexico Regents' Professor, 1990-1993.

Fellowship, John Simon Guggenheim Memorial Foundation, \$26,000, 1991-1992.

Distinguished Visiting Faculty, Kellogg Biological Station, Hickory Corners, MI, July 1-4, 1991.

**FINDLEY**

Regents' Distinguished Service Award.

**KERKOF**

A candidate for Chairman of the Department of Biology.

**KODRIC-BROWN**

NSF MidCareer Fellowship in Environmental Biology, Fall 1991.

**LOKER**

Fogarty Senior International Fellowship, NIH, for sabbatical leave to the University of Glasgow, Scotland, 1992.

**MARSHALL**

Potter Chair in Plant Ecology, May 1991.

**NATVIG**

Elected to Faculty Senate as at-large senator.

**THORNHILL**

Japan Society for Promotion of Science Fellowship.

Visiting Professor, Nagoya University, 1991.

Visiting Professor Kyoto University, 1991.

**C. DISTINGUISHED DEPARTMENTAL VISITORS HOSTED.**

**BARTON**

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Dr. Frank A. Fekete, one-year sabbatical in my lab.

Prof. Elizabeth Theil, Department of Biochemistry, North Carolina State University, for a seminar/visit.

**BROWN**

Martinez, Ceballos, Stevens.

**CRAWFORD**

Prof. M.R. Warburg, Technion Institute, Haifa, Israel.

Prof. T.J. Cohn, San Diego State University.

**DUSZYNSKI**

Dr. Gheary Pettit, Associate Dean, College of Veterinary Medicine, Washington State University, Pullman, WA, September 10, 1991.

Dr. Norman E. Hutton, Associate Dean, College of Veterinary Medicine, Oregon State University, Corvallis, OR, October 24, 1991.

Dr. Robert B. Griewe, Professor of Pathology, Colorado State University, Ft. Collins, CO, November 19, 1991.

**JOHNSON, G.**

Dr. Gregory Phillips, New Mexico State University, Departmental Seminar, April 16, 1991.

**LIGON**

Dr. Jeff Walters, North Carolina State University, Departmental Seminar, November 12, 1991.

**LOKER**

Hosted Dr. Ryuichi Uchikawa and his family, Department of Medical Parasitology, Kagoshima University, Japan, for one year.

Dr. Robert Grieve, Department of Pathobiology, Colorado State University, departmental seminar speaker (with Dr. D. Duszynski).

Dr. Xavier Henriques, Department of Veterinary Science, University of Arizona, departmental seminar speaker (with Dr. F. Monroy).

**LOWREY**

Dr. Douglas Soltis, Washington State University, February 1991.  
 Dr. Tim Hoffman, New Mexico State University, March 1991.

**MARSHALL**

Dr. Thomas Mitchell-Olds, Fall.

**MILNE**

Dr. Zev Naveh, landscape ecologist from Israel.  
 Drs. Scott Collins and Susan Glenn, plant ecologists from University of Oklahoma.

**NELSON**

Prof. Giuseppe Macino, April 8, 1991.  
 Prof. Martinez Hewlett, May 2, 1991.  
 Prof. Gerald Hazelbauer, November 21, 1991.  
 Prof. Robert L. Metzenberg, December 10, 1991.

**SNELL**

Daniel Evans, Director of the Charles Darwin Research Station, April 1991.

**STRICKER**

Dr. C. Larry Keenon, Demonstration of Confocal Microscopy, November 1991.  
 Dr. Alan Morris, Demonstration of Ratiometric Methods, December 1991.

**WERNER-WASHBURNE**

Dr. Robert Metzenberg (partially funded and arranged by the Wisconsin/UNM faculty exchange program I set up in 1988), December 10, 1991.  
 Dr. Gerald Hazelbauer, November 21, 1991.

**D. MUSEUM CURATOR, UNDERGRADUATE ADVISOR, ASSISTANT CHAIR, EM DIRECTOR, ETC.****BACA**

Graduate Program Advisor (1991-92).

**CRAWFORD**

Associate Chair, Biology.  
 Curator, Insect Collection.

**DUSZYNSKI**

Chairman of Biology, January 1-July 31, 1991.  
President and Founder, Biological Society of New Mexico.

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**FINDLEY**

Director, Museum of Southwestern Biology.

**JOHNSON, W.**

Transfer Student Advisor.  
Application for Degree Evaluator (Sem. II).

**KODRIC-BROWN**

Graduate Student Advisor.

**LIGON**

Elected Chairman of the Department of Biology, began serving on August 1, 1991.

**LOKER**

Associate Chair (Fall).

**LOWREY**

Curator, UNM Herbarium.

**MOLLES**

Curator, Ichthyology Division, Museum of Southwestern Biology.  
Undergraduate Advisor.

**SNELL**

Curator, Herpetology Division, Museum of Southwestern Biology.

**STRICKER**

Director, Department of Biology, Electron Microscopy Facility.

**VOGEL**

Assistant Chairman, Spring.  
Associate Chairman, Summer and Fall.

**WERNER-WASHBURNE**

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Undergraduate advisor and mentor to about 30 students.

**E. COMMITTEE SERVICE.**

**1. Departmental committees served on in 1991 (indicate chair with asterisk).**

**BACA**

Departmental Representative, A & S Graduate Policy Committee (1991-92)  
Undergraduate Policy Committee (Spring)

**BARTON**

\* Co-chair, Media Prep. Committee

**BOURNE**

Health Professions Advisor

**BROWN**

Graduate Policy Committee  
Chair's Advisory Committee  
Potter Chair Committee  
Promotion and Tenure Committee

**CRAWFORD**

\* Space  
\* Library Liason  
\* LTER Liason

**DUSZYNSKI**

\* Chairman's Advisory Committee (January-July)  
\* Biological Society of New Mexico Committee  
Microbial Cell Center Advisory Committee (January-July)

**EVANS**

Space Committee

Greenhouse Committee (work for this newly-formed committee included writing  
"Guidelines for Pest Management and General Cleanliness" and "Information for  
New Users," and arranging a seminar on "Safe Pesticide Use Procedures."

**FINDLEY**

\* Tenure and Promotion Committee

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**JOHNSON, G.**

Greenhouse Committee  
Undergraduate Policy Committee (Spring)  
Biology Graduation Committee

**JOHNSON, W.**

Media Prep./Culture Collection Committee

**KERKOF**

Undergraduate Policy Committee

**LIGON**

\* Graduate Policy Committee (Spring)

**LOKER**

Chairman, Graduate Policy Committee (Fall)  
Chairman, Seminar Committee (Fall)  
Head, Proposal Committee to NSF's Program in Undergraduate Course and Curriculum  
Improvement for "Improving Beginning Biology at UNM."  
Member, REMI proposal committee  
Member, Howard Hughes proposal committee

**LOWREY**

\* Seminar Committee  
Greenhouse Management Committee (Fall)

**MARSHALL**

Space Committee  
Computer Use Committee  
Chair's Advisory Committee  
University Priority Hiring Committee  
\* Greenhouse Committee  
Research Day Committee

**MOLLES**

Undergraduate Policy Committee  
\* Teaching Awards Committee  
\* Teaching Evaluation Committee

**NATVIG**

Undergraduate Policy Committee  
Cell/Micro Area Advisory Committee  
Chairman's Advisory Committee on Departmental Reorganization

**NELSON**

Undergraduate Policy Committee  
Research Day Planning Committee

**RIEDEL**

Animal Care and Use Committee

**SNELL**

\* Graduation Committee  
\* Liaison with the Latin American Institute  
\* Graduate Student Selection Committee  
\* Laboratory Animal Utilization  
Graduate Policy Committee

**STRICKER**

Graduate Student Selection

**TAYLOR**

\* Computer Use Committee (Spring)

**THORNHILL**

Seminar committee.

**TOOLSON**

Graduate Policy Committee

**TRUJILLO**

Admissions for Degree Advisor

Microbiology Media Prep Committee

**VOGEL**

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\* Undergraduate Policy, Fall  
Tenure and Promotion

**WERNER-WASHBURNE**

Graduate Policy Committee  
Committee to Respond to Provost's Teaching Documents  
Priority Hiring Committee  
Media Prep Oversight Committee

**2. College/University committees served on in 1991 (indicate chair with asterisk).**

**ALTENBACH**

\* Chairman, Committee on Teaching of Natural Science for Pre-Service Elementary  
School teachers (Fall)  
Member, College of Arts and Sciences Undergraduate Curriculum Committee  
Member, UNM Council on Teacher Preparation

**BACA**

\* A & S Tenure/Promotion Committee  
Committee to Evaluate Dean of Pharmacy (Hadley)  
UNM Athletic Council  
Legislative Coordinating Committee  
Biomedical Research Support Grant Committee  
Sandia-University Research Program Grant Committee  
KUNM Radio Board (appointed by Board of Regents)  
\* Institutional Biosafety Committee on Recombinant DNA

**BARTON**

Member, UNM Scholarship Prizes and Awards Committee  
Member, Ad-Hoc Biomedical Graduate Program

**BOURNE**

Undergraduate Policy Committee (Spring)  
Curricula Committee (Fall)

**DUSZYNSKI**

UNM Academic Freedom and Tenure Committee, 1991-1993, elected.



UNM Faculty Senate Research Policy Committee, *ad hoc* member in December, 1991  
to interview two UNM finalists for VP/Research/Dean of OGS position.

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**JOHNSON, G.**

\* Faculty Senate Library Committee  
Teaching Enhancement Committee (ex-officio member)

**JOHNSON, W.**

UNM Health Sciences Advisory Committee  
Academic Sampler Committee for UNM Homecoming  
Faculty Senate Undergraduate Committee

**KERKOF**

UNM Radiation Protection Subcommittee  
Teaching Enhancement Committee  
\* Teaching Allocations Subcommittee

**LOKER**

Member, University Reallocation Committee on Advising

**SNELL**

Main Campus Animal Care and Use Committee  
Latin American Institute Travel Grant Review Committee

**TOOLSON**

A & S Curriculum Evaluation Committee

**TRUJILLO**

Radiation Control Committee

**VOGEL**

Research Policy Committee  
\* Interdisciplinary Research Subcommittee of RPC  
Radiation Control Committee

**WERNER-WASHBURNE**

Faculty Senate until June 1991

**F. OTHER.**

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**ALTENBACH**

Undergraduate Advisor

**BACA**

Research Professor of Microbiology

Member, N.M. State University's Recombinant DNA Committee

Search Committee for a molecular-immunologist, Microbiology Department, UNM School of Medicine.

**BARTON**

Judge Chairman of Microbiology, Northwestern New Mexico Science and Engineering Fair

Member, Advisory Committee, Sigma Xi, UNM Chapter

**BROWN**

Sabbatical leave, Fall 1991, Australia

**DUSZYNSKI**

UNM Advisor, Preveterinary Medicine; counsel about 20-30 students annually.

Coordinated organization for Biology Department's Third Annual Commencement, May 1991.

Took Marine Invertebrate Biology class (Biol. 404L) to Puerto Penasco, Sonora, Mexico, on field trip, October 19-26, more than 20 individuals.

**EVANS**

Organized and ran weekly informal discussions of current topics in ecology and evolution among graduate students and faculty, Fall (This long-standing department tradition had disappeared.)

**JOHNSON, G.**

Represented the Department of Biology at Motivational Workshop Program, UNM Medical School, July 20, 1991. Presented a talk on biology as a major or minor for pre-med students.

Participated as a biology representative in "Find a Major" Program, November 6, 1991.

Directed summer research of an undergraduate, Elaine Martinez, for UNM Program to Encourage Minority Participation in Graduate Education.

**JOHNSON, W.**

One-on-One Program, Spring 1991

**KERKOF**

Assisted the Albuquerque Police Department Forensics Laboratory with "DNA Fingerprinting."

**KODRIC-BROWN**

Sabbatical leave, Fall 1991, Australia

**LOKER**

Head, Proposal Committee to NSF's Program in Undergraduate Course and Curriculum Improvement for "Improving Beginning Biology at UNM."

Member, REMI proposal committee

Member, Howard Hughes proposal committee

**MARSHALL**

Community service: Guest speaker for in-service day at Inez Elementary School

**MOLLES**

Maintenance of a captive population of an endangered species, *Thermosphaeroma thermophilum*, the Socorro isopod, in cooperation with the N.M. Department of Game and Fish and the U.S. Fish and Wildlife Service.

**NATVIG**

Sabbatical Leave, Fall 1991

Faculty senate member, beginning Fall 1991

**NELSON**

Participated in "One-on-One" Program for new students at UNM; mentored two students. Spoke at the first UNM-AISES meeting of the year on opportunities for students in the Biology Department, September 12, 1991.

Ran the Biology Department table at "Finding a Major" Day, UNM Ballroom (SUB), November 6, 1991.

**SNELL**

Evening teaching, taught at least one course in the evening for each semester, every year since Fall, 1987.

Made a one-week field trip to the San Carlos region of Sonora, Mexico, with my herpetology class, April 1991.

Several field trips to Latin America, including a four-month trip to the Galápagos.

**TAYLOR**

Supervisor of Honors Program

**VOGEL**

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Organized departmental participation in "Finding a Major" Day  
Secured funding for Research Day, April, 1992.

**WERNER-WASHBURNE**

Ran Biology Department Table for "Finding a Majors" Day, UNM (SUB), November 6, 1991.

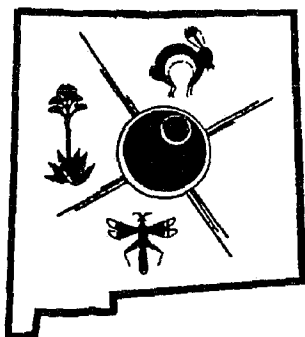
Mentored two students in the "One-on-One" program, Spring 1991.

Panel member at TARC meeting on Minority Education, April 1991.

Contributor MBRS grant for North Campus and UNM-Biochemistry-Nicaragua teaching program.

# **APPENDIX D**

***ANNUAL NEWSLETTER  
OF THE  
BIOLOGICAL SOCIETY OF NEW MEXICO  
VOL. 7, 1991***



# THE BIOLOGICAL SOCIETY OF NEW MEXICO

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VOLUME 7,

DECEMBER, 1991

## Greetings!

by J. David Ligon  
Professor and Chair

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Several noteworthy events have occurred since the last *BSNM* newsletter. One of them was the decision by Don Duszynski to step down as Chair of the UNM Department of Biology. Don gave us nearly 10 years of leadership, during which time he produced many significant accomplishments. One of these is the founding of The Biological Society of New Mexico and its annual newsletter, which has given you the opportunity to read about the many good things that our faculty and graduate students have done during Don's tenure.

I am Don's successor as Chair. For those of you who do not know me, let me give a brief sketch of my background and interests before providing a very brief overview of our Department from a new Chair's perspective. I came to UNM in 1968 as the first ornithologist to be hired at this university. (Do any of you remember the Skin-Ins vs. Skin-Outs football game of 1968, with Bud Riedesel on the trombone? Coaching the Skin-Outs to a convincing victory over the physiologists, etc., remains one of my early departmental accomplishments!) Thus, although I am the new

Chair, I am also an old-timer in this Department. My 23-year career at UNM has been highlighted by the life-long friends I have made, both among my faculty colleagues and among many of the graduate students who have come and gone over the years. Other noteworthy professional endeavors include a long-term (1975-1984) field project in Kenya and, more recently, a year's sabbatical of research and writing in Australia. These foreign ventures were conducted with my wife, Sandy (Husar), who received an M.S. degree from our Department in 1973 and who was appointed as a Lecturer here in 1979. To sum up, Sandy and I have long ties with the Department and with many of the people affiliated with it.

As you probably already know, our Department has become quite visible at a national level. This recognition is based on various professional accomplishments by our faculty and graduate students. In last year's newsletter, you read about three Presidential Young Investigators and the Long-Term Ecological Research program on the Sevilleta National Wildlife Refuge. The area of biology broadly labeled "cell-molecular" is also beginning to gain momentum here in a way not seen

(Cont. from p. 1)

before. It would take a great deal of space to describe the scholarly publications, the grants obtained, and the other professional successes enjoyed over the past year by our very productive faculty. So I will simply say that if you are a current or former member of this Department, you can be very pleased with the professional development and the national and international recognition that the faculty has earned over the past two decades.

Based on just about any measure, the Department of Biology has become a real success story at UNM. For example, we are now one of the largest departments in the College of Arts and Sciences, we lead all other science departments in obtaining competitive grants and contracts, and we teach a great many students. Given this generally happy situation in a perennially resource-limited environment, I am confident that we will continue to contribute to the educational mission of UNM, both through teaching and research, and that we will have good news to share with you each year into the indefinite future. For me personally, it is a privilege to serve as Chair of this group of faculty, and my goal is to help them attain their professional goals.

Finally, I want to say *thank you* for your interest and support.

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## FACULTY HIGHLIGHTS

### The Sustainable Biosphere Initiative

**D**R. JIM GOSZ will become the first Program Director for the Sustainable Biosphere Initiative (SBI) in January, 1992. The SBI is a new, multi-year, multi-disciplinary program of the Ecological Society of America. It will focus on the necessary role of ecological science in the wise management of Earth's resources and the maintenance of Earth's life support systems. SBI will focus on three priority areas: global change, biological diversity, and sustainable ecological systems within this framework.

SBI's plans include basic research for the acquisition of eco-logical knowledge, applied research to understand environmental problems, communication of that knowledge to citizens, and incorporation of that knowledge into policy and management decisions.

The research recommendations of SBI will: 1) examine the ways that ecological complexity controls global processes; 2) address both the importance of biological diversity in controlling ecological processes and the

*The SBI will focus on the necessary role of ecological science in the wise management of Earth's resources and the maintenance Earth's life support systems.*

role those processes play in shaping patterns of diversity at different scales of time and space; and 3) establish a major, integrated program on the sustainability of ecological systems in natural and human-dominated ecosystems so that restoration and management recommendations regarding Earth's ecological systems can be made.

Jim's role as Program Director will be to develop and hold workshops on these topics to formulate a research strategy, and to work with different agencies to develop an integrated plan and support for the necessary research. He will also help with briefings to Congress on SBI issues, plans and progress.

The SBI office will be located in Washington, D.C. Initial funding has been provided by the National Science Foundation (NSF), with subsequent support provided by a number of federal agencies.

Jim expects to direct SBI for one year with the aim of the federal government then setting up a permanent office.



## Biology's First Endowed Chair

As alumni and friends who have followed our activities over the last five or six years, many of you are aware that we have been building an endowment called the Loren D. Potter Chair in Plant Ecology since June, 1985. The details and the history of this endowment can be found in earlier editions of our newsletter.

At the Biology Department's Commencement this past May, our Provost, Dr. Paul Risser, announced that Dr. DIANE MARSHALL is the first recipient of the Potter Endowed Chair. As Chair, part of the annual interest on the principle of the Potter Endowment is available to Diane for research purposes in each of the next five years.

Diane joined the Biology Department in August, 1985, after having spent a year as an Assistant Professor at Earlham College and two years as a Research Scientist at the University of California at Riverside.

Diane has clearly distinguished herself in every way possible since joining our faculty. She has established herself as a leader in her chosen area of study, plant reproductive biology. She has published prolifically (25 papers) in the best refereed journals in ecology, presented nearly 30 papers and posters at professional meetings worldwide and another 27 invited seminars at major research universities, is the principal or co-principal investigator on five major NSF grants since coming to UNM, and in 1989, she was one of only four young ecologists in the United States to receive a Presidential Young Investigator (PYI) Award from NSF. At the time, her's was one of only two PYIs ever to be received by a faculty member at UNM and the first one in the College of Arts and Sciences. In November, 1990, she was appointed a Regents' Lecturer for three years, one of the most prestigious awards with which UNM can honor its faculty for outstanding achievement.

In the classroom, the results are the same. She has taught five different courses since joining our department, and students and faculty who have witnessed her teaching find it praiseworthy. In the Spring of 1990, she was nominated for the UNM Outstanding Teacher Award by the students in her classes.

Both at the departmental level and at the university level, she is a tireless committee worker and a departmental citizen *par excellence*. Given her area of interest and her enormous contributions, Diane is the appropriate and well-deserving person to be the recipient of Biology's First Endowed Chair: the L.D. Potter Chair in Plant Ecology. Congratulations, Diane, and *thank you* for your hard work!

—D. Duszynski

## New Department Chair: J. David Ligon

You will notice as you read this newsletter that we have had many beginnings in this past year. Among these changes is a new Department Chair elected by the faculty, staff and graduate students. Dr. J. DAVID LIGON took over the reins from Dr. DON DUSZYNSKI, who stepped down in August after more than nine years in office. Working with David will be four Assistant Chairs: Drs. Kathryn Vogel, Clifford Crawford, Howard Snell and Sam Loker.

David received his Ph.D. in Zoology from the University of Michigan in 1967, and joined the UNM Biology faculty in 1968. He is married to Sandy Husar Ligon, who is a lecturer in our Department, and they have two pre-teen sons.

David's areas of special interest are behavioral ecology of birds and mammals; avian cooperative breeding systems; and sexual selection. In the past five years, he has taught courses in animal behavior, general vertebrate zoology, ornithology, conservation

biology, behavioral ecology and graduate seminars on avian and mammalian social systems.

As some of you may recall from last year's newsletter, David and his family spent a year in Australia in 1989 while on sabbatical as a Visiting Research Fellow at the University of New England, Armidale.

In addition to his new duties, David is in the process of writing a book on "The Evolution of Avian Mating Systems."



## Faculty Highlights (cont.)

### Insect Research in Japan

**D**R. RANDY THORNHILL was in Japan from May 15-August 30, 1991, conducting field research on scorpionfly mating behavior. His research was sponsored by a Fellowship of the Japan Society for the Promotion of Science. Randy, who has done research on scorpionflies in Australia, New Zealand, Europe and Mexico, remarked that "Japan turned out to be the easiest foreign country for my research that I have worked in." Studies of insects tend to be logistically difficult (the habitat must be located, specific equipment must be secured, research facilities are needed, etc.), but due to the highly



organized arrangements made by his Japanese hosts in Nagoya University, Shinshu University and Kyoto University, he found that the time spent in Japan "was one of the most productive three and a half months of my career."

In addition to his studies, Randy visited several universities where he gave lectures and spoke with other scholars in his field. He reports that there is a wide range of animal behavior studies being conducted in Japan, and that Japanese interest in this area of research is comparable to that of Western Europe, the U.S. and Canada.

Randy also studies human behavior, and found two aspects of Japanese culture particularly intriguing. One is the great emphasis on formal social politeness, and the other is the manner in which they present their country's history (mythologically vs. scientifically as in the West, according to Randy).

Randy so "enjoyed everything about the country" that he intends to spend a few months each year doing research in Japan beginning in 1993.

### Keeping Up with the Browns

**D**R. JAMES H. BROWN has been doing experiments on a 20-ha. site in the Chihuahuan Desert of southeastern Arizona for the last 13 years. These studies have shown that kangaroo rats are "keystone" animals, and that their removal causes dramatic changes in vegetation and other kinds of animals. Jim was named an UNM Regent's Professor for 1990, and was awarded a John Simon Guggenheim Fellowship to write a book entitled, *Macro Ecology: The Interface of Ecology, Biogeography and Evolution*, while on sabbatical in Australia (August, 1991-January, 1992).

**A** Iso on sabbatical in Australia, **DR. ASTRID KODRIC-BROWN** will be studying the behavior, ecology and biogeography of Australian desert fishes. Astrid's work is supported by a Mid-Career Fellowship from the Biotic Systems and Resources Division of the NSF. The springs of central Australian deserts provide one of the few remaining opportunities to study the ecology of endemic desert fishes under natural conditions. Astrid will compare the behavior, morphology and ecology of these fishes with those of their North American counterparts to assess the extent of convergent

evolution. The results of her study should aid in the preservation of these relatively undisturbed fish faunas and spring ecosystems.



## Faculty Highlights (cont.)

## New Faculty Activities

**D**R. MARY ANNE NELSON (molecular genetics and molecular biology) came to UNM from the University of Wisconsin in Madison, where she was a Post-doctoral Fellow. When she arrived here after an ice storm hit NM (around Christmas, 1990), she heard locals grumbling about the weather, but she found it "fantastic" and "a great relief" compared to Wisconsin's.

Mary Anne spent her first spring semester at UNM writing papers for publication and grant proposals for funds needed to run her laboratory. The latter was an eye-opening experience: "I had no appreciation for how long it would take to find all the necessary items, and indeed how many items are found in molecular biology laboratories." During the summer, Mary Anne was able to start using her laboratory, working closely with one graduate student and two undergraduates.

In the Fall of 1991, Mary Anne began teaching Introductory Genetics with more than 100 students. It was

*Equipping labs and writing papers and grant proposals are primary concerns for new faculty members.*

the first time she had taught such a large class, and she learned a lot about teaching as the students were "aggressive about letting me know when I did things poorly, and when I did things well." She has been "favorably impressed with the caliber of UNM students—they are very intelligent and also extremely interested in the subject. I really enjoy most of my students." Mary Anne's one problem with teaching has been the consequent lack of time available to spend in her laboratory. Fortunately, two "great lab assistants" have kept things going for her.

**S**ince joining our faculty this fall, DR. ANN EVANS (ecology and evolution) has been busy getting settled in. In addition to purchasing equipment for her newly renovated lab facilities, Ann has submitted a paper for publication and a NSF proposal for research support. Her proposed research will use a local genus (*Townsendia*, of the sunflower family) to examine the genetic basis of physiological adaptations to different soils, including gypsum. The newly completed greenhouse (see p. 10) will provide Ann with great facilities to conduct this research. Ann has also participated in developing two NSF educational grants, one for undergraduate course development and one for undergraduate research in conjunction with the Sevilleta LTER. She is sponsoring one senior undergraduate honor's thesis, and finds it "particularly rewarding to work with an enthusiastic student who is gaining her first research experience." She will teach her first course, Advanced Ecological Genetics, in the upcoming spring semester.

## Appointments and Elections

**O**n July 24, 1991, Governor Bruce King announced the appointment of DR. CARLETON S. WHITE to the Member-at-Large position on the New Mexico Water Quality Control Commission. Carl was asked to serve a four-year term. The Commission acts as the state's water pollution control agency, and works to develop a comprehensive water quality control program.

Carl was also appointed to the Curriculum Development Committee for the Master of Water Resources Administration program and now serves as a member of that faculty.

**D**R. TIMOTHY K. LOWREY has been elected the Chairman of the Systematics Section of the Botanical Society of America.

**Department News**

**LATIN AMERICAN ACTIVITIES**

**UNM**'s Hemispheric Initiative Advisory Committee recently presented the first draft of the University's proposal for future projects with Latin American countries for research, teaching and cooperative exchanges. The Department of Biology has an established record of research and teaching ties to countries throughout Latin America. The past decade has seen these associations increase rapidly, especially in the prominent fields of biodiversity, conservation and global climate change. The Department currently has active collaborations with institutions in Mexico, Ecuador, Bolivia, Argentina, Paraguay and Chile, and is rapidly becoming a global center for the study of Latin American biology. No other program seems as well positioned to address questions in biodiversity and global change between hemispheres as does UNM's Biology program. Some of the most notable and most recent interactions between UNM Biology and Latin America are:

**BOLIVIA**

Dr. Terry L. Yates has received a three-year renewal of a research project he began in 1984 on mammalian diversity in Bolivia. This award, in collaboration with the American Museum of Natural History in New York and funded by the National Science Foundation, totals \$210,000 and will support research centered in the Yungas and Valles of Central Bolivia. Dr. Scott L. Gardner, who recently received his Ph.D. in Biology from UNM and who is now on the faculty at the University of California at Davis, will join this research effort and has secured an additional grant of \$206,000 from the NSF to conduct parallel studies of the parasites of the mammals being examined in Terry's study. We currently have convenio's with universities and museums throughout Bolivia, and Terry has a graduate student, Jorge Salazar-Bravo from Bolivia. Dr. Sam Loker also has a new Bolivian student, Maria Gabriela Perotti (Jorge's wife), starting in the Spring of 1992. Terry taught a course in field biology in Bolivia last summer, and submitted and received a grant from a gold mining company in Bolivia to conduct environmental research there.

**ECUADOR**

Dr. Howard Snell has received considerable support for his research in the Galápagos Islands of Ecuador. Most recently, he received a \$36,000 award from the U.S. Man and the Biosphere Program for research entitled "The Galápagos Islands Biosphere Reserve: An Analysis of Biological Diversity and Human Impact." Howard also received a \$30,000 Fulbright Scholarship in 1987 for research on "The Conservation and Ecology of Endangered Galápagos Reptiles." Through another grant to Howard, 13 Ecuadorian biologists recently visited the UNM campus to learn new research techniques. Also, the major research bulletin for the Charles Darwin Research Station is published at UNM. Finally, Dr. Donald Duszynski recently received a small seed grant from UNM's Latin American Institute to initiate his study on the parasites of endangered reptiles on the Galápagos Islands. Don worked with Howard in the Galápagos during August, 1991.

**ARGENTINA**

Lee Fitzgerald, a UNM graduate student in Biology, has been leading a research effort in Argentina for a number of years. His research on the biology of Argentinean reptiles was supported with a \$120,000 grant from the World Wildlife Fund. Lee also has worked in similar research projects in Venezuela. Several UNM biologists presented invited seminars at an international conference in Buenos Aires last June at which an Argentine member of the U.S. National Academy of Sciences, Dr. Oswaldo Reig, publicly urged attendees to explore cooperative research projects with the UNM Biology Department. We have a formal convenio with several institutions in Argentina, and Dr. Adrian Montjeu of the Institute Bariloche, Bariloche, Argentina, paid a formal visit to the UNM campus in May of this year.

**PARAGUAY**

Two former UNM graduate students, Adia Luz Acquino and Carl Shuster, both of whom received their Master's degrees in Biology at UNM, are now in charge of the Biological Survey of Paraguay. Dr. Norman Scott, an Adjunct Professor in Biology, also conducts research in this country.

**MÉXICO**

UNM has a major convenio with UNAM, México's largest university, and a number of collaborative projects in biology are named in that document. The current Rector of that institution, Dr. Jose Seruchan, is a biologist who visited the UNM campus in October. Another UNAM Biology faculty member, Dr. William Lopez-Formet, spent the fall semester in the UNM Biology Department and taught a course on the biology of mammals for us. Dr. Gerardo Ceballos, who received his Ph.D. with Dr. James Brown of our Department, is also on the UNAM faculty in the Institute of Ecology. Dr. Rudolfo Dirzo of UNAM is a member of the doctoral committee of Kristina Ernest a UNM Ph.D. student in Biology. Numerous faculty in the UNM Biology Department have research interests in México and we teach part or all of several of our courses in many different localities in México. Dr. Charles Wisdom currently has a graduate student from México City.

**CHILÉ**

UNM Biology has recently begun collaborative work in this country, and the potential appears high for the future. Dr. James Brown was an invited speaker at the InterAmerican Conference on the Impact of Global Change on Western America in Las Serena, Chilé, last December. This was sponsored by the AAAS, Canadian Academy of Sciences and the Chilean Academy of Science. Both Pablo Marquet, a Ph.D. student of Jim's, and Eduardo Palma, a Ph.D. student of Dr. Terry Yates', are from Chilé. A well-known cytogeneticist, Dr. Milton Gairardo, also from Chilé, plans to visit the UNM Biology Department during the coming year.



## Department News



# Commencement

## Biology Department Commencement Remarks

by James S. Findley

May 11, 1991

Our third Biology Department Commencement Ceremony was held on May 11, 1991. We awarded 88 degrees, including 5 B.A., 66 B.S., 6 M.S. and 11 Ph.D. degrees.

Dr. Paul Risser, Professor of Biology, Provost and VP for Academic Affairs, presented the First Loren D. Potter Endowed Chair in Plant Ecology to Dr. Diane Marshall (see p. 3).

Dr. Timothy K. Lowery, Assistant Professor, presented the BSNM Awards for our Outstanding Undergraduates to Mr. Ed Braun and Ms. Kelly Burks. This honor includes a certificate documenting the achievement and a cash award.

Dr. James S. Findley, past chairman of our Department, was the Commencement speaker; his address is presented here. A celebration, which included a luncheon, followed.

*Traditionally, commencement speakers exhort the graduates to go out and do good, and to assume the mantle of responsibility for leading the country and the world onto better things. I won't neglect that duty, but since you are all biology graduates, I have an obligation to point out the very special responsibilities of one with a biological education.*

*I intend to do this by making you listen to one last biology lecture because, according to my teaching philosophy, your education is not quite complete. My teaching philosophy came not from a college of education, but from the U.S. Army. As a young man of 18, I was fortunate enough to attend a free four-month course in infantry tactics at the Infantry Replacement Training Center at Camp Gordon, GA. While there, I received the only formal guidance in teaching I've ever had.*

*The educational doctrine of the Army was simple:*

*"Tell 'em you'll tell 'em.  
Tell 'em.  
Tell 'em you told 'em."*

*We biology professors have spent the last few years telling you a bunch of things about biology. Now I'm going to finish the job by telling you what we told you.*

*Here it is:*

*Life on Earth began about four billion years ago. The Earth was raw and young, and the first life forms developed in a warm, organic soup and ate organic molecules and each other.*

*About a billion years later, the descendants of some of these organisms learned to capture the Sun's energy.*

*In another billion years, because of this photosynthetic activity, oxygen began to accumulate in the Earth's atmosphere.*

*By a half-billion years ago, as a result of speciation and adaptive changes, as a benefit of the oxygen-rich atmosphere, the descendants of these first organisms filled the world's oceans with incredible numbers of individuals and species.*

*In another 100 million years, they had invaded the land. Terrestrial and marine life forms, plants, animals and*





protistans evolved to practice a rich diversity of modes of making a living and of interacting with one another.

As a result of their continued speciation and diversification, each of the millions of kinds of organisms that managed to survive developed a unique and efficient set of strategies for capturing and holding materials and nutrients. The combined biomass of the Earth came to represent a vast reservoir of biological compounds and chemical energy.

By interacting with the physical environment, this biota modified the atmosphere, the waters, the rocks, soil and temperature in such a way that the whole surface of the Earth became a more suitable habitat for life. Indeed, some contemporary biologists take the view that, in its ability to control and modify its environment, the entire biosphere is very like a gigantic organism, which has been named Gaia, after the ancient Grecian goddess of the Earth.

Despite the fact that the universe is running down, despite the fact that the galaxies are growing ever dimmer and more distant from one another, and despite the fact that the Second Law of Thermodynamics dictates that entropy will accumulate and that time must have a stop, life here on Earth provides a refuge from this inexorable domain of physical laws.

Here energy accumulates, things grow and reproduce, complexity and diversity increase, flowers bloom, birds sing, and, for the moment at least, the Earth is a well-ordered and productive garden from which we humans have not yet been ejected.

Continued existence in this garden is by no means assured. Most of the species that dwell here once are gone,

their abilities to accommodate to the existence of other kinds, to feed, to reproduce, to adapt, and to manage their economies having failed them.

We humans, as a part of this biotic matrix, can have hope for long-term residency in proportion to our ability to manage our relationship with other denizens of the garden in such a way as to ensure successful coexistence.

How to learn the secrets of living together? We all, each human, each microbe, each bird and plant, carry within our cells a record of this history of life. We each carry a personalized account of the experiences of our ancestors in dealing with life's problems. We each carry a program of instructions for successful living.

That program is our genetic code. It dictates, in substantial part, what we will do and how we will look. But these genetic lessons are based on the successes and failures of our predecessors. They tell us only what worked in the past. Each of us, and all biology, is constrained by history. Nothing in biology allows us to predict our future.

At the reproductive levels of chemistry and physics, we may make valid predictions, but at the level of the cell, the organism, the population, the community, or the ecosystem, the calculus of physical science fails us. We biologists are adrift in a middle number system. We are stalked by chaos. Our closer kinship is with sociologists, economist and historians.

Our inherited tool for coping with the present and the future is our ability to learn. Learning about life at its various scales of organization may lead us to that holistic understanding of the

properties of nature that must inform our plans for continued existence in this highly selective enclave.

For that understanding, to the extent that it is attainable, humanity must look to responsible biologists.

To whom else?

Only biologists are attuned equally to the flow of energy and materials through and between cells, organisms, and ecosystems, to the flow and diversification of life through ecological and evolutionary time, and to the flow of the wind through the willows and over the wing of a falcon.

That's what we've tried to tell you.

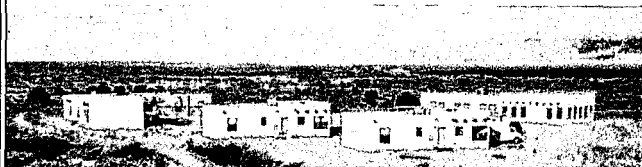
And you graduates are the responsible biologists I'm talking about. It is you who must serve as interlocutors between the rest of the living world and humanity. Indeed, it is you who must tell humanity about itself. That's the biologist's burden, which you've just inherited. We know you can handle it!

Have a good summer!



## DEPARTMENT NEWS

## Sevilleta Field Research Station Opens



The new Biology Department Field Research Station opened its doors for the first time on November 23, 1991, hosting a retreat for faculty, staff and students of the Long-Term Ecological Research (LTER) Program. The station, located on the Sevilleta National Wildlife Refuge, will provide residences, laboratory and conference room facilities for scientists involved with field research projects in biology, geology, anthropology and hydrology in central New Mexico.

The station consists of four 3-bedroom houses (one equipped for the handicapped), a residence for the facility coordinator, and a laboratory-conference center. The laboratory complex contains two general labs for sample processing, a specimen-processing lab for the Museum of Southwestern Biology, a microscope lab, a computer/data-processing lab, and an office/library. Attached to the laboratory building is a 1,200 sq. ft. classroom/conference room. With the financial assistance of the National Science Foundation, the station is currently being equipped with all the

necessary scientific instruments to support the wide variety of scientific projects being conducted on the Sevilleta Refuge. The instruments will be installed early in 1992, in time for the summer field season.

JOHN DEWITT, a recent UNM Biology graduate, has been hired by the Department to be the station facility coordinator, and will be living year-round in the station. JANE MYGATT, the Department's greenhouse horticulturalist and herbarium curatorial specialist, is developing landscaping plans using only native plant species. The landscaped station grounds will include a native plant garden with plant identification tags for the purpose of teaching students how to identify the local flora. There is also a large pond that will support a variety of aquatic flora and fauna.

We would like to encourage any interested person to visit the new station and tour the facilities. Please feel free to contact the station manager, DR. BOB FARMENTER, to set up an appointment (505/277-7619).

## New Greenhouse Opens

*"This greenhouse represents a substantial increase in quality and quantity of space for botanical research, and is evidence of our increasing strength in the plant sciences." —Dr. Diane Marshall*

The Biology Department opened its new research greenhouse on November 8, 1991. The new greenhouse replaces the previous facility (between Castetter Hall and Marron Hall), which was built in 1951. With a total of 2,520 sq. ft., the new one is twice as large as the old one. Its space is divided

into six research bays, each of which has an independent heating and cooling system, allowing several projects to be run simultaneously in different environmental conditions. And, unlike the old greenhouse, the new one has refrigerated air so that experiments can be conducted throughout the summer.

A variety of faculty and student research will be conducted in the greenhouse. Initial projects include studies of: plant mating systems by DR. DIANE MARSHALL and her students and postdocs; plant genetics by DR. ANN EVANS and her students; plant systematics by DR. TIM LOWREY and his students; and gas flux in plant communities by DRs. JIM GOSZ and CLIFF DAHM.

The project was funded, in part, by an NSF grant (written by seven members of our Department) and, in part, by UNM. The total project cost was more than \$300,000.

## Annual Flooding of Rio Grande to be Studied

**D**RS. CLIFFORD CRAWFORD AND MANUAL MOLLES have been funded by the U.S. Fish and Wildlife Service to study "The Effects of Annual Flooding on Rio Grande Riparian Forest." One of the special features of this research project is that it grew out of insights developed in their team-taught course, Bosque Biology (Biol. 407/507). A second notable feature is that the research will center around long-term, large-scale experimental flooding of some

*Historically, annual flooding by the Rio Grande probably had a number of important influences on the riparian community.*

of their research sites. The experimental floods will be created in bosque habitat at the Bosque del Apache National Wildlife Refuge at San Antonio, NM, by re-routing water as it is drained off the managed wetlands at the refuge.

Some effects of flooding, such as enhancing the reproduction and regeneration by Rio Grande cottonwoods, are well documented, while others are largely unexplored. Drs. Crawford and Molles and Lisa Ellis, chief technician of the grant and one of our recently graduated M.S. students, suggest that these other effects may include reduced threat of wildfires (one of the most significant threats to the present-day bosque), enhanced food production for wildlife, increased habitat complexity, and increased wildlife diversity in the Rio Grande Bosque.

## Graduate Student Professional Accomplishments

**D**uring the last year, our graduate students made numerous professional contributions and received professional recognition that was exclusive of whatever was accomplished by their major professors. These accomplishments included 22 papers presented at regional, national and international meetings; 11 publications in refereed journals; 3 travel awards and 1 outstanding student paper award; and 9 research grants/awards received from professional societies, state, federal or private granting agencies. These awards and grants came from Sigma Xi (3), the World Wildlife Fund (2), the NSF, the Ford Foundation, NIH and the Los Alamos National Laboratories. The total awards brought more than \$120,000 to UNM. Our students also won a Graduate Tuition Award, a Graduate Fellowship Act Fellowship, a Graduate Opportunities Fellowship, a Regents' Endowed Fellowship and nearly 30 grants funded by SRAC/VPGRF/A&S at UNM. These many achievements are in addition to departmental teaching awards and jobs/postdocs secured by our degree recipients, and departmental research and travel awards, of which there were 31.

## ALUMNI NEWS

DIANE BACA, formerly Diane Ewert, is teaching two sections of Biology I in Spanish at Rio Grande H.S. as part of its Bilingual program, as well as teaching E.S.L. and math. She is also pursuing her Master's degree in Bilingual Education.

JIM BANDOLI (Ph.D. 1983) is an Associate Professor of Biology at the University of Southern Indiana, where he teaches comparative chordate anatomy, vertebrate biology, general ecology, organic evolution, animal behavior, and human anatomy and physiology. His current research interests include reproduction and mating strategies of the spottail darter, a local benthic fish.

NEAL T. BUTT (B.S. 1989) is presently a graduate student at the University of North Dakota studying wildlife management and conservation.

MODESTO DEL CASTILLO (B.S. 1964, M.S. 1966) is a Professor of Biology at Elizabethtown Community College of the University of Kentucky, where he teaches general biology and microbiology. He also writes biological instructional computer software for IBM Corporation.

ARTEMIS E. CHAKERIAN (B.S. 1977) received her Ph.D. from Rice University and is working there as a Research Associate studying DNA-binding regulatory proteins.

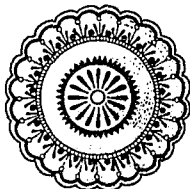
WILLIAM CHALVERUS (1979) is the Chief Perfusionist at Cardiac Surgery of New Mexico in Albuquerque. He enjoys skiing, tennis and gardening.

(Continued p. 10)



## Alumni News

(Cont. from p. 11)



MIKE DAVIS (M.S. 1987) is a forester with the U.S. Forest Service in the Danial Boone National Forest. He enjoys boating and camping.

DARREN DIVINE (B.S. 1990) is currently a master's level graduate student. He is working on a project to evaluate maintained artificial wildlife watering units on the White Sands Missile Range, with specific attention being paid to ungulates (bighorn sheep, pronghorn antelope, mule deer, oryx, sheep and feral horses).

THEODORE B. FLECK (M.S. 1940) is retired, but currently serves as a docent at the Arizona-Sonora Desert Museum and lectures twice a month at the V.A. Medical Center on the medical aspects of addiction and the philosophy of recovery. He loves to read, and also greatly enjoys spectator and participant sports activities.

KATHRYN GRAHAM (B.S. 1987, M.D. 1991) will be completing her Internal Medicine-Primary Care residency at Oregon Health Sciences University in Portland, OR. She is active in Health Promotion/Disease Prevention, including smoking cessation education. She enjoys mountain biking, skiing and racquetball.

JED HARRIS (M.S.) is a research associate at U.T. Southwestern Medical Center in Dallas. He writes and performs original songs, and owns and operates a recording studio. He also practices Tae Kwon Do, a form of karate.

KELLY D. HOLMES (B.S. 1988) is pursuing a DMV-Ph.D. through the Department of Anatomy and Neurobiology at Colorado State University. Her current research interests involve morphologic and

physiologic changes of cells incubated with conotoxin (which blocks nerve  $Ca^{++}$  channels). She is a member in the American Animal Hospital Association and of the student chapter of AVMA. She trains and shows dogs, and owns three golden retrievers. She also participates in the F.A. Club and the T.G.T.T.I.O.O. (Thank God This Test Is Over Organization).

CHERYL IMES (B.S. [Biology/Psychology] 1978) received an M.A. in Experimental Psychology from Bradley University in 1982, and completed her Ph.D. in Rehabilitation Psychology in December, 1990. She is a Rehabilitation Assistant for the Psychology Department at the Methodist Hospital of Indiana in Indianapolis. She enjoys both her nieces and her dog.

JAMES C. JARAMILLO (B.S. 1961) received an M.A. in Urban Studies from the Occidental College in Los Angeles in 1971. He is the Director of Corporate Administration at Advanced Sciences, Inc., an environmental scientific firm, headquartered in Albuquerque, which has 11 offices throughout the U.S. He was a National Urban Fellow at Yale University in 1970 and is a member of the Governing Board of Technical-Vocational Institute in Albuquerque.

REBECCA DANIELS KUSH (B.S. 1975) has a Ph.D. in Physiology/Pharmacology from the University of California at San Diego. She is currently the Associate Director of Project Managers at Pharmaco, a clinical research organization, where she oversees those who are responsible for all the activities associated

with NDA submissions of drugs, biotech products or devices and with post-marketing surveillance of these products.

GRANT D. LAWLESS (B.S. [Biology] 1973, B.S. [Pharmacology] 1977) received his M.D. in 1984, and is currently the Medical Director for Medical Affairs for Blue Cross of West Pennsylvania. Additionally, he is Board Certified in Internal Medicine and is an Attending Physician in the Department of Medicine at the St. Francis Medical Center in Pittsburgh.

JOHN E. LEDER (B.S. 1965) has an M.S. from the University of Washington and, after retiring from the U.S. Navy Reserve, works as the Project Manager and Senior Planner in an Earth science consulting firm in Seattle. He is currently studying to become a certified groundwater scientist. He also enjoys being a soccer coach and referee.

MELISSA D. MCCRAY (B.S. 1984) took a leave of absence from her job at SED Medical Labs in Albuquerque to join the New Mexico Air National Guard, where she received technical training in Electronic Warfare at Keesler A.F.B. in Mississippi. She returned to Albuquerque in December, 1990, and is obtaining her OJT toward certification as a microbiology technician, while also serving at the NM Guard on weekends.

KAREN MENCZER (B.S. 1979) has an M.S. in Ecology from Indiana University. She is a Natural Resources Manager at the Adelphi Laboratory Center, a U.S. governmental agency. She enjoys swimming, tennis, bike riding and birdwatching.

GEORGE H. MERTZ (B.S. 1949), a retired physician, is the Chairman of the Board of Trustees for Blood Systems, Inc., a nationwide, non-profit blood banking corporation.

## FRIENDS AND OTHER SUPPORTERS

Mr. and Mrs. William R. Barry  
Ms. Teresa Benton  
Ms. Maggie Brandt  
Drs. James & Sarah Christiansen  
Mrs. Janet E. Collins  
Dr. Roger Conant  
Dr. H.C. and Arlyn N. Cox  
Ms. Candice De Mar  
Ms. Verena H. Doak  
Ms. Wendy Ferguson  
Mr. and Mrs. Larry J. Gordon  
Ms. Cheryl F. Graham  
Mr. Sean Houtman  
Mrs. Mollie E. Hayes  
Dr. James W. Hicks  
Dr. Janet G. Hoagland-Williams  
Mr. George F. Howlett, Jr.  
Dr. Nancy Joste  
Mr. George A. Kennedy  
Mr. Bruce Krohn  
Dr. Roderick F. Luhn  
Ms. Dorothy McGuire  
Dr. William P. Morrison  
Dr. Harold R. Neely  
Mr & Mrs. Eugene W. Peirce, Jr.  
Mr. Ray Quintana  
Dr. Wayne A. Riddle  
Dr. and Mrs. John B. Roberts  
Dr. Richard M. Shapiro  
Miss Laurel E. Southard  
Dr. H. Wayne Springfield  
Dr. Cydney Stewart  
Drs. Albert and Kathryn Vogel  
Mr. Gary Walker

JILL MILLER (B.S. 1974) completed her M.D. at the UNM Medical School in 1979. She is currently a physician at the UNM Student Health Center. She has two children, ages 4 and 2.

LEONA (RUSTY) MILLER (B.S. 1970) is currently a biology teacher at Highland High School in Albuquerque,

and sponsors students for environmental education. She also is a sponsor of Highland's varsity and junior-varsity cheerleaders. She enjoys raising, training and showing Arabian horses.

CHRIS S. NEARY (B.S. 1986) is a District Wildlife Officer for the New Mexico Department of Game and Fish. He was stationed in Peñasco, NM, in July, 1990. His wife, Barbara, is doing archaeology for the U.S. Forest Service and also working at a Taos museum.

KATHY O'CONNOR (B.S. 1978) received a Nuclear Medicine Technology degree in 1980, and is currently a third-year medical student. She enjoys biking, canoeing, gourmet cooking, and travel in third-world countries.

ANDY PAQUET, JR. (B.S. 1967, M.S. 1970) received a Ph.D. from the University of Arizona in 1974. He is an Associate Professor and Chairman of the Biology Department at Texas Christian University in Ft. Worth. His research interests are in microbiology and immunology. He and his wife have completed building a Southwest-style home in the country, where they are enjoying raising pygmy goats, standard poodles and box turtles (which he acknowledges is "pretty weird for a microbiologist"). He also notes that his daughter, Amanda, graduated from UNM this past May.

BRUCE A. SHAFFER (B.S. 1980, M.D. 1985) is practicing internal medicine, pulmonary medicine and critical care in Santa Fe. He enjoys biking, hiking, skiing, sailing, bonsai, photography, automotive mechanics, and gardening, among other things.

LYMAN B. SPAULDING (M.S. 1972, Ph.D. 1974, M.D.) is a physician in the Department of Obstetrics-Gynecology at the Permanente Medical Group in Denver. He

relates that he and his family have "escaped California and are quite happy back in the Rocky Mountains."

ELIZABETH A. VENCILL STOWE (B.A. 1971) is a Laboratory Supervisor at SmithKline Beecham Clinical Laboratories in California. She is a past regent of the Daughters of the American Revolution, Major Hugh Moss Chapter, and is the past President of the Ladies Auxilliary, California Society Sons of the American Revolution. She enjoys her stepson, gardening and genealogy, and is learning to play the piano.

APRIL SAUER (B.S. 1990) is currently enrolled at the Babcock Graduate School of Management at Wake Forest University, where she is earning her M.B.A.

RONALD J. TRUJILLO (B.S. 1975, M.D. 1983) is a physician in solo practice. He has a wife and three children, and enjoys jogging, reading, exercise and golf.

DON E. WILSON (M.S. 1967, Ph.D. 1970) has been appointed the Director of the Smithsonian Institute's Biodiversity Program, where he oversees a variety of ongoing projects aimed at inventorying the world's flora and fauna, with a focus on Latin America. His office is in the National Museum of Natural History in Washington, D.C., where he has worked for the past 19 years.

GLENN WILSON (B.S. 1971) obtained his Ph.D. in Anatomy from the University of Illinois in 1976. He is currently a Professor in the Department of Structural and Cellular Biology at the University of South Alabama College of Medicine.



The Biological Society of New Mexico is a tax-exempt organization under the New Mexico Non-profit Corporation Act and the United States Internal Revenue Code. The object of the Society is to establish and maintain endowments, trusts, foundations, and other funds, all for the purposes of encouraging, fostering, and pursuing excellence in education in the Department of Biology at the University of New Mexico.

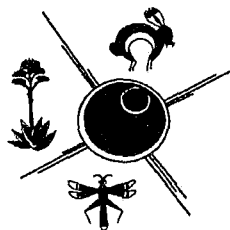
The Society is authorized to receive grants, stipends, honoraria, property, or any other interests for educational purposes. Tax-exempt gifts may be given with designation to be used for specific purposes, e.g., student fellowships, research support, etc., as long as the purpose fits the objectives of pursuing excellence in biological education and research at UNM.

Your gift can be earmarked for specific purposes. Donations and annual membership fees, unless otherwise specified, are placed in our UNRESTRICTED GIFT ACCOUNT. These funds are used primarily to support both undergraduate and graduate student recruitment, research, travel to meetings to present papers, and awards for teaching excellence. In addition, we have six other accounts that may have special interest to you.

#### L.D. POTTER ENDOWED CHAIR IN PLANT ECOLOGY

For the last six years we have been building an endowment from private donations and other sources to create the first Endowed Chair in Biology. This

chair, named in the honor of Loren D. Potter, who retired in 1985, recognizes and highlights the importance of plant ecological studies as they pertain to our natural resources. As of June 30, 1991, the L.D. Potter fund had \$134,000. Contributions are most welcome as we hope to one day have our first \$1 million chair in Biology.



#### MELINDA BEALMEAR SCHOLARSHIP

Melinda Bealmear was a dedicated and beloved staff member in our main office, who died in a tragic car accident in October, 1986. Our graduate students, faculty and staff, along with help from her parents Dorothy and Dale, established a scholarship fund in her memory. The fund now has about \$3,500. We would like to accrue enough principal, say \$50,000, so that the annual interest could be used to support the program of a needy graduate student in Biology.

#### MUSEUM OF SOUTHWESTERN BIOLOGY-MAMMALS

The purpose of this Museum account is to support any and all aspects of mammalogical field research conducted by faculty and

graduate students in Biology at UNM.

#### PRESIDENTIAL YOUNG INVESTIGATOR MATCHING FUNDS

For the next four years, we will be working against time to help our three PYIs (Drs. D. Marshall, B. Milne and M. Werner-Washburne) generate the private funds they need to qualify for matching funds from NSF. Remember that donations can be in kind (i.e., building materials, vehicles, laboratory equipment, etc.). Won't someone try to sponsor a PYI? Each dollar you give generates a dollar from NSF.

#### FACULTY EXCELLENCE FUND

We started this fund to support faculty travel to professional meetings where they present the results of their work. We have only \$600 in this fund—obviously a long way from a meaningful endowment.

#### COMMENCEMENT FUND

This past June, our Biology Commencement Exercise cost us \$1,200, while UNM gave us only \$400. The balance came from the pockets of our faculty and graduate students. We'd like to start an annual fund to at least break even.

#### MEMBERSHIP

Any person contributing \$20 or more annually becomes a member of the Society and will receive the annual *BSNM* newsletter.

**ALL MEMBERSHIPS AND CONTRIBUTIONS ARE TAX EXEMPT.**

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Other Degrees \_\_\_\_\_ Complete Current Mailing Address \_\_\_\_\_

Phone No. \_\_\_\_\_ Current Occupation \_\_\_\_\_

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# **APPENDIX E**

***BIOLOGY 1991***

***GRADUATION PROGRAM***

Summer 1992

*Chris Padilla* (Dr. Werner-Washburne) Thesis: Isolation and Characterization of Genes Involved in Stationary Phase Regulation

*Robert Christner* (Dr. Baca) Non-Thesis Program.

*Karen Romero* (Dr. Reidesel) Non-Thesis Program.

*Lisa Valle* (Dr. Brown) Non-Thesis Program.

Doctor of Philosophy Degrees

Fall 1991

*Evelyn Cox* (Dr. Molles) Dissertation: Interactions Between Trophic Levels on Coral Reefs: Scleractinian Corals and Corallivorous Butterflyfishes in Hawaii.

*Timothy Lyons* (Dr. Riedesel) Dissertation: The Effects of Glycerol Solutions on Fluid Compartments and Hemodynamics in the Rat.

*Carol Sabourin* (Dr. Natvig) Dissertation: Molecular Characterization of Ultraviolet Radiation-Induced Corneal Tumors in a South American Opossum, *Monodelphis domestica*.

Spring 1992

*Gregory Hartman* (Dr. Yates) Dissertation: Demographic and Population Genetic Structure in the Eastern Mole, *Scalopus aquaticus howelli* (Insectivora: Talpidae).

*Paul Nicoletto* (Dr. Kodric-Brown) Dissertation: Male Ornamentation and Constitution During Mate Choice in the Guppy, *Poecilia reticulata*.

Summer 1992

*Lauraine Hawkins* (Dr. Brown) Dissertation: Banner-tailed Kangaroo Rats and Cache Fungi: A Possible Vertebrate-Fungus Mutualism

*Stefan Sommer* (Dr. Brown) Dissertation: Insects of the Introduced Tumbleweed, *Salsola kali* (Chenopodiaceae): Community Formation and Structure

*Derrick Sugg* (Dr. Snell) Dissertation: Proximate Mechanisms for the Evolution of Sexual Dimorphism in Size

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The Biology Department gratefully acknowledges the cheerful contributions of the following whose help made this ceremony possible:

Thunderama for the music.

Vivian Kent for organizing the whole event.

Carol Martindale, and the Biological Society of New Mexico for the food and spirits.

Laurence Hoess for patiently preparing the diplomas.

All of the Staff, Students, and Faculty who contributed their time and effort.

The Department of Biology  
University of New Mexico



## Graduation Program



May 16, 1992

**GRADUATION PROGRAM  
DEPARTMENT OF BIOLOGY**

Welcome: Dr. J. David Ligon, Professor and Chairman

Commencement Address: Dr. Charles D. Wise, Professor Emeritus Ball State University (Ph.D., UNM, Biology, 1961), *If I Had It To Do Over, I'd Be a Biologist.*

Presentation of the Biological Society of New Mexico Award to Outstanding Undergraduate: Dr. Margaret Werner-Washburne

Presentation of Graduates: Drs. Kathryn Vogel, Howard Snell, Clifford Crawford; Associate Chairs

Bachelor of Arts Degrees  
Bachelor of Science Degrees  
Master of Science Degrees  
Doctor of Philosophy Degrees

Closing Announcements

**LIST OF GRADUATES**

**Bachelor of Arts Degrees**

Lauren K. Carlisle  
Timothy J. Gonzalez

Mary J. Johnston  
Brian P. Kramer

Melanie Marshall<sup>sci</sup>  
Shannon Vaughn

**Bachelor of Science Degrees**

Carlos Arguelles  
Katherine Lee Arnold  
Sheryll Ann Barker  
Eleanor A. Barry  
Larry E. Bowen, Jr.  
Dawn K. Boyd  
Judy M. Brake  
Kevin L. Brannon  
Diane Chapunoff  
Herbert E.B. Coker  
Elizabeth A. Collins  
John L. Conwell, Jr.  
John A. Craig, Jr.  
Audrey A. Crawford  
Michael Cromeans

Patrick Davidson  
John A. Davis  
Gregory A. Edgar  
Nicholas Elliott  
Larae Enright  
Kimberly Fincher  
Mark D. Gaughan  
Leonid Gershanok  
Roberto Gutierrez  
Lena B. Hakim  
Lara G. Hays  
Guy W. Herbert  
Daniel T. Jennings  
Diane L. Jennings  
Sheldon Jordan

Shelley A. Kawalec  
Michelle Kays<sup>ci</sup>  
Kathleen Kelley  
Peter Koenigsberg  
Darlene F. Lee  
Megan Manicke<sup>sci</sup>  
Kitrian K. Martin  
Marvin A. Martinez  
Juanita M. Martinez  
Patricia Mazzolini  
Michelle K. McCaulley  
Kathleen P. McGee<sup>sci</sup>  
Kurt McKean  
Lorraine Melendez  
Brian Moore<sup>ci</sup>

Pamela Noonan  
Mahesh C. Pant<sup>sci</sup>  
James W. Payette  
George Payne  
Mary K.C. Phillips  
Barbara A. Piperata  
Christopher Polage  
Denise Ready  
Jerry S. Richardson  
Thomas J. Rodriguez  
Rosemary D. Romero  
Jody P. Salgado

Sandra Sanchez  
Shermann Singleton  
Kim N. Spreng  
Joan M. Stearley  
Timothy Stelts  
Kate Sullivan  
Eduardo Gomez Sy  
David M. Thorp  
Samuel R. Trejo  
Debra J. Trujillo  
William Verzino  
Darren Vicenti

Joran A. Viers<sup>sci</sup>  
Kristin G. Vigil  
Leslie C. Vincent  
William R. Waldrip  
Jamie M. Warren  
Henry C. Watkins  
Phillip Williams  
Garth Winkless  
Susan E. Wolterstorff  
Tze Seun Yong  
Phillip C. Zaffery

<sup>sci</sup> = *summa cum laude* <sup>sci</sup> = *magna cum laude* <sup>ci</sup> = *cum laude*

**Undergraduate Honor Students**

Melanie Marshall Senior Project: Developmental Asymmetry in Two Populations of the Mustard *Brassica campestris*.

Kathleen McGee Senior Project: Effects of Variable Moisture Availability on Seed Germination in Three Populations of *Larrea tridentata*.

Mahesh Chandra Pant Senior Project: Bacterial Production of Bismuth Colloids.

Joran Viers Senior Project: An Assessment of Geomorphological Control of Saxicolous Lichen Community Structure and the Effects of Measurement Scale.

**Master of Science Degrees**

Fall 1991

Kenneth Sherrell (Dr. Vogel) Non-Thesis Program.

Spring 1992

Patricia Barlow (Dr. Lowrey) Thesis: Biosystematic Study of the Genus *Cirsium* (Asteraceae): *Cirsium ochrocentrum* and its red flowered phenotype from the region of the Mongollon Rim.

Patrick Doherty (Dr. Werner-Washburne) Thesis: Characterization of BCY1 Expression in Yeast *Saccharomyces cerevisiae*.

Bernadette Saiz (Dr. Barton) Thesis: Characteristics of Lead Transformation by the Bacterial Isolate, *Moraxella bovis*

Craig Vester (Dr. Barton) Thesis: General Characteristics Ferric Reductase Activity and its Inhibition in *Rhizobium meliloti* 1021.

Maria Alvarado-Zink (Dr. G Johnson) Non-Thesis Program.



# APPENDIX F

*ANNUAL REPORT:*  
*MUSEUM OF SOUTHWESTERN BIOLOGY*

ANNUAL REPORT  
1 JULY 1991 TO 30 JUNE 1992  
DIVISION OF MAMMALS, MUSEUM OF SOUTHWESTERN BIOLOGY  
DEPARTMENT OF BIOLOGY UNIVERSITY OF NEW MEXICO  
ALBUQUERQUE, NM 87131

Prepared by William L. Gannon

**NUMBER OF VISITORS, PUBLIC SERVICE, AND NEWS**

The Division of Mammals hosted 2087 people who used the collection for one purpose or another during a total of 211 day; a substantial increase over last years number of visitors (1181)! The increase was likely due to a more efficient system of handling the large number of requests for tours by teachers of school-aged kids. Approximately 1632 kids tour the collection last year (see memo dated 10 May 1992 attached). Visitation by professionals maintained the level of last year (76 in 1989, 184 in 1990, and 171 in 1991). These professionals were mostly from local agencies and institutions such as US Forest Service, NM Museum of Natural History, Bosque del Apache, US Fish and Wildlife Service, NM Department of Game and Fish, NM State University Las Cruces, The Nature Conservancy, and LANL. Notably, we had visitors from Cornell University, The American Museum of Natural History, Montana State, University of Alaska, Canadian Museum of Nature, Rutgers University, and Universidad Autonoma Nacional UNAM Mexico). Aside from these professionals, 202 members of the community such as educators, artists, medical practitioners, lawyers, consultants, lobbyists, and many others had questions important enough to be guided through the collection. We have always had a strong relationship with the Office of Contract Archaeology; 83 OCA folks used the facility last year. This is the second year we have maintained a locked door (recommended by the American Association of Museums), but visitors were apparently not too inconvenienced and called ahead. Nearly 50 "potential students" (both graduate and undergraduate) stopped by to tour the facility. The Collection Manager showed the departmental video to several groups and hosted an open house for several site reviews, homecoming, and graduation (9, 17, and 31 visitors respectively).

News that has affected the way the Division operated last year includes:

- 1) Again, as in years past, we have not been able to adequately serve public school teachers' requests for a field trip to the museum. The department very much needs to hire a staff person (a student, TA, etc) to conduct tours. We have turned 4x the students away that we have given departmental and museum tours to. This is a very valuable service that is also cheap way to recruit new students to the Biology department and to the University. The total roster of students hired in the last five years is attached.

- 2) Despite the relief of an answering machine, the Division answers the phone approximately 40 times per day (almost 200 per week!) from the community, University, and within the department. This rate is expected to increase after the Curator, Dr. Terry Yates, returns from his two-year leave in Washington, DC this next FY. His return will also allow the collections manager (and other staff) a tremendous relief from administrative duties.

**NUMBER OF LOANS**

The mammal collection processed 53 outgoing loans, including 19 loans of frozen tissues or collateral material. This material was used in electrophoretic, mtDNA or other DNA studies, karyotype analysis. Interestingly, our loaned material was sent throughout much of North and part of South America with loans to the American Museum of Natural History, University of Michigan, University of Alaska, California State University Long Beach, University of Wisconsin, Texas Tech University, Florida State University. Within the southwest, we serviced four institutions in Texas, University of Nevada Las Vegas, Northern Arizona University, Los Alamos National Lab, and our own LTER and Departmental researchers. Within the state we did business with all the major institutions of higher education including Western New Mexico State, Eastern New Mexico State, New Mexico State Las Cruces, Museum of Natural History, and Museum of New Mexico in Santa Fe. Loans were made to APS schools for use in the classroom, to the Sevilleta National Wildlife Refuge, the US Army, and with particularly heavy association with the New Mexico Museum of Natural History and the New Mexico Department of Game and Fish. Of note, we made permanent loans to two natural history museums in Bolivia, Universidad Nacional Aut6mica de Mexico (UNAM), the Zoological Museum in Moscow, USSR, and the Museo Natural de Argentina. In-house use of the collection was also heavy. These loans included; researchers (Altenbach, Findley, Brown, Duszynski, Ligon, George Stevens), graduate students (particularly Davis, Frey, Miyashiro, Salazar-Bravo, Palma, Hartman, Kelt, Skupski, Ernest, Farley, Nicoletto), and class use for several courses (see below), and other departments such as Anthropology, Geology, Contract Archaeology, and Maxwell Museum.

We also handled 34 incoming loans. These incoming loans represented the research requests primarily of Frey, Salazar-Bravo, Palma, Kelt, Sheppard, Gannon, and Yates.

**NUMBER OF ACCESSIONS AND SPECIMENS CATALOGED**

The Mammal Division accessioned 8 large groups of specimens and cataloged a whopping 3254 specimens into the main mammal collection (MSB 64126-67380; Fig. 1). This enormous increase in number of specimens cataloged is misleading in that there is a gap of 750 catalog numbers that have yet to be actually completed. Despite this, 2504 specimens were actually cataloged representing a 70% increase in cataloging effort. The number of specimens cataloged into the collection averaged 1444 per year between 1954 and 1986 (Fig 1). However, the yearly average jumped since 1987 to the present to 1709 specimens per year. The reason for the increase this year is due to two reasons. 1) We hired Suzy Feurach to catalog LTER specimens. With her help, Eduardo Palma working on Bolivian specimens, and myself cataloging fluid-preserved specimens we were able to make great progress. Also, with the addition of Tom Collins, Steve Davenport, and a volunteer Patricia Gunn the entire system worked smoother and specimen processing time decreased.

Division of Mammals (DOM), Annual Report 1991-1992

The most constant influx of material continues to be from the Long Term Ecological Research (LTER) study granted to ten investigators of the Department and Bolivian grant to Dr. Terry Yates. In three years the LTER deposited approximately 1750 specimens. We expect approximately 500 specimens from this years effort. We anticipate a similar flood of material (about 700 specimens) from the Bolivian expedition due back 15 August. Greg Hartman donated approximately 343 moles (*Scalopus aquaticus*) as a result from his dissertation. Dr. Ken Geluso (Univ. Nebraska, Omaha) completely curated and donated his collection of 450 Carlsbad mammals. A valuable collection of Mogollon voles was donated by C. LaRue (approximately 100 specimens) and Ed Heske collected and donated 45 specimens from the (old) USSR. Eight Cuban bats were donated by Dr. Robert Dickerman. The collection continues to grow at a steady pace and at a constant slope (Fig. 2). As might be assumed, most specimens in the DOM are from North America. However, the Division holds substantial numbers of specimens from Central and South America and Mexico.

Twelve museum cases were added to the collection (each at ca. \$800) due to some financial assistance from the New Mexico Department of Game and Fish. Figure 3 is a 3-D view of the museum floor plan as it now stands.

**COMPUTERIZATION**

The DOM purchased another 80386 25 mHz PC this year. This machine has been used heavily in producing graphics, running statistical programs, and in data management. The collection managers PC was upgraded to a 80486 33 mHz machine. Also, in addition to the already 200 MB of disk space and the tape backup system, Stackster, a software package, was added to double the effective disk space. Older machines (Zenith Z-158, 8088 PC) will have to be replaced in the next FY or two as these machines are reaching ten years old and have been failing occassionally.

**UNIVERSITY COURSES USING THE COLLECTION**

The Division of Mammals assisted 3 Biology Department classes and 2 other UNM classes (Anthropology, Art) with loans of specimens from our teaching collection or use of the collection in the Museum:

Biology 121:	Principles of biology	2 loans
Biology 122:	Principles of biology	4 loans
Biology 386:	General vertebrate zoology	2 loans
Biology 402/502:	Adv Vertebrate Biology	12 loans
Art 412:	Museum management	1 loan
Anthro 449:	Paleontology	2 loans

The following courses used the collection extensively as part of their coursework:

Biology 489:	Mammalogy - 18 students (1990)
Biology 502:	Advanced vertebrate biology - 15 students
Biology 502:	Topics in Chromosomal Evolution - 6 students
Biology 651:	Advanced Field Biology - 3 students
Biology 512:	Population Biology - 14 students
Biology 554:	Mammalian Ecology and Behavior - 14 students

Division of Mammals (DOM), Annual Report 1991-1992

Taught by Gannon: Biology 402/502 (16), Spring 1992

Biology 402/502 (7), Fall 1991

Zoo docents: instructed 75 docents total of 15 hours  
in the field of mammalogy. Oct-Nov 1991.

**INFORMATION DISSEMINATION**

Summary: The Mammal Division supported 20 Ph.D. dissertations and 4 M.S. theses, 14 grants, 17 published papers, 16 papers in press or submitted as manuscript, and ca. 35 papers presented at scientific meetings during this time.

Distinguished Departmental Visitors Hosted:

Dr. Michael Smith, Director, Savannah River Ecology Laboratory  
Dr. Ira F. Greenbaum, Professor, Texas A&M, University  
Dr. Sydney Anderson, Curator, American Museum  
Dr. Rodney Honeycutt, Assoc. Professor, Harvard  
Dr. Hisashi Abe and four other Japanese scientists, Hokaido  
University. (again 1992)  
Dr. K. Kamiya, Hirosaki Univ., Japan  
Dr. M. Kamiya, "  
Dr. M. Playford, "  
Dr. M. Yasuno, "  
Dr. William Lopez-Forment, UNAM Mexico City (six months).  
Dr. Richard B. Forbes, Portland State University (one year).  
Dr. Mike Mares, Oklahoma State Museum.  
Dr. Masayuki Yasuno, Dir. Environmental Division, NIE, Japan

**AWARDS, GRANTS, AND CONTRACTS: EXTRAMURAL AND INTRAMURAL.**Submitted to all agencies in 1990

Premanagement laboratory analyses of New Mexico Vertebrates (year 8). T.L. Yates. New Mexico Game and Fish, \$35,000, 1 Yr.

Population Structure and chromosomal evolution: evidence from the Bolivian Tuco-tuco - dissertation improvement, T.L. Yates and J.A. Cook, NSF, \$7,640, 1 year.

Mammalian diversity in Bolivia: The Yungas and Valles. J. A. Cook, T. L. Yates, and S. Anderson. NSF. \$263,000. 1 May, 1990 - 30 April, 1993. Yearly rate to be determined.

Genetics of endangered Gila Trout. Terry L. Yates and Brett R. Riddle. New Mexico Department of Game and Fish. \$25,000. 1 January, 1989 - 30 June, 1990.

Division of Mammals (DOM), Annual Report 1991-1992

Establishment of a Sevilleta long-term ecological research site museum. Gosz, Findley, Yates, Snell, Parmenter, Brown, Crawford, and Marshall. UNM Foundation, \$27,500. One time equipment grant

Ithyological Investigations of New Mexico fishes. T.L. Yates and Steve Platania. New Mexico Game and Fish. \$37,000. 1 August - 1989 - 30 June 1991.

Host genetic factors affecting specificity of parasites of small mammals. T.L. Yates and D.W. Duszynski. NIH - MBRS. \$57,000. 1 January, 1989 -31 December, 1993. Approx. 15,000/ YEAR.

Awarded in 1990-1992Terry Yates:

Genetic Diversity in Cutthroat Trout. T. Yates. N.M. Department of Game and Fish. \$9,000, Jan. 1, 1990-Jun. 30, 1992.

Biodiversity of San Ramon, Bolivia. T. Yates and M. Zalles. COMSUR Corp. \$17,000, Sept. 1, 1990-Aug. 31, 1992.

The Sevilleta Field Station: Development of a Regional Research Center in New Mexico. C. Crawford, J. Brown, D. Duszynski, J. Gosz, D. Marshall, R. Parmenter (Co-P.I.s). NSF. \$150,000, Aug. 1, 1990-Sept. 31, 1992.

Ithyological Investigations of New Mexico fishes. T.L. Yates and Steve Platania. New Mexico Game and Fish. \$37,000. 1 August - 1989 - 30 June 1992.

REU in Ecosystems Studies: Establishment of an REU site with the Sevilleta LTER Program. J. Gosz et al. NSF. \$150,000, May 1, 1991-Nov. 1, 1992, \$50,000/yr.

Long Term Ecological Research: The Sevilleta. National Science Foundation. \$2,400,000.00. BSR-8811906. 72 months (Co-principal Investigator). Start date 11/15/88.

Mammalian diversity in Bolivia: The Yungas and Valles. The National Science Foundation. \$237,000. 42 Months (with Syd Anderson and Joseph Cook. BSR - 8920617 Start date 6/1/90.

Endangered fishes of New Mexico. New Mexico Department of Game and Fish, \$193,645. 24 months, (with Steve Platania) start date 5/1/90.

Host genetic factors affecting specificity of parasites of small mammals. The NIH, \$ 62,000. 48 months (with D. Duszynski), start date 1/1/87.

NOTE\* Five additional conservation genetic studies were funded in 1989, 1990, 1991, and 1992 which totaled \$96,000. Only those totalling more than 50K are listed above.

Division of Mammals (DOM), Annual Report 1991-1992\*\*AWARDS AND APPOINTMENTS to TL Yates

Appointed Research Associate, National Museum of Natural History, 1991 - present.

Recipient - Leopold Conservation Award, 1991, The Nature Conservancy

OTHER STAFF AND STUDENTS:Jennifer Frey

Arizona Game and Fish Department, \$7,700.00 for Mogollon vole (Microtus mogollonensis) genetic analysis. 1992-1993

Recipient-- Albert R., and Alma E. Shadle Fellowship from the American Society of Mammalogists and the Theodore Roosevelt fund, \$3,145.00.

William Gannon

Supplement to Crane grant with the NM Department of Game and Fish; Museum equipment and supplies, \$10,678. WL Gannon and RW Dickerman, 1 June 1991 - 31 Dec 1991.

New Mexico Department of Game and Fish, Share With Wildlife Program, Acoustic sampling of bats of New Mexico, \$14,400 (\$7,700.00 for first year, 1992-1993).

Eduardo Palma

Funding and contracts obtained:

1991. Latin American Institute, University of New Mexico (\$ 1,250).-

1991. Student Research Allocation Committee, University of New Mexico (\$ 150.00).

1991. The Vice President's Graduate Research Fund, University of New Mexico (\$ 100.00).

1991. Graduate Research Allocation Committee, Dept. of Biology, University of New Mexico (\$ 250.00).

1992. Latin American Institute, UNM (\$ 1,250).

1992. Sigma Xi, The Scientific Society (\$ 375.00)

1992. National Science Foundation, Research Improvement Grant (\$ 18,900).

Division of Mammals (DOM), Annual Report 1991-1992

Awards in force from previous years

Survey of endangered fishes of the Rio Grande, T.L. Yates, Steve Platania, and Kevin Bestgen, New Mexico Game and Fish, \$100,000. 2 Years.

Long-term ecological research - The Sevilletta. Gosz et al. NSF. \$2,400,000. 1 November, 1988 - 31 October, 1994. \$400,000/ year.

Ecological-climatic Gradients on the Sevilletta National Wildlife Refuge-A Long Term Ecological Research (LTER) Site. J.H. Brown, J.R. Gosz, B.T. Milne and M.C. Molles. NSF. \$2,400,000, 1988-1993, \$400,000/yr.

Host Genetic Factors Affecting Specificity of Parasites of Small Mammals. T. Yates and D. Duszynski. NIH. \$62,000, Jan. 1, 1987-Dec. 31, 1991, \$15,500/yr.

Endangered Fishes of New Mexico. S. Platania and T. Yates. N.M. Department of Game and Fish. \$193,645, May 1, 1990-Apr. 30, 1992, \$96,800/yr.

Nuclear and Mitochondrial DNA Variation in Gila Trout. T. Yates and B. Riddle. N.M. Department of Game and Fish. \$25,000, Jan. 1, 1989-Jun. 30, 1990.

**PUBLICATIONS**

The Mammal Division supported many types of publications in 1990-92. Among these are included book chapters, refereed journal articles, oral presentations, and published abstracts.

**PAPERS AND OTHER PRESENTATIONS:**

Papers Submitted or Published in 1991

- 91 Choate, J. R., D. W. Moore, and J. K. Frey. 1991. Dispersal of the meadow jumping mouse in northern Kansas. The Prairie Naturalist, 23:127-130.
- 90 Cook, J.A., S. Anderson, and T.L. Yates. 1990. Notes on Bolivian Mammals 7: The genus Ctenomys (Rodentia: Ctenomyidae) in the highlands. Amer. Mus. Novitates, 2980: 1 - 22.
- 92 Cook, J.A., K. Bestgen, D. Propst, and T.L. Yates. 1992. Allozymic divergence and systematic status of the Rio Grande Silvery Minnow (Hybognathus amarus, Cypriniformes: Cyprinidae). Copeia, 1992(1): 36 -44.
- 90 Dragoo, J.W., J.R. Choate, and T.L. Yates. 1990. Evolutionary and taxonomic relationships among North American arid-land foxes. J. Mamm., 71: 318 - 332.



- 91 Findley, J. S., and T. L. Yates (eds.). 1991. The biology of the Soricidae. Special Publication, The Museum of Southwestern Biology, Albuquerque, New Mexico, 1:1-91.
- 92 Frey, J. K. 1992. Response of a mammalian faunal element to climatic changes. Journal of Mammalogy, 73:43-50.
- 90 Gallardo, M. H., and E. Palma. 1990. Systematics of Oryzomys longicaudatus (Rodentia: Muridae) in Chile. Journal Mammalogy, 71:333-342.
- 91 Gannon, W. L., and W. T. Stanley. 1991. Chip vocalization of Palmer's chipmunk (Tamias palmeri). The Southwestern Naturalist, 36(3):315-317.
- 91 Kelt, D. A., R. E. Palma, M. H. Gallardo, and J. A. Cook. 1991. Chromosomal multiformity in Eligmodontia (Muridae, Sigmodontinae), and verification of the status of E. morgani. Z. Säugetierkunde, 56:352-358.
- 92 Kelt, D. A., and R. E. Palma. A plea for adequate citation of authors of taxa in systematic studies. Proceedings of the Biological Society of Washington, 105:411-413.
- 90 Meyne, J., R.J. Baker, H.H. Hobart, T.C. Hsu, O.A. Ryder, O.G. Ward, J.E. Wiley, D.H. Wurster-hill, T.L. Yates, and R.K. Moyzis. 1990. Distribution of non-telomeric sites of the telomere repeat sequence (TTAGGG)<sub>n</sub> in vertebrate chromosomes. Chromosoma, 99: 3 - 10.
- 90 Miralles, Jacqueline G., and Jorge Salazar B. 1990. Clave para la identificación de los mamíferos del valle de La Paz. Museo Nacional, Historia Natural (Bolivia) Comunicacion, 9:3-17.
- 90 Salazar, Jorge B., and K. H. Redford, and A. M. Stearman. 1990. El perezoso de dos dedos de Hoffmann. Museo Nacional, Historia Natural (Bolivia) Comunicacion, 9:18-21.
- 90 Wash, C.D., D. W. Duszynski, and T.L. Yates. 1990. Enzyme variation of Eimeria arizonensis from Peromyscus truei and P. boylii. J. Protozoology, 37(6): 536 - 540.
- 91 Yates, T.L. and James Estes. 1991. Support for Biodiversity research at the National Science Foundation. Canadian Biodiversity, 1(4): 16 - 19.
- 92 Yates, T.L., S. Anderson, R. Urjel, and H. Bermudiz. 1992. The importance of collecting biological specimens in Bolivia. Bull. CENETROP, Santa Cruz, Bolivia.

Division of Mammals (DOM), Annual Report 1991-1992

- 90 Yates, T. L. and D. W. Moore. 1990. Speciation and Evolution in the family Talpidae (Mammalia: Insectivora). In The biology of fossorial mammals at the organismal and molecular levels (E. Nevo and O. Reig eds.). Liss/Wiley, New York, Pp. 1 - 22.

## Publications in Press:

- 93 Bogan, M.A., K.E. Petersen, and T.L. Yates. Systematics of little desert pocket mice, Chaetodipus arenarius and G. dalquesti, in southern Baja California, Mexico. J. Mamm., In press.
- 92 Cook, J.A., S.L. Gardner, and T.L. Yates. 1992. The genus Ctenomys in Bolivia. In Mammals of South America. A. Gardner, S. Anderson, and J. L. Patton eds. Univ. of Chicago Press.
- 92 Dickerman, A. W. and T. L. Yates. 1992. Systematics of Oligoryzomys: protein electrophoretic data. In press, Journal of Mammalogy.
- 92 Frey, J., T. L. Yates, D.W. Duszynski, W.L. Gannon, and S. Gardner. 1992. Designation and curatorial management of type host specimens (sybiontypes) for new parasite species. Journal of Parasitology, 78: IN PRESS.
- 93 Frey, J. K., and C. T. LaRue. 1992. Notes on the distribution of the Mogollon vole (Microtus mogollonensis) in Arizona and New Mexico. The Southwestern Naturalist, IN PRESS.
- 93 Frey, J. K. 1993. Mammalian type localities in New Mexico. Occasional Papers of the Museum of Southwestern Biology, SUBMITTED
- 93 Frey, J. K. 1993. Modes of peripheral isolate formation and speciation. Systematic Biology, SUBMITTED
- 93 Frey, J. K. 1993. Nocturnal foraging by the scirror-tailed flycatcher under artificial illumination. The Wilson Bulletin, SUBMITTED.
- 92 Gallardo, M H, and R. E. Palma. 1992. Intra- and interspecific genetic variability Ctenomys (Rodentia: Ctenomyidae). Biochemical Systematics and Ecology, IN PRESS
- 92 Gannon, W. L. 1993. Acoustic sampling of mammals in the field. Chapter 7, In Standard methods for measuring biological diversity (D. E. Wilson, A. L. Gardner, eds), ca. 400 pp. In Press.
- 92 Gannon, W. L., R. B. Forbes, and D. E. Kain. 1992. Tamias ochrogenys. Mammalian Species, IN PRESS.

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- 93 Gannon, W. L., and R. U. Gutierrez. 1992. Museum management: A global survey. Submitted to Collection Forum.
- 92 Hafner, D. J., D. W. Moore, T. L. Yates, and D. W. Reduker. Genetic variation among Cutthroat Trout of the Southern Rocky Mountains. In Review, Transactions American Fisheries Society.
- 92 Riddle, B. R., T. L. Yates, and T. E. Lee, Jr. 1992. Molecular divergence and variation in the endangered Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis). Science, SUBMITTED
- 92 Ruedas, L. , J. Cook, T. L. Yates, and J. Bickham. 1992. Total DNA amounts in chromosomally variable Tuco - Tucos. In press, Genome.
- 92 Sullivan, R. M. and T. L. Yates. 1991. Population genetics and conservation of relict populations of the Red Squirrel (Genus Tamiasciurus). In Press, Special Publications, Smithsonian Institution.

Abstracts and Contributed Talks at Professional Meetings:

Frey, J. K. 1992. Evolutionary consequences of modes of peripheral isolate formation under alternative modes of speciation and speciation in frogs of the subgenus Strombus (Leptodactylidae: genus Ceratophrys). Southwestern Association of Naturalists, April 1992.

Frey, J. K. 1992. Evolutionary consequences of modes of peripheral isolate formation under alternative modes of speciation. American Society of Mammalogists, June 1992.

Gannon, W. L. 1992. Evidence of character displacement in three parapatric chipmunk species. Biology Departmental Seminar Series (UNM), 6 May.

Gannon, W. L. 1992. Discriminant analysis of the skulls of Lepus: A method of classifying unknown specimens (subtitled, "I found this skull and was wondering what it is?"). Poster presented to UNM Biology Research Day, 3 April.

Herbert, G. W., and W. L. Gannon. 1992. Refining methods of cleaning and preserving large mammal specimens. Poster presented to UNM Biology Research Day, 3 April.

Gannon, W. L. 1991. Behavioral reactions of Onychomys and Peromyscus to cross fostering manipulations. Presented to the American Society of Mammalogists, Manhattan, KS

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Gannon, W. L., Phillip J. Glass, J. K. Frey, and T. L. Yates. 1991. Information retrieval of biological materials at the Museum of Southwestern Biology. Presented to the American Society of Mammalogists, Manhattan, KS

Palma, E. 1990. The Southwestern Association of Naturalists. Systematics of Oryzomys longicaudatus (Rodentia: Cricetidae) in Chile. Annual Meeting, Denton, Texas.

Palma, E. 1990. Joint meeting of the Argentine Mammal Society and the American Society of Mammalogists. Genetic variation in Andean Ctenomys (Rodentia, Ctenomyidae). Buenos Aires, Argentina.

Palma, E. 1992. Intra and inter-specific genetic variability in Ctenomys (Rodentia, Ctenomyidae). Poster presentation, Research Day, Department of Biology, University of New Mexico.

[approximately 25 additional presentations were made in 1991-1992 but are not reported here for several tactical reasons; i.e., the authors either are still out of town (in Bolivia) or their computers with their CVs are still not unpacked]

## SERVICE AND PANEL OR COMMITTEE ACCOMPLISHMENTS

Frey, J. K. Elected vice-president, UNM Club (now extinct).

Gannon, W. L. Member, Information Retrieval Committee, American Society of Mammalogists (1986-present)

Gannon, W. L. Member, Systematic Collections Committee, American Society of Mammalogists (1990-present)

Gannon, W. L. Committee of Conservation Materials, Society for the Preservation of Natural History Collections (1990-present)

Yates, T. L. Recording Secretary, American Society of Mammalogists. Elected.

Yates, T. L. 1990-1992. Directed the October Systematic Biology Panel for the National Science Foundation.

Yates, T. L. 1990-1992. Director of the Systematic Biology Program for the NSF.

## EDITORIAL SERVICE

Gannon, W. L. Member, Editorial Board for the Publications of the Museum of Southwestern Biology.

Yates, T. L. Managing Editor of the Editorial Board for the Museum of Southwestern Biology Publications.

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## GRADUATE EDUCATION.

The Mammal Division offered "Principles of Collection Management" (Biology 402/502; 3 hours) taught by William Gannon, with Terry Yates as course administrator, Spring 89, this will be offered next Spring 93.

Mammalian ecology (Biology 554; 4 hours) was offered by William Gannon and Richard Forbes Spring 91. This course entertained 14 students asking for several exams, presentations, and field work. Ed Heske, Jim Brown, Jim Findley, Scott Altenbach, Dave Hafner, and Jack Cully all gave guest lectures to the class.

Mammal Group, or Advances in Vertebrate Biology was offered all semesters and was attended by 6 registered students and 12 regular drop ins. The group expanded to include students of all vertebrate groups but is still mostly attended by mammalogists. The class met every other week at night for three hours.

Masters degrees awarded:

Lisa A. Valle, Spring 1992 (J. Brown, advisor)

Doctors degrees awarded:

Gregory Hartman, Biology of Scalopus aquaticus, Spring, 1992.

Names of 551, 599 and 699 studentsBiol 699 (spring and fall)

Greg Hartman  
Forrest Davis

Biol 699 (Summer)

Greg Hartman  
Forrest Davis

Biol 551 (Fall, Spring, Summer)

Jennifer Frey  
Jennifer Miyashiro  
Jorge Salazar  
Eduardo Palma

Biol 499 (Fall, Spring)

J.L. Dunnum  
D. Goddu  
S. Feurach  
S. Davenport

As a note on education, the Division has consistently provided education at a multitude of levels including: the kindergartners looking up at a stuffed chipmunk and asking, "Why are its eyes white?"; or the fifth grader who goes on and on about the time he and his dog were sprayed by skunks when he was asked if he knew what k-rats ate in the desert; or the community member that

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calls in about the "raven problem"; the Boy Scout with a special natural history project on ultrasound; the Future Farmers of America who are trying to win the championship; the news media interested about bats; the volunteer who wants to "just scrape a few bones and get some experience"; the undergraduate who thought they wanted medical school, but never thought there was this; the graduate student needing help making ends meet and cannot afford some equipment, xeroxes, and needs help on a trapping grid; the professional inquiring about the number of Neotoma cinerea from Socorro County; the retired orthopedic surgeon just wanting to x-ray a few sloth bones, but ending up x-raying the entire Eutheria; the rest-home elderly who recall the sea of gemsbok and impala on their trip to Kenya with Roosevelt. These are the everyday users and learners of the collection. No price can be put on what they learn, glean, or regurgitate from the holdings of this Division. No numbers can be put on insight, intrinsic values, or a good story about how vampires really feed. This is a good, worthwhile place. (WLG)

PERSONNELCuratorial Staff, Division of Mammals -- Jan 1986 - present

Terry L. Yates	Curator of Mammals
Jim S. Findley	Curator Emeritis, Director
William L. Gannon	Collections Manager, Acting Curator
Robert W. Dickerman	Curatorial Associate
William Lopez-Forment	Acting Curator, Chiroptera (90)
Richard B. Forbes	Acting Curator, Sciuridae (91)
Eduardo Palma	Assistant Curator (90, 92)
Jennifer K. Frey	Assistant Curator (90, 91)
Joseph A. Cook	Assistant Curator (90)
Forrest W. Davis	Assistant Curator (89)
Brett R. Riddle	Assistant Curator (87, 88, 89)
Laura Janeczek	Assistant Curator (86)
Robert M. Sullivan	Curatorial Assistant (87)
Marian Skupski	Curatorial Assistant (88)
Alejandra Alvarado	Curatorial Assistant (89)
Marianne Martin	Curatorial Assistant (89)
Jorge Salazar Bravo	Curatorial Assistant (90, 91)
Marikay Ramsey	Curatorial Assistant (89,90)
Phillip J. Glass	Programmer, work-study, staff (90-2)
Mariel L. Campbell	Head Preparator, work-study (88,90)
Rosanne L. Humphrey	Head Preparator, work-study (89)
Suzy C. Feurach	Head Preparator, work-study (88,90)
Roberto U. Gutierrez	Head Preparator, work-study (89,90)
Jon O. Dunnum	Head Preparator, work-study (89,91)
Guy O. Herbert	Preparator, work-study (91,92)
Roberto U. Gutierrez	Preparator, work-study (88-89)
Lisa A. Valle	Preparator, work-study (89)
Kristin Vaitkus	Preparator, work-study (90)
Colin Campbell	Preparator, work-study (91)
Steve Davenport	Preparator, work-study (91-92)

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Melissa Chavez	Preparator, MBRS (91-93)
Matt Brady	Preparator, work-study (90,91)
Natalie Derwelis	Preparator, SRAP, Academy HS (87,88)
Shelly McCaulley	Preparator, work-study (87,88)
Brian Frank	Preparator, MBRS, (87,88,89)
Carol Malcolm	Museum-aid, work-study (86)
Jim Seely	Museum-aid, work-study (86)
Yvette M. Paroz	Museum-aid, SRAP, (87)
Allison Brody	Museum aid (88)
Catherine Isbell	Museum-aid (88)
Stacey Hoffman	Museum-aid (88,89)
Dave Keller	Museum-aid (89)
Julie Kubler	Museum-aid (89)
Damon Matlock	Museum-aid (89)
Gabrielle Tripp	Museum-aid (89)
Jeff Harmon	Museum-aid, work-study (90)
Rachel Montenegro	Museum-aid (90)
Paulette Ford	Museum-aid (88)
Melissa Suarez	SRAP (91)
Justin McHorse	SRAP (91)
Ta-Ta Bill	SRAP (91)
Gerald Cunningham	School on Wheels (91)
Naomi Vallejos	School on Wheels (91)
John Alberto	School on Wheels (91)
Vicki Sanchez	YDI program (91)
Wade Wilson	RA parasites
Nancy Heimbigner	volunteer (90)
Mike Friggins	volunteer (89-90)
Stan Moolenijzer	volunteer (89)
Monica K. Rusk	USFWS, Preparator (89)
Tom G. Roe	karyology, MBRS (89-90)
Millan Baca	museum-wide, SRAP (90)
Miguel Romero	museum-wide, SRAP (90)
Steve Davenport	WS, Sept 90
Tom Collins	WS, Sept 91
Bryant Furlow	WS, May 92
Kurt Shipley	WS, Summer 92
Marcos Sandoval	museum-wide, YDI (92)
Levi Lucero	museum-wide, YDI (92)
Halea Johnson	museum-wide, YDI (92)
Nadine Kemrer	volunteer, Academy HS, 92

Other Mammalogists and Professionals Associated With the Division of Mammals

Dr. Sydney Anderson

MSB Research Associate  
Curator, Mammals,  
American Museum of Natural History

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J. Scott Altenbach	Associate Biology Professor Chiropteran Anatomy and Physiology
Troy L. Best	Auburn University Assistant Professor, Biology Mammalian Morphology and Systematics; <u>Dipodomys</u>
James H. Brown	Professor of Biology Mammalian Biogeography Community Ecology
Astrid Kodric-Brown	Associate Professor Community Ecology
Joseph A. Cook	Curator, UAF Museum Frozen Tissue Collection studies in <u>Ctenomys</u> , Bolivia
Donald W. Duszynski	MSB Research Associate Chair, Department of Biology Mammalian hosts of coccidian parasites
James S. Findley	Director of MSB, Ecomorphology, Community Ecology Curator Emeritis, Mammal Division
Richard B. Forbes	Professor, Portland State University mammalian photography, ecology
Ken Geluso	Professor, University Nebraska, bats, mammals of Carlsbad area
Brett R. Riddle	Assistant Professor, Department of Biology, University of Nevada, Las Vegas

Curatorial Associates:

James H. Brown	UNM Department of Biology
Robert W. Dickerman	Museum of Southwestern Biology
Richard B. Forbes	Department of Biology, Portland State University, Portland Oregon
William Lopez-Forment	UNAM, Mexico (1990)



Division of Mammals (DOM), Annual Report 1991-1992Research Associates:

J. Scott Altenbach	UNM Department of Biology
Sydney Anderson	American Museum of Natural History New York
Robert J. Baker	The Museum, Texas Tech University Lubbock, TX
Troy L. Best	Department of Biology, Auburn University
Joseph A. Cook	Natural History Museum University of Alaska, Fairbanks
Scott L. Gardner	Dept. Nematology, Curator, UC Davis.
Sarah B. George	Curator of Mammals, LA County Museum of Natural History
Gary L. Graham	Bat Conservation International
David J. Hafner	New Mexico Museum Nat. History
Bruce J. Hayward	Department of Biology Western New Mexico University Silver City, NM
Edward J. Heske	Illinois Biological Survey Urbana, IL
Dwit Ivey	Retired. Active in Botany, mammals
Clyde Jones	The Museum Texas Tech University
Dwight W. Moore	Emporia State University
Robert Parmenter	Department Biology, LTER coordinator
James L. Patton	Museum of Vertebrate Zoology University of California
Richard A. Smartt	New Mexico Museum of Natural History.
Robert M. Sullivan	New Mexico Mus. Nat. History Biogeography and systematics

Division of Mammals (DOM). Annual Report 1991-1992GRADUATE STUDENTS ASSOCIATED WITH THE DIVISION OF MAMMALSPh. D.

Forrest W. Davis  
Kris A. Ernest  
Jennifer K. Frey  
William L. Gannon  
Lauraine Hawkins  
Greg G. Hartman  
Douglas A. Kelt  
Marianne Martin  
Shahroukh Mistry  
Paul Nicoletto  
Eduardo Palma  
Michael Patrick  
Jorge Salazar Bravo  
Marian P. Skupski  
Ursula Sheppard  
Derrick Sugg  
Mike Balistreri  
Marcelo Zalles  
Travis Perry  
Jennifer Miyashiro

Masters

Paulette Ford  
Phillip J. Glass  
Carol Malcolm  
Lisa A. Valle

## ATTACHMENTS

Three attachments are included. The New Mexico endangered species list includes species represented in MSB collections. The ASC position on collections use is an important document forming the basis of the MSB's ideas on use of our collections; this is currently undergoing review. Finally, the Support for Tours, documents the numbers of school-aged kids that have toured the Mammal Divisions as well as those that have been turned away.

## DOM User's Guide - 1992

## New Mexico Endangered Species

Specimens Present in the Museum of Southwestern Biology

<u>Species List</u>	<u>Group #</u>
<u>Sorex arizonae</u> (Arizona Shrew)	1
<u>Cryptotis parva</u> (Least Shrew)	2
<u>Leptonycteris nivalis</u> (big, long-nosed bat)	1
<u>Leptonycteris sanborni</u> (Sanborn's Long-nosed bat)	2
<u>Lasiurus ega</u> (Southern Yellow bat)	2
<u>Euderma maculatum</u> (Spotted bat)	2
<u>Lepus callotis</u> (White-sided Jackrabbit)	1
<u>Eutamias quadrivittatus australis</u> (Colorado Chipmunk, Organ Mountains, subspecies)	2
<u>Eutamias minimus atristriatus</u> (Least Chipmunk, Penasco subspecies)	1
<u>Thomomys umbrinus</u> (Southern Pocket Gopher)	2
<u>Microtus montanus arizonensis</u> (Montane Vole, Arizona subspecies)	2
<u>Zapus hudsonius luteus</u> (Meadow Jumping Mouse)	2
<u>Canis lupus baileyi</u> (Gray Wolf, Mexican subspecies)	1
<u>Martes americana</u> (Pine Martin)	2
<u>Ovis canadensis mexicana</u> (Bighorn Sheep, desert subspecies)	1

(common names from Hall 1981)

## MEMORANDUM

26 November 1991

TO: Curators and Acting Curators  
FROM: Bill Gannon, Collections Manager  
RE: Attached ASC Position on Collections Use

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Attached please find the ASC's recently published (ASC Newsletter, February 1991) position statement on the use of collections. I have reproduced this paper verbatim in hopes of:

1. Using their statement (ASC's) in order to draft one of our own.
2. As a starting point to stimulate discussion among ourselves regarding the use of the collections of the MSB.
3. Are databases sacred? Who "owns" them?

To discuss this important issue, I have reserved Room 232 for two hours, from 12 to 2, on Tuesday 10 December for a working "Curator's Lunch". Most of the MSB participants are free during this time as well as Terry will be in town. Bring your lunch and please plan to attend.

## ASC POSITION ON COLLECTIONS USE AGREEMENTS

On 13 December, 1990, representatives of several member institutions of the Association of Systematics Collections met with Executive Director K. Elaine Hoagland, with the sanction of ASC's Executive Board, to determine a course of action that would lead to improved relations between the systematics community and the conservation community in general, and The Nature Conservancy in particular. Conservation is critical at this period in global history and neither we nor those that follow us can afford anything short of full cooperation. Informed policy development and sound decision-making in virtually every facet of the conservation effort are dependent on research on the systematics and biogeography of organisms and the data found in systematics collections (i.e., biological collections of natural history museums, university museums or departments, herbaria, arboreta, type culture collections).

This document states certain concerns about the current relationship between the systematics collections community and the conservation community (and most particularly The Nature Conservancy) and suggests formal contractual solutions to these problems. Nevertheless, the suggested solutions do not go to the heart of the matter, which is development of a larger, more all-embracing mutual understanding between the systematics collections community and TNC (as well as other conservation organizations) concerning their mutual obligations to the living environment, the different ways in which they fulfill these obligations, and optimal modes for cooperation and mutual support. Our hope is that in the near future representatives of the ASC, TNC, and other conservation organizations will address these matters in a productive manner.

With the advent of sophisticated computer-mediated data management systems have come inevitable economic and political consequences. Those who control "proprietary" information are in a position to market reports based on that information and to use it for political purposes. The control of certain proprietary information files based on systematics collections, can, for example, enable an organization to lobby governments more powerfully for financial support, to project a more dramatic image in soliciting funds, and to make claims and take actions that tend to preempt the role of natural history institutions in program development and funding efforts.

It is important to distinguish between computer-mediated information files and primary and secondary data bases derived from natural history collections. The distinctions are as follows:

**Primary Data Base**—a data base of locality, collection and other pertinent data pertaining to and maintained with the specimens in systematics collections. These data bases are dynamic, growing as the collection grows. Nomenclature is routinely updated as changes occur.

**Secondary Data Bases**—a data base composed of information extracted from the primary data base dissociated from a systematics collection. These data bases usually contain less information than the primary data base, and since they lack voucher specimens and their associated data, the accuracy of the records in these data bases can only be verified by going back to the primary data base. Because the data have been selected for a particular purpose, they are inherently biased. Secondary data bases tend to remain static; and are not necessarily updated to reflect changes in taxonomic nomenclature or revised species definitions.

**Information Files**—These files consist of data derived from secondary sources such as monographs and general literature (field guides, summarizations, generalizations from the original data, endangerment decisions, listing of taxa per geographical unit). This information may or may not be current or correct. Information files may also include observations (e.g., bird sightings) and subjective elements (e.g., a scientist or Heritage program staff member ranks how rare a species is on a scale of 1-5). Data in information files are abstracted from many sources and are even further from the specimen vouchers that document a species and its distribution through time. The Nature Conservancy in Arlington, Virginia, maintains "information files" that meet the definition presented here.

To protect the interests of their institutions, managers of systematics collections and primary data bases must establish formal contractual relationships with their users. Our institutions and staff generally commit too few relationships to paper and this oversight has lead, at least in part, to serious misunderstandings. In the past, and to some extent today, managers of collections have acted as storekeepers who allow anyone to enter and take goods from the shelves with no concern for costs, payments or credit ratings. In this analogy, no business operated in this manner will survive very long. To extend the analogy, state heritage/conservancy programs have had individuals coming to our stores and taking liberally from the shelves. They have then repackaged the goods and, coordinated by the national office of The Nature Conservancy, marketed them as proprietary goods. Little or no credit is given; few or no funds are exchanged. Goods at the local level are given in the name of the common

cause; once obtained gratis, however, the goods are variously used not only for conservation, but to obtain funds and contracts, to lobby government. The result is to disenfranchise the collections centers maintaining the primary data bases.

The first and necessary step to an improved understanding between the systematics community and the conservation community is a mutually agreed-upon relationship. The relationship, on a national scale, has been misunderstood by a few, either deliberately or unintentionally, and the misunderstanding must be corrected as quickly as possible. We need to build a fresh relationship based on written agreements. These agreements, whether Memoranda of Understanding, contracts, or other documents, are the cornerstone upon which good relations must be built. Currently our member institutions use a variety of written documents ranging from relatively informal memoranda to formal contracts replete with legal language. Following an analysis of these documents, the ASC task force deliberating this problem has agreed to the following:

1. A formal contract is required between the institution or collection center and all users (except individual research scientists or students writing scholarly papers for publication in scientific journals). The contract should be signed by the institutions' chief executive officer (director of a museum; highest responsible individual of a university collection, e.g., dean or departmental chairman).
2. The contract should state the mission of each party. In the case of collection repositories, the mission might include research, science education, collection growth and maintenance along with primary data base management. In the case of state heritage programs, the statement might include conservation and data management relative to conservation purposes, but not scientific research.
3. Realistic charges for services should be established for non-academic users. One ASC member collection center charges \$50.00 per day for the use of the collection plus a mandatory fee of 2.5 times the salary of the curatorial assistant (or other employee) for the time spent in mandatory supervision of the user. Another charges \$50.00 per hour. In some cases, in-kind payment may be appropriate.
4. The contract should clearly state that the primary data base is and will be maintained and managed by the collections center. The user may purchase part of the data base but may not have the entire data base. For example, the data base may have the data for all mammals in a collection. The user is interested in mammals from Kansas. The user may not purchase the entire data base, but only the section dealing



with the specific information requested on the Kansas mammals.

5. The user will acknowledge the source of the primary data base whenever it is used, even when modified, as is the case with The Nature Conservancy. The acknowledgement will be given in all publications and oral presentations, including testimony before Congress, state legislative bodies, and regulatory, conservation and land-use agencies. The users will acknowledge that the information they obtained and subsequent information bases that they may create are not the primary data base of the collection repository. Users will sign contracts with the understanding that the compilations of data they take with them represent a secondary data base, and that the information may become out of date in a short period of time. As the primary data base grows, the status of a species may change and changes in taxonomic nomenclature inevitably occur.
6. The user agrees not to pass on the data to any other party or parties, or organizations or centers, private or governmental, without written permission from the collections repository. If state heritage offices pass data to The Nature Conservancy in Arlington, a contract with the national office would be required for an informational file, as well as one with the state office for a secondary data base. [Editor's note: The ASC office hopes to negotiate a general MOU with the National Office of The Nature Conservancy that will serve as a template for ASC members' understandings with the National Office; signatures from individual institutions on such a document would still be required.]
7. The document should have a disclaimer to the effect that the collections center does not accept responsibility for the accuracy of data taken by the user.
8. The user agrees to provide an annual listing of publications, testimony, reports or other documents that by nature of the agreement require an acknowledgement. This permits tracking acknowledgements and how the data were used.

#### Other Points to Consider

9. The purpose of the contract may be stated. The purpose may be limited. A "use" clause may limit the use of the data.
10. An agreement for updating the user's secondary data base may be included; e.g., a subscription to updates from the collection repository.

11. An agreement to permit free exchange of data could be included.
12. A procedure for amending the contract may be included.
13. The length of agreement and termination procedures may be stated.
14. A liability agreement could be included, including a statement that any litigation would be conducted in the city of the collections center.
15. A statement should be included that notifies users that no institutional (Board) policy may be violated by this agreement (i.e., institutional policy supersedes any other arrangement).
16. A description of deliverables may be given.
17. A statement that users will deposit all voucher specimens with the collections center could be included. Fees could be established for maintaining vouchers.
18. Use of students to do field verifications of data is an option.
19. An annual meeting of parties may be an option to consider for inclusion in a long-term agreement.
20. A breach of contract clause may be included.

A different kind of document should be signed by all other users of the systematics collection. This document would clearly establish whether the data are to be used by commercial, government, or conservation groups or agencies or by individual scholars. Costs and requirements for groups of users and agencies should be clearly established. Users should state the intended use of the data and the agency or organization they represent. Clearly understood affiliations are necessary because in the past some users failed to state that they were collecting data for a conservation group or governmental agency. Collections that are not computerized are visited by Heritage Program staff to copy out specimen label data. Such use of collections to obtain data which are then entered into a data base should be acknowledged by the user, just as in the case of computerized data.

Institutions participating in the drafting of this document:

Academy of Natural Sciences of Philadelphia, Philadelphia,  
PA.

Bishop Museum, Honolulu, HI  
Carnegie Museum of Natural History, Pittsburgh, PA.  
Field Museum of Natural History, Chicago, IL.  
Florida Museum of Natural History, Gainesville, FL.  
Illinois Natural History Survey, Champaign, IL.  
Missouri Botanical Garden, St. Louis, MO.  
Museum of Natural History, University of Kansas, Lawrence,

KS.

Systematic Entomology Laboratory, U.S.D.A., Beltsville, MD.  
University of Alaska Museum, Fairbanks, AK.

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Source: ASC Newsletter, Feb. 1991

## MUSEUM OF SOUTHWESTERN BIOLOGY

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10 May 1992

TO: Dave Ligon, Chair

FROM: Bill Gannon

RE: Support for tours

Below is a partial list of the group tours we have done through the Museum. This has three implications. 1) The Museum has brought in 1911 kids and adults into the Department and showing these folks what a neat place this is. 2) No one is really paid to do this. Terry allows me to organize tours for the museum, but it is really not a part of my job as Bird and Mammal collections manager; someone must be hired and paid to run these tours. 3) The list below only represents a portion of those tours I recorded. Many other groups were guided through; the department by me or another Museum person; no one else in the Department does this.

The tours for just the past year (April 1991- April 1992) are:

"A Child's Garden	30/2-3	9/91
Hope Christian Elem	65/3rd	9/91
Apache Elementary	20/4th	5/91
Apache Elementary	20/5th	5/91
" "	20/5th	5/91
Valle Vista Elem	45/4th	5/91
Crown Point Elem	19/5th	5/91
Belen Jr High	55/7-8	5/91
Bernalillo MS	62/4th	5/91
Mazanares Elem	30/3rd	5/91
Carrol Elem	60/4th	5/91
SY Jackson	55/3rd	5/91
Taft MS	30/7th	5/91
Cordova Elem	40/K	5/91
Marie House MS	45/7th	5/91
SIMPTE	20/9th	5/91
Evangelical Temple	25/HS	5/91
St Charles Elem	40/2nd	5/91
Bosque Farms	40/4th	5/91
John Baker Elem	60/2-3	5/91
Alvarado Elem	55/4-5	5/91
Gruber, Home School	15/1-5	5/91
Onate Elem	16/K	5/91
Mitchell Elem	45/4th	5/91
Sandia Elem	65/6-7	6/91
" "	"	6/91
" "	"	6/91
Joan Scott kids	30/4-5	6/91
Upward Bound	15/9-12	9/91
Little Feet Learning Ctr	15/k-1	9/91
Monte Vista	24/1-3	9/91

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## Museum Educational Tours

Our Lady of Fatima	30/1st	10/91
Brownie Troop 544	12/3rd	10/91
A child's Garden	12/4 yo	11/91
SW Indian Polytech	15/post-secondary	11/91
Zia Elem	25/3-4	2/92
Hope Christian	41/3rd	2/92
Montezuma Elem	20/5th	2/92
Wilson MS	35/6-7	1/92
BelAir Elem	40/1st	2/92
BelAir Elem	45/2-3	3/92
Vineyard Home School	20/2-5th	1/92
Santa Fe Indian School	12/HS	3/92
SIMPTE	35/HS	4/92
Krummel Elem	15/k-4	3/92
Moriarty HS	15/HS	3/92
Moriarty HS	15/HS	3/92
Moriarty HS	15/HS	3/92
Moriarty HS	15/HS	3/92
Visually Impaired	25/varied	4/92
BelAir Elem	33/4th	4/92
Los Ranchos Elem	70/1st	4/92
Palo Duro Senior Cntr	25/55+ yo	4/92
Brownie Troop 544	15/3-5th	4/92
BelAir Elem	35/4th	5/92
John Baker Elem	60/4-5th	5/92
UNM-SF Coll Mgt Class	20/UNM	5/92
Alvarado Elem	30/3-4th	5/92

approximate total 1911

...again these are just the tours that I have written down. We get many more requests (see attached), and I don't always record those. We also have 4-5 "drop ins" per months. These are groups that end up at the door with thirty kids and we do a tour, or groups that fall in behind a tour already scheduled. I have been doing tours of this sort for the past five years.

Although I do a majority of these tours, I ask my crew (that have passed mammalogy) to help out with these as well; especially Suzy Pourach and Jon Dunnum. Other Museum people that have dealt with these groups include Alexis Schuler, Jane Mygatt, Lisa Ellis, Greg Farley, Bob Dickerman, Norm Scott...to name only the people here this semester that I can think of or know about. Many others have helped out. Many others still avoid me like the plague when they see me coming with scheduling sheets.

The point is that these tours offer a tremendous exposure of the entire Biology Department to these people; almost 2000 kids of an impressionable age

## Museum Educational Tours

as well as those just thinking about colleges to apply to have been exposed to the Biology Department by the museum folks in the past year. These tours have a greater impact than Research Day and Graduation activities combined. In these tours, we often talk about not just the museums, vertebrates, and ecology, but always mention work being done in molecular genetics and cell biology and other areas in which department excels. Displays and posters, as well as walking all around the department is also included with these tours. The time spent by museum people to benefit the department as a whole is exceptional. I wouldn't want to change that exposure in the least. However, the demand by the public to garner exposure to our department is increasing.

Because of the impact and the increasing demand, I recommend that you establish a position to organize, manage, and conduct public tours of the department. This position is a PR position that can only benefit the department by greater exposure, but also it is of a great educational service to the community. I do not mind (nor would Terry object) my helping with such a departmental employee in organizing and occasionally conducting museum tours, however, I cannot continue accepting the responsibility of these tours as it now stands any longer. I think there are some recent turns of events (e.g. George Stevens appointment; undergraduate education grants) that will help to find funding for this departmental educator position. Please feel free to discuss this with me. Thanks!

CC: T Yates  
J Findley  
Museum tour folks  
file

groups for summer camp in the science and English on Thursdays. Want to observe class rooms, kids self-select available "sites" and observe the mornings and afternoons, 6-7th grade, about 20 kids each time.

20 June, same as above

27 June, same as above

### Tour Requests

Albuquerque Academy; Urban Adventure Project "Back to Nature" program

Jill Riveria 845-8985

Eleanor Sanchez 277-1989 (Centennial Office)  
or  
Paula

Julie McGaharan (w/ the Brian Lang-man), 247-3787

Pam Baca, McCollum Elem, 298-5009, wants information

Elsa 345-9021 (re: museum tour)

Jennifer Adams, Bandelier Elementary, 255-8744

Cheryl Mattson, Monte Vista Schhol, 260-2030, 2-3rd grade

Sandy Zerzosa, Delores Gonzales School, 764-2020, turned down 7 Jan 91

Mathew Padilla, Academic Affairs, 277-0952

Betty Gomez, 864-7215, Cub Scouts in Belen, Prefer Saturday

Valerie Harvey, 243-4668, Washington Middle School, 15-16 Special Educ.

Annetta Darmitzel, 989-5548, 984-2065, Santa Fe Schools

Eric Caine, Jefferson Middle School, 9 special educ. kids, 266-8253, called 18 Oct.

Martha Hamilton, SW Childcare, 294-2233

Cissy Holstein, 242-2784 (home), Bandelier Elem.

Agnes Mauro, 898-1856

Silda Mason, 281-3316 x3317, Roosevelt Middle School, 120 kids

Charla Kendrick, 255-4680, Monte Vista Elem, 20+ students

Mike Zinn, 881-9390, McKinley Junior High, 120 kids

### Volunteers

Jean Leslie, 293-7504 (was docent trainee at RG2)

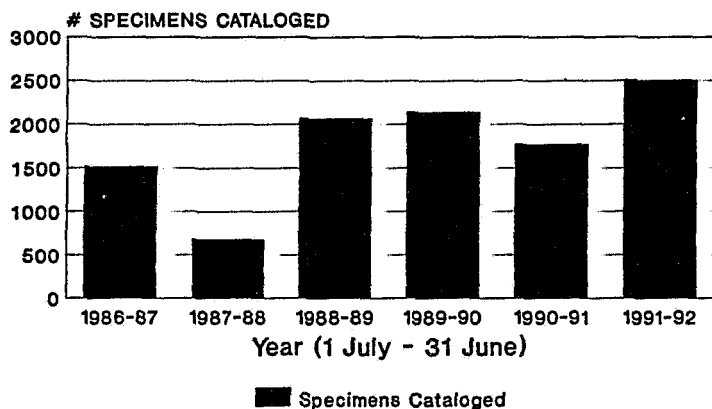
### Others:

**Figures:**

- Figure 1:** Graph of number of specimens cataloged by year.
- Figure 2:** Growth curve of numbers of specimens installed in the Division of Mammals by year.
- Figure 3:** Collection arrangement is outlined in a simplified floor plan for the Division of Mammals. See Key for further explanation.

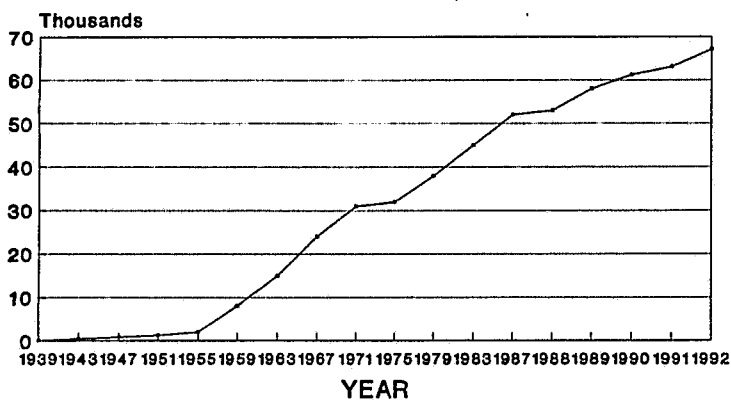


## NUMBER OF SPECIMENS CATALOGED PER YEAR (86-92)



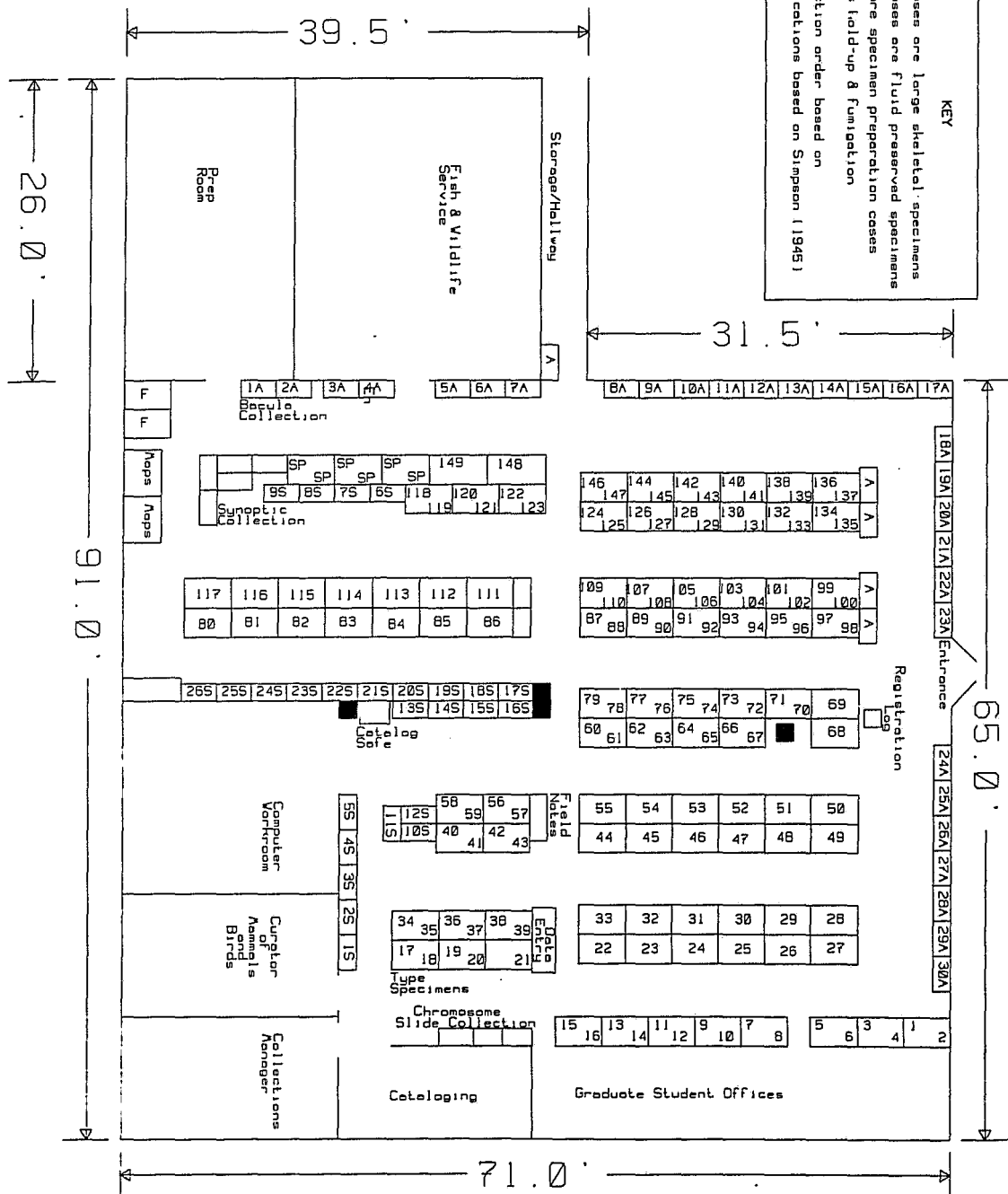
Museum of Southwestern Biology  
-- Division of Mammals (DOM) --

## Growth of the DOM by Year



numbers are approximate  
as estimated from written catalogs

354



## UNM HERBARIUM ANNUAL REPORT 1991-1992

The vascular plant holdings of the herbarium now exceed 82,150 specimens. We are continuing our efforts to computerize our administrative activities such as loan requests, generation of specimen labels, and general record keeping. Each new specimen accessioned has its label information captured in a computer database. We now have information from 6480 specimens in our database.

A number of Federal, State, and private agencies continue active associations with the herbarium. The New Mexico office of the Nature Conservancy continues to use the UNM Herbarium as the repository for specimens collected for the Heritage Program Database of Threatened and Endangered Plants. All plant specimens collected for the Sevilleta LTER are being deposited in the herbarium. The curator continues his efforts on the NM Plant Recovery Team.

The Curator, Dr. Tim Lowrey, has significantly increased his international field research activities during the year. He is involved in the Botanical Inventory of Taiwan project administered by the Missouri Botanical Garden. He completed 2 field trips to Taiwan this year totaling 4 weeks of field collection. Dr. Lowrey also was awarded a National Science Foundation Grant that will involve extensive field work in Hawaii, Cook Islands and New Guinea. Three weeks of field research were completed this past summer in the Hawaiian Islands.

The UNM Herbarium created and maintains the international electronic-mail database, E-mail Directory of Plant Taxonomists. This database was created by Patricia Barlow and is maintained by Jane Mygatt. The database is updated every month and is used by a large number of researchers throughout the world.

The Herbarium continues to serve as an important training facility for both undergraduate and graduate students. During the year we have one undergraduate work-study student per term working in the herbarium. We also have a graduate student R.A. working in the herbarium every term.

The Castetter Ethnobotanical Research Unit continues to be extremely productive (see attached summary report). The Unit is one of the few such research groups in the entire U.S. that does both contract and original research.

The long term goals of the herbarium remain to initiate and complete basic systematic research on Southwest and Pacific Basin vascular plant groups, to complete full computerization of the collection, provide a comprehensive representation of the floristic diversity in New Mexico, provide up-to-date service to researchers with regards to identification of research organisms as well as the source of research material, and provide training in herbarium management and botanical research for students in the Biology Dept.

## SUMMARY OF RESEARCH, EDUCATION, AND CURATORIAL ACTIVITIES

1. Number of specimens accessioned: 969.
2. Numbers of research loans to outside researchers or agencies: 19 loans comprising 1,528 specimens.
3. Number of specimens borrowed by UNM researchers: 44.
4. Field research: Timothy Lowrey - Taiwan, 4 weeks; Hawaiian Islands, 3 weeks; New Mexico, 2 weeks; Stephen Reed - New Mexico, 3 months.

5. New Mexico Plant Recovery Team Membership by Curator.
6. Numbers of visitors: 567.
7. Graduate R.A.'s in Herbarium: Stephen Reed and Raymund Chan.
8. Graduate students utilizing the Herbarium for Research: Biology Dept.: Stephen Reed, Patricia Barlow, David Bleakly, Sam Loftin, Robert Cabin, Douglas Kelt, Paulette Ford, Colleen Hatfield.
9. Undergraduate students utilizing herbarium for research: Joe Williams, and Joran Viers.
10. Courses using the Herbarium: Biol. 363-New Mexico Flora; Biol. 499 Undergraduate problems.; Biol.260-Intro. Botany.
11. Outside agencies using Herbarium on a continuing basis: Nature Conservancy; N.M. Dept. of Forestry; U.S. Forest Service; U.S. Fish and Wildlife Service; U.S. Bureau of Land Management; various agencies of the Navajo Nation; the Army Corps of Engineers.
12. Herbarium Research and Curatorial Associates: R. DeWitt Ivey, APS (retired); Paul J. Knight, Marron, Taschek & Knight Inc.; William Dunmire, Nature Conservancy (retired); Karen Lightfoot, New Mexico State Forestry; Robert Sivinski, New Mexico State Forestry; William Hevron, Navajo Natural Heritage Program, Esteban Muldavin, New Mexico Natural Heritage Program; Ellen DeBruin, New Mexico Natural Heritage Program.
13. Curator was invited participant, N.S.F. Workshop on Computerization of Natural History Collections, University of California, Berkeley. May 1992
14. Service and education activities performed by Curator: Presentation to Longfellow elementary students on plants of the Southwest; Presentation to REU students on *Sevilleta LTER* - Plant Biodiversity Research on the *Sevilleta LTER*.
15. Site of E-mail database of Directory of Plant Taxonomists.
16. Reprints from researchers using UNM Herbarium specimens:
  - A. Brandenburg, David M. and James R. Estes and John Thieret "Hard Grass (*Sclerochloa dura*, Poaceae) in the United States" Sida 14(3):369-376. 1991
  - B. Haufler, Christopher H. and Michael D. Windham "New Species of North American *Cystopteris* and *Polypodium*, with Comments on Their Reticulate Relationships" American Fern Journal 81(1):7-23 (1991)
  - C. Moore, Michael O. "Classification and Systematics of Eastern North American *Vitis* L. (Vitaceae) North of Mexico" Sida 14(3): 339-367. 1991
17. Castetter Ethnobotanical Unit Activities: See attachment.

## ANNUAL REPORT OF CASTETTER ETHNOBOTANICAL UNIT OF UNM HERBARIUM

1991/1992

## 1. SUMMARY OF WRITTEN REPORTS

- 303 Dean, G. Archaeobotanical Analysis of Pollen and Phytolith Samples from Prehistoric structural and agricultural features at LA 2742, LA 70577, LA 71189, and LA 71190, Pot Creek Project, Taos County, New Mexico. MS on file, Office of Archaeological Studies, Museum of New Mexico, Santa Fe, 87504. 33 p. James L. Moore & Jeffrey Boyer Principal Investigators, November 1991.
- 308 Holloway, R.G. Pollen and Plant Macrofossil Analysis of Site LA 68188, the Fox Place Site, Roswell New Mexico. MS on file, Museum of New Mexico, Office Archaeological Studies, R. Wiseman Proj. Dir., July 1991. 17p.
- 311 Dean G. Analysis of Pollen and Flotation samples from Archaic Archaeological Sites LA 16197, LA 16198, and LA 16663, Bolack Exchange Lands, San Juan County, New Mexico. MS on file, Office Contract Archaeology, UNM, Albuquerque NM. Janette Elyea, Project Dir., 15 JUL 91, 35p.
- 312 Holloway R.G. Identification of cordage remains from site NA 5507, Antelope Cave, Arizona. MS on file, Museum of Peoples and Cultures, Brigham Young University, Provo UT, Dr. Joel C. Janetski, Proj. Dir., July 1991, 4p.
- 313 Holloway R.G. Pollen and plant macrofossil analyses of site LA 75023, northern Jornada del Muerto, New Mexico. MS on file, Human Systems Research, Las Cruces NM, August 1991, 4 p.
- 314 Holloway, R.G. Preliminary Pollen Analyses of the Rivers Edge Phase II Archaeological Project. Ms on file, Rio Grande Consultants, Albuquerque NM, M.Schmader Principal Investigator, November 1991, 11p.
- 315 Holloway, R.G. Pollen and Plant macrofossil analyses of MAR Project 91-17, site LA 83550, Rio Arriba County, New Mexico. MS on file, Moore Anthropological Research, Aztec NM, September 1991, 14p.
- 316 Holloway, R.G. Wood Charcoal identification of three hearth areas from LA 85040, HSR 9112 MATS, Sierra County NM. Ms on file, Human Systems Research, Las Cruces NM, D. Kirkpatrick Project Director. 4 p. November 1991.
- 317 Holloway, R.G. Palynological Investigations at Site LA 3558 and LA 70163, I-40 Project, Cibola County, New Mexico. MS on file, Museum of New Mexico, Office Archaeological Studies, Project MNM 41.479, Steven Post, Project Director, 15p, October 1991.
- 318 Holloway, R.G. and J.M. Hart. Analysis of Early- and Mid-Holocene vegetational change from two woodrat middens from the Fairview and Little Burro Mountains, Southern New Mexico. MS on file, Human Systems Research, Las Cruces NM, D. Kirkpatrick Project Director. 17p. October 1991
- 319 Holloway, R.G. Preliminary pollen assesement of three trenches from El Paso, Texas. MS on

- file, Center Anthropological Research, NMSU, Las Cruces NM, Neal Ackerly, Project Director, 6p., October 1991.
- 320 Holloway, R.G. Assessment of pollen recovery from XBD-131, Alaska. Ms on file, State of Alaska, Archaeological Survey Unit, Office of History and Archaeology, Alaska Department Natural Resources, Anchorage AK. Dr. C. Holmes, Principal Investigator, December 1991, 8p.
  - 321 Holloway, R.G. Wood charcoal identification from LA 85791. Ms on file, Human Systems Research, Las Cruces, NM, HSR 9114-57. D. Kirkpatrick Project Director. 2 p. November 1991
  - 322 Holloway, R.G. Pollen Analysis of three Playa Lakes, Otero and Dona Ana Counties, New Mexico. Ms on file, Center Anthropological Research, NMSU, Las Cruces NM. Dr. Neal Ackerly, Project Director. June 1992, 20 pages
  - 323 Holloway, R.G. Wood Charcoal Identification from HSR Project 9135-1, Site LA 86516, Grant County New Mexico. Ms on file, Human Systems Research, Las Cruces NM, HSR Project 9135-1, D. Kirkpatrick Principal Investigator, 2 p. January 1992
  - 324 Holloway R.G. MacBeth, OCA
  - 325 Holloway- Report to Bob Lewis
  - 326 Dean, G. Assessment of two pollen samples from the York/Render Site (15BT92), Kentucky. Ms on file, Dept. Anthropology, Washington University, Saint Louis MO. Dr. Patty Jo Watson, Project Director, 9 p. 4 Feb 1992.
  - 327 Holloway, R.G. Pollen analysis of Trench 18, El Paso, Texas. MS on file, Center Anthropological Research, NMSU, Las Cruces NM, Neal Ackerly, Project Director, 6p., March 1992.
  - 328 Dean, G. Pollen analysis of eight samples from various features at 29 SJ 629, Chaco Canyon, San Juan County, New Mexico. MS on file, Chaco Center, Maxwell Museum, University of New Mexico, Albuquerque NM 87131. Tom Windes, Project Director, 14 p. April 1992
  - 329 Dean, G. Pollen and Flotation analyses of Chapin Gray Jar and its fill, LA 59208 (LAC8507, McE10-9), Ute Mountain Ute Indian Reserrvation Survey, San Juan County, New Mexico. MS on file, Moore Anthropological Research, Aztec NM 87410, 11p. May 1992, Roger Moore, Principal Investigator.
  - 330 Holloway, R.G. Wood Identification from Fort Craig, Socorro County, New Mexico. MS on file, Archaeological and Historical Research Institute, Box 300, Corrales, NM. P. Gerow, Principal Investigator, April 1992, 5 p.
  - 331 Holloway, R.G. Macrobotanical analyses of 16 samples from LA 84319, Rio Bonito Archaeological Project, Lincoln County, New Mexico. MS on file, Dept Social & Behavioral Sciences, Eastern New Mexico University, Portales NM. April 1992, 7 p.
  - 332 Holloway, R.G. Macrobotanical and charcoal identification from LA 87475, HSR 9204. Report on file, Human Systems Research, P.O. Drawer 728, Las Cruces NM D. Kirkpatrick, Principal Investigator. April 1992

- 333 Holloway, R.G. Charcoal identification from site LA 87591, HSR 9114-57. MS on file, Human Systems Research, P.O. Drawer 728, Las Cruces NM D. Kirkpatrick, Principal Investigator. April 1992
- 334 Holloway, R.G. Macrobotanical Identification of materials from Dripping Springs site, BLM-030-4930. MS on file, OCA, University of New Mexico. P. Gerow Project Director. April 1992, 3 pages
- 335 Holloway, R.G. Pollen analysis of samples from AZ:P:54:10, Sanders Arizona. MS on file, Navajo Nation Archaeology Department, Bilby Research Center, Northern Arizona University, Flagstaff AZ. L. Van Nimwegen Project Director, 13 pages, June 1992

#### Summary

RGH = 22 reports, 166 pages

GD = 5 reports, 75 pages

## 2. RESEARCH, TEACHING, AND SERVICE ACTIVITIES

#### RGH:

- Oct 91 attended American Association Stratigraphic Palynologists meeting, San Diego CA & presented paper
- OCT 91 Guest Lecturer in graduate class on Asteraceae taxonomy- presented lecture and lab on pollen analysis and pollen morphology
- FEB 92 Peer reviewed article for publication in American Antiquity
- 92 Taught Biol 260, Introduction to Botany, Spring Semester 1992
- JUN 92 Conducted field studies at Picacho & Roswell NM, June 1992
- JUN 92 Reviewed two book publications for AASP Newsletter

#### G. Dean

- 6-7 AUG 91 Toured Prehistoric Agricultural Fields as preliminary to development of research design for long term project in Rio del Oso Valley with University of Michigan.
- 10 AUG 91 Toured La Bajada Prehistoric Agricultural Fields with Univ. Michigan Personnel.
- 3 SEPT 91 Flora of New Mexico guest lecture
- 23-24 NOV Participated in LTER Departmental Retreat
- 30 JAN 92 toured Prehistoric agricultural fields as preliminary to develop of research design for interdisciplinary project near Ojo Caliente, with Museum of New Mexico personnel.
- JAN 92 submitted article for consideration to Science



- FEB 92                      Peer Reviewed article for publication in Journal Field Archaeology
- 10 FEB 92                  Presentation to LTER on potential for pollen analysis on the LTER
- 23 APR 92                  guest lecture Anthropology 121L on archaeobotany
- 15 MAY 92                  participated in Southwest Regional Ethnobotany Conference sponsored by Office of  
Contract Archaeology, UNM

## MUSEUM OF SOUTHWESTERN BIOLOGY

## Division of Birds

*Annual Report 1991/1992*

In late summer 1991 Dr. J. David Ligon became the Chairman of the Department of Biology for a five year period. He resigned as the Curator of Ornithology and Dr. Terry Yates assumed Curatorship of Mammalogy and Ornithology. Dr. Robert W. Dickerman became the functional curator of birds, taking the non-tract title of Acting Curator.

The current year was one of dramatic expansion and rearrangement. Eight new cases were obtained via the New Mexico Department of Game and Fish contract supplement. Three of these were used in the first phase of getting the skeleton collection out of cabinets with shelves and into proper cases, where the boxes are not stacked several deep. The others were used where needed to provide expansion within the skin collection.

Late in the year, the bird collection of 442 specimens from the New Mexico Department of Game and Fish was transferred to the Museum of Southwestern Biology, together with three additional cases. This collection will be incorporated into the collection during the summer of 1992.

During calendar year 1991, 1209 specimens were catalogued; however, this does not represent a gross increase in the collection as many specimens with less than useful data were deaccessioned.

Two other significant collections were donated during this period:

Dr. Dale A. Zimmerman, in a combined gift and exchange in cooperation with the University of Western New Mexico, deposited 66 specimens from southeastern and southwestern portions of the state. These included 14 first or unique specimens for New Mexico.

Dr. J. David Ligon donated 62 specimens, part of which he collected during his undergraduate and early graduate years, and part representing examples of families of the birds of the world.

RWD brought 92 small trays for Lane cases from the American Museum of Natural History in January 1992 (in an informal open exchange). A total of 254 trays have been received to date.

Computerization of the collection has come to a halt due to the lack of personnel. Through about November 1991 specimens currently being catalogued were entered into the computer, but data entry lagged farther and farther, and nothing has been entered since December 1991! The ornithological collection is simply understaffed.

### Collection utilization:

The heaviest use of the ornithological collection during the current period has been by people working for "contract archeology." This has indeed been instructive as to the lacuna within the collection and to its strengths! The skin collection has been widely used for courses within the University and for extension teaching.

Several inter-institutional loans have been made and we have made extensive inter-museum exchanges. Important historical specimens have been received from the American Museum of Natural History, Carnegie Museum of Natural History, the University of Kansas Museum of Natural History, the North Carolina State Museum of Natural History, and the Museum of Zoology, University of Michigan, as well as Western New Mexico University. As of this date the oldest New Mexico specimen in the collection is a Red-shafted Flicker, taken in the "Las Vegas Mountains," 7 August 1886. The second oldest is the unique specimen of Snow Bunting collected and mounted by L.L. Dyche of the University of Kansas Museum of Natural History. This bird was collected near Las Vegas on 16 December 1886 and received in exchange from Kansas University.

### Personnel:

Dr. Terry Yates, Curator of Mammalogy and Ornithology  
Dr. Robert W. Dickerman, Acting Curator, Ornithology

Ms. Shawn Nordell, Curatorial Assistant  
Mr. Gregory Farley, Curatorial Assistant  
Mr. Stephen R. Davenport, Student Assistant  
Mr. Thomas Collins, Student Assistant

### Publications:

Dickerman, R.W. Specimens of the subarctic nesting population of Great Horned Owl from New York, New Jersey and Connecticut. *Kingbird* 41:154-157, 1991.

Dickerman, R.W. On the validity of Bubo virginianus occidentalis Stone. *Auk* 108:964-965, 1991

Willard, D.E., Foster, M.S., Barrowclough, G.F., Dickerman, R.W., Cannell, P.F., Coats, S.L., Cracraft, J.L., and O'Neill, J.P. The birds of Cerro de la Neblina, Territorio Federal Amazonas, Venezuela. *Fieldiana, Zoology*, new series 65:1-80, 1991.

Hinklemann, C., Nicolai, B., and Dickerman, R.W., Notes on a hitherto unknown specimen of Nesolesbia nehrkorni (Berlepsh, 1887; Trochilidae) with a discussion of the hybrid origin of this 'species'. *Bull. Brit. Ornith. Club.* 111:190-199, 1991.

# 1991-1992 ANNUAL REPORT OF THE DIVISION OF HERPETOLOGY MUSEUM OF SOUTHWESTERN BIOLOGY THE UNIVERSITY OF NEW MEXICO

Allan J. Landwer and Howard L. Snell

## COLLECTION GROWTH AND USE

**Accessions** -- Fifty-four lots, totaling over 1,000 specimens were accessioned in 1991-1992.

**Catalog** -- One thousand six hundred twenty-nine specimens were cataloged in 1991-1992, bringing the total collection size to 54,513 specimens.

**Loans** -- Fifteen loans totaling 146 specimens were made during 1991-1992, including loans to other departments at UNM such as Education and Anthropology.

**Guests** -- Twenty-one guests visited the museum in 1991-1992. Among them were an author, anthropologists, an artist and elementary school teachers. In addition, the museum was visited by numerous school children. Several Distinguished herpetologists used the collections for research this year including Drs. Hobart Smith and Roger Conant.

**Phone inquiries** -- Approximately one hundred and fifty inquiries from the public regarding museum functions and herpetology were answered in 1991-1992.

## PERSONNEL:

### Curator

Howard L. Snell

### Curatorial Associate

Norman J. Scott, Jr.

### Curator Emeritus

William H. Degenhardt.

### Assistant Curator

Allan J. Landwer

### Research Associates

Roger Conant.

Thomas H. Fritts.

Charles W. Painter.

### Graduate Students

Lee A. Fitzgerald

Mark A. Jordan

Allan J. Landwer

Lee J. Pierce

Alexis L. Schuler

Paul A. Stone

James N. Stuart

### Museum Staff

Chris K. Anderson

Richard E. Anderson

David A. Stricker

## RESEARCH:

The following personnel used the Herpetology collection on a regular basis for research activities in 1991-1992.

Chris S. Altenbach, Lab Tech (Ichthyology).

Chris Anderson, Undergraduate Student

Richard Anderson, Undergraduate Student

Marie Brown, OCA/UNM (Archaeological Bone ID)

Ken Brown, OCA/UNM (Archaeological Bone ID)

Val Christiansen, SIPI

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Roger Conant, Adj. Prof., Research Associate.  
William H. Degenhardt, Curator Emeritus  
Zane Dohner, Sandia Mountain Research.  
Lee Fitzgerald, Graduate Student.  
Thomas H. Fritts, Adj. Assoc. Prof., U.S. Fish and Wildlife, Research Associate.  
Allan J. Landwer, Graduate Student  
Charles W. Painter, N.M. Game & Fish, Research Associate.  
Lee Pierce, Graduate Student.  
Steven P. Platania, N.M. Game & Fish (Ichthyology).  
Alexis Schuler, Graduate Student  
Norman J. Scott, Jr., Adj. Assoc. Prof., U.S. Fish and Wildlife, Curatorial Associate.  
Don Sias, Graduate Student  
Heidi M. Snell, Science Applications International, Inc.  
Howard L. Snell, Asst. Prof, Curator.  
Paul A. Stone, Graduate Student  
David A. Stricker, Undergraduate Student  
James N. Stuart, Graduate Student  
Derrick W. Sugg, Graduate Student, Assistant Curator.

#### STUDENT TRAINING:

During 1991-1992 the following students were involved in research under the direction of faculty associated with the Herpetology Division.

Norman J. Scott, Jr.:

Lee A. Fitzgerald, Ph.D.  
Paulette Ford, M.S.  
James N. Stuart, M.S.

Howard L. Snell:

Chris Anderson, B.S.  
Richard Anderson, B.S.  
Yvonne Chauvin, B.S.  
Lee A. Fitzgerald, Ph.D.  
Billy Gorum, B.S.  
Allan J. Landwer, Ph. D.  
Lee Pierce, M.S.  
Alexis Schuler, M.S.  
Paul Stone, Ph. D.  
David Stricker, B.S.  
James N. Stuart, M.S.  
Derrick W. Sugg, Ph.D.

### DISSERTATIONS AND THESES:

- Jennings, R. D. 1991. The adaptive significance of morphological plasticity in tadpoles of the Chiricahua leopard frog, *Rana chirichuensis*. Ph. D. Dissertation.
- Sugg, D. W. 1992. Summer 1992. Proximate mechanisms for the evolution of sexual dimorphism in size. Ph. D. Dissertation.

### GRANTS:

#### Proposals Submitted

- Snell, H. L. and Allan J. Landwer. Reproductive Trade-offs: A manipulative experiment measuring the fitness costs of reproduction. Spring 1992. National Science Foundation, Dissertation Improvement Grant. \$7,376 (not funded). Spring 1992.
- Snell, H. L. and Donald B. Miles. The Roles of Sexual and Natural Selection in the Evolution of Sexual Size-Dimorphism. National Science Foundation. June 1992 - December 1996, \$329,000, approximately \$80,000/yr.
- Snell, H. L. and Allan Landwer. Continuation of Studies on the Status of *Sceloporus graciosus arenicolous* in the Mescalero Sands of Southeastern New Mexico. New Mexico department of Game and Fish. July 1992-June 1993, \$34,000.
- Stone, P. Sexual selection in lava lizards (*Tropidurus* spp.): a pilot study. Animal Behavior Society Research Grant, \$1000 (pending)
- Stone, P. Sexual selection in lava lizards (*Tropidurus* spp.): a pilot study. Society for the Study of Amphibians and Reptiles, Grants-in-Herpetology, \$300(pending)
- Stuart, J. N. Proposal to conduct status survey of the boreal toad in New Mexico, 1993-94. Share With Wildlife Program, New Mexico Department of Game and Fish, Santa Fe. (Preliminarily approved for funding, June 1992).
- Stuart, J.N. Proposal to continue status survey of the Great Plains narrowmouth toad (*Gastrophryne olivacea*) in New Mexico, 1993. Share With Wildlife Program, New Mexico Department of Game and Fish, Santa Fe. (Preliminarily approved for funding, June 1992).

#### In Effect

- Degenhardt, W.G., C.W. Painter, and A.H. Price. 1992. Renewed funding for research and manuscript preparation for Herpetology of New Mexico project. N.M. Department of Game and Fish. \$2,500 dollar addition and funding for another year.
- Fitzgerald, L. A. 1991. World Wildlife Fund. Funds for continuation of *Tupinambis* research in Argentina. (\$7000)

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- Landwer, A. J. 1992. Reproductive Trade-offs: A manipulative experiment measuring the fitness costs of reproduction. Graduate Research Allocations Committee, University of New Mexico, Albuquerque, NM. \$250.
- Landwer, A. J. 1992. Reproductive Trade-offs: A manipulative experiment measuring the fitness costs of reproduction. Student Research Allocation Committee, University of New Mexico, Albuquerque, NM. \$100.
- Scott, N.J. Jr., Principal Investigator. "Selected aspects of the biology of high-priority species of fishes, reptiles, and amphibians in coastal arroyos, San Luis County, California;" Project funded by the California Department of Transportation.
- Scott, N.J. Jr., Principal Investigator. "Studies of the biology of and the effects of logging on the Sacramento mountain salamander, *Aneides hardii*;" Project funded by the U.S. Forest Service, Alamogordo.
- Scott, N.J. Jr., Principal Investigator. "Ranid frogs of the Southwest;" Project funded by the U.S. Fish and Wildlife Service;
- Scott, N.J. Jr., Principal Investigator. "Studies of comparative biology of Harter's water snake;" Project funded by the Colorado River Municipal Water District.
- Scott, N.J. Jr., Principal Investigator. "Use of riparian revegetation along the Rio Grande by terrestrial vertebrates;" Project funded by the U.S. Fish and Wildlife Service.
- Snell, H. L., and Alfredo Carasco.  
Human Impact on Biological Diversity: Techniques for Measurement and Management.  
United States Agency for International Development Program in Science and Technology Cooperation.  
December 1991 - March 1993, \$23,000. (this grant is administered through the Charles Darwin Foundation in Quito Ecuador).
- Snell, H. L., and Allan J. Landwer.  
Status of *Sceloporus graciosus arenicolous* in the Mescalero Sands of Southeastern New Mexico.  
New Mexico Department of Game and Fish. July 1991 - June 1992, \$10,000, approximately \$5,000/yr.
- Snell, H. L., and Marilyn Altenbach.  
Status of Jemez Mountain Salamanders.  
New Mexico Department of Game and Fish. July - September 1991, \$4,000
- Snell, H. L., Randy D. Jennings, and Norm Scott.  
Monitoring of Selected Endangered Species in New Mexico.  
New Mexico Department of Game and Fish. January 1991 - December 1992, \$30,000, approximately \$20,000/yr.
- Snell, H. L., Research and Conservation in the Galápagos Islands.  
Established this Fund in the UNM Foundation with a \$30,000 package of donations and matching grants from IBM Corporation.

- Stone, P. A. 1992. Effects of cat predation on lava lizard (*Tropidurus* spp.) behavior and morphology. Graduate Resources Allocation Committee, University of New Mexico, \$250
- Stone, P. A. 1992. Effects of cat predation on lava lizard (*Tropidurus* spp.) behavior and morphology. Latin American Institute, \$2000
- Stone, P. A. 1992. Effects of cat predation on lava lizard (*Tropidurus* spp.) behavior and morphology. Student Resources Allocation Committee, University of New Mexico, \$250

#### AWARDS, SCHOLARSHIPS, AND FELLOWSHIPS:

- Fitzgerald, L. A. 1991. Doctoral Fellowship from the Fulbright-Hays Doctoral Dissertation Research Abroad program for dissertation work on conservation biology and ecology of *Tupinambis* lizards. (\$21000)
- Fitzgerald, L. A. 1991. Doctoral Fellowship from the Inter-American Foundation for dissertation work on sustained use and conservation of *Tupinambis* lizards in Argentina. (\$8500)
- Pierce, L. 1991. Year-long research assistantship from Los Alamos National Laboratories, Los Alamos, New Mexico.

#### PAPERS PRESENTED AT MEETINGS:

- Chani, J.M. and L.A. Fitzgerald. 1991. Patrones de actividad de *Tupinambis teguixin*. Presented at the annual meeting of the Asociación Herpetológica Argentina, Universidad Nacional de Córdoba, Argentina.
- Fitzgerald, L.A., F. Cruz, and G. Perotti. 1991. the reproductive cycle and size at maturity of *Tupinambis rufescens* in the dry chaco of Argentina. Presented at the joint annual meeting of the American Society for Ichthyologists and Herpetologists, Society for the Study of Amphibians and Reptiles, and Herpetologist's League, Pennsylvania State University.
- Jennings, R. D. and Howard L. Snell. Adaptive plasticity in tadpoles of the Chiricahua leopard frog. Joint Annual Meetings of the Society for the Study of Reptiles and Amphibians and the Herpetologists' League, Penn State University, August 1991.
- Landwer, A. J. 1992. The Cost of Reproduction in the lizard *Urosaurus ornatus*. Seminar at the First Annual Research Day, 1st Place Oral Presentation, Biology Department, University of New Mexico, Albuquerque, April, 1992.
- Pierce, L. A. and Howard L. Snell. Nest defense by female leopard geckos, *Eublepharis maculata*. Annual Meeting of the Southwestern Association of Biologists, November 1991.
- Scott, N.J., Jr. "Captive management and conservation of amphibians and reptiles: a symposium dedicated to Roger Conant," invited moderator, reptile section, at the Society for the Study of Amphibians and Reptiles and Herpetologists' League annual meeting, State College, Pennsylvania, August 1991.



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- Scott, N.J., Jr. "Concho Water Snake Recovery," Recovery Team meeting at Austin, Texas, September 1991.
- Scott, N.J., Jr. "Mimicry in snakes," seminar presentation to the New Mexico Herpetological Society, Albuquerque, December, 1991.
- Scott, N.J., Jr., and C.A. Ramotnik. "Does the Sacramento mountain salamander (*Aneides hardii*; Caudata: Plethodontidae) require old-growth forests?" paper presentation at the Old-growth forests in the Southwest and Rocky Mountain Workshop, Portal, Arizona, March 1992.
- Scott, N.J., Jr., and R.A. Seigel. "The management of reptile and amphibian populations: species priorities and methodological and theoretical constraints," paper presentation at Wildlife 2001: Populations, Oakland, California, July 1991.
- Scott, N.J., Jr., "Bases científicas para el uso racional de los recursos teyu guazu y yacare en el Paraguay," seminar presentation at the Ministerio de Agricultura y Ganadería, Asunción, Paraguay, November 1991.
- Snell, H. L., Heidi M. Snell, and Marco Altomirano. Interspecific Variation of the Role of Natural Selection in the Evolution of Sexual Size-Dimorphism: Examples from Galápagos Lava Lizards. Annual meetings of the Southwestern Association of Biologists, Prescott, AZ, November 1991.
- Stone, P. A., Howard L. Snell, and Heidi M. Snell. Increased wariness in Galápagos lava lizards (*Tropidurus* spp.) on islands inhabited by cats. Annual Meeting of the Southwestern Association of Biologists, November 1991.
- Sugg, D. W., Lee A. Fitzgerald and Howard L. Snell. The role of energy allocation in determining sexual dimorphism in size of the greater earless lizard (*Cophosaurus texanus*). Annual Meeting of the Southwestern Association of Biologists, November 1991.

#### **POSTERS PRESENTED AT MEETINGS:**

- Ford, P.L., and N.J. Scott, Jr. "Larval community structure of temporary-pond breeding frogs from tropical deciduous forests in western Mexico," poster presentation at the First Annual Biology Research Day, University of New Mexico, Albuquerque, April 1992.
- Landwer, A. J. and Howard L. Snell. The cost of Reproduction in the lizard *Urosaurus ornatus*: Preliminary Results. Annual Meeting of the Southwestern Association of Biologists, November 1991.
- Pierce, L.J. "Nest Defense by Female Leopard Geckos, *Eublepharis macularius* " at the SWAB meetings November 8-10, 1991.

#### **INVITED PRESENTATIONS:**

- Snell, H. L. Biological diversity in the Galápagos Islands. Plenary address o the annual meeting of the Río Grandé Zoological Society, Albuquerque, NM, December 1991.

- Snell, H. L. Biology Department Seminar Series; Reptiles of the Galápagos.  
Biology Department, Santa Clara University, San Jose, CA, November 1991.
- Snell, H. L. Biology Department Seminar Series; Sexual and natural selection in the evolution of sexual dimorphism in Galápagos lava lizards.  
Biology Department, University of California - Santa Cruz, Santa Cruz, CA, November 1991.
- Snell, H. L. Charles Darwin Research Station; Dimorfismo sexual y la ecología de las lagartijas de lava en las islas Galápagos.  
Charles Darwin Research Station, Isla Santa Cruz, Galápagos, Ecuador, August 1991.
- Snell, H. L. Conservation biology of Galápagos reptiles: twenty-five years of successful repatriation. Linda Cayot and Howard Snell. Invited paper, Symposium on Conservation of Reptiles in Honor of Roger Conant. Joint Annual Meetings of the Society for the Study of Reptiles and Amphibians and the Herpetologists' League, Penn State University, August 1991.
- Snell, H. L. Savannah River Ecology Laboratory Evening Seminar Series; Biological diversity of the Galápagos islands.  
Savannah River Ecology Laboratory, Aiken, South Carolina, September 1991.
- Snell, H. L. Savannah River Ecology Laboratory Noon Seminar Series; Sexual and natural selection in the evolution of sexual dimorphism in Galápagos lava lizards.  
Savannah River Ecology Laboratory, Aiken, South Carolina, September 1991.
- Snell, H. L. Savannah River Ecology Laboratory; Natural selection and body-size of Galápagos land iguanas: tradeoffs of survival and reproduction.  
Savannah River Ecology Laboratory, Aiken, South Carolina, September 1991.

**MANUSCRIPTS, ABSTRACTS, AND REPORTS:**

*Submitted*

- Jennings, R.D., and N.J. Scott, Jr. Ecologically correlated morphological variation in tadpoles of the Chiricahua leopard frog *Rana chiricahuensis*. Submitted to Journal of Herpetology.
- Scott, N.J., Jr. 1991. Studies of three species of water snakes (*Nerodia*). Annual report submitted to the Colorado River Municipal Water District, Big Spring, Texas. 2 pp.
- Scott, N.J., Jr. 1992. Ranid frog survey of the Gray Ranch with recommendations for management of frog habitats August 1990-September 1991. Progress report submitted to the Gray Ranch. 15 pp.
- Snell, H. L. and Allan J. Landwer. Results of Preliminary Research on the Effects of Shinnery Oak Removal on the Sand Dune Lizard, *Sceloporus graciosus arenicolous* in New Mexico. Technical report submitted to the New Mexico Department of Game and Fish, December 1991.

3. Snell, H. L. Final Report: Follow-on Course for Park Management Personnel, Isla de la Plata, Ecuador, September 1 - 3, 1991.  
5 page report to AID Agency (Development Associates/Andean Peace Program), Washington, D.C.

Stuart, J.N., and N.J. Scott, Jr. Geographic distribution: *Apalone spinifera hartwegi* (Western spiny softshell). Submitted to Herpetological Review.

Stuart, J.N., N.J. Scott, Jr., and G.H. Farley. 1992. Use of riparian revegetation sites along the Rio Grande by terrestrial vertebrates. Annual report submitted to U.S. Fish and Wildlife Service, Fort Collins, Colorado. 92 pp.

Stuart, J.N., N.J. Scott, Jr., and G.H. Farley. 1992. Use of riparian revegetation sites along the Rio Grande by terrestrial vertebrates. Progress report to National Ecology Research Center, U.S. Fish and Wildlife Service, Fort Collins, CO.

Sugg, D. W. 1991. Report of Activities at Elephant Butte Reservoir (1991). For the Bureau of Reclamation, Truth or Consequences, New Mexico.

#### *In Press*

Crump, M.L., and N.J. Scott, Jr. In press. Visual encounter surveys. In W.R. Heyer, R.W. McDiarmid, M. Donnelly, M.S. Foster, and L. Hayek, eds., Standard methods for measuring biological diversity. Smithsonian Institution Press, Washington, DC.

Cruz, F.B., M.G. Perotti, and L.A. Fitzgerald. (in Press for 1992). Lista de anfibios y reptiles colectados en una localidad del chaco Salteño. Lilloana xx:xx.

Fitzgerald, L.A., F.B. Cruz, and M.G. Perotti. (Accepted for publication). The reproductive cycle and size at maturity of *Tupinambis rufescens* in the dry chaco of Argentina. Journal of Herpetology.

Scott, N.J., Jr. Complete species inventories. In press. In W.R. Heyer, R.W. McDiarmid, M. Donnelly, M.S. Foster, and L. Hayek, eds., Standard methods for measuring biological diversity. Smithsonian Institution Press, Washington, DC.

Scott, N.J., Jr. In press. Book review--crocodiles and alligators of the world by David Alderton. Journal of Wildlife Management.

Scott, N.J., Jr., and B.D. Woodward. In press. Surveying amphibians at the breeding site. In W.R. Heyer, R.W. McDiarmid, M. Donnelly, M.S. Foster, and L. Hayek, eds., Standard methods for measuring biological diversity. Smithsonian Institution Press, Washington, DC.

Scott, N.J., Jr., and C.A. Ramotnik. In press. Does the Sacramento mountain salamander (*Aneides hardii*; Caudata: Plethodontidae) require old-growth forests? In W. Moir and R. Hamre, eds., Old-growth forests in the Southwest and Rocky Mountain region. U.S. Forest Service, General Technical Report, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Scott, N.J., Jr., and R.A. Seigel. In press. The management of reptile and amphibian populations: species priorities and methodological and theoretical constraints.

In D.R. McCullough and R.H. Barrett, eds., *Wildlife 2001: populations*. Elsevier Science Publishers, Ltd., London, England. 1163 pp.

- Stone, P. A., R. P. Henry, and J. L. Dobie. 1992. Cutaneous surface area and bimodal breathing in softshell, stinkpot, and mud turtles. *Physiological Zoology* (in press).
- Stone, P. A., R. P. Henry, and J. L. Dobie. 1992. Diving and ventilatory behavior as a function of aquatic PO<sub>2</sub> in softshell, stinkpot, and mud turtles. *Physiological Zoology* (in press).
- Stuart, J.N., and N.J. Scott, Jr. In press. Geographic distribution: *Apalone spinifera hartwegi* (Western Spiny Softshell); Nebraska. *Herpetol. Review*.
- Stuart, J.N., and N.J. Scott, Jr. In press. Range extension for the northern pygmy mouse, *Baiomys taylori*, in New Mexico. *Texas Journal of Science*.
- Stuart, J.N., and N.J. Scott, Jr. In press. Range extension of the northern pygmy mouse, *Baiomys taylori*, in New Mexico. *Texas J. Sci.*

### Published

- Christian, K. A. W.T. Lawrence, and H. L. Snell. 1991. Effect of soil moisture on yolk and fat distribution in hatchling lizards from natural nests. *Comparative Biochemistry and Physiology*, 99A (1/2), 13-19.
- Conant, R. 1992. Comments on the survival status of members of the *Agkistrodon* complex. *Contributions in Herpetology*, Special Publication of the Greater Cincinnati Herpetological Society.
- Conant, R. 1992. The type locality of *Agkistrodon halys caraganus* Asiatic Herpetological Research Vol. 4.
- Conant, R. and Joseph T. Collins. 1991. *A Field Guide to Reptiles and Amphibians of Eastern and Central North America* (3rd edition). Houghton Mifflin Company, Boston, MA.
- Conant, R., Robert C. Stebbins, and Joseph T. Collins. 1992. *Peterson First Guides/Reptiles and Amphibians*. Houghton Mifflin Co., Boston, MA.
- Fitzgerald, L.A., J.M. Chani, and O.E. Donadio. 1991. *Tupinambis* lizards in Argentina: Implementing management of a traditionally exploited resource. Pages 303-316 In John G. Robinson and Kent H. Redford (eds.) *Neotropical Wildlife Use and Conservation*. University of Chicago Press.
- Losos, J.B., R.M. Andrews, O.J. Sexton & A.L. Schuler. 1991. Behavior, ecology and locomotor preference of the Giant Anole, *Anolis frenatus*. *Caribbean Journal of Science*. 27(3-4):173-179.
- Stuart, J.N. 1991. *Cnemidophorus exsanguis*. *Catalogue Amer. Amphib. Rept.* 516.1 - 516.4

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Stuart, J.N., and C.S. Clark. 1992. Geographic distribution: *Chelydra serpentina serpentina* (Common Snapping Turtle); New Mexico. Herpetol. Review 22(4): 134.

### **SERVICE:**

#### **Lee A. Fitzgerald --**

Lee sat on a panel to discuss environment and development issues at the Inter-American Foundation, Washington, D.C.

May 1992. Participated in a development workshop sponsored by the Inter-American Foundation in Cuernavaca, Mexico.

#### **Leland J. Pierce --**

Lee aided in mammal, plant, and insect surveys throughout Los Alamos county.

#### **Norman J. Scott, Jr. --**

Dr. N.J. Scott, Jr., served as Research Associate, Department of Vertebrate Zoology, Smithsonian Institution and Division of Herpetology, Natural History Museum of Los Angeles County.

Dr. Scott served as a Member of the U.S. Fish and Wildlife Service Region 2 Herpetological Recovery Team, a consortium of renowned herpetologists which provides biological and technical expertise on Region 2 (Arizona, New Mexico, Oklahoma, and Texas) threatened and endangered herptiles.

Dr. Scott served as Corresponding Member of two groups of the International Union for the Conservation of Nature (IUCN), Species Survival Commission: the Turtle and Tortoise Specialist Group and the Crocodile Specialist Group.

Dr. Scott served as Leader of the IUCN Declining Amphibian Populations Task Force, Southwestern Working Group.

Dr. Scott served as Leader of the Leslie Canyon Leopard Frog Group, a team dedicated to preserving this species through systematic biochemical analyses and captive rearing.

Dr. Scott served as Chair of the University of New Mexico, Department of Biology, Liaison Committee with the Latin American Institute.

Dr. Scott served as a Member of the New Mexico Salamander Working Group, an interagency team concerned with the management and conservation of New Mexico's endemic salamanders.

Dr. Scott served as Associate Editor in Herpetology, Southwestern Association of Naturalists.

Dr. Scott served on the Board of Editors for the Museum of Southwestern Biology Publication series.

Dr. Scott assisted the Paraguayan Ministerio de Agricultura y Ganaderia and the Museo Nacional de Historia Natural del Paraguay in coordinating caiman and tegu lizard research projects, Asunción, Paraguay.

Dr. Scott served as Leader of the U.S. Fish and Wildlife Service's Concho Water Snake Recovery Team, a team of biologists from Federal, State, University, and private agencies assigned with the task of establishing a Recovery Plan for the threatened Texas snake; a draft Plan has been submitted to the U.S. Fish and Wildlife Service, Albuquerque, for public review.

**Howard L. Snell --**

Biological diversity in the Galápagos Islands. Plenary address to the annual meeting of the Rio Grandé Zoological Society, Albuquerque, NM, December 1991. (see IIC).

Service in a scholarly capacity as member of local, state or national panel, committee, or commission, for purpose of reviews of public policy issues, scientific evaluations, awards of grants or fellowships or prizes, etc.

International "Panel" organized by the Charles Darwin Foundation to plan the future management of the Biological Diversity of the Galápagos Archipelago.

National Science Foundation, Division of Biotic Systems & Resources, Population Biology and Physiological Ecology Program, Panel Member.

Associate Editor of Noticias de Galápagos.

Councilor of the Charles Darwin Foundation

\*Graduation Committee.

\*Liaison with the Latin American Institute.

\*Graduate Student Selection Committee.

\*Laboratory Animal Utilization.

Graduate Policy Committee.

Main Campus Animal Care and Use Committee.

Latin American Institute Travel Grant Review Committee.

1992 Annual Report of the Division of Fishes  
Museum of Southwestern Biology  
The University of New Mexico

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Steven P. Platania

This has been a year of both transition and significant growth in the fish collection of the Museum of Southwestern Biology. We completed a four-year research project on macrohabitat associations of the fishes of the Middle Rio Grande and initiated studies on the Rio Grande silvery minnow (proposed for Federal Endangered status) and San Juan River larval fish. Our Pecos River fish life-history studies have been going on for two years and will terminate in December 1992. Additional research projects included food studies of sandhill cranes, reproductive behavior and early development of Pecos River fishes, and life-history of Rio Grande chub. Research money generated by the aforementioned projects totaled \$613,000 (UNM Research Notes 22[1]:16).

We shipped 20 loans in the last year (since June 30, 1991) representing almost 100 lots and several hundred specimens. These loans were sent to 12 different institutions and were primarily used in systematic revisions. We also sent four lots of frozen fish to three institutions for molecular studies being conducted by various researchers throughout the country. Searches of the museum database were conducted on four occasions, at the request of outside personnel, for historic and current information on fish in the American Southwest.

Health and safety issues raised in 1992 prompted a renewed call for the installation of a ventilation system in the museum to remove hazardous vapors (primarily formaldehyde). The least expensive means of acquiring this system was for the fish range to be moved from the room it currently occupies (room 53) into room 35 where a ventilation system can be installed which will be accessible by both the herp and fish ranges. Each range will have their own hood and share the same duct-work. This plan will require moving the fish range into room 35 and the contents of room 35 (Brown laboratory) into room 53. While there is no firm date for the installation of the ventilation system, the move is to take place during the 1992-Christmas break.

In 1992, I secured five years of funding which will allow us to hire a full-time fish collections manager to oversee the daily operation of the fish range. This person is supposed to be on staff by 1 October 1992. The primary charge of this individual will be to get the MSB fish collection computerized. We have purchased the software for computerization but are without a computer. At the 1992 budget meeting, we specifically requested funding to help pay for the cost of a computer for the fish range. The money for the fish range computer was not allocated from the annual museum budget but will instead be sought from alternative sources by the chair.

In addition to a collection manager, we are hiring a full-time biological illustrator to assist with various aspects of our projects. Both of these individuals will contribute significantly to the growth and operation of the museum.

The collection continued to grow in 1992 as almost 2,000 lots were incorporated. The collection currently consists of over 11,000 lots and will probably maintain this rate of growth for the next several years.

The fish range has been designated as the repository for all Federal endangered fishes captured and sacrificed in the seven-year San Juan River ichthyofaunal research program. This includes specimens maintained in fluid as well as those cryogenically preserved for future studies. (It was through this designation that we were able to obtain funding for the collection manager position).

We have been very active with community service programs supplying jars and lectures to Sandia Prep school, tadpoles and fish to Y.A. Jackson elementary school, and tours to numerous school groups visiting the museum. Our contacts and work with the Albuquerque Public school system resulted in our acquiring, from their excess stock, over 30 cases of preserved, double injected, dogfish for use in comparative anatomy or vertebrate zoology classes. If purchased today, those specimens would have cost over \$2,000 (as much as the entire fish range budget). Course which used the resources and or personnel of the fish division were Biology 121 and 122, systematic zoology, and vertebrate zoology.

We continue to grow in recognition as a leading center of ichthyofaunal studies in the America Southwest and attended three professional meetings. I presented papers and chaired sessions at two of those meetings, continued my committee duties on the Collections Committee of the American Society of Ichthyology and Herpetology (ASIH), was appointed to the long-range planning and finance committee (ASIH), and was elected to the Board of Governors (ASIH). This presence in the largest professional ichthyology society in North America has served to bring recognition to the fish range, MSB, Department of Biology, and UNM.



3 September 1992

To: David Ligon, Chair, Biology

From: Cliff Crawford, <sup>cc</sup>Curator, Division of Entomology

Subject: Annual Report

The Arthropod Collection, as I prefer to call it since it emphasises not only insects, continues to grow steadily and to be the center of increased activity. The move from Room 131 to Room 5, next to the Herbarium, has made for a quieter and more scholarly environment than was the case during the Collection's first decade. Carlos Blanco-Montero, my curatorial assistant, is largely responsible for the orderly functioning of the present arrangement, and his assignment of 20 hours a week, instead of the usual 10, should pay off in terms of our starting to keep up with the workload.

Identification of major arthropod groups in the Collection by outside experts was a top priority this past year. Large numbers of specimens, mainly beetles, solpugids and millipedes, were sent to such individuals, who returned them unexpectedly rapidly. The immediate practical benefits of this have been to facilitate specimen processing by Sevilleta LTER technicians, and to increase the accuracy of specimen identification important to the Molles/Crawford manipulative flooding study (cooperative agreement with the US Fish & Wildlife Service) and to the Bosque Biology course.

Dr. David Lightfoot, an entomologist employed part time by the LTER, now contributes specimens and his considerable taxonomic expertise to the Collection. His specimens come from his LTER involvement and from contract agreements with the Park Service for surveys of the Bandelier and Malpais National Monuments.

Several of my students make valuable taxonomic contributions (to the level of genus, at least) to the Collection, at no cost to the department. These individuals are Sandra Brantley, a doctoral student and spider expert, who is also very knowledgeable about many other groups of terrestrial arthropods, and Fred Heinzelmann, an Honors Program undergraduate who is already far ahead of me when it comes to knowing local ants and beetles.

Here are some facts, detailed by Carlos Blanco-Montero, which illustrate why a full-time collection manager is badly needed. In the past year he answered 226 phone calls about arthropods, made 18 arthropod identifications for "the public," made three arthropod-related visits to different homes and one to one of Dr. Tim Lowrey's classes, hosted eight visits from local school groups and 14 from outside visitors, gave talks at four different schools, complied with the requests of instructors in three different UNM Biology classes for demonstration material, and incorporated hundreds of specimens from his own doctoral turfgrass studies into

the Collection.

Finally, I am collaborating with Drs. David Richman and Daniel Howard at New Mexico State University in preparing a proposal to the National Science Foundation to fund a survey of New Mexico arthropods (especially in threatened habitats). If awarded, the proposal would enable UNM and NMSU to coordinate collection activities and to build a common computerized data base for their specimens. Each institution would also employ a collection manager to help bring these goals about and to deal with all of the ordinary curatorial and other needs (see above) of their respective collections. As the UNM Collection now has no computer, I am requesting one both for cost-sharing purposes and simply because we need one if we are to achieve any of our stated goals.

# APPENDIX G

*ANNUAL REPORT:  
NATIONAL ECOLOGY RESEARCH CENTER,  
U.S. FISH AND WILDLIFE SERVICE*

National Ecology Research Center  
U.S. Fish and Wildlife Service  
Museum of Southwestern Biology

### Grants and Projects

"Studies of the biology of and the effects of logging on the Sacramento mountain salamander, *Aneides hardii*;" Project funded by the U.S. Forest Service, Alamogordo; N.J. Scott, Jr., Principal Investigator.

"Studies of comparative biology of Harter's water snake;" Project funded by the Colorado River Municipal Water District; N.J. Scott, Jr., Principal Investigator.

"Ranid frogs of the Southwest;" Project funded by the U.S. Fish and Wildlife Service; N.J. Scott, Jr., Principal Investigator.

"Use of riparian revegetation along the Rio Grande by terrestrial vertebrates;" Project funded by the U.S. Fish and Wildlife Service; N.J. Scott, Jr., Principal Investigator.

"Selected aspects of the biology of high-priority species of fishes, reptiles, and amphibians in coastal arroyos, San Luis County, California;" Project funded by the California Department of Transportation, N.J. Scott, Principal Investigator.

### Publications

Crump, M.L., and N.J. Scott, Jr. In press. Visual encounter surveys. In W.R. Heyer, R.W. McDiarmid, M. Donnelly, M.S. Foster, and L. Hayek, eds., Standard methods for measuring biological diversity. Smithsonian Institution Press, Washington, DC.

Farley, G.H. In press. Observations of a ruby-crowned kinglet (*Regulus calendula*) roosting in a verdin (*Auriparus flaviceps*) nest in winter. Southwestern Naturalist.

Scott, N.J., Jr. In press. Book review--crocodiles and alligators of the world by David Alderton. Journal of Wildlife Management.

Scott, N.J., Jr. Complete species inventories. In press. In W.R. Heyer, R.W. McDiarmid, M. Donnelly, M.S. Foster, and L. Hayek, eds., Standard methods for measuring biological diversity. Smithsonian Institution Press, Washington, DC.

Scott, N.J., Jr., and C.A. Ramotnik. In press. Does the Sacramento mountain salamander (*Aneides hardii*; Caudata: Plethodontidae) require old-growth forests? In W. Moir and R. Hamre, eds., Old-growth forests in the Southwest and Rocky Mountain region. U.S. Forest Service, General Technical Report, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

- Scott, N.J., Jr., and R.A. Seigel. In press. The management of reptile and amphibian populations: species priorities and methodological and theoretical constraints. In D.R. McCullough and R.H. Barrett, eds., *Wildlife 2001: populations*. Elsevier Science Publishers, Ltd., London, England. 1163 pp.
- Scott, N.J., Jr., and B.D. Woodward. In press. Surveying amphibians at the breeding site. In W.R. Heyer, R.W. McDiarmid, M. Donnelly, M.S. Foster, and L. Hayek, eds., *Standard methods for measuring biological diversity*. Smithsonian Institution Press, Washington, DC.
- Stuart, J.N., and N.J. Scott, Jr. In press. Range extension for the northern pygmy mouse, *Baiomys taylori*, in New Mexico. *Texas Journal of Science*.

#### Reports and Non-refereed Publications

- Scott, N.J., Jr. 1992. Ranid frog survey of the Gray Ranch with recommendations for management of frog habitats August 1990-September 1991. Progress report submitted to the Gray Ranch. 15 pp.
- Scott, N.J., Jr. 1991. Studies of three species of water snakes (*Nerodia*). Annual report submitted to the Colorado River Municipal Water District, Big Spring, Texas. 2 pp.
- Stuart, J.N., N.J. Scott, Jr., and G.H. Farley. 1992. Use of riparian revegetation sites along the Rio Grande by terrestrial vertebrates. Annual report submitted to U.S. Fish and Wildlife Service, Fort Collins, Colorado. 92 pp.

#### Manuscripts Submitted

- Jennings, R.D., and N.J. Scott, Jr. Ecologically correlated morphological variation in tadpoles of the Chiricahua leopard frog *Rana chiricahuensis*. Submitted to *Journal of Herpetology*.
- Stuart, J.N., and N.J. Scott, Jr. Geographic distribution: *Apalone spinifera hartwegi* (Western spiny softshell). Submitted to *Herpetological Review*.

#### Scientific Meetings, Symposiums, and Workshops

- Ford, P.L., and N.J. Scott, Jr. "Larval community structure of temporary-pond breeding frogs from tropical deciduous forests in western Mexico," poster presentation at the First Annual Biology Research Day, University of New Mexico, Albuquerque, April 1992.
- Scott, N.J., Jr. "Captive management and conservation of amphibians and reptiles: a symposium dedicated to Roger Conant," invited moderator, reptile section, at the Society for the Study of Amphibians and Reptiles and Herpetologists' League annual meeting, State College, Pennsylvania, August 1991.

- Scott, N.J., Jr. "Mimicry in snakes," seminar presentation to the New Mexico Herpetological Society, Albuquerque, December, 1991.
- Scott, N.J., Jr. "Concho Water Snake Recovery," Recovery Team meeting at Austin, Texas, September 1991.
- Scott, N.J., Jr., "Bases científicas para el uso racional de los recursos teyu guazu y yacare en el Paraguay," seminar presentation at the Ministerio de Agricultura y Ganadería, Asunción, Paraguay, November 1991.
- Scott, N.J., Jr., and C.A. Ramotnik. "Does the Sacramento mountain salamander (*Aneides hardii*; Caudata: Plethodontidae) require old-growth forests?," paper presentation at the Old-growth forests in the Southwest and Rocky Mountain Workshop, Portal, Arizona, March 1992.
- Scott, N.J., Jr., and R.A. Seigel. "The management of reptile and amphibian populations: species priorities and methodological and theoretical constraints," paper presentation at Wildlife 2001: Populations, Oakland, California, July 1991.

#### Committees, Awards, and Other Significant Activities

- Dr. N.J. Scott, Jr., served as Research Associate, Department of Vertebrate Zoology, Smithsonian Institution and Division of Herpetology, Natural History Museum of Los Angeles County.
- Dr. Scott served as a Member of the U.S. Fish and Wildlife Service Region 2 Herpetological Recovery Team, a consortium of renowned herpetologists which provides biological and technical expertise on Region 2 (Arizona, New Mexico, Oklahoma, and Texas) threatened and endangered herptiles.
- Dr. Scott served as Corresponding Member of two groups of the International Union for the Conservation of Nature (IUCN), Species Survival Commission: the Turtle and Tortoise Specialist Group and the Crocodile Specialist Group.
- Dr. Scott served as Leader of the IUCN Declining Amphibian Populations Task Force, Southwestern Working Group.
- Dr. Scott served as Leader of the Leslie Canyon Leopard Frog Group, a team dedicated to preserving this species through systematic biochemical analyses and captive rearing.
- Dr. Scott served as Chair of the University of New Mexico, Department of Biology, Liaison Committee with the Latin American Institute.
- Dr. Scott served as a Member of the New Mexico Salamander Working Group, an interagency team concerned with the management and conservation of New Mexico's endemic salamanders.
- Dr. Scott served as Associate Editor in Herpetology, Southwestern Association of Naturalists.
- Dr. Scott and Ms. R.E. Robino served on the Board of Editors for the Museum of Southwestern Biology Publication series.

Ms. Robino served as an Editorial Assistant to *Noticias de Galápagos*, a publication about science and conservation in Galápagos published by The Charles Darwin Foundation.

Dr. Scott assisted the Paraguayan Ministerio de Agricultura y Ganaderia and the Museo Nacional de Historia Natural del Paraguay in coordinating caiman and tegu lizard research projects, Asunción, Paraguay.

Dr. Scott served as Leader of the U.S. Fish and Wildlife Service's Concho Water Snake Recovery Team, a team of biologists from Federal, State, University, and private agencies assigned with the task of establishing a Recovery Plan for the threatened Texas snake; a draft Plan has been submitted to the U.S. Fish and Wildlife Service, Albuquerque, for public review.

# **APPENDIX H**

***ANNUAL REPORT:  
LONG-TERM ECOLOGICAL  
RESEARCH PROGRAM***



**THE SEVILLETA LONG-TERM ECOLOGICAL RESEARCH PROGRAM**

Department of Biology, University of New Mexico, Albuquerque, 87131

**Summary**

The University of New Mexico's Sevilleta Long-Term Ecological Research Program (LTER) in the central Rio Grande Basin is part of a National Science Foundation network of research sites that examines the responses of ecosystems to environmental changes. The Sevilleta LTER Program is located primarily at the Sevilleta National Wildlife Refuge (Socorro County, NM), but researchers also utilize areas in Cibola National Forest, Bosque del Apache National Wildlife Refuge, El Malpais National Monument, Bandelier National Monument, and Kirtland Air Force Base. These varied study sites include a wide range of ecosystem types, including Chihuahuan Desert, Great Plains Grassland, Great Basin Shrub-Steppe, Piñon-Juniper Woodland, Bosque Riparian Forests and Wetlands, Ponderosa Pine Forests, Mixed-Conifer Montane Forests, and Sub-alpine Forests and Meadows. The dominant theme of the Sevilleta LTER Program is to examine long-term changes in ecosystem attributes (e.g., population dynamics of plants and animals, nutrient cycling, hydrology, productivity, species diversity) as a result of both natural and man-made disturbances (e.g., global warming, acid rain, grazing, wildfires, droughts, and the "El Niño-Southern Oscillation" (ENSO)). Through these long-term studies, scientists will improve their understanding of the natural dynamics of ecosystems in the heterogeneous landscape of central New Mexico.

**Introduction**

The Sevilleta LTER Program is conducted by the University of New Mexico's Department of Biology in close collaboration with the U.S. Fish and Wildlife Service. The LTER is funded by a major grant from the National Science Foundation. The Sevilleta LTER is part of a coordinated network of 18 LTER sites that span North America (including two sites in Antarctica). The Sevilleta LTER Program concentrates its research efforts on the Rio Grande Basin in central New Mexico. Four dedicated research areas comprise the core sites for the field research activities. These are the Sevilleta National Wildlife Refuge (100,000 ha), the Bosque del Apache National Wildlife Refuge (25,300 ha), the Sierra Ladrones Wilderness Study Area (28,390 ha) and the Magdalena Mountains Research Area (15,000 ha) in Cibola National Forest. Additional studies are being conducted at Bandelier National Monument near Los Alamos, at the El Malpais National Monument near Grants, and at Kirtland Air Force Base in Albuquerque.

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The Sevilleta research region spans the Rio Grande Basin. In the Socorro County area, study site elevations range from 1,350 m at the Rio Grande to 2,195 m in the Los Pinos Mountains in the east, to 2,797 m at Ladone Peak in the northwest, and to 3,450 m in the Magdalena Mountains to the southwest. Other important regional features include the San Agustin Plains to the west, and the Jornada del Muerto ("Journey of Death") valley to the south. The San Agustin Plains is an ancient lakebed, which has had a number of paleoecological studies that have characterized the long-term vegetation changes in the region; it is also the site of the Very Large Array Radio-telescope funded by NSF. The Jornada del Muerto extends southward some 125 km, and is largely uninhabited except for military personnel at the White Sands Missile Range, site of the first atomic bomb test. The Jornada del Muerto area is the northward extension of habitats characteristic of the Jornada LTER.

Variations in elevation, parent material and geomorphic setting have combined to produce a variety of soils and habitats ranging from thin and rocky residual soils to deep alluvium. For example, in the Sevilleta NWR outside of the floodplain, there are 3 orders, 6 suborders, 10 great groups, 17 subgroups, and 38 named series of soils represented. In the floodplain are additional Entisols and Vertisols. The variability attributed to topography, geology, and soils over a number of scales contributes directly to the variety of gradients in the region. There are wide ranges of variation in soil properties such as texture, depth, presence of argillic and calcic horizons, A-horizon organic matter content, temperature and moisture regimes, and salinity.

The imposition of climatic dynamics in combination with diverse microsite characteristics presents numerous, excellent opportunities for research on species and ecosystem dynamics. Climatic dynamics occur over a range of time and space scales and the research region offers an opportunity to examine many of them. There is a rich set of "behaviors" in response to the dynamics of climate. At one end of the spectrum, areas as large as the Sevilleta or Magdalena Mountains can be viewed as a single pixel and will show variations in spectral reflectance from seasonal to annual time-scales and longer. At another point in the spectrum, species are subject to genetic change and demonstrate an evolutionary response to climate dynamics, at both fine and broad scales. In between these examples is a rich diversity of biological and ecological features that can be studied. The current research ranges from studies of genes to landscapes.

Although the dedicated research areas form the core of the site research, there are excellent opportunities to evaluate management influences on species or landscapes. Intensive grazing occurs outside the boundaries of the research areas and fence-line contrasts have been studied frequently. The Rio Grande provides irrigation water, and floodplain agriculture also has been studied. The juxtaposition of reserved and managed areas also allows studies of, for example, species' refuges, dispersal factors, the influence of exotics, and disturbed-land restoration.

#### LTER in a Biome Transition Zone

Topography, geology, soils, and hydrology, interacting with major air mass dynamics, provide a spatial and temporal template that has resulted in the region being a transition zone for a number of biomes. The region contains communities representative of, and at the intersection of, Great Plains Grassland, Great Basin Shrub-steppe, Chihuahuan Desert, Interior Chaparral, and Montane Coniferous Forest. The elevational gradient of the Magdalena Mountains provides further

transitions for Interior Chaparral, Piñon-Juniper Woodland, Montane Conifer Forest, Subalpine Conifer Forest, and Subalpine Grassland (Brown 1982). The Magdalena Mountains represent the northeastern limit of Interior Chaparral and are unique in having both Subalpine Conifer Forest and Interior Chaparral on the same mountain range.

The regional location at the junction of a number of biomes is critical for quantifying (1) gradient relationships with distance, (2) the scale-dependent or independent nature of spatial variability, (3) how steep gradients influence system properties, (4) integrated responses across the region, and (5) biome responses to climate change (Gosz and Sharpe 1989).

### Biodiversity

The size of the area, the heterogeneous topographic and geological features, and the characteristics of a biome transition zone have resulted in a rich diversity of species. At least 104 families, 1,201 species and 208 varieties of plants occur within the study region, and many species are at their distributional limits. For example, 54 plant species terminate their geographic distributions within the Sevilleta NWR. Some of these species represent major life forms and physiologies, such as the  $C_3$  perennial grasses (*Oryzopsis*). The terrestrial vertebrate fauna includes 89 species of mammals, 353 birds, 58 reptiles, and 15 amphibians (Findley et al. 1975, Hubbard 1970, Snell unpubl.). A substantial proportion of these species have a geographic distribution boundary within the region. Reptiles provide the most dramatic example, as 47 of the 58 species end their distributions in the vicinity of the Sevilleta (33 of these are northern limits of desert species). In addition, a high diversity of ground-dwelling arthropods, with distinctive habitat-specific assemblages, has been documented in recent (Crawford 1988) and ongoing studies.

An important feature of the biodiversity of this region is the number of examples of sympatric swarms of closely related species. This sympatry affords opportunities for studying the evolutionary differentiation of species. For example, six species of mice in the genus *Peromyscus* occur on the Sevilleta (a seventh may also occur), of which five have been found coexisting on a one hectare plot. Four species of *Bouteloua* grasses can be found in the same habitat, and seven species of lizards in the genus *Cnemidophorus* are present. Six of these seven lizard species are found in Sevilleta shrubland habitats, and all seven are present in the shrubland/piñon-juniper transition.

### The LTER Program as an "Ecological VLA"

At a regional scale, the central New Mexico landscape is composed of a mosaic of biome types, many of which are represented by study sites in the Sevilleta LTER. The study region also straddles the boundary between major seasonal air masses (e.g., the "Arctic express" on the Great Plains influences Sevilleta's eastern edge; Great Basin polar air masses extend to Sevilleta's northern edge; the Bermuda High generates summer convective storms over the mountains, which track northeast across Sevilleta's lowlands). Superimposed on these spatial patterns are the temporal dynamics of the ENSO phenomenon. These climate phenomena are a function of orographic effects of the southern Rocky Mountains and the New Mexico basin-and-range topography.

Given the reasonably large latitudinal, longitudinal and elevational gradients found in the Sevilleta study region, Sevilleta LTER researchers have access to many representative biome

"patches" that lie close to the edges of their continental distributions. The LTER capitalizes on this "biome diversity" to scale-up the population, community and ecosystem studies, and address biotic responses to climate change on a regional basis. To accomplish this, we have developed an ecological analog to NSF's Very Large Array Radiotelescope (VLA). The VLA is composed of a series of scattered, individual dish-antennae, that, when monitored simultaneously, reveal high-resolution data on obscure astronomical objects. As a rule, signal resolution increases with greater antennae numbers and spread-diameters.

In line with this approach, the LTER Program established a number of research sites (VLA antennae analogs) in various habitats ranging from Rio Grande riparian forest through grassland, shrub-steppe, desert shrubland, piñon-juniper woodland, mixed-conifer subalpine forest, and sub-alpine meadow. In combination with the Sevilleta LTER Program, the studies at Bosque del Apache NWR, Cibola National Forest, Kirtland Air Force Base, and the Bandelier and El Malpais National Monuments are becoming important components of the New Mexico "Ecological VLA." With this network of sites, that spans a two-fold gradient in precipitation amount (VLA spread-diameter analog), we can address problems that require simultaneously-measured, multi-biome data. Such topics include the role of drought or wet cycles on (1) primary production, decomposition and nutrient cycling budgets at a regional scale, (2) species diversities and trophic structures of biotic assemblages across landscapes, and (3) population dynamics and demographics of plants and animals with multi-biome distributions. The benefit of this approach is enhanced greatly by the fact that all these regional research sites are subjected to the same regional climate dynamics; e.g., a drought year for one site is a drought year for all. With the ecological VLA approach, the LTER Program can conduct a "natural experiment," examining proportionate or disproportionate responses of biome types under a similar climatic "treatment."

### Description of Hypotheses Addressed by the LTER Program

The LTER Program addresses a number of ecological questions, including: 1) How do the El Niño/La Niña climate dynamics influence ecological processes, such as nutrient cycling and energy flows, as well as the population abundances and spatial/temporal distributions of plants and animals; 2) What effects do climate dynamics have on the species compositions and trophic structures of the various biome types; 3) Across the central New Mexico landscape mosaic, are there similar or disproportionate responses among communities in various biome types when subjected to a common, regional climate change (e.g., drought); 4) Are patterns of plant and animal demographics, density/abundance, survivorship, and reproduction associated with habitat-specific variables (e.g., primary production, precipitation, soil moisture, temperature); 5) How does the heterogeneity of habitat mosaics, in concert with their ecotones, influence floral and faunal distributions, and which species might be poised for habitat invasion/retreat following abrupt or long-term climate changes?

### Project Description

The following pages provide provide a conceptual description of the Sevilleta research program's present status and future direction, based largely on current trends and national funding priorities in ecological research. Following this section is a more detailed projection of the long-term future of the Sevilleta LTER Program.

The primary values of the research region include: (1) the four dedicated research areas occupying a large area (150,000 ha), (2) the location at transitions spanning a number of biomes,

and (3) the high biological and environmental diversity. The transitions can express themselves in a number of ways, as various gradients of soils, geology, and topography change through space and time. Climate change will also express itself over a range of time and space scales and the ecological transitions of the Sevilleta region represent an opportunity to examine many of them. We anticipate that the area will demonstrate a wide range of "behaviors" in response to the dynamics of climate. For example, the 1950's drought caused marked vegetation boundary movement in much of the region. The 1988-89 La Niña event produced a strong winter drought that prevented spring production of  $C_3$  grasses. Other wet years in the 1980's caused increased production and expansion of  $C_3$  perennial grasses (*Oryzopsis*). The area is expected to provide a rich set of ecological "tools" capable of quantifying the range of responses to environmental dynamics.

The high biodiversity is related to the large area, heterogeneous habitats and the transitional area for so many biomes. This offers excellent possibilities to understand the factors that contribute to the high diversity, including the high degree of sympatry for closely related species. Population studies are focusing on the interaction between climate change and evolutionary change. Climate change may both stretch the limits of response and change the process of evolution through climate-induced changes in population structure. The effects of a dynamic and heterogeneous environment are expected to be magnified for species at the margins of their ranges. Such species, near the limits of physiological tolerance, are most likely to be affected by short time scale changes, and their population dynamics may reflect the rapid environmental changes typical of this region.

Disturbance patterns and frequencies are important forcing functions for the ecology of the area. "Disturbance" is viewed and studied across many scales that range from antelope hoof-marks in the soil crust between plants, to individual plant mortality (gap dynamics), to mammal mound activity, to frequency and intensity of flooding/scouring in ephemeral streams, to the grassland and forest fires that are increasing in frequency in the protected areas, and to decadal patterns of climate dynamics.

Landscape dynamics also receive significant attention. The hundreds of square kilometers surrounding the Sevilleta Field Station provide a natural laboratory for studying the interplay between temporal environmental variation and the spatial patterning of habitat. Viewed from afar, the extensive landscape exhibits repeating patterns of low-elevation grassy plains punctuated by ascending topography that may be viewed as a superstructure upon which environmental gradients are arrayed. As precipitation and temperature vary temporally, we expect to see spatially correlated shifts in the distributions of habitats, and consequently species distributions may be envisioned as ever expanding and contracting mosaics constrained by the shifting habitats. An interesting analogy between the landscape dynamics and the annealing of alloys provides a theoretical framework for the envisioned fluctuations (B. Milne, pers. comm.). Annealing is the process of repeated heating and cooling of mixtures. Heating excites the component molecular species to seek new configurations that result in minimized free energy levels upon cooling. Variation in annual precipitation constitutes an "excitation" of the system, thereby allowing the entire collection of species to seek new "free energy levels" which may be characterized by such measures as genetic similarity, species richness (per area), primary production, or by multivariate vectors of community composition. The free energy achieved depends on the organismal, demographic, community, and ecosystem level interactions of the populations involved.

Restoration biology also is an area of intense interest in the region. The grassland and desert shrub areas of most of New Mexico were heavily grazed for centuries. The research areas allow experiments and studies of natural succession and recovery. Species reintroductions also are being planned, such as the native Desert Bighorn Sheep in the Sierra Ladrone and pronghorn antelope on the Sevilleta NWR west of the Rio Grande. The riparian cottonwood forest along the Rio Grande also has been greatly altered by harvesting, river control from impoundments, and invasion by exotics. UNM and FWS ecologists have initiated a new research program at Bosque del Apache NWR that examines aspects of cottonwood forest restoration, focusing particularly on flood manipulations of the Rio Grande and the effects on riparian forest ecosystem processes.

### Summary of "Core" Program Studies

The Sevilleta LTER Program is an integral part of the regional research effort, and has already proven to be a tremendous asset to both resident and visiting research scientists. The "long-term" nature of the LTER funding schedule (6-yr intervals) contributes a large degree of continuity and stability to the region's research program, ensuring consistent collections of important "core" data sets. The following sections summarize the various ecological research programs that continually accumulate these "core" data sets, all of which are accessible to any interested scientist. The existence of these ongoing projects greatly enhances the data bases available to scientists during all phases of project implementation, from hypothesis development and experimental design through data analysis and interpretation. The LTER "core" projects take advantage of the region's large size and valuable characteristics as a biome transition zone. The approaches are designed to emphasize a variety of scales and levels, including landscapes, phenotypic plasticity, and evolution. Numerous other ongoing studies in geology, anthropology, hydrology and geomorphology will not be discussed because of space limitations.

### Meteorological Studies

The Sevilleta NWR has been instrumented with 7 fully-equipped meteorological stations and data-loggers, over 50 rain gauges, and an additional 20 collectors for precipitation chemical analysis. The Langmuir Laboratory and the Bosque del Apache riparian forest site are also equipped with meteorological stations. Historical weather records (100+ yr) for the region are available from the Socorro, NM, weather station. The LTER also acquires lightning strike data (frequencies and locations) for the entire central New Mexico region. All weather data are archived in the Sevilleta Information Management System (SIMS), and are available on request.

### Vegetation Assemblage Studies

The principal, large-scale environmental gradients are related to the north-south and east-west characteristics of meteorologic dynamics and topography. Major transects 3 km wide, 30 to 50 km long are designed to traverse the transitions between biome types as well as maximize or minimize environmental gradients (e.g., temperature and precipitation) and elevation. Transects of this scale allow remote sensing analyses from aircraft and satellite to be coordinated with balloon photography and ground truthing to identify gradients in spectral reflectance, species distributions, and substrates. Within the transects, 1 km<sup>2</sup> plots concentrate traditional plant (as well as animal) measurements and permanent photography quadrats.

The justifications for including a watershed approach within the region are: (1) water courses amplify variation in precipitation, especially in arid and semiarid regions where there is a nonlinear relationship between variation in precipitation and variation in runoff. Hence, biological responses (demographic, functional, etc.) to changes in mean climate will be magnified along ephemeral watercourses; (2) drainage networks have a natural, hierarchical organization and scale by both size and dynamical behavior, with the smallest watersheds flowing at high frequency and low magnitude and large watersheds at low frequency and high magnitude (Yair 1983, Yair and Shachak 1982); (3) watershed studies have, as a central focus, movement of water across the landscape (the focal constraint in the region's ecology), and represent especially steep, spatially predictable, gradients in water availability; and (4) watershed-based analyses allow comparative studies with other research environments. The watershed studies are based on a conceptual view of watershed processes developed in the Negev Desert (Noy-Meir 1973, 1981). The focus is on biotic responses to the hydrologic redistribution of water as a consequence of interaction between scale, climate, local geology, and microtopography. These interactions result in spatially predictable patterns of average runoff intensity and frequency. Currently, 8 ephemeral stream sites nested within the Rio Salado drainage are studied with watershed areas spanning several orders of magnitude (4 at about 22 ha, 2 at 240 ha, 1 at 3,000 ha, 1 at 300,000 ha). The hydrologic data of U.S.G.S. for the Rio Puerco (1 million ha) and the Rio Grande (5.5 million ha) provide long-term, broad scale results. Recent studies of El Niño/La Niña effects in the region also identify temporal predictability at certain scales. The watershed studies (1) form a model for studies of other constraints which change across scales in other landscapes, and (2) form an empirical basis in attempts to link ecological studies to regional and global biogeospheric studies.

### Plant and Animal Population Studies

For plant population studies, the ideas focus on the interaction between climatic change and evolutionary change. Climate change may both stretch the limits of response and change the process of evolution through climate-induced changes in population structure. For long-lived species, it is crucial to understand the limits of phenotypic response. For shorter lived species, genetic change is possible. The effects of short term climatic change on the evolutionary process is being studied by investigating the effects of La Niña and El Niño conditions on gene flow and reproduction in current populations.

Plant productivity responses to environmental dynamics may change beyond simple responses to climate due to enhanced susceptibility to herbivores. Monitoring specific interactions between a plant species and its herbivores show at what levels plants react initially to climate change. Genetic variation of spatially separated populations and changes in response to changing environment as well as altered herbivore interactions are hypothesized to control landscape patterns of species.

For animal populations, movement of individuals is being quantified, as well as dynamics of populations, abundance and distribution of species, and trophic and taxonomic composition of assemblages of rodents, large herbivorous mammals, birds, reptiles, and surface-active arthropods. Patterns and rates of genetic change (in isozymes and mitochondrial DNA clones) are monitored in rodents and lizards. These measurements are made over a sufficient range of spatial and temporal scales: (1) to document the response to heterogeneity across the entire region; and (2) to assess

the detailed response of individuals and local populations to both natural environmental change and any experimental manipulations. Specimens are sorted and recorded using the Museum of Southwestern Biology (MSB) computerized information retrieval system.

### Fertilization Studies

The abundance of plants from many different biomes suggests intriguing questions of nutrient limitation. Ecosystem nutrient limitation has been noted in many studies while others clearly indicate that each species responds individually to resource availability in relation to its requirements (Chapin and Shaver 1985, Gutierrez and Whitford 1987, Tilman 1982). The ability to predict strong El Niño or La Niña events offers additional capabilities to study nutrient limitation. During wet springs associated with El Niños, cool season plants are expected to be limited by nutrients rather than moisture. The warm season grasses also would be nutrient limited during an El Niño year because of nutrient immobilization by spring growth of cool season grasses. In La Niña years both cool and warm season grasses should be more water limited than nutrient limited (Lauenroth and Sims 1976). Fertilization experiments on Sevilleta grasslands have been initiated to evaluate these hypotheses.

### Wildfire Studies

Natural fires have become more common on the grassland areas of the protected research areas (no cattle grazing). The studies of these natural fires shows that the influence of fire is very species specific because perennial grasses with large, belowground root systems (e.g., Blue Grama of the Great Plains flora) survive while Chihuahuan Desert species (e.g., Black Grama, desert shrubs) are depleted. Thus, in the tension zone between Chihuahuan and other biomes, fire may be a primary agent in controlling species movement due to climate dynamics. In areas where the desert species have been established for a longer period (i.e., more like desert habitat than transition habitat), the grass component has been greatly reduced and fires are rare or nonexistent. The natural fires allow studies of species and the effects on subsequent ecosystem processes. Factorial experiments have begun that relate burning and herbivore (large ungulates) activity to plant and animal community composition and ecosystem processes.

### Future Research Potential

Based on current research activity in the Sevilleta region, as well as on the research activity projections considered internally and with potential visiting researchers, several major avenues of future research are anticipated. First are ecosystem- and community-level studies addressing the effects of climate change on biotic systems. These will include both seasonal, annual, decadal (and longer time scales) fluctuations and trends in climatic variables, and the eventual responses in ecosystem structure and function among the various biomes represented in the Sevilleta region.

Second, a dramatic increase in population- and organism-level studies can be expected in response to the increasing concern about world-wide patterns of declining biodiversity. Included in this category of research are studies concerning the genetic variability of existing plant and animal species, and the historical implications. As mentioned above, the Sevilleta is an extremely



species-rich region, and many species therein occur near the boundaries of their range distributions. As such, they are subjected to environmental conditions that, for them, may be extreme. In some cases, e.g., a species of desert millipede, the region contains only isolated, relict populations that are widespread elsewhere (Crawford et al. 1987). Comparisons of genetic similarity among these and other species populations that, over time, have colonized marginal habitats in the Rio Grande Basin, will be of prime importance in LTER studies.

Third, an increase in the number of studies concerning the relationship between ecosystem restoration and biodiversity is anticipated. The Rio Grande Basin as a whole has been overexploited in a number of ways, particularly in the past century. Currently, however, much discussion and some research has centered on restoration of the region's semi-arid grasslands and on the marshes and gallery forests associated with the Rio Grande itself. The Sevilleta NWR contains extensive grasslands that have been free of livestock grazing for nearly two decades. Studies of the effects of livestock removal on the diversity of grassland biotas are underway and more are planned. The Rio Grande Valley has lost most of the marshland that made it one of North America's most important migration routes for birds. The introduction of salt cedar and Russian olive trees in this century has greatly compounded that loss in terms of habitat alteration. Significant strides to correct these alterations have been made by the Fish and Wildlife Service at the Bosque del Apache NWR, where federal and UNM biologists have begun collaborative studies on restoration of the original wetlands.

Fourth, a number of current and planned research projects on the Sevilleta concern the research and development of new technologies for use in ecological studies, and the application of current technologies to field research. For example, the development of field FTIR (Fourier-Transform Infra-Red) technology to measure trace atmospheric gas production over  $\text{km}^2$  areas of natural ecosystems has been and continues to be an active program on the Sevilleta. In addition, Sevilleta researchers are developing a 3-dimensional, advanced image processing system that will calculate plant biomass from stereoscopic photographs of permanent study plots. An example of integration of existing technologies is the collaborative effort between UNM and NMIMT to correlate lightning activity during thunderstorms with realized precipitation. A 20  $\text{km}^2$  grid of 25 tipping-bucket rain gauges, each gauge instrumented with a data logger, provides rainfall timing and distribution data that are integrated with temporal and spatial lightning data collected simultaneously by Langmuir's Lightning Detection System. As future technology is made available for scientific use, Sevilleta LTER researchers will continue to develop practical applications of technology for ecological research.

Finally, Sevilleta researchers are developing program interactions with several Federal Government agencies and their respective Global Change initiatives. Collaborative efforts are underway with the National Park Service's Global Change Program at the El Malpais National Monument and Bandelier National Monument, and with the U.S. Air Force (Kirtland AFB) under the auspices of the DOD Legacy Program. The Bureau of Indian Affairs is considering a cooperative agreement with Sevilleta researchers to use satellite imagery and GIS analyses to extend the Sevilleta vegetation transects from the Rio Grande valley into other parts of New Mexico, Arizona, Colorado and Utah. These developing regional databases will permit considerable increases in the scale and detail of analyses on ecosystem changes in the southwestern United States.

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# **APPENDIX I**

## ***DEPARTMENTAL SEMINAR SERIES***

DEPARTMENT SEMINAR SERIES

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During FY 1991-92 we featured the following individuals:

- Dr. Stuart Barker, University of New England, "Ecological Genetics of Habitat Choice in *Drosophila buzzatii*."
- Dr. Gary Carmichael, U.S. Fish & Wildlife Service, Fisheries Division, "Introgression among Apache, Cutthroat and Rainbow Trout due to 'Johnny Appleseed' Management."
- Dr. Schivcharn S. Dhillon, Department of Biological Sciences, Texas Tech. University, "Effects of Fire on Micorrhizal Ecology of Little Blue Stem in Sand Prairies."
- Dr. F. Stephen Dobson, Auburn University, "Phenotypic Plasticity in Life Histories of Columbian Ground Squirrels."
- Dr. Anne Eggert, Bielefeld University & Illinois State University, "Reproductive Competition in Burying Beetles: Lessons of the Larder."
- Dr. John Endler, Department of Biological Sciences, University of California at Santa Barbara, "The Effect of Ambient Light & Predation on Sexual Selection."
- Dr. Javier Enriquez, University of Arizona, "*Cryptosporidium* Infections in Children in Developing Countries."
- Dr. Owen T. Gorman, U.S. Fish and Wildlife Service, "Structuring of Stream Fish Communities."
- Dr. Katherine Green-Hammond, Ecosystems Modeling Consultant, Albuquerque, "Modeling for Resource Management: Mule deer populations in New Mexico."
- Dr. Robert B. Grieve, Colorado State University, "Immunobiology of Larval *Toxocara Canis* Infection."
- Dr. Zev Haveh, Haifa University, Israel, "Landscape Ecology."
- Dr. Margo Haygood, Scripps Institute of Oceanography, Marine Biology Research Division "Bioluminescent Symbiosis" (Research Day Seminar).
- Dr. John Janovy, Department of Biological Sciences, University of Nebraska, "The Parasite Assemblage of *Fundulus zebrinus*."
- Dr. Stuart A. Kauffman, University of Pennsylvania & Santa Fe Institute, "Coevolution to the Edge of Chaos."
- Dr. James Mattoon, Director, Biotechnology Center, University of Colorado, "Regulation of Heme Biosynthesis in Yeast."
- Dr. Robert L. Metzenberg, Department of Physiological Chemistry, University of Wisconsin, "Mating Type Versus Sex: How Different are They?"
- Dr. Brook Milligan, Department of Botany, University of Texas at Austin, "Paternity Analysis and Estimation of Male Fertility."

UNM Department of Biology  
Departmental Seminar Speakers 1991-92  
Page Two

- Dr. Oscar Minkenberg, Department of Entomology, University of Arizona, "Parasitoid Searching Time Aggregation, Host Density Independence, and Effective Biological Control."
- Dr. Randy Mitchell, Department of Biology, University of New Mexico, "Adaptive Nature of Nectar Production for a Hummingbird-pollinated Plant."
- Dr. Tom Mitchell-Olds, University of Montana, "Population and Molecular Genetics of Plant Parasite Interactions."
- Dr. Norman Myers, Consultant in Environment & Development, Oxford, England, "Mass Extinction: Why we should care and what we should do about it."
- Dr. Robert Paine, Department of Zoology, University of Washington, "A Different Perspective on Food Webs: Field Measurements of Interaction Strength."
- Dr. Linda Sandell, University of Washington, Department of Orthopaedics, "Expression of Collagen Genes During Skeletal Growth & Development."
- Dr. William Schuster, Department of Biology, University of Utah, "Genetic Variation & Ecophysiology of Desert Plants."
- Dr. Michael H. Smith, Director, Savanna River Ecology Lab, Aiken, SC, "Importance of Genetics in Vertebrate Population Biology."
- Dr. Robert Tombes, Department of Biological Sciences, Clemson University, "Dual Pathways Trigger Mitosis."
- Dr. Frank Triska, U.S. Geological Service, Water Resources Division, Menlo Park, CA, "Nitrogen Cycling in the Hyporheic Zone & Channel of a Small Stream: Examining the Terrestrial/Aquatic Interface."
- Dr. H. Maurice Valett, Department of Biology, University of New Mexico, "The Interface between Ground Water & Surface Water: Implications for Stream Ecosystem Structure & Functioning."
- Dr. Jeff Walters, North Carolina State University, "The Role of Basic Research in the Conservation of an Endangered Species, the Red-cockaded Woodpecker."
- Dr. Paul Watson, Department of Biology, University of New Mexico, "Fake Sex and Crazy Genitalia Help Female Sierra Dome Spiders Reduce Male Kleptoparasitism, Choose Vigorous Sires, and Thwart Forced Copulation."
- Dr. Cosette Wheeler, Cancer Center, University of New Mexico, "Current Perspectives in Epidemiological Studies of Human Papillomavirus Infection."
- Dr. Michael Yeaman, Division of Infectious Diseases, Harbor—UCLA Medical Center, "Platelets in the Host Defend against Bacterial Infection."

# **APPENDIX J**

***FACULTY  
AND  
GRADUATE STUDENTS,  
1991-92***

List of Faculty, Department of Biology, FY 1991-92.

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Professors (12)

Altenbach, J. Scott  
Baca, Oswald G.  
Brown, James H.  
Duszynski, Donald W.  
Crawford, Clifford S.  
Findley, James (retired 6/92)

Gosz, James  
Ligon, J. David (Chair)  
Riedesel, Marvin L.  
Thornhill, Randy  
Toolson, Eric  
Vogel, Kathryn

Associate Professors (15)

Barton, Larry  
Bourne, Earl  
Dahm, Clifford L.  
Johnson, Gordon  
Johnson, William  
Kerkof, Paul  
Kodric-Brown, Astrid  
Loker, E. Samuel

Marshall, Diane  
Molles, Manuel  
Natvig, Donald O.  
Snell, Howard L.  
Taylor, Fritz  
Trujillo, John  
Yates, Terry

Assistant Professors (5)

Evans, Ann - code 1  
Lowery, Timothy - code 4  
Milne, Bruce - code 6  
Nelson, Mary Anne - code 1  
Stricker, Stephen - code 3  
Werner-Washburne, Margaret - code 4  
Wisdom, Charles (resigned 12/91)

Lecturers (3)

Berger, Lyle  
Heidrick, John (resigned 6/92)  
Ligon, Sandy

Joint Appointments (5)

Kelley, Robert - Professor, Anatomy  
Kogoma, Tokio - Professor, Cell Biology  
Risser, Paul - Vice President for Research  
Trotter, John - Professor, Anatomy  
Waterman, Robert - Professor, Anatomy

## GRADUATE STUDENTS AND FACULTY ADVISORS

<u>Student</u>	<u>Advisor</u>	<u>Student</u>	<u>Advisor</u>
Adams, K.	Trujillo	Kelt, D.	Brown
Alvarado, M.	Wisdom	Kimball, R.	Ligon
Argyres, D.	Kerkof	Kleyboecker, K.	Yates/Hafner
Ashby, P.	Toolson	Kucera, S.	Taylor
Baker, K.	Johnson, G.	Landwer, A.	Snell
Baldwin, J.	Natvig	Loftin, S.	Gosz
Balistreri, M.	Altenbach	Lyons, T.	Riedesel
Barlow, P.	Martin	Malcolm, C.	Yates/Hafner
Bennett, T.	Marshall	Marinakas, Y.	Gosz
Blanco, C.	Crawford	Markweise, J.	Kodric-Brown
Bleakly, D.	Wisdom	Marquet, P.	Brown
Boyce, T.	Loker	Martin, M.	Yates
Brantley, S.	Crawford	Mehlman, D.	Brown
Braun, E.	Werner-Washburne	Merino, S.	Nelson/Natvig
Cabin, R.	Marshall	Merola, M.	Ligon
Carr, D.	Dahm	Mirrales, J.	Loker
Cartron, J.	Ligon	Mistry, S.	Brown
Chan, R.	Lowrey	Miyashiro, J.	Yates
Christner, R.	Baca	Morrice, J.	Dahm
Cox, N.	Findley/Molles	Morrison, J.	Brown/Smart
Crocker, M.	Dahm	Newberry, T.	Gosz/Dahm
Cruz, F.	Snell	Nicoletto, P.	Kodric-Brown
Daly, G.	Ligon	Nieuwolt, M.	Snell/Fritts
Davis, F.	Yates	Nordell, S.	Brown
DeGaffe, G.	Loker	Padilla, C.	Werner-Washburne
Dennis, G.	Johnson, G.	Palma, R.E.	Yates
Doherty, P.	Werner-Washburne	Patrick, M.	Duszynski
Dvorachek, W.	Natvig	Pierce, L.	Snell
Eldredge, H.	Gosz	Reed, S.	Lowrey
Enquist, B.	Johnson, G.	Robbins, R.	Vogel
Ernest, K.	Brown	Romero, K.	Riedesel
Evanko, S.	Vogel	Sabourin, C.	Natvig
Farley, G.	Ligon	Saiz, B.	Barton
Fitzgerald, L.	Findley	Salazar, J.	Yates
Flies, K.	Crawford	Schuler, A.	Snell
Ford, P.	Brown/Scott	Shepherd, U.	Brown
Frey, J.	Yates	Sherrell, K.	Vogel
Gannon, W.	Brown	Skupski, M.	Findley/Best
Geng, Y.	Duszynski	Stone, D.	Snell
Grogan, S.	Taylor	Stuart, J.	Snell
Guo, Q.	Brown	Sugg, D.	Snell
Hale, B.	Ligon	Sylvester, K.	Natvig
Harrison, R.	Crawford	Tull, D.	Kodric-Brown
Hartman, G.	Yates	Valle, L.	Brown
Hatfield, C.	Milne	Venable, G.	Findley
Hawkins, L.	Brown	Vester, C.	Barton
Huckett, S.	Dahm	Wilber, P.	Loker/Duszynski
Huybrechts, M.	Barton	Zwartjes, P.	Ligon
Keitt, T.	Milne		



# **APPENDIX K**

## ***ANCILLARY FACULTY***

# ANCILLARY FACULTY, DEPARTMENT OF BIOLOGY

FY 1991/92

## Joint Appointments (with other departments or areas):

Robert Kelley, Prof., Anatomy  
Tokio Kogoma, Prof., Cell Biology  
Paul Risser, Prof., Vice President for Research

Miriam Roman, Assistant Prof., Valencia Campus  
John Trotter, Prof., Anatomy  
Robert Waterman, Prof., Anatomy

## Adjuncts (not on UNM payroll):

Richard Aguilar, Asst. Prof., Forest Service  
James Bednarz, Sr. Research Assoc.  
Cynthia Annett, Asst. Prof., Univ. of Arkansas  
William H. Baltosser, Asst. Prof., NMG&F  
Celestyn Brosch, Assoc. Prof., Lovelace Foundation  
Robyn J. Burnham, Asst. Prof., Univ. of Washington  
Richard A. Byles, Asst. Prof., USFWS  
Raimundo Cabrera-Perez, Post-doctoral Fellow  
David M. Chapin, Asst. Prof., Univ. of Washington  
Roger Conant, Prof., UNM  
John O. Corliss, Prof., UNM  
Harry Crissman, Prof., Los Alamos National Labs  
Steven Freeman, Asst. Prof., Lovelace Foundation  
Philip R. Fresquez, Asst. Prof., Forest Service  
Thomas Fritts, Assoc. Prof., DWRC  
Deborah Goldberg, Res. Assoc. Prof., Univ. of Michigan  
David Hafner, Asst. Prof., NMMNH  
Deborah C. Hayes, Asst. Prof., Kansas State Univ.  
Bruce Hofkins, Asst. Prof.  
John Horner, Asst. Prof., Bucknell University  
David Hsi, Prof., NMSU  
John P. Hubbard, Assoc. Prof., NMG&F  
William J. Kuipers, Assoc. Prof.

Ronald D. Ley, Prof., Lovelace Foundation  
John E. Lobbell, Assoc. Prof., Univ. of Alaska  
Gary M. Malvin, Asst. Prof., U. Washington, Seattle  
Chary Parvathi, Asst. Prof., TVI  
Eugene Rypka, Prof., Lovelace Foundation  
Kenneth Schoenly, Asst. Prof., Rockefeller Institute  
Norman Scott, Prof., DWRC  
Mary K. Seeley, Prof., Namibia Desert Research Lab  
George M. Shopp, Jr., Asst. Prof., Lovelace Foundation  
Richard Smartt, Asst. Prof., NMMNH  
Mohan Sopori, Prof., Lovelace Foundation  
Peter Stacey, Research Prof., Univ. of Nevada-Las Vegas  
George C. Stevens, Assoc. Prof.  
Robert Sullivan, Asst. Prof., NMMNH  
Nancy Thornhill, Asst. Prof., UNM  
Francisco Tomei-Torres, Asst. Prof., Howard Univ.  
Eleonora Trotter, Research Asst. Prof., UNM  
Sandra Turner, Research Asst. Prof., UNM  
Paul J. Watson, Res. Asst. Prof.  
John Wiens, Disting. Prof., Colorado State Univ.  
Stephen Wood, Prof., Lovelace Foundation  
Bruce D. Woodward, Asst. Prof., Univ. Northern Colorado  
Marlene Zuk, Asst. Prof., UC-Riverside

## Research or Visiting Status (usually on UNM payroll):

Brooks Burr, Research Assoc.  
Dan Caprioglio, Research Assoc.  
Gerardo Ceballos-Gonzales, Visiting Scholar  
Glenna Dean, Research Assoc.  
Michael Folsom, Research Asst. Prof.  
Herbert Grover, Research Assoc.  
Timothy Hayden, Research Assoc.  
Lynn Hertel, Research Assoc.  
Richard Holloway, Res. Assoc.  
Alan Johnson, Research Assoc.

Thomas Koob, Sr. Research Assoc.  
Patricia Leonard, Research Assoc. & Lecturer  
Gary Miller, Research Asst. Prof.  
Fernando Monroy, Research Assoc.  
Hugh B. Musick, Jr., Research Asst. Prof.  
Diana Northrup, Res. Assoc., UNM Centennial Library  
Robert Parmenter, Research Assoc. Prof.  
Michael Richard, Asst. Prof., UNM  
Mark Taper, Research Assoc.  
Carelon White, Research Assoc.

## Herbarium Affiliates

Margaret Caffey-Moquin, M.S.  
Elizabeth Crowder, B.S.  
Anne Cully, M.S.  
Ellen DeBruin, M.S.  
Reggie Fletcher, M.S.  
Paul Knight, M.S.  
Yavonn Wilson-Ramsey, B.A.

## Herbarium Research Associates

Karen Clary, M.S.  
Molly Toll, M.S.

## Emeriti

William Degenhardt  
Loren D. Potter  
William Martin

# **APPENDIX L**

## ***PROFESSIONAL AND TECHNICAL SUPPORT STAFF***

**BIOLOGY DEPARTMENT PROFESSIONAL & TECHNICAL SUPPORT STAFF**  
**(Excluding Temporary/On-Call Personnel)**  
**FY 1991-1992**

<u>EMPLOYEE</u>	<u>TITLE</u>	<u>GRANT P.I.</u>	<u>EMPLOYMENT DATES</u>	<u>NOTE</u>
Alberti, Julie	Accountant		07/29/91-12/31/99	Staff
Berger, Lyle	Lecturer II		08/13/90-12/31/99	Freshman Lab Coordinator/T.A. Supervisor
Boucher, Ray	Lab Technician III		04/06/92-12/31/99	
Brunt, James	Analyst Programmer II	Gosz	01/02/89-03/31/92	
Caprioglio, Ph.D., Dan	Research Associate I	Werner-Washburne	09/01/89-06/30/92	Postdoc
Curtiss, Peter	Staff Assistant		01/28/85-12/31/99	Staff-Storekeeper
Dennis, Beth	Graphics Designer III		08/19/85-12/31/99	Staff-Artist/Illustrator
Folsom, Ph.D., Michael	Research Associate II	Marshall	10/01/89-12/31/92	Postdoc
Gannon, William	Research Associate III		04/14/86-12/31/99	Staff-MSB Collections Manager
Hertel, Lynn	Research Associate I	Loker	08/18/86-11/30/92	
Kent, Vivian	Administrative Assistant		03/05/90-12/31/99	Staff-A.A. & Graduate Program Coordinator
Kubler, Sharon	Department Administrator IV		01/11/88-12/31/99	Staff
Lovato, Trini	Clerical Specialist V		07/12/91-12/31/99	Staff-Receptionist/Accounting Aide
Maddux, Troy	Lab Technician V	Gosz	05/23/88-03/30/93	
Malivuk, Karl	Lab/Facility Coordinator		10/22/90-12/31/99	Staff-Computer Mgr./Facility Coordinator
Martindale, Carol	Accounting Clerk		02/03/86-12/31/99	Staff (.75 FTE) Payrolls 20 & 40; Billing
Martinez, Dina	Clerical Specialist V		08/05/91-12/31/99	Staff (.50 FTE)
McConnell, Dee	Lab Animal Technician III		06/23/86-12/31/99	Staff (.75 FTE)
Monroy, Ph.D., Fernando	Research Associate I	Loker	07/01/90-11/30/92	
Moore, Douglas	Research Associate II	Gosz	09/01/80-02/28/93	
Morris, Carol	Lab Technician V		02/12/90-12/31/99	Staff (.50 FTE) EM Lab Tech.
Musick, Hugh	Sr. Research Associate II	Gosz	05/10/90-09/30/92	P/T, Permanent
Mygatt, Jane	Horticulture/Curatorial Spec.		09/21/84-12/31/99	Staff-Greenhouse/Herbarium
Parmenter, Ph.D., Robert	Program Director	Gosz	01/01/89-03/31/92	LTER Director
Platanina, Steven	Research Technologist V	Yates	07/01/86-08/31/91	
Ricci, Keith	Lab Animal Technician II		11/13/89-12/31/99	Staff (.50 FTE)-Animal Care Unit
Ricci, Roy	Lab Animal Technician IV		07/07/81-12/31/99	Staff-Animal Care Supervisor
Rice, Anne	Editorial Assistant II		08/01/90-12/31/99	Staff-Editing/Word Processing/Computing Assistance
Richard, DVM, Michael	Veterinarian		11/01/86-12/31/99	Staff (.50 FTE) Veterinarian
Stevens, George	Grant Coordinator		03/30/92-03/23/93	Grant and Fund-Raising Coordinator
Welford, Angela	Research Technologist IV		01/12/87-12/31/99	Staff (.50 FTE) EM Dept.
White, Ph.D., Carl	Research Associate III	Gosz/White	07/01/74-09/30/92	

<u>EMPLOYEE</u>	<u>TITLE</u>	<u>GRANT P.I.</u>	<u>EMPLOYMENT DATES</u>	<u>NOTE</u>
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TERMINATED FY 1991—1992:

<u>EMPLOYEE</u>	<u>TITLE</u>	<u>GRANT P.I.</u>	<u>EMPLOYMENT DATES</u>	<u>NOTE</u>
Burks, Kelly	Clerical Specialist V		01/01/90—05/27/91	Staff (.50 FTE) Main Office—Float
Garrison, Tom	Research Technologist IV	Gosz	07/17/89—09/30/91	
Gayheart, Claudia	Accounting Technician		02/01/87—08/09/91	Staff
Hackney, Sharon	Clerical Specialist V		02/06/92—05/22/92	Staff—Receptionist
Haagenstad, Todd	Lab Technician III	Gosz	01/30/89—11/31/91	
Heidrich, Ph.D., DVM, John	Lecturer III		08/14/89—05/31/92	Staff (.50 FTE) A & P Coordinator
LaFrance, Donna	Clerical Specialist V	Milne	09/30/91-01/24/92	Staff (.05 FTE)
Leonard, Patricia	Research Associate I		08/01/89—01/31/91	Staff—Media/Culture Center Supervisor
Petrilyak, Donna	Clerical Specialist V		12/17/90—06/13/91	Staff—Receptionist
Schammel, Christine	Lab Technician IV		08/13/91—10/18/91	Staff
Swanson, Bradley	Research Technologist I	Goldberg	09/10/90—07/31/91	
Taper, Ph.D., Mark	Research Associate I	Brown	01/02/90—04/30/92	Postdoc

# **APPENDIX M**

***ALL COURSE  
OFFERINGS  
1991-92***

## APPENDIX M

Course offerings and semester credit hours, Department of Biology, UNM, FY 1991-92.

SUMMER 1991

<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
121	Principles of Biology	1	66	4	264
121L	Prin of Biol Lab	3	66	-	-
136	Hum Anat/Phy—Non-Majors	1	44	3	132
400	Senior Honors Thesis	1	1	V	3
402	ST/Ecosystem Res Tech	2	15	V	45
499	Undergraduate Problems	9	10	V	25
502	ST/Ecosystem Res Tech	3	4	3	12
551	Graduate Problems	8	9	V	27
599	Masters Thesis	1	1	V	4
699	Dissertation	6	7	V	53
<b>TOTAL, SUMMER 1991</b>		<u>44</u>	<u>223</u>		<u>565</u>

FALL 1991

<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
110	Biology Non-Majors	1	143	3	429
112L	Biology Lab Non-Majors	4	83	1	83
121	Principles of Biology	2	702	4	2,808
121L	Prin of Biol Lab	29	699	-	-
122	Principles of Biology	1	137	4	548
122L	Prin of Biol Lab	6	135	-	-
136	Hum Anat/Phys—Non-Majors	1	156	3	468
139L	Hum Anat Lab—Non-Majors	5	88	1	88
200	Principles of Ecology	1	33	4	132
200L	Prin of Ecology Lab	2	33	-	-
221	Introductory Genetic	2	195	3	585
222	Intro Genetics Prob	2	35	1	35
223L	Intro Genetics Lab	2	41	1	41
224	SW Natural History	1	26	4	104
224L	SW Nat Hist Lab	1	26	-	-
237	Human Anat & Phys I	2	343	3	1,029
238	Human Anat & Phys II	1	104	3	312
239	Health Sci Micro	1	94	4	376

<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
239L	Health Sci Micro Lab	4	93	-	-
247L	Anat & Phys Lab I	13	328	1	328
248L	Anat & Phys Lab II	4	82	1	82
260	Intro Botany	1	18	4	72
260L	Intro Botany Lab	1	18	-	-
300	Evolution	1	60	3	180
350	General Micro	1	59	4	236
350L	General Micro Lab	3	59	-	-
363	Flora of New Mexico	1	20	4	80
363L	Flora of New Mexico Lab	1	20	-	-
371	Invertebrate Biology	1	40	5	200
371L	Invert Biol Lab	2	40	-	-
400	Senior Honors Thesis	3	4	V	12
402	ST/Biotechnology	1	1	3	3
402	ST/Parasites & Host	1	1	V	3
402	ST/Prosection I/Lab	1	8	V	24
402	ST/Field Herpetology	1	2	1	2
402	ST/Top En Biologica	1	1	1	1
402	ST/Adv Verteb Biol	1	2	2	4
402	ST/Aquatic Ecol/Lab	1	3	1	3
402	ST/Proteoglycans	1	2	1	2
402	ST/Practical Modeling	1	2	3	6
402	ST/Evolution Social	1	3	3	9
402	ST/Aquatic Ecol/Toxi	1	4	3	12
402	ST/Avian Soc Systems	1	1	2	2
402	ST/Plant Reprod Ecology	1	1	1	1
402	ST/Adv Fungal Genetics	1	3	1	3
402	ST/Intro Wildlife Ecology	1	23	3	69
404L	Marine Inverte Lab	1	17	2	34
407	Bosque Biology	1	14	3	42
412	Developmental Biology	1	28	3	84
421	Comp Vertebrate Anatomy	1	9	4	36
421L	Comp Vertebrate Anatomy Lab	1	9	—	—
423	Introductory Biochemistry	1	29	3	87
428	Human Heredity	1	22	3	66
429	Cell Biology I	1	102	4	408
430	Vertebrate Physiology	1	17	4	68
431L	Verteb Physiol Lab	1	3	1	3
435	Animal Physiology	1	26	4	104
435L	Animal Physiology Lab	2	27	—	—
444	Molecular Biology	1	21	3	63
451	Microbial Ecology	1	11	3	33
452	Vertebrate Endocrinology	1	25	3	75
456	Immunology	1	57	3	171
491	Radiobiology	1	6	4	24
491L	Radiobiology Lab	1	5	—	—



<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
499	Undergraduate Problems	11	18	V	41
500	New Graduate Student Sem	1	24	1	24
502	ST/Biotechnology	1	2	3	6
502	ST/Parasites & Hosts	1	5	V	7
502	ST/Ecology Seminar	1	13	1	13
502	ST/Bird Banding	1	2	V	4
502	ST/Field Herpetology	1	3	1	3
502	ST/Top in Biologica	1	5	1	5
502	ST/Proteoglycans	1	3	1	3
502	ST/Practical Modeling	1	11	3	33
502	ST/Aquatic Ecol/Toxi	1	7	3	21
502	ST/Aquatic Ecol/Lab	1	3	1	3
502	ST/Avian Soc Systems	1	5	2	10
502	T/Bio Remediation	1	12	3	36
502	T/Plant Prod Ecology	1	2	1	2
502	S/Adv Fungal Genetics	1	5	1	5
502	ST/Cellular Automata	1	4	1	4
502	ST/Adv Verteb Biol	1	6	2	12
502	ST/Cell/Molecular Sem	1	5	1	5
507L	Bosque Biology	1	6	3	18
513	Physiol Behav Ecol	1	14	5	70
513L	Physiol Behav Ecol Lab	1	12	—	—
514	Ecosystem Studies	1	11	3	33
521	Adv Behav Ecology	1	7	3	21
547	Trans Electron Micro	1	8	4	32
551	Problems	28	48	V	126
581	Adv Cell & Mol Biol	1	6	4	24
593	Plant Min Metabolism	1	3	2	6
599	Masters Thesis	9	13	V	32
651	Adv Field Biology	5	5	V	32
699	Dissertation	12	24	V	203
<b>TOTAL, FALL 1991</b>		<u>226</u>	<u>4,691</u>		<u>10,504</u>

SPRING 1992

<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
110	Biology Non-Majors	1	66	3	198
112L	Biolody Lab Non-Majors	2	27	1	27
121	Principles of Biology	1	296	4	1,184
121L	Principles of Biol Lab	12	289	-	-

<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
122	Principles of Biology	2	395	4	1,580
122L	Principles of Biol Lab	17	389	-	-
123	Biol for Hlth Rel Sci	1	132	4	528
123L	Hlth Rel Sci Lab	6	132	-	-
136	Hum Anat/Phy—Non-Majors	1	151	3	453
139L	Hum Anat Lab—Non-Majors	6	71	1	71
200	Principles of Ecology	1	15	4	60
200L	Principles of Ecology Lab	2	15	—	—
221	Introductory Genetics	1	111	3	333
222	Intro Genetics Prob	1	39	1	39
223L	Intro Genetics Lab	2	24	1	24
237	Hum Anat & Phys I	1	191	3	573
238	Hum Anat & Phys II	1	257	3	771
239	Microbio/Health Sci	1	118	4	472
239L	Microbio/Health Sci Lab	5	119	-	-
247L	Anat & Phys Lab I	7	168	1	168
248L	Anat & Phys Lab II	9	204	1	204
249L	Human Anatomy Lab	1	11	1	11
260	Intro Botany	1	34	4	136
260L	Intro Botany Lab	2	34	-	-
365	Human Sexuality	1	82	3	246
379	Conservation Biology	1	47	3	141
382	Intro to Parasitology	1	15	4	60
382L	Intro to Parasitology Lab	1	14	—	—
386	Gen Verte Zool	1	75	4	300
386L	Gen Verte Zool Lab	3	73	-	-
400	Senior Honor Thesis	8	10	V	28
402	T/Yeast Mol Genetics	1	3	3	9
402	T/Ecology Seminar	1	15	1	15
402	T/Space Physiology	1	13	1	13
402	T/Adv Verte Biol	1	6	2	12
402	T/Avian Soc Systems	1	4	2	8
402	T/Top En Biologia-s	1	2	1	2
502	T/Human Evol/Changing	1	1	3	3
502	T/Adv Marine Biol	1	10	3	30
502	T/Molec Genetic Develop	1	10	3	30
502	T/Cell Recogn & Adhesion	1	3	2	6
502	T/Plant Reproductive	1	2	1	2
502	T/Evol Parental Care	1	8	3	24
502	T/Hazardous Waste	1	15	1	15
502	T/Instrumental Analysis	1	1	3	3
502	T/Adv Fungal Genetics	1	4	1	4
407	Bosque Biology	1	15	3	45
416	Histology	1	41	5	205
416L	Histology Lab	2	40	-	-
418	Ecological Genetics	1	28	3	84

<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
423	Introductory Biochem	1	48	3	144
425	Molecular Genetics	1	8	3	24
430	Vertebrate Physiology	1	45	4	180
439L	Cell Biol Lab	1	16	3	48
447	Prosection	1	11	3	33
449	Cell Biol II	1	24	3	72
455	Ethology-Animal Behav	1	48	3	144
455L	Ethology Lab	1	12	1	12
460	Microbial Physiology	1	13	4	52
460L	Micro Physiology Lab	1	13	-	-
471	Plant Physiol Ecol	1	5	3	15
475	Desert Field Biol	1	13	3	39
478	Plant Physiology	1	6	4	24
478L	Plant Physiology Lab	1	6	-	-
495	Limnology	1	20	3	60
496	Limnology Lab	1	10	1	10
498	His/Phil of Biol	1	13	3	39
499	Undergraduate Problems	14	25	V	53
502	T/Top En Biologia-S	1	5	1	5
502	T/Yeast Mol Genetics	1	4	3	12
502	T/Ecology Seminar	1	11	1	11
502	T/Cell-Molecular Sem	1	6	1	6
502	T/Vertebrate Biol	1	8	2	16
502	ST/Avian Soc Systems	1	7	2	14
502	T/Space Physiology	1	4	1	4
502	T/Adv Marine Biol	1	3	3	9
502	T/Proteoglycans	1	1	1	1
502	T/Molec Genetics Develop	1	1	3	3
502	T/Cell Recogn & Adhesion	1	5	2	10
502	T/Plant Reproductive	1	1	1	1
502	T/Evol Parental Care	1	2	3	6
502	T/Hazardous Waste	1	7	1	7
502	T/Adv Parasitology	1	2	3	6
502	T/Instrumental Analysis	1	2	3	6
502	T/Adv Fungal Genetics	1	5	1	5
507	Bosque Biology/Lab	1	4	3	12
515	Research Field Biol	1	8	3	24
520	Energy & Metabolism	1	23	3	69
522	Molec Biol & Evol	1	12	3	36
523	Prin-Systematic Biol	1	8	3	24
548	Scan Elec Microscopy	1	7	3	21
549	Cell Biology II	1	6	3	18
551	Problems	23	36	V	92
571	Plant Physiol Ecology	1	1	3	3
576	Landscape Ecology	1	5	4	20
582	Adv Cell & Mol Biol	1	5	4	20

<u>No.</u>	<u>Course Title</u>	<u>No. of Sections</u>	<u>Total No. Students</u>	<u>Cr.</u>	<u>Total SCH</u>
599	Masters Thesis	10	16	V	68
644	Mech Gene Expression	1	1	3	3
651	Adv Field Biology	4	6	V	31
699	Dissertation	13	31	V	280
<b>TOTAL, SPRING 1992</b>		<u>229</u>	<u>4,404</u>		<u>9,876</u>
<b>TOTALS, FY 1991-92</b>		<u>480</u>	<u>4,691</u>		<u>20,944</u>

# **APPENDIX N**

***BIOLOGY DEPARTMENT  
ACTIVE CONTRACTS  
AND GRANTS  
1991-92***

BIOLOGY DEPARTMENT  
ACTIVE CONTRACTS & GRANTS  
July 1, 1991 - June 30, 1992

Account	Principal Investigator	Agency	PDS No. 105-/Project Title	Base Award	Current Yr. Funds	Cumulative/ Supp Funds	Period of Performance
1-02348	Duszynski	UNM	RAC Award	\$ 7,500	\$ 7,500	\$ 7,500	04/22/92 - 09/30/92
1-02312	Stricker	UNM	RAC Award				02/04/92 - 02/04/93
1-02361	Stricker	UNM	RAC Award	2,293		2,293	10/15/90 - 10/15/91
1-02369	Lowrey	UNM	RAC Award	2,496		2,496	10/23/90 - 09/30/91
1-02372	Trujillo	UNM	RAC Award	2,450		2,450	10/15/90 - 10/15/91
1-02346	Crawford	UNM	RAC Award	2,480	2,480	2,480	08/13/92 - 08/13/93
3-13666	Stricker	UNM	BRSG Award	3,890		3,890	01/26/91 - 12/31/91
3-84190	Marshall	UNM	Regents' Lecturer Award	8,700	2,900	8,700	08/19/90 - 08/19/93
3-82199	Brown	UNM	Regents' Lecturer Award	12,700	2,900	12,700	08/19/90 - 08/19/93
3-77002	Marshall	UNM	Potter Chair Endowment	134,000		134,000	
				\$176,509	\$15,780	\$176,509	

Account	Principal Investigator	Agency	PDS No. 105-/Project Title	Base Award	Current Yr. Funds	Cumulative/ Supp Funds	Period of Performance
1-18679	Crawford et al.	NSF (641A)	Sevilleta Field Sta. (Risser contrib.)Bal=3-21101	\$ 50,000	\$	\$ 50,000	08/01/90 - 07/31/92
3-10202F	Milne	DOE (516A)	Spatial Scaling:Animal Movement in Semiarid Landscp.	150,000		99,976	08/03/88 - 08/09/90
3-10203	" "	DOE	" "			49,844	08/09/90 - 08/08/91
3-10931	Scott	CO Rv MWD (560)	Biology of Harter's Water Snake	22,500		22,500	08/01/88 - 12/31/91
3-11411	Toolson	NSF (530)	Thermal Physiology of Cicadas	158,060		136,506	02/15/89 - 07/31/91
3-11411	" "	NSF (530F)	" " Amd. #5 (UNM yr. 1 @ 48.5% IDC)			50,000	03/29/91 - 01/31/93
3-11421	Marshall	NSF (547)	Non-Random Seed Paternity in Wild Radish Raphanus sativus	182,000		182,000	06/30/89 - 06/30/94
3-11421	" "	NSF (547C)	" " REU			8,000	01/10/90 - 08/31/92
3-12341	Marshall	NSF (557)	Presidential Young Investigator Award	125,221	25,000	25,000	10/15/89 - 03/31/93
3-12341	" "	NSF (557A)	" "			31,250	10/15/90 - 03/31/93
3-12341	" "	NSF (557B)	50% matching funds " "			31,471	10/15/90 - 03/31/93
3-12349	" "	NSF (557C)	UNM Foundation Matching Funds - PYI	50,221		37,500	10/15/90 - 11/14/92
3-13231	Loker	AID (553)	Biotic/Abiotic Factors-Disease-Transmitting Snails	69,072		69,072	08/07/89 - 12/31/92
3-13231	" "	AID	Yr. 2 " "			41,427	08/07/90 - 08/07/91
3-13231	" "	AID	Yr. 3 " "			39,501	08/07/91 - 12/31/92
3-13581	Riedesel	NASA (551)	Glycerol-Induced Hyperhydration	30,000		30,000	10/01/89 - 09/30/91
3-13581	" "	NASA (551C)	Suppl.		78,509	78,509	10/01/91 - 08/31/92
3-13581	" "	NASA (551B)	Suppl. - " "			29,743	10/01/90 - 05/31/93
3-13581	" "	NASA (551E)	Suppl. 3 " "		78,800	78,800	06/01/92 - 05/31/93
3-13671	Werner-Washburne	NSF (566)	Gene Regulation in Starvation-Induced Arrest-Yeast	90,000		90,000	11/15/89 - 11/14/90
3-13671	" "	NSF (566B)	Suppl. - Amd. #1 " " (-0- IDC)			21,575	03/15/90 - 04/30/91
3-13671	" "	NSF (566C)	Suppl. - Amd. #2 " "			2,250	06/04/90 - 04/30/91

Account	Principal Investigator	Agency	PDS No. 105-/Project Title	Base Award	Current Yr. Funds	Cumulative/ Supp Funds	Period of Performance
3-13671	" "	NSF (556D,E,G)	Suppl. - Amd. #3 " "			111,500	05/01/91 - 04/30/92
3-13671	" "	NSF (566F)	Suppl. - Amd. #4 " "			21,550	04/30/91 - 04/30/92
3-13671	" "	NSF (566H)	Suppl. - Amd. #5 " "		90,000	90,000	11/15/91 - 04/30/93
3-13671	" "	NSF (566J)	Suppl. - I & J combined	18,056	18,056	18,056	10/12/89 - 04/30/93
3-13671	" "	NSF (566K)	Suppl. - Amd. #7 " "	99,000	99,000	99,000	04/30/92 - 12/30/93
3-14061	Brown/Hawkins	NSF	Banner-Tailed Kangaroo Rats & Cache Molds	8,000		8,000	11/15/89 - 10/31/91
3-14742	Bednarz	DOE/West.(416H)	" " (yr. 1)			49,101	10/01/90 - 09/30/91
3-15451	Vogel	NIH (401A-D)	Yrs. 1-6, Proteogly. Str./Metab./Role Tendon	1,000,000		872,964	09/23/85 - 08/31/91
3-15454	" "	NIH (401E)	" " (yr. 7 of grant; retain yr. 4 No.)		174,180	174,180	09/01/91 - 08/31/92
3-15454	" "	NIH (401F)	" " (yr. 8 of grant)		193,516	193,516	08/27/92 - 08/31/93
3-16281F	Yates	NMGF (602&478)	Rio Grande Fishes: Status/Biology Notropis Simus & N. Orca	50,000		209,736	06/15/86 - 12/31/92
3-16282	" "	NMGF (602B)	Yr. 2, Amd. #2 " "			163,795	08/24/89 - 06/30/92
3-16891F	Loker	NIH (572)	2nd yr. of yr. 4: Trematode-Induced Immunosupp. Snails	64,040		478,636	12/01/86 - 11/30/91
3-16894	" "	NIH	3rd yr. of yr. 4		139,666	139,666	12/01/91 - 11/30/92
3-16981F	Gosz/Dahm/Risser	NSF (450A)	Long-Path FTIR Analysis Biophysics/Atmospheric Interaction	272,336		594,783	02/01/87 - 08/31/91
3-16982	" "	NSF	" "			708,000	03/01/90 - 08/31/92
3-16982	" "	NSF	Yr. 3 funding		150,000	150,000	03/01/91 - 08/31/93
3-16989	" "	NSF (450I)	Amd. #3 - REU			16,000	06/06/91 - 08/31/93
3-18521	Brown	NSF (496)	Long-Term Monitoring & Manipulation Desert Granivore System	423,529		378,931	01/01/88 - 06/30/92
3-18521	" "	NSF (496)	Amd. #8 " " (no PDS- noncompeting, continuing grant)			93,166	01/01/92 - 06/30/93
3-18529	Brown	NSF (496G)	Amd. #7 " "			4,148	07/01/91 - 06/30/93
3-19661	Brown	NSF (522)	Spatial/Temporal Breeding - Birds	230,000		230,000	11/01/88 - 04/30/92
3-19961	Milne	NSF (515A)	Spatial Scaling/Patch Mosaic-Semiarid Ecosystems	204,687		204,687	08/01/88 - 01/31/92
3-19991	Gosz et al.	NSF (529A)	LTER-Sevilleta	1,413,303		1,413,303	10/15/88 - 03/31/92
3-19991	" "	NSF (529M)	Ecological/Climatic Gradients on the Sevilleta	400,000	400,000	400,000	10/15/88 - 03/31/93
3-19999	" "	NSF (529I)	Amd. #7 " " (combined budget includes I, J, & L.)		19,500	19,500	05/01/91 - 03/31/92
3-19999	" "	NSF (529J)	Amd. #7 " " " "		12,000	12,000	06/01/91 - 03/31/92
3-19999	" "	NSF (529L)	Amd. #7 " " " "		50,273	50,273	05/01/91 - 03/31/92
3-19999	" "	NSF (529N)	Preadward approval - REU/RAMHSS		74,955	74,955	06/01/92 - 06/01/93
3-20081	Toolson	NSF (600A)	Natural/Sexual Select. & Cactophilic Drosophila	68,883		68,883	03/01/90 - 02/28/93
3-20281	Yates	NSF (568A-B)	Mammalian Diversity in Bolivia - The Yungas & Valles	55,701		55,701	06/01/90 - 11/30/93
3-20281	" "	NSF (568E)	Continuation " "			25,084	06/01/91 - 11/30/92
3-20281	" "	NSF (568F)	Supplement " "	17,081	17,081	17,081	07/01/91 - 05/31/92
3-20289	Cook/Duszynski	NSF (568C)	Amd. #3 REU " "	10,000	10,000	10,000	06/01/91 - 05/31/92
3-20289	" "	NSF (568G)	Amd. #5 REU " "	10,000	10,000	10,000	05/01/92 - 11/30/92
3-20481F	Yates	NMGF (639)	Yr. 1-2, Genetic Analysis/Rio Grande Cutthroat Trout	14,000		14,000	02/28/90 - 06/30/91
3-20483	" "	NMGF (639B)	Yr. 3 " " (-O- IDC)		9,000	9,000	04/01/91 - 06/30/92
3-20702	Grover/Gosz/Moore	NMWRRI (636A)	Yr. 2 " "		14,447	14,447	07/01/91 - 06/30/92
3-21011	Riedesel	NASA (649)	Glycerol Solution-Countermeasures- Orthostatic Intolerance	42,809		42,809	07/01/90 - 10/01/91
3-21041	Loker	NIH (642)	Small Instrumentation Program	12,100		12,100	09/01/90 - 08/31/91



Account	Principal Investigator	Agency	PDS No. 105-/Project Title	Base Award	Current Yr. Funds	Cumulative/ Supp Funds	Period of Performance
3-21101	Crawford et al.	NSF (641A)	Sevilleta Field Station - bldg. construction	140,000		140,000	02/01/91 - 07/31/93
3-21111	Werner-Washburne	NSF (608A)	PYI & yr. 2 base: Starvation-Induced Arrest in Yeast	78,450		50,000	07/01/90 - 06/30/92
3-21111	"	NSF (608C)	PYI - matching yr. 1	28,450	28,450	28,450	07/01/91 - 06/30/92
3-21111	"	NSF (608D)	PYI Cash donations - UNM Development Office	17,721	17,721	17,721	07/01/90 - 06/30/91
3-21111	"	NSF (608E)	PYI - yr. 3 base	25,000	25,000	25,000	07/01/92 - 06/30/93
3-21111	"	NSF (608F)	PYI - yr. 2 match	22,675	22,675	22,675	07/01/92 - 06/30/93
3-21221	Miller	NSF (585A)	Reproductive Strategies of So. Polar Skuas	125,551		125,551	06/15/90 - 11/30/92
3-21281	Milne	NSF (752/609)	Presidential Young Investigator Award	75,440		25,000	07/01/90 - 06/30/92
3-21281	"	NSF (609A)	" " Foundation Match	12,720	12,720	12,720	07/01/91 - 06/30/92
3-21281	"	NSF (609B)	" " NSF Match yr. 1	12,720		12,720	07/01/91 - 06/30/92
3-21281	"	NSF (609C)	" " Base grant for yr. 2	25,000	25,000	25,000	07/01/91 - 06/30/92
3-21281	"	NSF (609D)	Preaward	62,500	62,500	62,500	07/15/92 - 07/14/93
3-21661F	Yates	USDAFS (683)	Mitochondrial DNA of Red Squirrels	4,200		4,200	08/03/90 - 08/03/91
3-21781	Snell	USDD (617A)	Galapagos Islands Biosphere Reserves-Analysis of Biol. Diversity	36,121		36,121	10/05/90 - 10/04/92
3-21851F	Altanbach	EMNRD (692)	Evaluation of Bat Populations & Bat Habitat Research	4,500		4,500	10/01/90 - 06/30/91
3-21852	"	EMNRD (692A)	" "	5,000	5,000	5,000	07/01/91 - 06/30/92
3-21853	"	EMNRD (692B)	Amd. 1 " "	5,000	5,000	5,000	07/01/92 - 07/01/93
3-21931	Platanía	USBR (688)	Coop. Agreement: Ichthyofaunal Studies Fed. Listed Species	15,000		15,000	11/15/90 - 04/01/91
3-21931	"	USBR (688A)	" "		15,000	15,000	09/27/91 - 07/01/92
3-21931	"	USBR (688C)	" "		15,000	15,000	12/02/91 - 09/30/95
3-21931	"	USBR (688D)	" "		27,500	27,500	11/15/90 - 09/30/95
3-22171	Snell et al.	NMGF (689)	Monitoring Endangered Species/Dev. Interactive Database System	30,000		30,000	12/20/90 - 06/30/92
3-22201	Natvig	NSF (550C)	Preaward: Cellular Responses to Superoxide-Mediated Stress	104,000		104,000	01/28/91 - 08/31/93
3-22201	"	NSF (550E)	Cellular Responses to Superoxide-Mediated Stress			20,597	06/20/91 - 08/31/93
3-22201	"	NSF (550F)	Suppl. " "	4,000	4,000	4,000	01/28/92 - 08/31/93
3-22311	Platanía	NMGF (693)	New Mexico Rare Fish Studies	10,600		10,600	12/01/90 - 06/30/93
3-22321	Yates	NMGF (701)	Genetic Analysis of Sandhill Crane	9,000	9,000	9,000	12/31/91 - 06/30/92
3-22321	"	NMGF (701A)	Suppl. " "			10,664	05/29/91 - 12/31/91
3-22361	Marshall	NSF (646B)	Renov. Facilities-Integrated Res.(Risser's \$150K)	150,000		150,000	02/01/91 - 04/30/92
3-22371	Dahm/Campana	NSF (671)	Stream Hyporheic Zones	568,909		221,751	03/01/91 - 08/31/92
3-22371	"	NSF (671)	Amd. No. 2 " "			196,912	03/01/92 - 02/28/93
3-22371	"	NSF (671D)	REU supp.:Stream Hyporheic Zones(awarded w/671C)	10,000	10,000	10,000	03/01/91 - 02/28/93
3-22379	"	NSF	" "	16,000	16,000	16,000	06/03/91 - 02/28/93
3-22379	"	NSF (671C)	RAMHSS supp: " "	6,000	6,000	6,000	03/01/91 - 02/28/93
3-22541	Trotter/Thomson	NMWRRI (709A)	Comparison:Conventional Septic Drain Field/Alt. Biofilter	25,000		25,000	04/01/91 - 07/31/92
3-22601	Gosz	NMWRRI (707B)	Sewage Sludge Application in Semiarid Grasslands	25,466		25,466	04/01/91 - 05/31/92
3-22602	Gosz	NMWRRI (773)	" " year 2	21,625	21,625	21,625	07/01/92 - 06/30/93
3-22611	White	NMWRRI (708A)	Aquatic Ecology/Toxicology & Lab: Course Development	9,550	9,550	9,550	06/01/91 - 12/31/91
3-22651	Crawford/Molles	USFWS (727)	Manipulative Flooding Effects-Bosque del Apache Nat'l Refuge	79,894		79,894	04/16/91 - 04/15/92
3-22651	"	USFWS (727A)	Suppl. " "	93,960	93,960	93,960	04/15/92 - 04/14/93

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Account	Principal Investigator	Agency	PDS No. 105-/Project Title	Base Award	Current Yr. Funds	Cumulative/ Supp Funds	Period of Performance
3-22701	Gosz et al.	NSF (685A)	REU Ecosystem Studies - LTER	49,600		49,600	05/01/91 - 10/31/92
3-22702	Gosz et al.	NSF (685B)	REU " " - LTER	151,800	49,400	49,400	05/01/92 - 04/30/95
3-22801	Platanía	NMGM (719)	Upper San Juan River Studies	13,000		13,000	04/29/91 - 03/30/92
3-22811F	White	Pegasus(110-307)	ID/Eval. Treatment Tech. Water Contamination-Gold Mining	32,179		32,179	03/01/91 - 06/01/92
3-22812	White	Pegasus(750)	Plan to Bioremediate Cyanide/Nitrate Contamination	9,980	9,980	9,980	12/01/91 - 06/01/92
3-22971F	Snell/M.Alténbach	NMGM (720)	Jemez Mountains Salamander	4,000		4,000	04/30/91 - 07/31/91
3-23051	Gosz/Parmenter	USNPS (730)	El Malpais Nat'l Monument: Survey of Biological Resources	90,000		28,908	06/01/91 - 06/14/96
3-23211	Loker	NIH (712)	Small Instrumentation Program	10,401	10,401	10,401	09/01/91 - 08/31/92
3-23212	Vogel	NIH (775)	Small Instrumentation Program	20,595	20,595	20,595	09/01/92 - 08/31/92
3-23431	Snell	NMGM (724)	Status of Threatened Sand-Dune Lizard - Southeastern NM	10,000	10,000	10,000	07/01/91 - 06/30/92
3-23431	Snell/Painter	NMGM (724B)	Amd. 2 - Effect of Shinnery Oak Removal-Sand Dune Lizard	10,000	10,000	10,000	03/21/91 - 06/30/95
3-23431	Snell/Landwer	NMGM (724C)	Amd. 3 - Status of Endangered Sand-Dune Lizard	8,400	8,400	8,400	07/01/92 - 06/30/93
3-23461	Milne/A. Johnson	NSF (699A)	Phase Transitions & Critical Phenomena in Woodland Ecotones	300,000		300,000	08/01/91 - 01/31/95
3-23923	Parmenter	NPS (793)	Bandelier Nat'l Monument:Long-term Ecological Measurement	9,667	9,667	9,667	08/12/92 - 06/30/93
3-23924	White	NPS (787)	Variation in Soil Monoterpene Concent./Bandelier	7,999	7,999	7,999	08/06/92 - 06/30/93
3-23961	Crawford et al.	NSF (728)	Sevillea Field Station:Lab Equipment for Ecological Res.	119,834	119,834	119,834	10/08/91 - 10/31/93
3-24141	Brown/Mistry	NSF (718A)	Bat-Plant Interactions: Multi-Species Approach	6,400	6,400	6,400	11/01/91 - 10/31/93
3-24271	Musick	NASA (758)	Wind Erosion - Semiarid Landscape	112,500	112,500	112,500	12/01/91 - 05/31/93
3-24571	Degenhardt	NMGM (753)	Book MS Prep. - Amphibians & Reptiles of NM	5,757	5,757	5,757	02/12/92 - 01/01/93
3-24581	Dahm	EAP/San Diego(723A)	Harbingers Anthropogenic Ecosys.Stress:Cycorrhizal Fungi	52,256	26,261	26,261	09/15/91 - 09/14/92
3-24581	" "	EAP/San Diego(723A)	(2nd payment)	25,995	25,995	25,995	09/15/91 - 09/14/93
3-24671	Milne	EPRI (752)	Fractal Indicators Ecological Responses/Climate Chng	112,500	37,500	37,500	02/24/92 - 12/31/92
3-24691	Nelson	NIH (732)	Molecular Analysis of Sexual Dev.	94,029	94,029	94,029	05/01/92 - 04/30/93
3-24761	Platanía	USBR (779)	San Juan River Drift Studies	90,000	15,000	15,000	03/18/92 - 09/30/92
3-24841	Platanía	NMGM&F (784)	Foods of Sandhill Cranes	4,752	4,752	4,752	04/30/92 - 08/31/92
3-24871	Platanía	NMGM&F (777)	San Juan River Larval Fish Studies	10,000	10,000	10,000	04/02/92 - 06/30/93
3-25041	Platanía	USBR (786)	Coop. Agmt.: RG Silvery Minnow	571,025	90,325	90,325	05/15/92 - 09/30/97
3-25101	Brunt	NSF (738A)	Env. Info./Analysis: Ecosystem to Biosphere Scales	46,858	46,858	46,858	04/01/92 - 05/15/94
3-25471	Gosz et al.	NSF (785)	Praeward: Ecosys. Recovery-Livestock Grazing	25,245	25,245	25,245	06/30/92 - 06/30/93
3-25841	Yates, T.	AGFD (798)	Mexican Vole Genetic Analysis	7,700	7,700	7,700	06/25/92 - 05/30/93
3-25871	Snell, H.	NSF (761A)	Natural/Sexual Selection-Evol. of Sexual Dimorphism	189,997	70,000	70,000	08/18/92 - 12/31/95
3-25871	" "	NSF (761A)	UNM Cost Share	65,558	65,558	65,558	08/18/92 - 12/31/93
3-25931	Werner-Washburne	NSF (756)	Establishment of a Molecular Biology Facility	244,135	244,135	244,135	09/01/92 - 08/31/93
3-25938	" "	NSF	UNM Cost Share (Dr. E. Padilla - recruitment)	10,000	10,000	10,000	09/01/92 - 08/31/93
3-25939	" "	NSF	UNM Cost Share	108,568	108,568	108,568	09/01/92 - 08/31/93
3-28131	Barton	WERC/DOE (627)	Appl. Biotech. Mgmt. Industrial Wastes Containing Toxic Metals	66,930		66,930	03/01/90 - 12/30/90
3-28131	" "	WERC/DOE (627A)	" "			73,401	02/20/91 - 02/19/93
3-28131	" "	WERC/DOE (627B)	" "		37,333	37,333	02/20/92 - 02/19/93
3-28251	Barton/Ross	WERC/DOE(110-291)	New, Fast-Scanning Env. SEM for Use in Waste Studies	146,972		43,905	02/20/91 - 02/19/92
3-34661	Snell	Tinker Fnd(465)	Herpetology of Galapagos Islands, Res. & Conservation	50,000		50,000	06/22/87 - 12/31/92

Account	Principal Investigator	Agency	PDS No. 105-/Project Title	Base Award	Current Yr. Funds	Cumulative/ Supp Funds	Period of Performance
3-37511	Gosz	ESA (776)	Sustainable Biosphere Initiative	102,493	102,493	102,493	01/01/92 - 12/31/92
3-37871	Gosz/Brunt	NSF (781A)	US-China Workshop Internat'l Data Mgmt. Training	64,269	64,269	64,269	05/28/92 - 12/31/93
3-37721	Stricker	NSF (769)	SW Regional Developmental Biology Conference	3,500	3,500	3,500	05/01/92 - 10/31/92
3-55500	Loker	NIH (733A)	Fogarty Senior International Fellowship	16,884	16,884	16,884	12/09/91 - 05/08/92
3-64031	Fitzgerald	USDE (124-109A)	Conserv. Biol. & Sustained Use of Tegu Lizards-Argentina	19,700	19,700	19,700	07/01/91 - 12/31/92
3-64221	Caprioglio	NSF	Isolation/Char. Mutants in Transcription in Saccharomyces	<u>70,000</u>	<u>70,000</u>	<u>70,000</u>	07/01/91 - 06/30/93
Total:				\$10,349,430	\$ 3,662,522	\$12,421,910	
Grants received at start of FY '92-'93 (7/1/92 - 9/4/92)					<u>2,849,929</u>		
Grand Total:					\$ 6,512,451		

# **APPENDIX O**

***RESEARCH PROPOSALS  
SUBMITTED  
1991-92***

**BIOLOGY DEPARTMENT  
1991 CALENDAR YEAR**

**PROPOSALS**

**January**

Principal Investigator	Agency/Proposal No.	Period of Performance	Proposed Funding	Title
Brown, J.	NSF (718)	09/01/91 - 08/31/93	\$ 10,000	Bat-Plant Interactions: A Multi-Species Approach
Brown/Gannon	NSF (717)	07/01/91 - 06/30/93	10,000	Ontogeny of Onychomys Vocalizations using Cross-Fostering Techniques
Gosz, J.	NSF (529I)	05/01/91 - 04/30/92	19,500	REU to LTER
Gosz, J.	NMWRRI (707)	03/15/91 - 03/15/92	28,174	Sewage Sludge Appl. Semiarid Grasslands: Effects on Vegetation/Water Quality
Grover/Gosz/Moore	NMWRRI (636A)	07/01/91 - 06/30/92	24,989	Analysis of Relationship between Lightning, Precipitation and Runoff
Milne, B.	Chino Mines (703)	06/01/91 - 05/31/92	76,528	Integrated System for Fractal Design, Ecolog. Analy., Geographic Info. Mgmt.
Natvig, D.	NSF (550C)	03/01/91 - 02/28/93	104,000	Cellular Responses to Superoxide-mediated stress in <i>N. crassa</i>
Riedesel, M.	NASA-HQ (704)	04/01/91 - 03/30/92	105,353	Glycerol-induced Hyperhydration on Lower-body Negative Pressure Responses
Riedesel, M.	NASA-Houston (705)	04/01/91 - 03/30/92	105,353	Glycerol-induced Hyperhydration on Lower-body Negative Pressure Responses
Snell, H.	US-AID (716)	04/01/91 - 12/31/93	153,559	Galapagos Islands Biosphere Reserve: Analysis Biol. Diversity/Human Impact
Stricker, S.	Eppley Fnd. (710)	06/01/91 - 05/31/92	28,222	Nucleus & Intranuclear Calcium Dynamics During Early Development
Stricker, S.	NIH (711)	12/01/91 - 11/30/95	449,786	Nucleus & Intranuclear Calcium Dynamics During Early Development
Thornhill, N.	Guggenheim Fnd. (714)	07/01/91 - 06/30/93	78,476	Evolutionary Psychology of Sexual Coercion
Toolson, E.	NSF (702)	07/01/91 - 06/30/94	171,709	Epicutic. Hydrocarb. <i>Drosophila melanogaster</i> : Direct/Coorel. Respon. to Selection
Trotter, E./Thomson	NMWRRI (709)	04/01/91 - 03/31/92	30,850	Comp. Septic Drain Field/Alt. Biofilter at Residence to Small Comm. Scale
Werner-Washburne, M.	NSF (566F)	04/30/91 - 04/30/92	21,375	Gene Reg. in Starvation-induced Arrest in Yeast <i>Saccharomyces cerevisiae</i>
White, C.	NMWRRI (708)	06/01/91 - 12/31/91	26,900	Aquatic Ecology/Toxicology & Lab: A Course Development Proposal
White, C.	NMWRRI (715)	07/01/91 - 06/30/92	24,986	Role-Dominant Electron Acceptor & Contaminant Concentration/Aquifer Bioremed.
Wisdom/Crawford	USDA (706)	06/01/91 - 05/31/94	<u>222,127</u>	Influence of Chemical Heterogeneity on Plant Pest Distributions
<b>Total:</b>			<b>\$1,691,887</b>	

**February**

Brown, J.	NSF (496G)	05/01/91 - 08/31/91	\$ 4,148	REU: Long-Term Monitoring/Manipulation of Desert Granivore System
Cook/Duszynski	NSF (568C)	05/01/91 - 05/01/92	12,860	Mammalian Diversity in Bolivia - The Yungas and Valles
Dahm/Campana	NSF (671A)	05/01/91 - 04/30/92	10,000	REU: Stream Hyporheic Zones: Hydrology, Biogeochemistry/Links to Water/Plants
Gosz, J.	NSF (450I)	05/01/91 - 04/30/92	10,000	REU: Long-Path FTIR Analysis-Biospheric/Atmospheric Interactions
Gosz et al.	NSF (585A)	05/01/91 - 04/30/92	49,600	REU: Ecosystem Studies: REU Site with Sevilleta LTER Program
Loker, S.	NIH (712)	09/01/91 - 08/31/92	10,962	Small Instrumentation Program

Principal Investigator	Agency/Proposal No.	Period of Performance	Proposed Funding	Title
Marshall, D.	NSF (547D)	05/15/91 - 12/31/91	10,025	REU: Mechanisms of Non-Random Mating in Wild Radish
Musick/Truman	USDA (721)	06/01/91 - 05/31/94	211,365	Influence of Rangeland Vegetation on Eolian Sediment Transport
Platania, S.	NMGP (719)	03/01/91 - 03/30/92	11,818	Upper San Juan River Studies
Snell/Altenbach	NMGP (720)	DOA - 07/31/91	4,000	Jemez Mountains Salamander
Watwood/Thomson	Pegasus (110-307)	03/01/91 - 11/01/91	<u>32,179</u>	ID/Eval. Treatment Tech. Water Contamination from Gold Mining
<b>Total:</b>			<b>\$ 366,957</b>	

## March

Brown, J.	NSF (496F)	01/01/91 - 06/30/92	\$ 88,730	REU: Long-Term Monitoring/Manipulation of Desert Granivore System
Campana/Dahm	NSF (671B)	06/01/91 - 05/31/92	6,000	RAMHSS Suppl. to Stream Hyporheic Zones
Dahm, C.	EPA (723)	10/01/91 - 09/30/93	67,350	Harbingers of Anthropogenic Ecosystem Stress: Mycorrhizal Fungi/Weedy Plants
Gosz, J.	NSF (529J)	06/01/91 - 05/31/91	12,000	RAMHSS Supplement to LTER
Gosz/Dahm	NSF (450J)	05/01/91 - 04/30/92	6,000	Minority H.S. Student Supp.-Long-Path FTIR Analysis of BLiosphere/Atmosphere
Lowrey, T.	NSF (725)	06/15/91 - 06/15/92	24,870	Evolutionary Systematics & Genetics of Tetramolopium
Platania, S.	US Bur.Reclm.(688A)	09/29/90 - 09/30/95	-0-	No cost extension - Ichthyofaunal Studies
Riedesel, M.	NASA (551C)	06/01/91 - 10/01/92	78,509	Glycerol-Induced Hyperhydration
Snell, H.	NMGP (724)	03/20/91 - 12/31/91	10,000	Status of Threatened Sand-Dune Lizard in Southeastern NM
Snell/Stone	Danforth Fund (726)	05/01/91 - 08/31/91	1,000	Effects of Cat Predation on Lava Lizard Behavior/Morphology
Stricker, S.	NIH (648A)	04/01/92 - 03/31/93	156,592	Laser Scanning Confocal Microscope
Toolson, E.	NSF (530F)	02/15/91 - 07/31/92	50,000	Thermal Physiology of Cicadas/Regulation of Cuticular Permeability in Insects
Trotter/Thomson	WRRF (709A)	04/01/91 - 03/31/92	25,000	Comparison of Conventional Septic Drain Field & Alt. Biofilter - Small Scale
Vogel, K.	D. Runyon (722)	09/01/91 - 09/01/94	<u>84,000</u>	Role of Altered Proteoglycans in the Metastatic Process
<b>Total:</b>			<b>\$ 610,551</b>	

**FIRST QUARTER TOTAL:** **\$2,668,895**

## April

Crawford et al.	NSF (728)	09/01/91 - 08/31/93	\$ 119,834	Sevilleta Field Station: Lab Equipment for Ecological Research
Crawford/Molles	USFWL (727)	05/01/91 - 04/30/92	79,894	Manipulative Flooding Effects of Bosque del Apache National Wildlife Refuge
Gosz, J.	NSF (450K)	02/01/91 - 01/31/92	200,000	Long Path FTIR Analysis-Ecosystem Processes/Landscapes & Spatial Scales
Gosz, J.	NSF (529K)	05/01/91 - 04/30/93	147,595	Implementation & Evaluation of Software for Collaboration
Gosz, J.	NSF (529L)	05/01/91 - 04/30/92	50,273	Enhancement of Data Mgmt. Capabilities for GIS & Remote Images
Gosz/Parmenter	USNPS (730)	06/01/91 - 05/31/94	90,000	El Malpais Nat'l Monument: Survey of Biological Resources

Principal Investigator	Agency/Proposal No.	Period of Performance	Proposed Funding	Title
Natvig, D.	NSF (550D)	06/01/91 - 08/31/92	39,900	Cellular Responses to Superoxide-Mediated Stress in <i>N. crassa</i>
Snell, H.	NMG&F (724A)	07/01/91 - 12/31/93	33,906	Status-Threatened Sand-Dune Lizard in SW New Mexico
Stricker et al.	NSF (729)	01/01/92 - 12/31/92	106,592	Acquisition of a Confocal Microscope
Werner-Washburne, M.	NSF (608B)	07/01/91 - 06/03/92	22,727	PYI - yr. 2; Role of Gene Regulation in Starvation-Induced Arrest in Yeast
White, C.	NMWRRI (708A)	06/01/91 - 12/31/91	<u>9,550</u>	Aquatic Ecology/Toxicology & Lab: A Course Development Proposaly
			<b>\$ 900,271</b>	

#### May

Duszynski/Cook	NSF (568E)	06/01/91 - 11/30/92	\$ 25,084	Cont. - Mammalian Diversity in Bolivia: The Yungas & Valles
Duszynski/Yates	NSF (568E)	07/01/91 - 06/30/92	17,081	Mammalian Diversity in Bolivia: The Yungas & Valles
Fitzgerald, L.	USDE (124-109A)	09/01/91 - 04/01/92	19,700	Conservation Biology & Sustained Use of Tegu Lizards in Argentina
Loker, E.S.	PHS (733)	01/01/92 - 06/30/92	18,875	Trypanosome Receptors for Tsetse Fly Lectins
Marshall, D.	NSF (557D)	07/15/91 - 07/14/92	25,000	PYI 3rd yr. base: Non-Random Mating in Plants
Marshall, D.	NSF (557E)	07/15/91 - 07/14/92	12,721	PYI 2nd yr. Matching NSF Component: Non-Random Mating in Plants
Marshall, D.	NSF (557F)	07/15/91 - 07/14/92	12,721	PYI 2nd yr. Matching Private Component: Non-Random Mating in Plants
Miller, G.	NSF (736)	06/01/92 - 09/30/94	135,849	Foraging Behavior-So. Polar Skuas: Nest Attendance & Foraging Efficiency
Miller, G.	NSF (595B)	06/01/92 - 09/30/94	148,197	Reproductive Strategies of So. Polar Skuas: Role of Food-Chick Survival
Milne, B.	NSF (699A)	06/15/91 - 06/14/94	300,000	Phase Transitions & Critical Phenomena in Woodland Ecotones
Natvig, D.	NSF (550E)	06/01/91 - 08/31/92	20,597	Cellular Responses to Superoxide-Mediated Stress in <i>N. crassa</i>
Nelson, M.	NSF (731)	01/01/92 - 12/31/96	769,935	Molecular Analysis of Sexual Development of Neurospora
Nelson, M.	NIH (732)	04/01/92 - 03/31/97	349,884	Molecular Analysis of Sexual Development of Neurospora
Taper, M.	NSF (734)	04/01/92 - 03/31/93	59,612	US-Japan Coop.Res.:Empirical Invest. of Evol.-Genetic Covariance Matrices
Werner-Washburne, M.	NSF (608C)	07/01/91 - 06/30/92	26,564	Role of Gene Regulation in Starvation-Induced Arrest in Yeast
Yates/Cook	NSF (568D)	04/01/91 - 06/01/91	8,000	Preadward request for partial funding for yr. 2 (Mammalian Diversity)
Yates/Gannon	NMG&F (701A)	05/01/91 - 12/31/91	<u>10,664</u>	Genetic Analysis of Sandhill Cranes - Amd. for Equipment
<b>Total:</b>			<b>\$1,960,484</b>	

#### June

Brunt, J.	NSF (738)	08/01/91 - 02/01/93	\$ 51,445	Environmental Info. Mgmt. & Analysis: Ecosystem to Biosphere Scales
Milne, B.	NSF (609A)	07/01/91 - 07/01/92	12,720	PYI-Contributions: Fractal Analysis of Landscapes
Milne, B.	NSF (609B)	07/01/91 - 07/01/92	12,720	PYI-Matching Contributions, Yr. 1: " "
Milne, B.	NSF (609C)	07/01/91 - 07/01/92	25,000	PYI-Base Grant for yr. 2: " "
Musick, H.B.	NMIMT (737)	08/15/91 - 08/15/94	66,270	Analysis-Remotely Sensed Data-Studies of Soil Water Bal.-Semi-arid Lndscaps

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Principal Investigator	Agency/Proposal No.	Period of Performance	Proposed Funding	Title
Musick/Truman	NASA (128-361)	08/15/91 - 08/14/93	203,680	Wind Erosion in Semiarid Landscapes: Predictive Models/Remote Sensing
Musick/Truman	NASA (128-391)	08/15/91 - 08/14/91	203,680	Wind Erosion in Semiarid Landscapes: Predictive Models/Remote Sensing
Vogel, K.	NIH (401E)	09/01/91 - 08/31/92	197,932	Proteoglycan Structure, Metabolism & Role in Tendon
Werner-Washburne, M.	NSF/UNM Dev.(608D)	07/01/91 - 06/30/92	<u>17,721</u>	(PYI Cash Donations) Role of Gene Regulation
<b>Total:</b>			<b>\$ 791,168</b>	

**SECOND QUARTER TOTAL:** **\$3,651,923**

### July

Altenbach, S.	NMEMNRD (692A)	07/01/91 - 06/30/92	\$ <u>5,000</u>	Evaluation of Bat Population & Bat Habitat Research (yr. 2)
<b>Total:</b>			<b>\$ 5,000</b>	

### August

Barton, L.	DOE/WERC (627B)	01/01/92 - 12/31/92	\$ 38,221	Biotechnology in Mgmt. of Industriail Wastes Containing Lead or Chromium
Barton/Ross	DOE/WERC (110-325)	01/01/92 - 12/31/92	55,000	Biocorrosion & Flocculation Measurements in Waste Systems
Barton/Thompson	WERC (110-330)	01/01/92 - 12/31/94	198,428	Investigation of Microbial Reduction of Uranium (VI) Below Mill Tailings
Brown, J.	NSF (718A)	01/01/91 - 12/31/92	6,400	Bat-Plant Interactions: A Multi-Species Approach
Brown/Marquet	NSF	05/01/92 - 04/30/94	19,000	Patterns in Geographic Structure of Species Assemblages
Duszynski/Patrick	NSF (740)	03/01/92 - 02/28/94	8,675	Community Ecology of Parasites from Merriam's Kangaroo Rat
Werner-Washburne, M.	NSF (566H)	11/15/91 - 11/15/92	<u>61,586</u>	Role of Gene Regulation in Starvation-Induced Arrest in Yeast
<b>Total:</b>			<b>\$ 387,310</b>	

### September

Barton, L.	NIH (745)	07/01/92 - 07/31/93	\$ 51,093	Imaging Living Cells by Fast/West Electron Microscope
Dahm, C.	EPA/SDSU (723A)	09/15/91 - 09/14/92	26,261	Anthropogenic Ecosystem Stress: Cycorrhizal Fungi & Weedy Plants
Gosz, J.	NMWRRI (707B)	04/01/91 - 03/31/92	25,766	Sewage Sludge Applic.-Semiarid Grasslands:Effects - Vegetation/Water Quality
Gosz, J. et al	NSF (685B)	05/01/92 - 04/30/95	151,800	REU: Establishment of REU Site with Sevilleta LTER Program
Loker, E.	NIH (572B)	12/01/91 - 11/30/92	139,666	Role of Lectins in Snail-Trematode Associations
Loker, E.	NSF (743)	06/01/92 - 05/31/95	400,146	Evaluating Educational Effectiveness & Increasing Minority Student Retention
Nelson, M.	HFSP (744)	01/01/92 - 01/01/95	184,710	Sexual Dev. Filamentous Fungi: Mating-Specific Genes of Neurospora & Podospora
Platania, S.	USBR (688B)	09/30/91 - 07/01/92	<u>15,000</u>	Ichthyofaunal Studies of Federally Listed Species, Pecos River, NM
<b>Total:</b>			<b>\$ 994,442</b>	

Principal Investigator	Agency/Proposal No.	Period of Performance	Proposed Funding	Title
<b>THIRD QUARTER TOTAL:</b>			<b>\$1,386,752</b>	
<b>October</b>				
Caprioglio, D. et al	NSF (690)	05/01/91 - 04/30/94	\$ 32,600	Isolation & Characterization of Stationary Phase Expression Genes in Yeast
Lowrey, T.	NSF	06/01/92 - 06/01/94	462,054	Evolutionary Genetics of Adaptive Radiation in Tetramolopium
Marshall/Mitchell	Eppley Fnd.(748)	01/01/92 - 01/01/93	25,068	Sexual Selection & Mating Response in Wild Mustard, Lesquerella Fendleri
Werner-Washburne, M.	Johnson/Johnson	02/01/92 - 01/31/96	<u>159,960</u>	Regulation of Gene Expression during Starvation-Induced Arrest in Yeast
<b>Total:</b>			<b>\$ 679,682</b>	
<b>November</b>				
Degenhardt, W.	NMGF (753)	01/01/92 - 01/01/93	\$ 5,757	Book MS Prep. - The Amphibians & Reptiles of NM
Marquet/Brown	AID/WWF(749)	05/01/92 - 12/31/93	14,791	Small Mammals Conservation Puna Area Bolivia & Argentina
Milne, B.	EPRI (752)	01/01/92 - 12/31/94	112,500	Fractal Indicators of Ecological Responses to Climate Change
Palma/Yates	AID/WWF (751)	06/15/92 - 08/15/92	14,470	Conservation of Small Paraguayan Mammals
White, C.	Pegasus (750)	12/01/91 - 06/01/92	<u>9,980</u>	Dev. of Field-Scale Appl. to Bioremediate Cyanide/Nitrate Contamination
<b>Total:</b>			<b>\$ 157,458</b>	
<b>December</b>				
Lowrey, T.	NSF (759)	06/01/92 - 05/31/94	\$ 293,211	Genetic Analysis of Adaptive Radiation in Tetramolopium (Asteraceae).
Mistry, S.	AID (754)	01/15/92 - 01/15/93	7,976	Ecology of Indian Megachiropteran Bats
Musick/Truman	NASA (758)	01/01/92 - 06/30/93	112,500	Wind Erosion in Semiarid Landscapes
Platania, S.	USBSR (688C)	12/02/91 - 07/01/92	15,000	Coop. Agreemt.-Ichthyofaunal Studies, Pecos River, NM
Snell/Miles	NSF (761)	07/01/92 - 06/30/96	328,169	Roles of Natural Selection in Evolution of Sexual Dimorphism in Body-Size
Stone, P.	SSAR (764)	05/01/92 - 08/01/92	300	Sexual Selection in Lava Lizards: A Pilot Study
Stone, P.	ABS (763)	05/01/92 - 08/01/92	1,000	Sexual Selection in Lava Lizards: A Pilot Study
Stricker, S.	NSF (757)	01/01/93 - 01/01/96	178,823	Confocal Microscopy Facility
Vogel, K.	H.Hughes (765)	06/01/92 - 06/01/97	<u>897,553</u>	H. Hughes Undergraduate Curriculum Education Initiative
<b>Total:</b>			<b>\$1,834,532</b>	
<b>FOURTH QUARTER TOTAL:</b>			<b>\$2,671,712</b>	
<b><u>GRAND TOTAL:</u></b>			<b><u>\$10,379,282</u></b>	



# **APPENDIX P**

***UNM BIOLOGISTS  
IN THE NEWS  
1991-92***

# METROPOLITAN

Thursday, May 28, 1992

Albuquerque Journal

## UNM Biology Department Gets \$1 Million

### Goal Is To Stimulate Interest in Science

The University of New Mexico biology department asked for \$900,000 over five years to give New Mexico college seniors hands-on laboratory experiences. The Howard Hughes Medical Institute gave it \$1 million.

The goal of the grant, announced Wednesday by UNM, is to stimulate undergraduate interest in science, especially among women and minorities. Among other things, the money will pay for 15 seniors from UNM and other New Mexico colleges, at least half of whom will be women and minorities, to get the

kind of laboratory experiences that budget cuts have made less available to undergraduates.

"A major problem, nationally, which also affects UNM, is that we keep cutting back on lab courses because there's no money for equipment and supplies," said UNM professor Kathryn Vogel, associate chairperson of the biology department.

In a press release, Vogel said the college seniors who enroll in the grant-sponsored program will perform such high-tech procedures as determining the sequence of subunits that make up the genetic instructions of a DNA molecule.

"They can get jobs anywhere if they know how to do this," Vogel

said in the release. "And they get excited because they're actually doing something instead of hearing about it."

The Maryland-based institute, named after the iconoclastic manufacturer, aviator and motion-picture producer, primarily is a benefactor of medical research.

However, three years ago it adopted a new program to attract more students into the sciences. The institute has committed \$176 million to 181 institutions since founding the new effort.

In January, UNM submitted a \$900,000 proposal to underwrite student research and curriculum and laboratory development over five years. The institute gave it \$1 million.

## Teens Make No Bones About Work

By Laura K. Trujillo

JOURNAL STAFF WRITER

**C**ABINETS full of critters. Dead critters. That's what Marcos Sandoval, 15, said he saw when he began his summer job at the University of New Mexico Museum of Southwestern Biology earlier this month.

"When I first got there I wanted to quit. It was gross with dead animals everywhere," Sandoval said Wednesday afternoon.

But after two weeks on the job, Sandoval said the critters are "neat."

Through the federally funded Summer Youth Employment and Training Program, which provides jobs for low-income youth ages 14-21, Sandoval and about 1,000 other Albuquerque young people are working at non-profit agencies this summer.

The youths work part-time and full-time jobs for the minimum hourly wage of \$4.25, said Mary Ann Caldwell, the placement coordinator. They work in different jobs across the city including clerical, custodial and research work, she said.

Sandoval, who said he wants to become a veterinarian one day, is one of four teens working at the museum's collection division.

He spends 20 hours a week in the basement of UNM's Castetter Hall labeling small and large mammals. Wednesday afternoon Sandoval was numbering the bones of wood rats that were gathered in Socorro.

Sandoval, who will be a sophomore at Rio Grande High School in the fall, said the job has helped him learn the differences in the skeletons of small mammals.

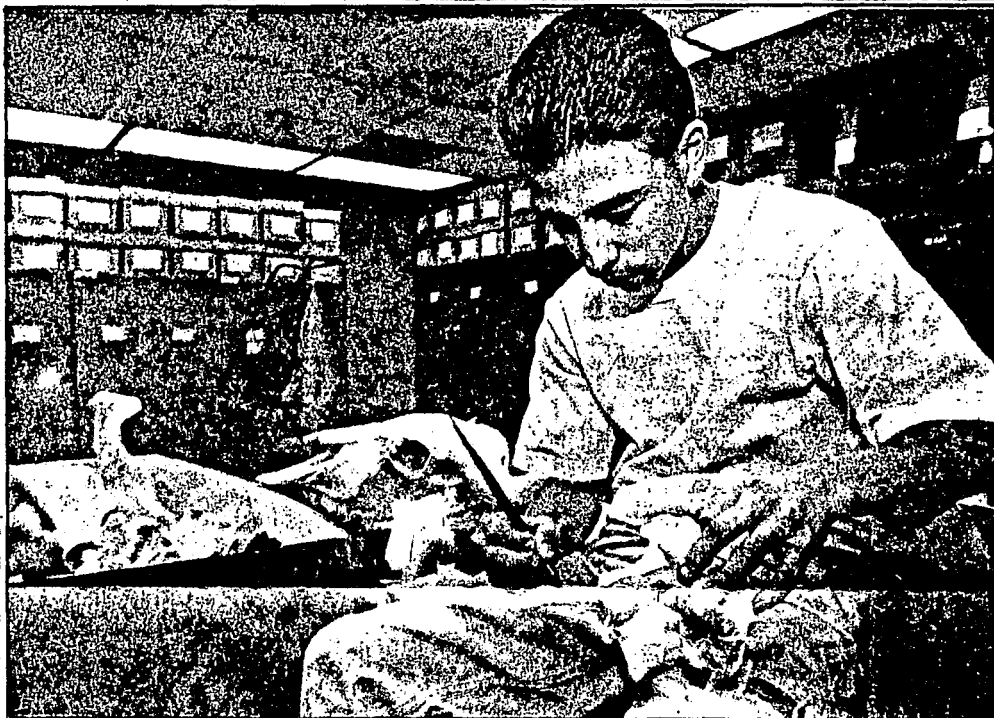
"And it's much better than flipping burgers," he said, laughing.

Sandoval said he had anticipated working with live animals.

"But these kind are interesting too," he said, pointing to a tray of Bolivian shrews — small mouse-like mammals.

Fellow worker Haies Johnson, 17, held the pelvis of a black bear and numbered its bones.

Johnson, who said she wants to be a marine biologist one day, said the practical experience of working with animals will help her in school.



JIM THOMPSON / JOURNAL

Levi Lucero, 15, numbers American Bison bones in the basement of UNM's Castetter Hall as part of his job at the Museum of Southwestern

Biology. The Summer Youth Employment and Training Program has put about 1,000 youths in jobs at non-profit agencies.

"We never would get to work with all of these," she said, looking around the room filled with cabinets holding the remains of 67,000 mammals. But the job doesn't always keep the teen-agers in the basement numbering bones.

The job also allows them to work with other biologists at the university, said Bill Gannon, the museum's collection manager who oversees the teen-agers in the program.

Gannon, sitting in his office with mounted deer heads and a stuffed bobcat hanging above him, said the students also work in the university's labs, sorting small mammal tissues.

"They get to see what biologists really do. We aren't just people in white coats running around," he said.

As Gannon explained the benefits the teens gain from working at the university, the teens

wandered in and out of his office with questions. Gannon patiently answered them.

"Sometimes the training takes longer than the task," he said, laughing. "But we do get some labor out of them."

"We mostly try to have a positive influence on the kids," he said, noting that two former teen-agers from the program recently entered school at UNM in the biology department.

## Violation Forces



## Judge Says Man Not Extraditable

# AGES IN THE HOLE

**There are up to 50,000 abandoned mines scattered across New Mexico. They are refuges for wildlife and potential death traps for unwary adventurers. Locating and sealing these shafts is a specialized job for a careful few.**

By Fritz Thompson

JOURNAL STAFF WRITER

Scooped over and walking single file, a small group of people has followed a geologist into the gloom of an abandoned metal mine reaching through solid rock for a hundred yards and more under the Cerrillos Hills.

"This is the kind of mine you could die in, in a split second and without warning, it can swallow the wanderer and the unwary. Like many of the thousands of other played-out mines around the state, it is the classic cliché: an accident waiting to happen."

Two men stand between here and tragedy. Their job is to seal up these forgotten mines, shutting shafts and blocking tunnels, making them inaccessible to humans and, coincidentally, erasing evidence of New Mexico's past, perhaps forever.

Harner Allford and Randall Roush, both with a couple of feet bent round with the abandoned labyrinth of the abandoned, are doing this partly because they have advanced degrees in biology and partly because they have more than a passing acquaintance with bats.

Never foolhardy, they don't probe the depths without belts, ropes, 50-foot ladders, oxygen meters, winches and lights.

They say there are between 20,000 and 50,000 abandoned mines in New Mexico. The 30,000 difference is because no one really knows where all the holes are. Sometimes they find out because a foolish adventurer goes inside and gets killed. It happened at least twice last year.

**Introduction to danger.**

The trek into the Cerrillos Hills mine is being led by a state geologist named Rick Soelke. In the narrow passage down and over the hill, he and his assistant



rather, he says, "I got tangled up."

Several times, Koehler says, he had a small alcove. Here, when he becomes apparent, why there are so dangerous.

In the alcove, only a few feet off the main passageway, is the opening to a vertical shaft in the floor. Square, about 8 feet on a side, a black hole, no fence, no rail, no warning. Straight down. Three hundred feet. Maybe more. You could step right off into it.

That's what happened last year when two people died in mines just like this one.

In the shadows, cast by headlamps, Koehler is standing at the precipice of this shaft, his arms outstretched, holding a rock a little bigger than his fist. He drops it. It doesn't weigh, and for a second there is no sound.

But two seconds down and the rock begins to ricochet off the walls of the shaft. Five seconds later, it has hit the bottom.

Seven seconds and the sound of the rock is far away. Two more seconds and the rock has fallen to the bottom. Either the rock has fallen to the bottom, or it has hit bottom. No one is sure.

"You can't tell," says Koehler, "how it would be the time problem for someone who comes into a place like this with no more light than a book of matches."

### Mines take their toll

Last year, two teen-age boys died in two New Mexico mines, one near Corona and one near Organ. Both fell while walking along a tunnel, one with a dim-bulb flashlight and another with matches.

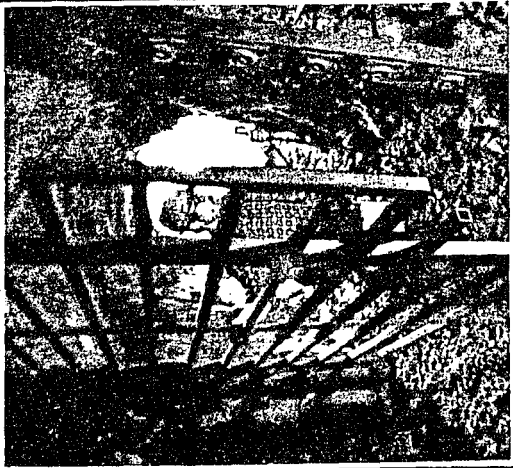
The body of a third person, never identified, was found near Organ, floating in water 80 feet down a shaft open to the surface. Investigators could not determine if he fell in and died by accident or if his body was thrown down the shaft by someone else. The Organ shaft mine has gone through a long procedure

WASH. POST STAFFS Q.D. on PAGE 12



the Abandoned Mine Land Bureau. Milford was for more than 20 years a college biology professor at the University of Albuquerque and the University of New Mexico.

At top, state geologist Rick Koehler exits hole daylight from the Grand Central Tunnel Mine. Above, Homer Milford investigates shafts in the Stevenson-Barnett Mine. Before going to work with



Above, Homer Milford, left, Scott Attenbach and Randall Armitage look for bats in a mine. "There's growing evidence that abandoned mines may be the bats' last chance for survival," says UNM biologist Attenbach. "Man's interference has had a negative effect in other places. Mines are good habitats because they tend to have less ventilation than caves." No mine is closed without an inventory of bats, summer and winter. At right, Rick Koehler kneels behind a gate that lets small animals come and go, but not people.

Journal Photos  
By Richard Pipes



# Are Giving Taxonomy A New Lease on Life

From the biological  
backwaters to the  
cutting edge.

By JON R. LUOMA

MADISON, Wis.—At the University of Wisconsin Herbarium, Dr. William Alverson strolled down narrow aisles between rows of vault-like steel cabinets, from time to time pulling open one cabinet door or another to show off a paper-mounted cutting of a plant.

The herbarium houses a library of much of the known plant life on the globe, samples of leaves and flowers collected for more than a century by botanists in places ranging from the diundone (a ditch in rural Wisconsin) to the romantically alien (a Borneo rain forest).

For decades, in adjacent rooms, taxonomists have examined the specimens here, seldom using tools more sophisticated than a microscope, perhaps counting the petals on flowers or examining the shape of pollen grains, with a goal of assigning scientific names or evaluating evolutionary links.

But this categorizing—taxonomy, or systematics, as it is also sometimes called—is now in the forefront of high-tech science. Using new techniques, systematists have begun in recent years to peer into the very molecular heart of evolution and genetics.

In fact, new developments, particularly in the use of molecular techniques, have begun to change the way taxonomists work.

## U.S. Sees Threat to Plover

PORTLAND, Ore., Feb. 17 (AP)—The western shore plover, a small bird that nests in beaches in Oregon, Washington, California and Mexico, may be listed a threatened species by the United States Fish and Wildlife Service.

The agency estimates that the birds number less than 1,500, and has proposed adding the plover to its list of threatened species.

The plover has lost nesting and breeding sites in the three West Coast states, said the agency, which has identified 28 breeding grounds. The

lately a process called polymerase chain reaction, for slicing out and amplifying infinitesimal molecular bits of genetic material, make it possible for biologists to analyze evolutionary differences at a level of detail not even imaginable a decade or so ago. Scientists can even study in detail scraps of hair or tissue from organisms long extinct.

### 'A Whole New Realm'

"Systematics is no longer 'old fashioned stuff,'" said Dr. Michael Novacek, vice president and dean of science at the American Museum of Natural History in New York. "It represents some of the most fascinating and progressive sides of biology. It's a whole new realm that gives you a way to look at all the genetic relationships between organisms."

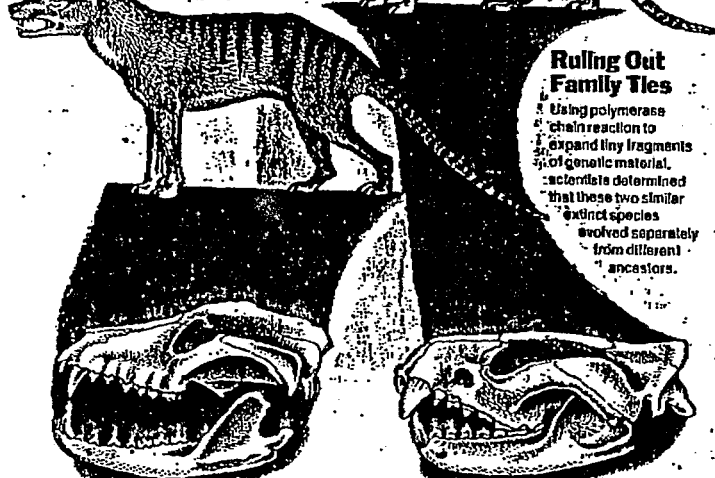
By using polymerase chain reactions and related technologies to clone more than a million virtually perfect copies of a few exact molecules of DNA, systematists have been able to study evolutionary change at its most basic level. Such techniques allow scientists to study genes themselves with relative ease.

Most biologists say the new technologies have most often simply verified old taxonomic ideas, but there have been some surprises. Moreover, the molecular work has allowed scientists to settle quite firmly some long-standing evolutionary disputes.

Further, some experts speculate that the techniques that have been developed for taxonomic purposes hold promise for other research, like tracking wild animals without the trappings of a costly and intricate detective work to track the trails in the parts of endangered species.

Barryana, South American  
carnivorous marsupial from the  
Miocene era

Recently extinct Australian  
marsupial wolf



Source: "Vertebrate Paleontology and Evolution" (W. H. Freeman)

Here at Wisconsin, the high-tech future lies one floor above the herbarium. In a corner office, on a low table, sits a device about the size of a microwave oven, a polymerase chain reaction machine. Dr. Alverson refers to it as "our very expensive hoplart."

### Millions of Molecular Copies

The polymerase chain reaction process, developed on the Cetus Corporation in California, allows a scientist to separate the two strands of a DNA double helix. Then, using a chemical "primer," a researcher can slice out an infinitesimal snippet of a few molecules of a single strand of DNA, the basic genetic coding material of living things. In heating and cooling cycles that last about three minutes, polymers cause the DNA to reproduce itself repeatedly, splitting again, doubling again, in each cycle.

The result of all the doubling is eventually enormous. "You can get an inch of a tent from another scientist in Australia by Federal Express, and by the next morning have literally hundreds of millions of copies of a 'the gene you want to look at,'"

said Dr. Alverson. Molecular biologists use some standard techniques to compare such DNA samples, including electrophoresis, in which tiny samples are embedded in a gel and subjected to electric current to compare the rates at which the samples migrate toward an electrical pole.

Most systematists caution that such molecular approaches cannot altogether replace traditional or morphological taxonomy. "Right now, the molecular techniques are prohibitively expensive in some cases," said Dr. Steven Scholten, a biologist at the University of Wisconsin's Whitewater campus, and a specialist on tropical chocolate plants. "You can't walk around a forest with a note pad and survey plants based on their DNA. And if you're interested in evolutionary aspects, you still need to know what an organism's unique physical characteristics are."

But he added: "For the first time, it gets us out of a weird loop. In the past we used the characteristics to try to understand an organism's evolution, and then used evolution to try to understand the characteristics, often not knowing for certain that

we'd gotten the first part absolutely right."

Molecular techniques allow scientists to look with precision at dozens or even hundreds of characteristics, rather than the relative handful of visible traits used for comparison in traditional taxonomy.

### Taxonomists Were Mainly Right

Most systematists point out that the vast majority of molecular studies so far have merely verified the hypotheses developed in the past, showing, for instance, that taxonomists comparing the jawbones of bats or the pollen of a tropical plant have nearly always traced evolutionary patterns accurately.

But the molecular approach can sometimes answer questions that observation cannot.

One of the great advantages of the molecular studies is that they are not clouded by convergent evolution, in which two species evolving in similar environments come to have similar characteristics. Such similarities have sometimes misled biologists into believing that two species were descended from a common ancestor.

## Ruling Out Family Ties

Using polymerase chain reaction to expand tiny fragments of genetic material, scientists determined that these two similar extinct species evolved separately from different ancestors.

the long-extinct boryanena, a South American marsupial carnivore. Dr. William Rainey, a biochemist at the Museum of Vertebrate Zoology at the University of California in Berkeley, said the teeth of the two carnivores were so similar that some paleontologists insisted that the two species had to be relatively recently evolved from a common ancestor.

In what Dr. Rainey called a "fairly heated dispute," however, many mammalogists insisted that the Australian marsupial wolf, which itself probably became extinct around 1910, more likely evolved separately in a direct line from other Australian marsupials, along with carnivores like the Tasmanian devil.

### Settling a Dispute

In a 1989 paper in the Journal Nature, Dr. Richard Thomas of the British Museum of Natural History and a group of colleagues reported that molecular analysis had settled the issue: the Australian carnivore's DNA was closely related, as the mammalogists suspected, to Australian marsupials. The two groups' teeth, and indeed their basic wolf-like appearance, had evolved separately as the carnivores filled similar predatory ecological niches on separate continents.

Dr. Norman Arnheim, a molecular biologist at the University of Southern California, said the new technologies paradoxically do not diminish but rather greatly enhance the importance of traditional taxonomic collections. "Even pellets of animals in museums take on new importance," he said. Indeed the marsupial carnivore controversy was settled using tiny pieces of tissue from samples of the extinct animals.

The future uses of the new methods in field biology and ecology appear to be both bright and remarkable. In a 1990 paper for the Journal Bioscience, Dr. Rainey, Dr. Arnheim and Dr. Tom White, a molecular biologist at Hoffmann-La Roche Inc., speculated that its use in field biology could be wide ranging.

In the past, detailed studies of the genetics of wild animals virtually always involved capturing live specimens, at least temporarily. In many cases, determining parent-offspring sibling relationships was difficult or impossible. But the new techniques suggested that it might be possible in the near future to survey or study wild populations solely from bits of cast-off internal tissue found in feces or urine, or from tiny samples of lost or nibbled-off hair.

Further, Dr. Rainey has experimentally used polymerase chain reactions and related techniques to identify powdered rhinoceros horn, suggesting that forensic wildlife detectives could use such techniques for tracking the trade in rhino horn, elephant ivory or other endangered species parts.

note: Exm. notes

# Taxonomy, Lacking in Prestige, May Be Nearing a Renaissance

By JON R. LUOMA

**T**HE Rodney Dangerfield of the biological sciences finally appears to be getting some respect, although some biologists suggest that it may be too little and too late.

Taxonomy, the science of naming organisms, is arguably the oldest of the biological disciplines, reaching back in written form to the Bible and Aristotle. In its more modern incarnation, taxonomy was born in the great catalogues of known species assembled by the Swedish naturalist Carolus Linnaeus in the mid-18th century.

But beginning in the latter half of this century, the discipline, which often used tools no more sophisticated than a calipers or magnifying glass, began to lose its luster as biologists specializing in cell work and genetics increasingly began high-tech explorations of cellular and molecular functions.

Taxonomists' prestige has been battered to such an extent that some of their peers in other disciplines have virtually disparaged taxonomy as "not a real science," said Dr. William Alverson, a taxonomist at the University of Wisconsin. Part of that attitude may be understandable, Dr. Alverson acknowledged, in that the discipline is descriptive, rather than experimental.

Paradoxically, the decline took place even as the science was advancing dramatically. Many people

## Species are dying out before they are even identified

working in taxonomy today call their science "systematics" to reflect a science that now looks beyond the naming of species and more deeply into the evolutionary and ecological relationships among organisms.

One consequence of the erosion in prestige for taxonomy/systematics has been a decline in funds for research and in academic jobs. Some biologists have begun to express alarm that this decline, which may take years to fully reverse, has occurred while entire communities of species are disappearing before they can even be identified.

"The commitment to systematics has simply been abandoned at a number of universities," said Dr. Michael Nováček, vice-president and dean of science at the American Museum of Natural History, and president of the Society of Systematic Biologists.

In a series of reports beginning in the late 1980's, such agencies as the National Academy of Sciences and the National Science Board, which oversees the activities of the National Science Foundation, warned that systematics was in a deep decline.

A report by the science board in 1989 noted that there were 1,154 doc-

toral and master's candidates combined that year, compared with 1,298 Ph.D. candidates alone in 1985. "A lack of professional opportunities discourages students from pursuing systematics in graduate school," the report stated.

"How can you encourage a bright-eyed student to go into a field where there aren't any jobs?" asked Dr. Alverson.

## Increasing Alarm

But systematics may be on the verge of a renaissance. "It's suddenly central to a whole lot of things that are on the cutting edge of biology," said Dr. Terry Yates, director of the systematic biology program at the science foundation. "There's new attention coming across the board. Everybody is at least starting to realize that the decline in support for systematics has become a major problem."

That awareness, however, has yet to translate into huge new support. Dr. James Edwards, the science foundation's deputy director for biotic systems and resources, said Federal budget constraints have meant that specific financing for systematics has increased only a "modest" 10 to 15 percent since 1989.

The revival is propelled by an increasing sense of an alarm among biologists from an array of disciplines about the growing rate of extinction of species, most notably in tropical rain forests.

"Biological diversity is being destroyed at a faster rate than it's being described," said Donald Falk, executive director of the Center for Plant Conservation at the Missouri Botanical Garden. "We have a situation where our library of life is being burned at a phenomenal rate — and we have only a small number of people who know how to read what's left."

Mr. Falk said the alarm was generated in part from the fact that ecosystems that harbor the diversity of life on earth can only be understood, and protected, if scientists know which species exist within them.

## Disappearing Legumes

But there are other vital issues. A significant proportion of new pharmaceuticals, as much as 40 percent, come from chemicals extracted from living plants. These include cancer drugs and a handful of new experimental drugs that hold promise in the fight against AIDS.

Further, some agricultural experts have pointed out that any expansion of the agricultural "green revolution" will likely continue to depend on new discoveries among wild organisms. A National Science Foundation

## The Legacy of Linnaeus

Modern taxonomy was born in the notebooks of Carolus Linnaeus, 1707-78, who set out to catalogue all the plants and animals known in the mid-1700's. "Systema Plantarum," describing about 7,300 plants, was published in 1753, and "Systema Naturae," describing about 4,200 animals, five years later.

But Linnaeus's most lasting contribution may have been his virtual invention of a system of "binomial nomenclature" that is still in use. According to this system, each organism is assigned a two-word Latin or Latinized name to designate its genus (as in Homo) and its species (as in sapiens).

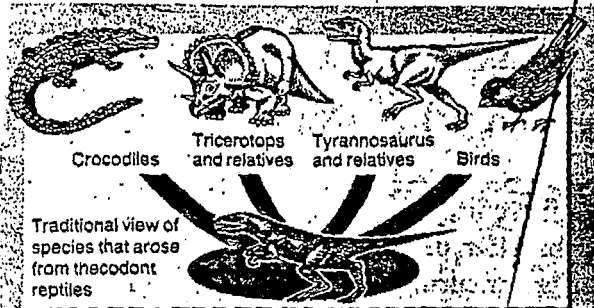
Sometimes names have been chosen for benefit of ego — bearing a taxonomist's Latinized



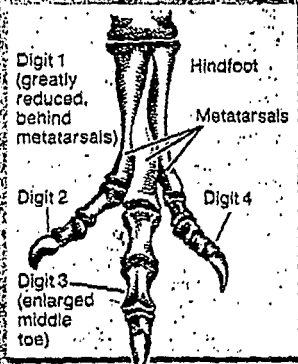
Carolus Linnaeus

name. (Wilsonia citrina for the hooded warbler). Others involved more, evocative, or descriptive whimsy: the grizzly bear is Ursus horribilis and the slink cabbage is Symplocarpus foetidus. And then there is the forest mushroom called *Boletus impudicus*.

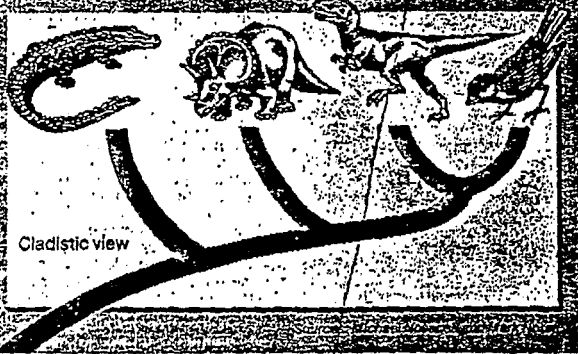




## 2 Kinds of Family Tree



(traditional classification)  
Thecodont reptiles, crocodiles, and two groups of dinosaurs are all considered to be members of the same group, the 'Thecodonts'. This is because they all have a common ancestor, the 'Thecodont reptile'. This is the traditional view of the relationship between these groups.



much the old-fashioned techniques employed since Linnaeus.  
"That's maybe a bit of an exaggeration," he added, "because we used microscopes. And we began using computers to analyze phylogenies, the evolutionary relationships among species. "Nonetheless, the actual going about things was much the same — one dissected flowers, and one examined hairs on backs of leaves, and counted petals — essentially, we were attempting what Linnaeus was attempting."

### A Striking Change

The nature of taxonomy, however, has gradually changed, beginning in the 1950's with an increasing emphasis on identifying the evolutionary relationships among species, rather than on simply naming them.

Undoubtedly the most striking philosophical change in the field has been the growing acceptance since the 1970's of a once-controversial approach to systematics called "cladistics."

As Dr. Novacek explains it, cladistics involves a more rigorous and logical analysis of the evolutionary relationships of species. Cladistic specialists attempt to identify unique characteristics (called "apomorphs") that differentiate species or groups of species from related species. With enough such sorting, often based on new biotechnological approaches to replicating and analyzing DNA, taxonomists can construct more detailed evolutionary "family trees" of species.

One significant consequence of all this cladistic sorting: most taxonomists now would agree with Dr. Novacek that a surprising diversity of direct descendants of the dinosaurs inhabit the earth. Those descendants are not reptiles at all, but birds. In fact, cladistics has shown that all birds are descended from the theropod dinosaurs, including Tyrannosaurus rex.

"If you were going to look for clues to look at the biology of dinosaurs, it would be an important discovery to learn that there are living dinosaurs — or at least their direct evolutionary descendants," said Dr. Novacek. "Birds are actually living dinosaurs."

Beyond that, he says, the new approaches to systematics are critical to understanding the origins of life on earth. Cladistical studies, he pointed out, have revealed that one group of bacteria lies at the apparent evolutionary base of each phylogenetic tree, for bacteria: the thermophilic bacteria that live in and derive their energy not from photosynthesis, but from hot springs. That, in turn, suggests that the earliest, most primitive bacteria were, in fact, thermophilic.

The classification of life is very important because it's like the periodic table in chemistry," said Dr. Novacek. "We can't know how elements interact without knowing how they're organized. We have to know how life is organized if we're going to understand life."

committee has pointed out, for example, that few of the world's 18,000 estimated species of legumes have been investigated as potential sources of genetic stock to enhance world food production. Yet as many as 4,000 legume species in Latin America alone may be close to extinction.

Further, Dr. Novacek said, a better understanding of the taxonomical relationships among species is critical to understanding how life itself has evolved.

"Evolution is not just the history of a species, but the whole evolution of life," he said. "To understand that,

The New York Times (Illustration by Patricia J. Wynne)

you have to find the road maps — the way in which species are related in evolutionary terms." Systematics, he contends, provides that road map. "It is," he suggested, "our window backwards into evolution."

For more than 200 years, from the time of Linnaeus until about the early 1980's, there was precious little change in the way taxonomists went about their work.

Dr. Steven Solheim, a taxonomist and botanist at the University of Wisconsin's campus in Whitewater, said taxonomy was held in low regard "partly because the techniques we employed until recently were pretty

COLLEGE OF ARTS AND SCIENCES  
THE REPORT OF THE DEPARTMENT OF CHEMISTRY

July 1, 1991 to June 30, 1992

Cary J. Morrow, Chair

**A. Significant Achievements During Academic Year 1991-92**

Several significant events involving faculty personnel changes occurred during the course of this past academic year:

Assistant Professor Philip Hampton joined the faculty during the summer of 1991. He will teach in the organic chemistry division and conduct research in the materials chemistry area. John Shelnutt, a senior scientist at Sandia National Laboratory who works in the area of biophysical chemistry, continued in our department as one of the prestigious group of University of New Mexico/National Laboratory Professors. He taught Chemistry 501 this past fall. Jeff Brinker, also of Sandia, continued in the same appointment on a half-time basis in Chemistry (the other half is in Chemical and Nuclear Engineering). Each of these appointments contributes to the evolution of our interdisciplinary development areas: biophysical chemistry and materials chemistry. Professor Roy Caton was on sabbatical leave during the Fall semester of 1991 to work on a set of video tapes to aid students enrolled in Chemistry 121. Professor Vince Ortiz was on sabbatical leave during the Spring semester of 1992 to conduct research at the University of Florida in

Gainesville. He will take the second half of his sabbatical during the Spring semester of 1993. Assistant Professor Thomas Bein resigned from the department to accept a position as a tenured Associate Professor at Purdue University. Professor Carlos Bustamante continued on leave without pay from UNM to be a faculty member at the University of Oregon. Professor Riley Schaeffer continued on a two-year leave without pay to pursue research interests at the University of Colorado. He will retire prior to the beginning of the Fall 1992 semester. Professor Ulrich Hollstein retired on June 30, 1992, after serving on the faculty for twenty-five years. He plans to continue his research activities in the department for at least one year.

In the first major curriculum change in several years, an organic chemistry laboratory sequence, Chem 309L and 310L, was deleted in the Fall of 1991. Our majors now take the same laboratory as other students in Organic Chemistry. A new laboratory course, Chem 415L, Synthesis and Structure Determination Laboratory, taken in the senior year by B.S. majors, was offered for the first time in Fall 1991 with Professor Hampden-Smith in charge. The new course increased the amount of laboratory experience our majors receive in inorganic chemistry. This course retains the experience in determining the structures and provides broader opportunities to explore the instrumentation and other physical techniques at the heart of modern experimental chemistry.

All classes offered by the Chemistry Department are listed in Appendix B.

Despite the ongoing efforts of Carl Hilton, head of the department's Safety Committee, the continuing vulnerability of our old building was once again underlined by a fire in Professor Hampden-Smith's laboratory. Apparently the fire started in an overheated stirring hotplate. Quick action by Professor Hampden-Smith limited the fire to about six feet of one research bench. Had it occurred at night, however, there might have been much greater damage. The damage was largely due to smoke and was cleaned up by Professor Hampden-Smith and his research group within a few days. If there had been adequate fume hood space available in the lab, the experiment probably could have been set up in a hood that would help contain a fire. This need for improved ventilation and additional hood space in the Riebsomer Wing must remain the top priority for capital improvements in A&S.

The Facilities Committee continued to be active this past year. A major renovation of the HVAC system in Clark Hall began about a year ago and is just being completed. There are still some problems with inadequate ventilation and cooling in certain rooms. These problems are being remedied by the contractor, Bradbury and Stamm, in consultation with Larry Schuster of the Physical Plant and Bob Gorrell of Facilities Planning. Fritz Allen, Director of Facilities for the department, continued to work closely with the architectural programming efforts intended

to lead to new, high-quality research space for Chemistry. During the year, an executive summary of the draft programming document, outlining the problems to be addressed and proposing solutions to be incorporated into the design for the new space, was presented to the faculty by John Petronis, President of Architectural Research Consultants. This document calls for a new wing off the West side of Clark Hall to house modern instructional research laboratories and other space that will provide a safe environment for faculty and graduate students, but still allow them to be near the research labs. It also calls for renovation of the Riebsomer Wing into instructional laboratories for Chemistry and further renovation of Clark Hall to provide classrooms and instructional laboratories for other departments on campus. The document itself is now undergoing final revisions based on the comments made by the faculty and others. Because of the extensive level of effort in the department toward upgrading the physical facilities, it was felt that a single person should be selected to oversee and coordinate those efforts. Professor Fritz Allen held this position during the past fiscal year and will do so in the upcoming year as well. He has been actively involved in protecting the department's interests during the Clark Hall renovation and played a major role in developing the programming document for the new space.

The Graduate Recruitment and Selection Committee was again very active and succeeded in attracting a highly qualified group

of new graduate students to the department. Appendix A summarizes activities in this area. A further increase in the sum available for stipend support granted by the Dean has made it possible for us to offer \$11,000 teaching assistantships for nine months of service to this group of new students. Although this is still not as competitive as we would like since other universities in our region offer nine-month assistantships worth up to \$12,000, these changes represent major progress toward building a competitive graduate program. The Dean also made it possible for us to begin reducing the number of laboratories each TA must teach, to offer truly exceptional students in excess of \$11,000, and to guarantee the incoming graduate students a position for the summer. We are grateful to the Dean for his continuing support of our goal. The course reductions were used to allow TAs teaching Organic Chemistry Laboratory 303L or 304L to teach only two sections per semester because of the heavy grading demands associated with this course. In addition to the support of the Dean, Eligio Padilla, Associate Dean of Graduate Studies, successfully sought funds from the Department of Education to allow ten Chemistry graduate students to receive fellowship support in the form of Graduate Assistantships in Areas of National Need (GAANN). These were awarded to seven incoming students and three already in the department. The awards pay a stipend of \$10,000 for the academic year plus the cost of tuition for ten credit hours. A supplement from university resources, corresponding to 25% of

the grant amount, is required. The supplement of \$3,333 was in the form of one-third of a TA position for each student holding a GAANN fellowship.

We had our third annual departmental commencement following the general commencement ceremonies at the Arena. It was followed by an elegant catered buffet luncheon served on our patio. We were again joined this year by the Department of Biochemistry. Over 100 graduates and guests attended, with Dr. Morrow and Dr. Glew, Chairman of Biochemistry, presenting certificates to those receiving the B.S., B.A., M.S. and Ph.D. degrees and to award winners.

The department was awarded a continuation of the grant from the National Science Foundation (Richard Holder is the Principal Investigator) under their Research Experiences for Undergraduates program to host promising undergraduate students for summer research. As in the past, we conducted a national search and selected ten students to work intensively with a faculty member for eight weeks during the summer semester. Each student felt that the program was very beneficial. We will track these students in the future so we will know how our program ultimately affects their careers.

Our own undergraduate program produced a small but well prepared group of graduates this year. Several will attend graduate or professional schools this Fall. Six students earned a B.S. degree (four men and two women). Fourteen students (eight men and six women, including four Hispanics and one

Asian) also obtained the B.A. degree. In addition to these students who completed Chemistry degrees, twenty-two men and twenty-six women took a minor in Chemistry. At the graduate level, one student earned the M.S. degree (one man), and three men (including two Asians) and four women (including one Hispanic and one Asian) finished the Ph.D. degree. Individuals receiving degrees in Chemistry during the 1991-92 academic year are listed below.



STUDENTS RECEIVING THE B.A. DEGREE IN CHEMISTRY IN 1991-92

Simon Chavez	Elizabeth Duran
Keyvan Eghbalieh	Diedra Faulkner
Timothy Geist	David Jackson
Sheldon Jordan	Robin Leshner
Chan Park	Rosemary Romero
William Sanderson	Samuel Trejo
Brent Wagner	Susan Wolterstorff

STUDENTS RECEIVING THE B.S. DEGREE IN CHEMISTRY IN 1991-92

Wyatt Booher	Dwayne Monroe
Jimmy Smith, Jr.	Kimball Smith
Joy Thomas	Tamara Thompson

STUDENTS COMPLETING THE M.S. DEGREE IN CHEMISTRY IN 1991-92

Edward Gooding

STUDENTS COMPLETING THE DOCTOR OF PHILOSOPHY DEGREEIN CHEMISTRY IN 1991-92

Aticha Borvornwattananont, December 1991  
 (Professor Thomas Bein)  
 Kelly Brown, December 1991 (Professor Thomas Bein)  
 Maria Dillon, July 1991 (Professor Peter Ogilby)  
 Patricia Enzel, December 1991 (Professor Thomas Bein)  
 Rebecca Keller, May 1992 (Professor Carlos Bustamante)  
 Hyun-Kooock Shin, May 1992 (Professor Mark Hampden-Smith)  
 Jianling Wang, May 1992 (Professor Mark Ondrias)

At our graduation ceremony, we also presented the following awards for academic excellence to our majors for the 1991-92 academic year:

Arthur Baca, Ray Forrister, Michael Trujillo, & Maxim Yorgancioglu shared the Dean Uhl Award.  
 Dale Steele was given the Paul Mozley Award.  
 Kien Huynh was given the Anne Kahn Award.  
 Jimmy Smith, Jr. was given the Riebsomer Award.  
 Jonathan Pugmire was given the LeRoy Gibson Award.  
 David Jackson was given the Mike Millican Award.  
 Leda Chang and James Clay were awarded the Al Schnoebelen Award.  
 Kuang-Chiu Ho and Boonsri Wangmaneerat shared the Outstanding Graduate Student Award.

Once again, the Department was provided with a strong seminar schedule (Appendix C) under the able guidance of Vince Ortiz.

The department continued its aggressive efforts to add to its experimental research base. However, the total value of accountable equipment declined from \$5,113,159 to \$4,903,156 at the end of the accounting period in 1992 because of equipment transferred to Oregon State University with Carlos Bustamante and to Purdue University with Thomas Bein. Major pieces of equipment (more than \$10,000 in cost) acquired during the reporting year were:

193667	Quadrupoles Ltd. Spectrometer	\$40,261
194017	Hitachi Spectrophotometer	37,504
196583	Park Scientific Control Unit	35,400
194994	Glove Box	32,995
195639	IBM Computer CPU/System	28,640
194532	Hewlett Packard Calibrator	26,300
196723	NRC Vacuum Evaporator	16,700
196581	Schlumberger Analyzer	14,375
196578	Glove Box Assembly	14,000
194030	Varian Chromatograph	13,404
196722	Hewlett Packard Computer CRT	11,269

After significant overrun last year, we were able to manage the department's finances within the budget provided by the Dean this past fiscal year. Our ability to provide the required supplies and meet the department's expenses with the available funds is a direct result of the excellent prices the Storeroom Manager, Carl Hilton, is able to negotiate with a number of vendors. These same pricing advantages have been made available to departments all across the campus and to a number of state-funded agencies elsewhere. Were Chemistry to lose these price breaks, an immediate 50-100% increase in our Supplies and Expenses budget would be required to maintain the current level of support for our programs.

The department's personnel, including faculty, visiting faculty, postdoctoral and research fellows, adjunct professors, staff, and graduate students are listed in Appendix D. Also included are brief summaries of staff assignments. The Director of Undergraduate Studies, Professor Richard W. Holder, and the Director of Graduate Studies, Professor Mark R. Ondrias, worked hard in their positions, along with the chairs and members of departmental committees, to meet the needs of the department. Faculty standing committees active this year include Executive, Graduate Studies, Undergraduate Curriculum, Awards, Graduate Recruitment and Selection, Facilities, Safety, Computer, Library, and Seminar.

Significant improvements in the support staff were made during the past year. Most importantly, two new professional

staff members at the Ph.D. level were added. Dr. Todd Alam was appointed as a Research Scientist III to operate the department's NMR facilities. He will maintain our three NMRs, train students requiring NMR capabilities for their research work to operate the instruments, and provide consultation on the use of modern NMR methods to faculty and students. Dr. Nancy Boldt became the Laboratory Supervisor in the Fall 1991 semester. She oversees the TAs instructing the laboratories in General Chemistry (Chem 121L and 122L), Quantitative Analysis (Chem 253L), and Organic Chemistry (Chem 303L and 304L). Both of these new staff members have had a tremendous impact, both by freeing faculty members from many administrative duties and by modernizing their respective areas. Dr. Boldt, in particular, has begun to remedy the long years of neglect the teaching laboratories have suffered because of the lack of a trained chemist to oversee them. Through Dr. Alam's efforts, an instrument we expected would require \$20,000 to repair will be brought back for about \$6,000. These are the first new Ph.D. level permanent staff to be added since Dr. Eileen Duesler joined the Department as the X-ray crystallographer about ten years ago. We have been able to defray some of the costs of operating the Storeroom by charging those costs against the revenue brought in from other departments. This made it possible for us to add a third new professional staff member, Mr. Kriss Stanley, to work part-time in the Storeroom and part-time in the machine shop. We hope this position will eventually

evolve into the in-house machinist we have needed for many years. A fourth professional staff member, Mr. Mike Campbell, was added to the university glassblower's shop. The goal of this addition is to increase efficiency and move the glass shop toward complete self-sufficiency.

#### **B. Significant Plans and Recommendations for the Future**

We will continue using our annual faculty retreat in August before classes begin to refine our goals and aspirations for the future. At this time, several major issues are apparent. The most important is faculty recruiting. To continue a viable graduate program, we need at least three additional research-active faculty: one in inorganic chemistry (to replace Thomas Bein), one in biophysical chemistry (to replace Carlos Bustamante), and one in organic chemistry because nearly all faculty in that division are involved with administration (Morrow, Holder) or carry heavy teaching loads (Papadopoulos) and make a limited contribution to our research effort. At least two of these need to be sought in the coming year. We also need to address the issue of how to cover our large lower-division and organic chemistry courses as retirements among those carrying heavy teaching loads become common over the next few years. The faculty are very concerned about the extent to which we must now use PTI in the undergraduate program. For the first time, TAs are being used to teach lecture courses.

We will continue to press the central administration for approval of, and a high priority for, our plans for additional research space. We recently proposed a plan under which much of the newly renovated Clark Hall would become teaching laboratories for programs such as Biology and Geology, and a renovated Riebsomer wing would become mostly teaching laboratories for Chemistry once the new research space is available.

We still favor the creation of centers or institutes to mesh with our own research activities. Structural biophysical chemistry, or some related aspect of biotechnology, and sensor chemistry seem likely choices. However, to avoid the conflict that has surrounded CHTM's and CMEC's interaction with academic departments, we feel the structure of any new centers must be carefully considered.

America's inability to attract sufficient students into the sciences and to retain the ones who begin a major in a scientific field has become a national crisis. During the coming year, we will be reexamining the undergraduate major in Chemistry with an eye to making it more attractive to the many students who enter the first-year course but then go on to another field. We want to provide opportunities for early success in chemistry so students will be willing to try the more advanced courses. We also want to reduce the number of prerequisites for the more advanced courses to allow students to

begin a chemistry major later in their college careers than is now convenient.

Staff appointments, changes in status, and separations are listed below in sections C and D. Section E is a compilation of current faculty grant activity and of proposals for research support submitted in 1991-92.

#### **C. Appointments to Staff**

Mr. Todd Alam joined the staff as a Research Scientist on 3-1-92.

Ms. Nancy Boldt joined the staff as a Laboratory Supervisor on 8-20-91.

Mr. Gary Bush joined the staff as a Laboratory Technician III on 10-16-91.

Mr. Mike Campbell joined the staff as a Junior Scientific Glassblower on 10-1-91.

Ms. Kathryn Green joined the staff as an Accounting Technician on 9-16-91.

Mr. Patrick Martinez joined the staff as a Staff Assistant on 5-1-92.

Ms. Chia Towner joined the staff as an Editorial Assistant II on 8-19-91.

#### **C1. Changes to Staff Personnel**

Carl Hilton's position was reclassified from Chemical Stores Operations Manager I to Chemical Stores Operations

Manager II on 9-1-91.

Amir Shavar's position was reclassified from Instrumentation Technician V to Research Engineer I on 2-1-92.

Kriss Stanley's position was reclassified from Lab Technician III to Lab Facilities Coordinator on 8-19-91.

Kelly Utterback's position was reclassified from Administrative Assistant to Academic Support Aide II on 7-1-91.

#### D. Separations

Mr. Jimmy Lanier, Staff Assistant, resigned on 2-7-92.

Ms. Lisa Meyer, Staff Assistant, resigned on 4-30-92.

Ms. Kelly Norman, Staff Assistant, resigned on 8-9-91.

Ms. Kate Peters, Editorial Assistant II, resigned on 8-9-91.

#### E. Sponsored Research

Our faculty continued to seek and obtain outside research funding at a very high level. The total funding for 1990-91 exceeded that for 1989-90 by some \$250,000 and, for the first time, the total value of active grants in the Department exceeded \$4 million. Of the twenty-one faculty, 17 (81%) held one or more active grants or contracts during the 1990-91 academic year. Table 1 below summarizes the growth of grant dollars over the past seven years, and compares that with the growth of the Research and Development Price Index (i.e., the amount the department would have had to bring in to maintain the



1984-85 value, taking into account inflation). Table 2 shows the growth of grant dollars over the same period compared with the amount the Department would have needed to bring in to exceed the effect of inflation on the previous year's funding.

Table 1

Growth in Chemistry Department Research Grant Activity  
Relative to Inflation Since 1984-1985

<u>Academic Year</u>	<u>Grant Dollars</u>	<u>R&amp;D Price Index Relative to 1984-85</u>
1984-85	\$1,489,261	\$1,489,261
1985-86	1,875,347	1,557,257
1986-87	2,691,001	1,623,921
1987-88	3,321,160	1,693,251
1988-89	3,680,173	1,761,248
1989-90	3,901,368	1,872,207
1990-91	4,157,869	1,973,306

Table 2

Growth in Chemistry Department Research Grant Activity  
Relative to the Preceding Year

<u>Academic Year</u>	<u>Grant Dollars</u>	<u>R&amp;D Price Index<sup>1</sup></u>
1984-85	\$1,489,261	Not Available
1985-86	1,875,347	\$1,560,746 (4.8%)
1986-87	2,691,001	1,942,459 (4.3%)
1987-88	3,321,160	2,809,405 (4.4%)
1988-89	3,680,173	3,250,430 (6.0%)
1989-90	3,901,368	3,878,903 (5.4%)
1990-91	4,157,869	4,096,463 (5.0%) <sup>2</sup>

1. This is the level of grant funding required for each year's funding to exceed that of the preceding year by the indicated percentage increase in the R&D Price Index

2. FY 1991 R&DPI estimated to be 5%.

The compilation below lists the active grants of each faculty member this past year. The data regarding proposals submitted was unavailable from the Office of Research Administration.

## GRANTS ACTIVE DURING THE 1991-92 FISCAL YEAR

<u>INVESTIGATOR</u>	<u>END DATE</u>	<u>SOURCE</u>	<u>AMOUNT</u>
Bein	8-31-91	ACS	\$ 39,000
Bein	2-28-92	NSF	281,200
Bein	7-31-91	NSF	80,600
Bein	8-31-92	Sprague Elec	168,262
Bein	8-14-92	DOE	210,443
Bein	2-19-92	NMSU/WERC	133,279
Bustamante	7-31-91	NSF	186,557
Bustamante	12-31-91	LBL	124,072
Crooks	7-31-91	Digital Inst	5,000
Crooks	8-31-91	ONR	171,076
Crooks	7-31-94	ONR	75,000
Crooks	9-30-92	SNL	40,00
Crooks	8-31-93	IBM	13,830
Hampden-Smith	10-1-92	Intl. Zinc	40,452
Hampden-Smith	8-31-92	ACS	18,000
Hampden-Smith	11-30-93	ONR	93,000
Hampden-Smith	3-10-92	BCT-Spectrum	13,000
Hampden-Smith	9-30-92	SNL-Livermore	65,073
Hampden-Smith	PRE-AWARD	SNL-Livermore	10,000
Hampton	9-30-92	SURP	30,000
Hampton	5-31-93	SNL	10,000
Holder	4-30-92	NSF/REU	79,200
Holder	4-30-93	NSF/REU	40,000
Hollstein	9-30-91	RAC	2,500
Hollstein	OPEN	RES CORP	5,500
Hollstein	5-31-92	RES CORP	6,000
Hollstein	7-31-91	GE FOUND	7,500
Keller	9-30-91	SURP	30,000
Morrow	8-31-91	ACS	1,000
Morrow	6-30-92	NSF	110,000
Morrow	6-30-93	NSF	55,000
Morrow	12-31-91	MBRS	24,948
Morrow/Bein	7-31-93	TSF	30,000
Niemczyk	7-31-91	CHROMEX	18,117
Niemczyk	12-31-92	SNL	25,147
Niemczyk	2-19-92	NMSU/WERC	113,817
Niemczyk	2-19-93	NMSU/WERC	29,548
Ogilby	1-31-92	NSF	126,960
Ogilby	1-31-93	NSF	79,671
Ogilby	8-15-92	SNL	30,000
Ogilby	8-31-91	SNL	25,000
Ogilby	8-31-92	SNL	25,000
Ogilby	8-31-94	ARMY	275,000
Ondrias	6-30-92	NIH	109,522
Ondrias	6-30-93	NIH	151,136
Ondrias	5-31-92	SNL	15,000
Ondrias	2-19-92	NMSU/WERC	128,836
Ondrias	2-19-93	NMSU/WERC	45,000

Ondrias	8-31-91	GE FOUND	19,342
Ondrias	12-31-91	MBRS	24,948
Ondrias	12-31-92	MBRS	25,394
Ortiz	10-31-91	NSF	123,992
Ortiz	4-30-92	NSF	73,000
Ortiz	4-30-93	NSF	50,000
Ortiz	8-31-93	ACS-PRF	40,000
Paine	12-30-91	DOE	319,251
Paine	12-30-92	DOE	35,000
Paine	9-30-91	LANL	70,351
Paine	9-30-92	LANL	49,973
Papadopoulos	OPEN	AMER CY	17,458
Park	10-1-91	SNL	59,788
Park	9-30-92	SNL	59,993
Park	5-31-92	SNL	33,999
Park	2-19-93	WERC	47,991
Walters	4-30-93	RESEARCH CORP	12,000
Walters	3-13-92	AFWL	<u>52,521</u>

TOTAL \$4,512,247

ACS/PRF = American Chemical Society Petroleum Research Fund  
 AFWL = Air Force Weapons Laboratory (now Phillips Laboratory)  
 AMER CY = American Cyanamid Corporation  
 BRSG = Biomedical Research Support Grant  
 CMEC = Center for Micro-engineering Ceramics  
 DEC = Digital Equipment Corporation  
 DOD = United States Department of Defense  
 DOE = United States Department of Energy  
 EPA = United States Environmental Protection Agency  
 GE FOUND = General Electric Foundation  
 INTL ZINC = International Zinc Corporation  
 LANL = Los Alamos National Laboratory  
 LBL = University of California Lawrence Berkeley Laboratory  
 MBRS = Minority Biomedical Research Support Program (NIH)  
 HIH/DHHS = National Institutes of Health  
 NMSU/WERC = Waste Education and Research Consortium  
 NSF = National Science Foundation  
 ONR = Office of Naval Research  
 RAC = Research Allocations Committee  
 RES CORP = Research Corporation  
 SANDIA = Sandia National Laboratories  
 SNL = Sandia National Laboratories  
 SPRAGUE = Sprague Electronics Corporation  
 SURP = Sandia/University Research Program  
 U OF C = University of California, San Francisco

## APPENDIX A

Applications Received for Graduate Study in Chemistry  
1991-92

APP - Applications Received  
 APR - Applications Approved  
 DIS - Applications Disapproved  
 INC - Applications Incomplete  
 DEC - Applications Approved but Declined

<u>State</u>	<u>APP</u>	<u>APR</u>	<u>DIS</u>	<u>INC</u>	<u>DEC</u>
Arizona	2	1	0	1	0
California	1	1	0	0	0
Colorado	4	1	3	0	1
Hawaii	1	1	0	0	1
Kansas	1	0	1	0	0
Louisiana	1	1	0	0	1
Maryland	2	1	1	0	0
Michigan	2	1	0	1	1
Missouri	1	1	0	0	0
Montana	1	1	0	0	0
New Mexico	5	3	0	2	1
New York	1	0	1	0	0
Oregon	1	1	0	0	0
Pennsylvania	2	2	0	0	2
Texas	2	0	1	1	0
Utah	1	0	1	0	0
Virginia	2	1	1	0	0
Washington	2	2	0	0	1
West Virginia	1	0	0	1	0

TOTALS:	33	18	9	6	8
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Male	22
Female	11

ETHNICITY:	American Indian	0
	Asian	3
	Black	2
	Hispanic	3
	Other	0
	White	25

Applications Received for Graduate Study in Chemistry  
1991-92

<u>COUNTRY</u>	<u>APP</u>	<u>APR</u>	<u>DIS</u>	<u>INC</u>	<u>DEC</u>
Bangladesh	3	0	2	1	0
Britain	1	0	1	0	0
Bulgaria	1	0	0	1	0
China	121	9	89	23	1
Czechoslovakia	1	0	0	1	0
India	6	1	4	1	0
Korea	8	2	6	0	2
Malaysia	1	0	1	0	0
Mexico	1	0	1	0	0
Nicaragua	1	0	0	1	0
Oman	2	1	1	0	0
Puerto Rico	1	0	0	1	0
Peru	2	1	1	0	1
Taiwan	1	0	1	0	0
Thailand	1	0	1	0	0
Turkey	1	0	1	0	0
<b>TOTALS:</b>	<b>152</b>	<b>14</b>	<b>109</b>	<b>29</b>	<b>4</b>

Male        105  
Female      47

ETHNICITY:	American Indian	0
	Asian	142
	Black	0
	Hispanic	3
	Other	3
	White	4

**GRAND TOTALS**

<u>APP</u>	<u>APR</u>	<u>DIS</u>	<u>INC</u>	<u>DEC</u>
185	32	118	35	1

**PERCENTAGE OF APPLICATIONS**

Male	127	83.5%
Female	58	31%
American Indian	0	0
Asian	145	78%
Black	2	1%
Hispanic	6	3%
Other	3	1%
White	29	16%

**APPENDIX B**  
**CHEMISTRY COURSE OFFERINGS**

COURSE # & NAME	SEMESTER	SECTIONS	STUDENTS	CR HRS
111 Elem of Gen Chem	F 91	3	195	780
111 Elem of Gen Chem	S 92	2	158	632
121 General Chemistry	SS91	1	54	216
121 General Chemistry	F 91	3	625	2500
121 General Chemistry	S 92	2	542	1684
122 General Chemistry	SS91	1	49	196
122 General Chemistry	F 91	2	237	948
122 General Chemistry	S 92	3	422	1688
151 Gen Chem Special	S 92	2	2	6
152 Gen Chem Special	F 91	1	3	9
152 Gen Chem Special	S 92	2	4	12
212 Int Org Chem+Biochem	SS91	1	52	208
212 Int Org Chem+Biochem	F 91	2	79	316
212 Int Org Chem+BioChem	S 92	2	134	536
253 Quant Analysis	SS91	1	31	124
253 Quant Analysis	F 91	1	56	224
253 Quant Analysis	S 92	1	65	260
Sub-Total: Undergraduate Lower Division			2,708	10,339

COURSE # & NAME	SEMESTER	SECTIONS	STUDENTS	CR HRS
301 Organic Chemistry	SS91	1	32	96
301 Organic Chemistry	F 91	3	253	759
301 Organic Chemistry	S 92	2	158	474
302 Organic Chemistry	SS91	1	52	156
302 Organic Chemistry	F 91	2	141	423
302 Organic Chemistry	S 92	3	214	642
303 Org Chem Lab	SS91	1	22	22
303 Org Chem Lab	F 91	13	226	226
303 Org Chem Lab	S 92	6	97	97
304 Org Chem Lab	SS91	1	17	17
304 Org Chem Lab	F 91	5	74	74
304 Org Chem Lab	S 92	11	177	177
307 Organic Chemistry	F 91	1	27	81
308 Organic Chemistry	S 92	1	17	51
311 Physical Chemistry	F 91	1	44	176
312 Physical Chemistry	S 92	1	29	116
315 Intro P Chem	F 91	1	20	80
325 Spec Top Undergrad	F 91	3	33	97
326 Topics	S 92	1	18	54
331 Chemistry Lab III	F 91	2	6	12
332 Chemistry Lab III	S 92	2	7	14
391 Topics	SS91	1	1	3
391 Topics	F 91	3	3	7
392 Topics	S 92	3	3	7
401 Scient Glassblowing	F 91	1	9	9
			1,680	3,870



COURSE # & NAME	SEMESTER SECTIONS		STUDENTS	CR HRS
401 Scient Glassblowing	S 92	1	8	8
415L Adv Synth & Struct	F 91	1	4	8
423 Intro Biochemistry	F 91	1	57	171
423 Intro Biochemistry	S 92	1	54	162
431 Adv Inorg Chem	F 91	1	24	72
445 Intensive Biochem	F 91	1	22	88
446 Intensive Biochem	S 92	1	11	44
454 Instrumental Anal	S 92	1	35	72
466 Sci Computation	S 92	1	15	45
495 Undergrad Problems	SS91	1	1	3
495 Undergrad Problems	F 91	2	2	3
496 Undergrad Problems	S 92	6	10	19
497 Undergrad Problems	F 91	4	4	10
497 Undergrad Problems	S 92	1	1	3
498 Senior Honors Resrch	S 92	4	4	9
499 Chemistry Sem Res	F 91	1	22	22
Sub-Total:	Undergraduate	Upper Division	274	739
Sub-Total:	Undergraduate		4,662	14,948

COURSE # & NAME	SEMESTER	SECTIONS	STUDENTS	CR HRS
501 Molecular Struc Th	F 91	1	9	27
504 Chemical Dynamics	S 92	1	16	48
511 Mechanisms Org Chem	F 91	1	6	18
512 Mechanisms Org Chem	S 92	1	3	9
514 Separations	S 92	1	10	30
515 T/Organometallic Ch	F 91	1	11	33
534 Phys Meth Inorg Chem	S 92	1	14	42
538 T/Inorg Chemistry	S 92	1	7	21
540 Adv Analytical Chem	F 91	1	9	27
541 Separations	S 92	1	14	42
545L T/Analy Chem Lab	F 91	1	12	36
560 Biophysical Chem	S 92	1	6	18
565 Kinetics	F 91	1	8	24
567 T/Las/Opt Spectrosco	F 91	1	3	6
568 T/Survey of Probe Mi	S 92	1	9	27
587 T/Biochem of Disease	S 92	1	1	3
599 Masters Thesis	F 91	2	2	6
599 Masters Thesis	S 92	1	1	6
625 Seminar	F 91	7	54	54
625 Seminar	S 92	8	48	48
650 Research/Rdgs	SS91	1	5	13
650 Research/Rdgs	F 91	13	36	185
650 Research/Rdgs	S 92	11	37	214
699 Dissertation	SS91	1	3	21
699 Dissertation	F 91	11	26	190
699 Dissertation	S 92	11	26	225
Sub-Total: Graduate Students			376	1,373
GRAND TOTAL: ALL STUDENTS			5,038	16,321

APPENDIX C  
DEPARTMENT OF CHEMISTRY  
UNIVERSITY OF NEW MEXICO  
SEMINAR SPEAKERS  
Fall 1991

Dr. A. Bard University of Texas September 3, 1991	"Scanning Electrochemical Microscopy"
Dr. D. Keller Los Alamos National Lab. September 13, 1991	"Rapid DNA Sequencing by Single Molecule Detection"
Dr. B. Buhro Washington University September 20, 1991	"Metal-Organic Routes to Metal Phosphide Semiconductor Nanoparticles"
Dr. R. Murray U. of NC at Chapel Hill October 18, 1991	"Electrochemical Voltammetry in Rigid Solids"
Dr. D.A. Payne University of Illinois Urbana-Champaign November 1, 1991	"Molecular Design of Heterometallic Precursors for Electrical Ceramics by Sol-Gel Methods"
Dr. L.R. Pratt Los Alamos National Lab. November 8, 1991	"Theory of Hydrophobic Effects"
Dr. J.W. Mintmire Naval Research Laboratory November 15, 1991	"Electronic and Structural Properties of Fullerenes"
Dr. H. Frei U. of CA at Berkeley December 6, 1991	"Time Resolved Redox Chemistry in Solution and at Semiconductor Materials"
Dr. M.D. Curtis University of Michigan December 13, 1991	"Organometallic Chemistry and Catalysis"
Dr. K.N. Raymond U. of CA at Berkeley February 7, 1992	"Metal Ion Specific and Stereogenostic Coordination Chemistry"
Dr. A.A. Krasnovsky, Jr. February 14, 1992 Moscow State University	"Photoluminescence of Singlet Molecular Oxygen: Spectroscopy, Detection, and Applications in Chemistry and Biology"

Dr. M. Morris  
University of Michigan  
February 21, 1992

"Raman Microscopic Imaging"

Dr. L. Morrison  
Amoco Research  
February 28, 1992

"Detecting DNA Hybridization by  
Energy Transfer and Fluorescence  
Quenching: Physical and  
Analytical Studies"

Dr. P. Stang  
University of Utah  
March 6, 1992

"Alkynyliodonium and Alkynyl  
Ester Chemistry"

Dr. H.S. White  
UNM Dept. of Chem. Eng.  
March 13, 1992

"Electron-Transfer Mechanisms in  
Concentrated Solutions"

Dr. M.A. Tolbert  
U of CO at Boulder  
March 27, 1992

"Heterogeneous Chemistry in the  
Stratosphere: Implications for  
Polar and Global Ozone"

Dr. C.R. Martin  
Colorado State University  
April 3, 1992

"Electronically Conductive  
Polymer Microstructures:  
Tubules, Fibers,  
and Ultrathin Films"

Dr. J. Leddy  
University of Iowa  
April 10, 1992

"Flux Enhancement in Composite  
Ion Exchange Polymers"

Dr. K. Rajeshwar  
U of Texas at Arlington  
April 17, 1992

"Quartz Crystal Microgravimetry:  
New Electroanalytical  
Applications for an Old  
Technique"

Dr. U. Schubert  
Institut für  
Anorganische Chemie  
April 24, 1992

"New Materials by Sol-Gel  
Processing: Hydrophobic Aerogels  
and Metal/Ceramic Composites"

## APPENDIX D

## FACULTY AND STAFF OF THE DEPARTMENT OF CHEMISTRY

## PROFESSORS:

ALLEN, Fritz S., Ph.D., 1969, University of Illinois  
BUSTAMANTE, Carlos, J., Ph.D., 1981, University of California -  
Berkeley  
CATON, Roy D., Ph.D., 1963, Oregon State University  
HOLLSTEIN, Ulrich, Ph.D., 1956, University of Amsterdam  
MORROW, Cary J., Ph.D., 1970, Tulane University  
NIEMCZYK, Thomas M., Ph.D., 1972, Michigan State University  
ONDRIAS, Mark R., Ph.D., 1979, Michigan State University  
PAINE, Robert T., Ph.D., 1970, University of Michigan  
PAPADOPOULOS, E. Paul, Ph.D., 1961, University of Kansas  
PARK, Su-Moon, Ph.D., 1975, University of Texas, Austin  
SCHAEFFER, Riley, Ph.D., 1967, University of Chicago  
VANDER JAGT, David, Ph.D., 1967, Purdue University  
WALTERS, Edward A., Ph.D., 1966, University of Minnesota

## ASSOCIATE PROFESSORS:

HOLDER, Richard W., Ph.D., 1970, Yale University  
LITCHMAN, William M., Ph.D., 1965, University of Utah  
MCLAUGHLIN, Donald R., Ph.D., 1965, University of Utah  
OGILBY, Peter R., Ph.D., 1981, University of California,  
Los Angeles  
ORTIZ, Joseph V., Ph.D., 1981, University of Florida

## ASSISTANT PROFESSORS:

CROOKS, Richard, Ph.D., 1987, University of Texas-Austin  
DECK, Lorraine, Ph.D., 1989, University of New Mexico  
HAMPDEN-SMITH, Mark, Ph.D., 1984, London University  
HAMPTON, Philip D., Ph.D., 1989, Stanford University  
KELLER, David, Ph.D., 1984, University of California-Berkeley

## EMERITUS PROFESSORS:

KAHN, Milton, Ph.D., 1950, Washington University  
MALM, Miriam, M.S., 1964, University of New Mexico

## VISITING FACULTY:

FALKENBERG, Kenneth, M.S., 1972, University of New Mexico  
MILLER, Deborah, M.S., 1984, Iowa State University  
SHI, Ting Mei, B.S., 1960, Fudan University  
WILLIAMS, Cecelia, M.S., 1975, University of New Mexico; M.S., 1990

## POSTDOCTORAL AND RESEARCH FELLOWS:

BOLDT, Nancy J., Ph.D., 1988, Carnegie Mellon University  
 BRYANT, Mark A., Ph.D., 1991, University of Arizona  
 CHOI, Yong-Kook, Ph.D., 1985, Chonbuk National University  
 de BECDELIEVRE, Michel, M.S., 1990, Ecole Nationale  
 FRANKE, James E., Ph.D., 1991, Rensselaer Polytechnic Institute  
 GAN, Xinmin, M.S., 1985, Lanzhou University  
 HOBBS, John David, Ph.D., 1991, University of New Mexico  
 HUBER, Christian, Ph.D., 1991, Universitat Regensburg, France  
 JANIK, Jerzy, Ph.D., 1987, University of New Mexico  
 KEPLEY, Larry J., Ph.D., 1990, University of Texas-Austin  
 KRISTIANSEN, Marianne, Ph.D., 1988, Aarhus University, Denmark  
 MARTIRE, Daniel, Ph.D., 1988, Universidad Nacional de La Plata,  
 Buenos Aires, Argentina  
 MCGUIRE, Joseph, Ph.D., 1988, Oregon State University  
 RAPKO, Brian M., Ph.D., 1986, University of Oregon  
 ROGER, Christophe, Ph.D., 1989, Universite de Rennes,  
 Rennes, France  
 ROSS, Claudia, M.S., 1983, University of Moron  
 ROUSSEAU, Francois, Ph.D., 1990, Institut National Polytechnique de  
 Grenoble, France  
 SANETRA, Jerzy, Ph.D., 1984, Technical University of Cracow, Poland  
 SUN, Li, M.S., 1985, Northwestern University  
 TAYLOR, Daniel, B.S., 1985, New Mexico State University  
 TAYLOR, Vicki, Ph.D., 1989, Oklahoma State University  
 YAN, Yongan, B.S., 1983, Tianjin University  
 ZHOU, Yuqing, M.S., 1983, Jilin University

## ADJUNCT PROFESSORS:

ALDISSII, Mahmoud, Ph.D., 1981, University of Pennsylvania  
 BARTON, Larry L., Ph.D., 1969, University of Nebraska  
 BEAR, David., Ph.D., 1978, University of California-Santa Cruz  
 BECKEL, Charles L., Ph.D., 1954, Johns Hopkins University  
 BIENIEWSKI, Thomas M., Ph.D., 1965, California Institute of Tech -  
 nology  
 BLAIS, Norman D., Ph.D., 1956, Yale University  
 BOUSEK, Ronald R., Ph.D., 1976, University of Arizona  
 BRINKER, C. Jeff, Ph.D., 1978, Rutgers University  
 BRUECK, S.R.J., Ph.D., 1971, Massachusetts Institute of Technology  
 CLOUGH, Roger L., Ph.D., 1971, University of Utah  
 CREMERS, David A., Ph.D., 1972, Seattle University  
 DATYE, Abhaya, Ph.D., 1984, University of Michigan  
 DAVIS, Steven J., Ph.D., 1973, University of New Hampshire  
 FRIEDMAN, Joel M., M.D., Ph.D., 1975, University of Pennsylvania  
 GINLEY, David S., Ph.D., 1976, Massachusetts Institute of  
 Technology  
 GLADNEY, Ernest S., Ph.D., 1974, University of Maryland  
 GRANT, Patrick M., Ph.D., 1973, University of California-Irvine  
 GUENTHER, Arthur H., Ph.D., 1957, Pennsylvania State University  
 HAALAND, David M., Ph.D., 1982, University of Rochester

HADLEY, Steven G., Ph.D., 1966, University of California-Davis  
 HADLEY, William M., Ph.D., 1972, Purdue University  
 HAMMOND, Robert B., Ph.D., 1975, California Institute of Technology  
 HAY, Philip J., Ph.D., 1971, California Institute of Technology  
 HILL, Ralph H., Jr., Ph.D., 1979, Texas A&M University  
 HUGHES, Loris W., Ph.D., 1971, New Mexico State University  
 HYLARIDES, Mark D., Ph.D., 1979, University of New Mexico  
 JOHNSTON, Roger, Ph.D., 1983, University of Colorado  
 JUNGLING, Kenneth C., Ph.D., 1970, University of Illinois  
 KELLEY, Robert O., Ph.D., 1969, University of California-Berkeley  
 KLEINSCHMIDT, Phillip D., Ph.D., 1977, Pennsylvania State University  
 KLEIN, Cornelius, Ph.D., 1965, Harvard University  
 KNAFF, David B., Ph.D., 1966, Yale University  
 LAYMAN, Lawrence R., Ph.D., 1974, Indiana University  
 MACKINNON, Ian D.R., Ph.D., 1978, James Cook University  
 MAESTRE, Marcos F., Ph.D., 1964, Yale University  
 MOODY, David C., III., Ph.D., 1975, Indiana University  
 MOROSIN, Bruno, Ph.D., 1959, University of Washington  
 OLIVER, Janet M., Ph.D., 1972, London University, England  
 O'NEILL, William M., M.S., 1937, University of Cincinnati  
 PALMER, Byron A., Ph.D., 1977, Purdue University  
 PARKER, Donald R., M.P.H., 1963, University of Michigan  
 PARSONS, Michael, Ph.D., 1966, University of Florida  
 PENNEMAN, Robert A., Ph.D., 1947, University of Illinois  
 PETERSON, Dean E., Ph.D., 1972, University of Kansas  
 PETERSON, Eugene J., Ph.D., 1976, Arizona State University  
 PIGG, C. Joanne, Ph.D., 1965, Oregon State University  
 RASURE, John, Ph.D., 1985, Kansas State University  
 SALZMAN, Gary C., Ph.D., 1972, University of Oregon  
 SHELNUTT, John A., Ph.D., 1975, Georgia Institute of Technology  
 SINHA, Dipen N., Ph.D., 1980, Portland State University  
 SMITH, Brian R., Ph.D., 1972, Utah State University  
 SMITH, Douglas M., Ph.D., 1982, University of New Mexico  
 SMITH, Wayne H., Ph.D., 1974, University of Texas-Austin  
 SORENSEN, N. Robert, ScD., 1981, Massachusetts Institute of Technology  
 STUMP, Robert F., Ph.D., 1984, University of Connecticut  
 SWENSON, Frank J., Ph.D., 1980, University of New Mexico  
 TAPSCOTT, Robert E., Ph.D., 1968, University of Illinois-Urbana  
 THOMAS, Kimberly W., Ph.D., 1978, University of California-Berkeley  
 WEISSMAN, Suzanne H., Ph.D., 1975, University of California-Urbana  
 WERNER-WASHBURNE, Margaret C., Ph.D., 1984, University of Wisconsin-Madison  
 WHALEY, Thomas W., Ph.D., 1971, University of New Mexico  
 WOODRUFF, William H., Ph.D., 1972, Purdue University

**DEPARTMENT OF COMMUNICATION**

Robert K. Tiemens, Chair

## Annual Report

July 1, 1991 - June 30, 1992

**A. Significant Achievements**

The faculty continued to work throughout the fall semester on plans for a merger with the Department of Journalism. On November 13, 1991 the faculty of both departments voted unanimously to become a single academic unit under the name, Department of Communication and Journalism. The merger document is attached to this report as Appendix A.

The graduate program was reviewed by the Senate Graduate Committee during the fall semester. The review committee was comprised of Professor Terrance Albrecht, University of South Florida; Professor Jesse Delia, University of Illinois; Professor Mark Knapp, University of Texas; and Professor Jose Rivera, University of New Mexico. The report of the committee was highly laudatory of the department and its M.A. program. Among the recommendations offered by the committee was the development of a Ph.D. program with a focus on intercultural communication.

The UNM Debate Team, under the direction of Tom Jewell, enjoyed considerable success during the 1991-1992 season. The team won awards in the junior varsity as well as varsity divisions at several national-level tournaments. Highlights of the years's successes were as follows.

On the junior varsity level, two freshman debaters were octafinalists at San Diego State University. The freshman team won 5th Place honors at the National Junior Varsity Debate Tournament. One freshman debater won 1st Place out of over 100 competitors at San Diego



State University and was also a finalist at Colorado College. The varsity sophomore team placed high throughout the year in several regional and national tournaments and were seeded 10th among 250 teams at the National Debate Tournament in Arlington, Texas. The success of these young teams bodes well for the future of UNM forensics. Every member of the squad is on academic scholarship and one student is a Regent's Scholar at UNM. New recruits for 1992 should complement the present squad of excellent students and competitors to keep UNM visible at the national level in a highly competitive academic endeavor.

#### **B. Significant Plans and Recommendations for the Future**

The merger with the Department of Journalism and the recommendation to implement a Ph.D. program have set the agenda for future planning. In addition the department has made specific proposals to the university administration for remodeling and expansion of space in the Journalism Building and for extensive upgrades of computer and broadcast equipment.

#### **C. Appointments, Retirements and Resignations**

Professor Robert Tiemens resigned his position as Professor and Chair of the department to return to the University of Utah. A national search for a successor resulted in the appointment of Professor Everett Rogers, Annenberg School of Communication at Southern California University. Professor Rogers' appointment is effective January 1, 1993. Professor Jean Civikly will assume the position of interim chair from July 1, 1992 to December 31, 1992.

Professor Richard Jensen resigned his position as Professor of Communication to take a faculty position at the University of Nevada, Las Vegas. Professor Jensen has been at UNM

for 16 years.

Virginia Ortiz resigned her position as administrative assistant to take a position at Sandia Laboratories in Albuquerque.

Professor Lynda Dixon Shaver (Ph.D., University of Oklahoma) joined the faculty in 1991-92. Her teaching and research interests are in intercultural communication.

Professor Franklyn Haiman, an internationally renown scholar in speech communication, was appointed a Visiting Professor of Communication for the spring semester. Professor Haiman was the John Evans Professor of Communication Studies at Northwestern University until his retirement in August 1991.

Professor Janice Schuetz was on sabbatical leave for the 1991-92 academic year.

A roster of all faculty, staff, and teaching assistants for AY 1991-92 is presented in Appendix B.

#### **D. Sponsored Research**

Two faculty members (17%) submitted research proposals to outside agencies during the 1991-92 academic year. One of the seven proposals was funded, while three proposals are still under review.

## Merger Proposal for the Department of Communication and Department of Journalism

### INTRODUCTION

Universities are expected to be at the forefront of intellectual and social change, producing new ideas, and new perspectives on old ones. It is no longer a new idea that our culture and others are influenced deeply by many complex means of communication. But many new ideas and new perspectives still await discovery. The faculty concerned with oral, written and visual communication at the University of New Mexico believe the time has come to integrate existing programs.

We therefore propose merging the departments of Journalism and Communication into a single department. The case for such a merger could be made simply on the basis of saving money by streamlining administrative structures and curricula. The two faculties are convinced, however, that the intellectual bonus will be much broader, putting the new department at the cutting edge of teaching, scholarship and research.

The timing is right, paralleling the university's current reallocation program and the development of UNM 2000. Like UNM's broader programs, this plan offers short-term solutions that will mold the department of the future. It is not exhaustive. We anticipate that unexpected details involved in merging two well-established departments will need further resolution. With that reservation, six broad areas are addressed in this proposal: the department's name; departmental and administrative structure; faculty appointments and status; faculty review and evaluation; curriculum; and resources and facilities.

### DEPARTMENT NAME

We propose that the new unit be named the Department of Communication and Journalism. There are good reasons to retain the identity of both components associated with the former units. Both have constituencies with distinct identities, and that must be recognized. Alumni in the two fields often prefer to hire graduates with a familiar background. The proposed name is a reminder, moreover, that separate degrees will still be offered, and that this is a merger, not the absorption of one department by another.

### DEPARTMENTAL AND ADMINISTRATIVE STRUCTURE

The chairperson will be appointed by the dean of the College of Arts & Sciences. The department chair will be advised by an executive committee comprised of four members: an associate chair for undergraduate studies, an associate chair for graduate studies, and two tenured faculty members representing the undergraduate degree programs offered by the department. The committee will be appointed by the department chair after consultation with the faculty. The secretarial and professional staffs of the two departments will be combined into one staff under the supervision of the chair.

## FACULTY APPOINTMENTS AND STATUS

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Members of the communication and journalism faculties will join the new department at their current rank and tenure status. But a distinction will be drawn between graduate and undergraduate faculty after the merger. Only those who hold a doctorate or terminal degree in an appropriate field will be eligible for graduate faculty status and thus eligible to chair master's thesis committees. All faculty in the department will be eligible to sit on master's thesis committees and teach graduate courses in their areas of specialization, but only those who are members of the graduate faculty may chair thesis committees. The merger, of course, will provide the opportunity for the new department to add to the current offerings in communication and journalism a mass communication specialization at the master's level.

## FACULTY REVIEW AND EVALUATION

Faculty reviews for tenure and promotion will be conducted according to newly developed criteria which incorporate standards previously used by the two departments. The document accompanying this report will become the official statement on promotion and tenure for the new department (see Appendix A).

## CURRICULUM

A significant purpose of the merger is to create a focused curriculum that broadly meets student needs. The most obvious and immediate change will be in the journalism and mass communication curricula. Benefits for students will include a wider selection of courses; consolidation of overlapping courses; combined expertise of instructors with media experience at both theoretical and professional levels; strengthening of courses and formalizing of programs in public relations, advertising and broadcast management; and the introduction of more research into the overall program.

The department will offer two undergraduate degrees, one in Communication and one in Journalism and Mass Communication. The degree in Communication will continue to offer emphases in Intercultural Communication, Interpersonal Communication, Organizational Communication and Rhetorical Communication. Requirements for the degree in Communication will not change, except that the existing emphasis in Mass Communication will be altered to reflect the shift of this emphasis to the Journalism and Mass Communication degree program.

The proposed new curriculum for the Journalism and Mass Communication degree will substantially enhance and modernize the education offered to students. Five core courses will be required, emphasizing written communication skills, visual communication skills, and law and ethics in specific areas. Four specialized sequences will be offered: Broadcast Journalism; Print Journalism; Broadcast/Cable Management; and Public Relations and Advertising. Several existing electives will be restructured to make them pertinent to students in all four sequences.

This plan makes it possible to consolidate several courses, enabling the merged

courses already were dropped in Communication course revisions in the Spring of 1991. Eight Communication and Journalism courses will be modified to eliminate duplication and make them relevant to the needs of more students. Three new courses, one in public relations, one in advertising, and one in visual communication, are being proposed to round out the plan.

## RESOURCES AND FACILITIES

As department structure improves, so must faculty, staff, equipment and the use of space. Most of what is needed is apparent. First, vacant faculty positions should be held open. Mounting a new sequence in public relations, for which there is clear demand, will require filling present and future faculty positions left vacant through resignations and retirements. At the same time, reassignment of faculty and realignment of courses for the new sequence will increase workload efficiency for the department as a whole. In addition, increased enrollment may produce the need for additional faculty positions.

A second major priority is enhancement of the current graduate program in Communication. In recent years the Communication faculty has committed itself to develop this program with an increased emphasis on intercultural perspectives throughout the program. UNM is an ideal setting, with its high Hispanic and Native American enrollment. Its ethnic richness makes it a living laboratory. Indeed, it has generated pioneering work in Intercultural Communication, including many language and culture studies, the influential Harvard value studies, and the work of Edward T. Hall, who was among the first to generate interest in the field. The Communication department has reinforced the program by hiring faculty with expertise in Intercultural Communication, developing programs with universities in Japan and Mexico and acquiring outside grants for research. With regard to intercultural studies, a long-term goal of both departments has been the development, should resources permit, of Latin American programs. Several members of both faculties already have substantial experience in Latin America. More faculty positions will be needed as the program expands. However, one of the benefits of the merger will be to increase the pool of graduate teaching assistants available to help teach undergraduate courses.

Improvement of space and equipment needs to continue. With the recent move of Communication to remodeled space, some progress has been made. But the merger requires more. Both of the old units have struggled with extremely limited facilities, and this is an opportunity to bring them up to date.

One of the most basic needs is for space to house faculty in a common area. Three Journalism faculty now work out of offices in Marron Hall across the street from the Journalism Building. They should be moved quickly to new offices on the second floor of the Journalism Building. Proximity is critical to faculty identity, cooperative teaching and research, and availability to students.

Expansion of the building's computer laboratory also is important. The current lab is used at about 95 percent of capacity, a very high rate. CIRT administrators consider it one of their major success stories. To meet growing student demand and to accommodate larger

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additional workstations. An expansion of the computer laboratory will provide additional resources and enrichment for the professional writing program in the Department of English.

A vital need is to begin upgrading the new department's instructional facilities to the point that University of New Mexico students have access to facilities at least minimally equal to those available to students at Eastern New Mexico and New Mexico State universities, at some two-year colleges and even, by repute, some New Mexico secondary schools. Technology is central to communications in the present and the future, and UNM students need up-to-date facilities in the form of an upgraded television studio and a media technologies classroom. This facility should include technology for video conferencing, playback and recording, advanced equipment for electronic news gathering, and computer-generated graphics. In addition, growing use of electronic technology in communication and journalism will require an electronic photo-processing system and more video and audio editing rooms.

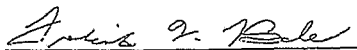
An immediate need is to complete the ethernet system in the building. In recent remodeling, the west end of the building -- not the east end -- was provided conduit and cable for ethernet connections. The original remodeling plan called for installing connections throughout the entire building, connecting the wiring center for the building, and installing required electronics for faculty and administrative connections. Ideally this work would be completed along with the new computer pod since the new pod must operate through an updated wiring center. Important benefits will include faculty members' ability to work through the university computer system, to prepare material in their offices for transfer to the file server in the new pod, and to communicate readily with colleagues through electronic mail.

Completion of videotaping facilities for the communication research lab also is needed. This will entail installation of mounted video cameras and microphones in the lab, bringing it up to functional use and provide important faculty and graduate student research opportunities.

### SUMMARY

The University of New Mexico can be at the forefront of innovation in a multi-ethnic setting. The proposed merger and continued improvement of undergraduate and graduate programs in Communication and Journalism are concrete ways to reallocate resources and invest in the future at acceptable cost, to the profit of everyone concerned. The faculty of Communication and Journalism are ready to move forward.

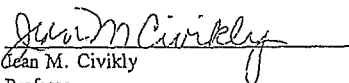
470  
Adopted by the faculties of the Department of Communication and the Department of Journalism, November 13, 1991.



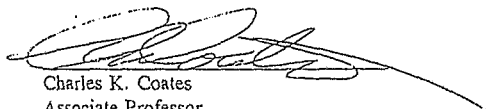
Frederick V. Bales  
Associate Professor



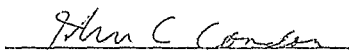
Robert A. Barraclough,  
Assistant Professor



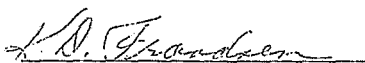
Jean M. Civikly  
Professor



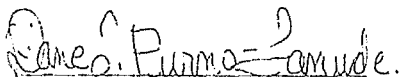
Charles K. Coates  
Associate Professor



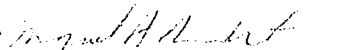
John C. Condon  
Professor



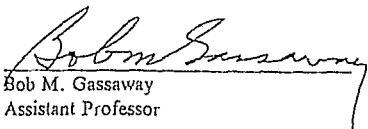
Kenneth D. Frandsen  
Professor



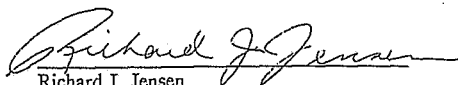
Diane L. Furno-Lamude  
Assistant Professor



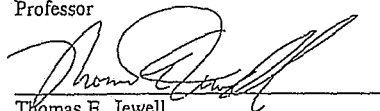
Miguel A. Gandert  
Assistant Professor



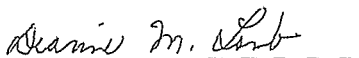
Bob M. Gassaway  
Assistant Professor



Richard J. Jensen  
Professor



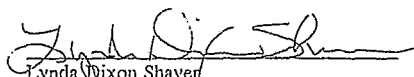
Thomas E. Jewell  
Assistant Professor



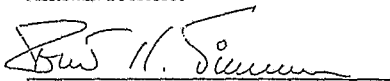
Dianne M. Lamb  
Associate Professor



Janice E. Schuetz  
Professor



Lynda Dixon Shaver  
Assistant Professor



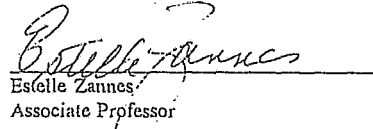
Robert K. Tiemens  
Professor



Henry L. Trewitt  
Associate Professor



W. Gill Woodall  
Associate Professor



Estelle Zannes  
Associate Professor

## APPENDIX A

### PROPOSED CRITERIA FOR FACULTY PROMOTION AND TENURE



## PROPOSED CRITERIA FOR FACULTY PROMOTION AND TENURE

Department of Communication and Journalism  
University of New Mexico

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Department criteria for promotion and tenure are governed by applicable policies and regulations of the University. Specific reference in this regard is made to sections B-3-g and B-4 of the UNM *Faculty Handbook*.

The Department of Communication and Journalism encourages each faculty member to seek excellence in each of the three areas of teaching, research, and service. Each faculty member is expected to devote a significant effort to teaching and research and/or creative endeavors. Research in this context is intended to include creative achievements and/or professional achievements that make a recognized contribution to the field and that bring distinction to the department and university. The Department recognizes that individuals' achievements in these areas will vary due to their unique abilities, opportunities, and areas of professional expertise.

### TEACHING

A record of effective teaching, in a manner that contributes significantly to the Department's instructional objectives, is essential for an individual to attain tenure and to advance through the professional ranks. Evidence to establish a faculty member's teaching effectiveness will come primarily from faculty peer reviews. These reviews should examine course syllabi, reading lists, exams, handouts, or other materials including instructional materials in print or computer-based form. In addition, the reviews should evaluate teaching performance based on class visitations and/or videotaped recordings. Student evaluations, exit interviews with graduating students, and alumni questionnaires or interviews constitute useful data in assessing a faculty member's teaching performance and should be included in the review file. Teaching awards from inside and outside the university should be regarded as important indicators of a faculty member's teaching effectiveness.

The total teaching effort should be considered in evaluating a faculty member's contribution. In this regard, the following activities are relevant: teaching assignments, class enrollments, number of different preparations, participation in curriculum planning and the development of new courses, grants for course development or for individual teaching development, leadership roles in teaching-related activities in professional organizations, supervision of internships and independent studies, number of undergraduate and graduate advisees, the number of graduate student committees the faculty member has chaired, and professional media positions which demonstrably enhance the faculty member's teaching.

### RESEARCH

The Department expects each faculty member to make a serious and sustained commitment to a planned program of research and/or creative endeavors that results in significant publication or other tangible evidence of professional achievement. Within this

general framework, each faculty member is allowed to pursue those avenues of research and/or creativity that are best suited to his or her individual interests and aptitudes.

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The Department uses refereed publication and dissemination of research and creative work as the basis for evaluating an individual's scholarship. Appropriate publication outlets include books, monographs, chapters in books, articles and reviews in professional journals, and research reports. Publications also include articles, reviews and commentaries in newspapers, magazines/computer databases, broadcast or other media, if they demonstrate high professional standards. Creative work which is disseminated through non-print media such as films, video and audio recordings, photography exhibits, and computer software constitutes an appropriate means of publication. Other positive indicators of scholarly achievements are research grants, awards, invited lectures, and presentations at scholarly or professional meetings.

While there are no minimal requirements in terms of the number of publications, it is important that each faculty member demonstrates an on-going commitment to his or her research program. In all cases, the quality of an individual's scholarship is of primary importance. In judging the quality of an individual's work, the Department will seek opinions from knowledgeable evaluators at other institutions.

Appointment or advancement to the rank of assistant professor normally requires completion of a doctoral degree or evidence of comparable scholarly or professional achievement. Advancement to the rank of associate professor requires evidence of additional and significant scholarly, creative, or professional achievement. To attain the rank of professor, a faculty member will be expected to make a distinctive and widely recognized contribution to the field of communication or the sub-fields of communication.

### SERVICE

The Department regards service as an essential element of a faculty member's professional growth. Service is defined as professionally related activity in which a faculty member contributes his or her time, expertise, and ability. Three general areas of service are recognized for promotion:

1. University service--participation in department, college, and university committees; and contributions which significantly enhance the multifaceted mission of the University.
2. Service to professional organizations--involvement in planning and executing seminars, meetings, conferences, and conventions of professional societies; holding office and serving on committees of professional societies; advisory or editorial service to professional journals; consulting work with other schools or mass communication outlets.
3. Community service--activities in which the faculty member shares his or her professional skills and expertise for the good of the community, the state or the

## PROFESSIONAL RELATIONSHIPS WITH OTHERS

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The collective achievements of the department's faculty rely on the goodwill and cooperation of each individual. It is important, therefore, that each member cultivates amenable relationships with colleagues and with students. Disagreements and differences of opinion should be expected and are often signs of a healthy intellectual environment. Therefore, these criteria should be applied with considerable circumspection in evaluating colleagues for tenure and/or promotion. Individual personality traits and personal behavior will generally have little bearing on evaluating achievements for tenure or promotion unless that behavior becomes detrimental to effective departmental and university performance. Race, religion, gender, citizenship, national origin, age, and political attitudes are irrelevant to tenure and promotion decisions.

--Proposed Fall 1991

## APPENDIX B

### Roster of Faculty, Staff, and Teaching Assistants

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#### Regular Faculty

Robert A. Barraclough, Assistant Professor  
Jean M. Civikly, Professor and Associate Dean, College of Arts & Sciences  
John C. Condon, Professor  
Kenneth D. Frandsen, Professor and Associate Dean, College of Arts & Sciences  
Richard J. Jensen, Professor  
Thomas E. Jewell, Assistant Professor and Director of Forensics  
Diane L. Furno-Lamude, Assistant Professor  
Janice E. Schuetz, Professor  
Lynda Dixon Shaver, Assistant Professor  
Robert K. Tiemens, Professor and Department Chair  
W. Gill Woodall, Associate Professor  
Estelle Zannes, Associate Professor

#### Part-time and Temporary Faculty

Franklyn S. Haiman, Visiting Professor  
John J. Griffin, Instructor  
Cara J. Gallegos, Lecturer II  
Charles A. Hundertmark, Lecturer II  
Lisa Orick, Lecturer II  
Deana Richter, Lecturer II  
Tessa Simpson, Lecturer II  
Gaylord E. Mance, Visiting Lecturer  
Paul Shaver, Assistant Instructor  
Irwin Starr, Assistant Instructor  
Vici Taus, Assistant Instructor

#### Staff

Patrick Kiska, Electronic Technician II  
Virginia E. Ortiz, Administrative Assistant (resigned May 15, 1992)  
Katherine D. Vazquez, Clerical Specialist V

#### Teaching Assistants

Michael Artiaga, Academic Year	Kathy Hoag, Academic Year
Wardene Crowley, Academic Year	Jeffrey Hudson, Academic Year
Jennifer Gruenewald, Academic Year	Jeanne Page, Academic Year
Ronald Hidalgo, Academic Year	Shara Stone, Academic Year

Department of Communicative Disorders

Annual Report

July 1, 1991 - June 30, 1992

Submitted by

Linda Riensche

Professor and Chair, Department of Communicative Disorders

Director, UNM Speech and Hearing Center

**1. Significant developments during the academic year, 1991-92.**

The primary tasks carried out during this academic year were review and reorganization of all aspects of the department. The workloads of all faculty, staff, and office personnel were reviewed and adjusted with particular consideration of equality in workload and developing areas of responsibility with accountability. Organization of the department, speech and hearing center, and audiology clinic were summarized through the development of a 3 year department calendar, a 5 year plan, and a policy manual which included information on the responsibilities of faculty, staff, and office personnel with a description of how they would function together academically and clinically (Dr. Karen Patterson from Central Missouri State University served as a consultant). Faculty, staff, and office personnel worked together to develop policies in areas where there was a need for specified written policies. New admissions procedures were delineated; new advisement procedures were implemented; a formal budget was developed with controls on spending; a filing system was implemented for departmental paperwork; a new filing system was implemented at the UNMH audiology clinic (at the expense of the Department of Surgery) to increase efficiency and reduce paperwork; two MacIntosh computers, a modem, a laser printer, and a FAX machine were acquired to increase efficiency in management; new office procedures were implemented to improve security of confidential files; and the use of an answering machine was implemented as needed. A public information program was initiated and informational materials were developed. Alumni questionnaires were mailed to master's degree graduates to determine interest in developing an alumni organization. Finally, an outside consultant, Dr. Daniel S. Beasley from Memphis State University was brought in to review the program and provide recommendations concerning the future growth and direction of the program and speech and hearing center. The Memphis State University graduate program is one of the strongest in the country. Dr. Beasley

served as Department Chair and Director of the Memphis Speech and Hearing Center during the major growth and development of the program.

### Speech and Hearing Center

The Speech and Hearing Center was reorganized so that the Chair of the Department, Linda Riensche, also held the position of Director of the UNM Speech and Hearing Center with Judy Williams serving as the clinic coordinator for speech-language pathology services and Karen Kurowski serving as the clinic coordinator for audiology services. The speech and hearing center also added a clinical supervisor, Ann Marquis, through the use of grant release funds. Additionally, Barbara Rodriguez served as a part time supervisor and instructor for Janet Patterson who took a part time leave of absence in order to finish her dissertation. The work of these two supervisors allowed the acquisition of service and practicum contracts with Albuquerque Public Schools and the New Mexico Preschool for the Deaf. Both these contracts provided special clinical practicum opportunities to speech-language pathology graduate students.

The Speech and Hearing Center test library was reorganized and placed under the management of a graduate assistant supervised by the speech-language pathology clinic coordinator in order to improve the security and management of inventory. Clinic funds were used to increase the test inventory and appropriate fees were attached to courses in which test materials are used. Collection of malpractice insurance was transferred to course fees in order to minimize office transactions.

### Audiology Clinic

Personnel were changed from two part time and one full time audiologist to two full time audiologists (one funded through UNMH Department of Surgery and one funded through Arts & Sciences) in order to increase the cohesiveness of the program. The two new audiologists reorganized the audiology clinic to provide more productive scheduling of clients and more efficient billing and collection of medicaid and hearing aid payments. They also emphasized outreach in the UNM Hospital through developing relationships in the community and providing inservices to other departments in the hospital. Through the efforts of the two new audiologists, \$63,000 of new equipment was provided by UNMH for their use. (Communicative Disorders previously provided the equipment.) The acquisition of some of this equipment has

lead to approaches from other hospitals for service contracts. UNMH also recarpeted the audiology clinic, giving it a more modern and comfortable appearance.

### Special Programs

#### Augmentative Communication Program

1991-1992 was the last year of the Augmentative Communication Grant. The grant provided funding for 4 graduate students, 1 supervisor (Chris Brown), and part of Dolores Butt's salary. This program has created a large referral base with clients throughout the state seeking services through the UNM Speech and Hearing Center. It has also been the basis for the development of the Mexico City Interdisciplinary Augmentative Communication Program held in May 1991 and scheduled for August 1992.

#### Multicultural and HITOS Programs

Dr. Carol Westby has served as Principal Investigator of the Multicultural Program and the HITOS Program. This was the second three year grant cycle of the Multicultural Program. The HITOS program began in August, 1991. It was decided that it would be in the best interest of the department to transfer both these programs to another unit in the University.

### Special Events

#### Annual Picnic

The Department held its first annual picnic on Saturday, September 7 at Kit Carson Park. Faculty, staff, undergraduate, non-degree, and graduate students were invited. Approximately 65 persons attended, with about 10 of those being undergraduates. Undergraduates had never before been included in departmental events of this nature and this large attendance had not previously occurred.

#### American Speech-Language-Hearing Association President

Dr. Patrick Carney, President of the American Speech-Language-Hearing Association, visited the department during the fall semester. He spent much of the day consulting with Linda Riensche relative to program growth and development. Later in the afternoon, he provided a special presentation about the need to publicize the profession to students and faculty. In the course of the presentation, he presented certificates of appreciation to Dolores Butt, Mary Bolton-Koppenhaver, and

Carol Westby for their multicultural emphasis in program development. Dr. Carney had dinner with the faculty and staff in the evening.

#### The American Speech-Language-Hearing Association Convention

More UNM faculty, staff, and students participated in the Annual Convention of The American Speech-Language-Hearing Association, held in Atlanta, Georgia, than in any previous convention. Faculty participants included Dolores Butt, Patrick Finn, Lloyd Lamb, Linda Riensche, and Carol Westby. Staff participants included Janet Patterson, Judy Williams, and Mary Bolton-Koppenhaver. Carol Boeke, Gwenn Charley, Russell Claybrook, and Lynda Ross contributed as students. Several of these individuals, Dolores Butt, Judy Williams, and Lynda Ross, also participated in the Annual Minspeak Conference in Minneapolis, Minnesota. Richard Hood also attended the American Speech-Language-Hearing Association Convention.

#### NSSLHA First Annual Conference

The UNM chapter of the National Student Speech, Language, and Hearing Association held its first annual conference at the UNM Continuing Education Center in April. The Conference developed under the direction of Debra Harbaugh, Vice President in Charge of the Student Conference with the assistance of Kate Weinrod, President. The remaining officers of the students' association were also actively involved and included Michelle Gallagher, Michelle Palagi, and Desiree Coon. Other committee chairs included Kevin Caffrey, Dora Gomez, and Dana Rascon.

A welcome message was given by Dr. Jean Civikly, Associate Dean of Arts & Sciences. Linda Riensche, Department Chair, introduced Dr. Jack Damico from Southwestern Louisiana State University who served as the featured speaker and spoke on "Language Assessment and Intervention in a Multicultural Context" during the morning. The afternoon program included four breakout sections with the following speakers:

Judith M. Barnes, M.S., CCC-SLP  
Private Practitioner and Program Director,  
Presbyterian Ear Institute  
Albuquerque, New Mexico



Sandra Dillon, M.A.  
 Albuquerque Public Schools Language Clinic  
 and  
 Adjunct Instructor, Department of Special Education  
 University of New Mexico  
 Albuquerque, New Mexico

Darla Franz, M.A., CCC-A  
 Audiologist  
 Presbyterian Ear Institute  
 Presbyterian Hospital  
 Albuquerque, New Mexico

Karl L. Horn, M.D.  
 Medical Director  
 Presbyterian Ear Institute  
 and  
 Assistant Clinical Professor of Otolaryngology  
 University of New Mexico  
 Albuquerque, New Mexico

Mary Hunt, M.A., CCC -SLP  
 Private Practitioners, Specialty Dysphagia  
 Albuquerque, New Mexico

Sherie Williamson, M.A., CCC-SLP  
 Specialty Dysphagia, St. Joseph's Hospital  
 Albuquerque, New Mexico

Continuing Education Units were provided. Exhibitors provided information on products and employment. Students and private companies provided hors d'oeuvres and snacks. Kevin Caffrey provided guitar music. Approximately 95 individuals were in attendance. The most common comment concerning the conference related to its high level of professional quality. Proceeds were used by the students to purchase tests and materials for their use in the speech and hearing center.

#### NSSLHA Monthly Meetings

NSSLHA monthly meetings were held in the Communicative Disorders Unit. The number of students in attendance was approximately 18 to 25 for each meeting. The general format of each meeting included the serving of pizza during a social time and included a business meeting followed with a speaker. The speakers included the following:

Christine Parkhurst, New Vistas Independent Living Center:  
 "Communication/Etiquette: responding to the needs of the disabled"

Graduates in Com Dis on their CFY shared experiences:

Christie Spill: NovaCare/Belen site

Sara Beene, M.S. : EASI/Chelwood Elementary site

"ASHA Preview" presentation

Dr. Finn: Presentation on Stuttering research

Gwen Charlie, M.S., CCC-SLP: Poster--Communication Disorders in Adolescent Substance Abusers (with Dr.Rienschke)

Susan Rimbert, M.Ed, CCC-SLP, Children's Psychiatric Hospital, University of New Mexico "Behavior Management for Speech and Language Therapy"

Ruth Dismuke-Blakely, M.S., CCC-SLP, Skyline Therapy Associates, "Hippotherapy"

Larry Gaddis, Laryngectomee, "The Experiences of a Laryngectomee"

#### Other NSSLHA Activities

- a. A garage sale was hosted by Michelle Palagi and yielded \$75.
- b. A \$50 Book Scholarship was awarded to an undergraduate student through a drawing at the April meeting (to Sabine Brown).
- c. The Graduate Student Association awarded NSSLHA \$450 to support costs related to their Conference.
- d. A student newsletter was developed and distributed each semester.

#### Graduation Luncheon

The Graduation Luncheon was held at Albuquerque Country Club for the fourth consecutive year. The program committee was chaired by Richard Hood and was planned similarly to programs of previous years but an outside speaker was included for the first time. Dr. Fred Chreist and Nadyne Meyers were Guests of Honor. Fred Chreist was the founder of the speech and language program. Nadyne Myers, M.A., Director of the Albuquerque Public Schools District Diagnostic Center, Chair of the New Mexico State Department of Education, Division of Special Education, Related Ancillary Services Action Committee, Subcommittee for Speech-Language Pathology, and one of the first graduates from the UNM speech and hearing program, served as the speaker. Two hundred seven graduates, family members, and guests were in attendance. In keeping with established tradition, all graduates were presented with UNM pins, this year provided by Dr. Richard B. Hood.

### Public Information

Efforts at increasing the visibility of the department were initiated through a special section in the Hearsay, the newsletter of the New Mexico Speech, Language, and Hearing Association. The newsletter is published twice each year and both publications included a section entitled "News from UNM". Additionally, Dr. Butt appeared on Channel 14 to discuss augmentative communication on a Sunday morning talk show. Patrick Finn appeared on Dr. Dale Alverson's segment, For the Family, on Channel 4 to discuss stuttering. Campus News and the Albuquerque Tribune noted the visit of Dr. Patrick (Jerry) Carney along with the certificates presented to Dolores Butt, Mary Bolton-Koppenhaver, and Carol Westby. Russell Claybrook, who served as President of the National Student Speech-Language-Hearing Association, received recognition in his hometown newspaper in Los Alamos and the TARC (Teaching Assistants Resource Center) Newsletter. The Student Conference was listed in the Daily Lobo. Program information and course flyers were also developed for dissemination on campus and brochures, posters, and a video tape providing information about the profession were ordered. A flyer on courses that might be especially interesting to speech-language pathologists needing continuing education units to maintain their licensure was developed prior to each semester and the summer session and sent to schools and private practices employing speech-language pathologists as well as members of the New Mexico Speech, Language, and Hearing Association. The Department participated in four career and professional fairs and provided materials about the department and profession to the UNM freshman orientation fairs. An alum, Cathy Wallace, volunteered to develop an alumni group and alumni questionnaires were mailed to all UNM master's degree graduates in speech-language pathology and audiology. Attempts were made to locate the bachelor's degree graduates for a phone survey, but so few were available that the project was temporarily ended.

## 2. Significant plans and recommendations for the near future.

- a. Two Assistant Professors will be recruited.
- b. A Stuttering Lab will be set up and a research program will be put into operation.
- c. Every tenure track faculty member will publish in a refereed journal.
- d. The Multicultural and HITOS Grants will be transferred to a different unit.

e. The Augmentative Communication Grant (Dolores Butt, Principal Investigator) will be refunded or arrangements will be made to continue the program and expand it as a rural outreach program.

f. The Mexico City Interdisciplinary Clinical Program will be reviewed relative to other UNM programs in Mexico, particularly the intensive Spanish program in the Spanish Department. A long range plan will be developed.

g. The Albuquerque Public Schools contract will be expanded to include a bilingual, multicultural component.

h. The Student Conference will increase in size and visibility by including at least two highly productive and nationally visible speakers.

i. The UNM Chapter of the National Student Speech, Language, and Hearing Association will increase its visibility through the distribution of flyers on campus publicizing their invited professional speakers.

j. The flyers and program information developed during the 1991-1992 fiscal year will be distributed. Television Information Spots for the program and profession will be increased.

k. An organized alumni group will be initiated.

l. Bachelor's degree graduates will be surveyed for their interest in involvement in an organized alumni group.

m. A new Clinic Policy manual will be completed and its policies implemented.

n. An application for the American Speech-Language-Hearing Association Professional Services Board Accreditation for the Speech and Hearing Center and Audiology Clinic will be submitted.

### 3. Appointments to staff.

a. Patrick Finn joined our faculty as a tenure track Assistant Professor with a specialty in stuttering. Patrick defended his Ph.D. dissertation at The University of California at Santa Barbara prior to his move to Albuquerque in August. He has an established record of research. He obtained his Certificate of Clinical Competence during this academic year.

b. Ann Marquis joined our staff as a full time person on a nine-month contract. She taught Preclinical Training and served as a clinical supervisor for our students receiving training in Jefferson Middle School. Ann has an established record as a developer of commercially available clinical materials.

c. Pat Lilley served at the UNMH newborn intensive care unit as a clinical supervisor on the HITOS grant for .30 FTE.

d. Susan Rush was recruited by our department, hired by the Department of Surgery at UNMH, and serves our audiology program as a Clinical Fellowship Year audiologist (Master Audiologist). Susan completed her Master's degree in audiology at The University of Texas in Dallas. Previously, she had served as a sign language interpreter in Alaska.

e. Barbara Rodriguez served as a temporary, part time clinical supervisor while Janet Patterson took a leave of absence to finish her dissertation.

f. Lynn Holland served as a temporary, part time faculty person teaching one graduate course.

#### 4. Separations from staff.

a. Jan Lewis (.50 FTE)

b. Sue Miller (audiologist appointed through the Department of Surgery at UNMH) (.50 FTE).

c. Lloyd Lamb retired June 30, 1992.

#### 5. Publications, either of division or of individuals on staff, not elsewhere mentioned.

a. V.W. Bolie, R.B. Hood, R.H. Kotoski, R.J. Knight, R.A. Claybrook, and C.J. Porteous: Digital Signal Processing for Hearing Augmentation. Proceedings of Fourteenth Annual Ideas in Science & Electronics Exposition and Symposium. Albuquerque, May, 1992.

b. R. Claybrook. A Students' Perspective. In In Search of Self. A compilation of articles inspired by the October 1991 ASHA Intradisciplinary Conference.

c. L. L. Ross, D.S. Butt, and J.K. Williams. Learning and Recalling Words Strategy Symbol Sequences, Using a Computer. Proceedings of the 6th Annual Minspeak Conference. Minneapolis, Minnesota.

d. M. A. Marquis and T. Blog. Barrier Games with Unisets. Communication Skill Builders. Tucson, AZ 1992.

#### 6. Outside professional activities of staff members.

a. Dolores Butt was honored at the World Federation for Mental Health Convention in Mexico City where Comunidad Crecer announced a coming addition

to the model school for an augmentative communication program which will be dedicated and named after her.

b. Dolores Butt was presented a Certificate of Appreciation for "Outstanding Service to the Children of Mexico and Contributions to the Multicultural Education of Speech-Language Pathologists". The presentation was made by American Speech-Language-Hearing Association President Jerry Carney.

c. Dolores Butt took a one semester sabbatical during which she continued development of her augmentative communication program in Mexico. This led to plans for a second Augmentative Communication Interdisciplinary Project scheduled for August, 1992.

d. Dolores Butt served as Co-founder of the New Mexico Association for Augmentative and Alternative Communication (NEWMAAC), a chapter of the United States Association for Augmentative Communication (USAAC).

e. Richard Hood collaborated with faculty in Electrical Engineering to develop a programmable hearing aid.

f. Linda Riensche served as a member of the New Mexico State Department of Education, Division of Special Education Related and Ancillary Services Action Committee whose purpose is to address the shortage of speech-language pathologists in the State of New Mexico.

g. Linda Riensche chaired the American Speech-Language-Hearing Association Educational Standards Board Accreditation Site Visit Team for the program at The University of Kansas, an intercampus program in Lawrence and Kansas City, Kansas.

h. Patrick Finn collaborated with researchers at the University of California in Santa Barbara and The University of Illinois in planning a longitudinal research program in stuttering.

i. Janet Patterson successfully defended her Ph.D. dissertation.

j. Mary Bolton-Koppenhaver served as Legislative Councilor for the New Mexico Speech, Language, and Hearing Association. In that capacity, she was flown to Atlanta, Georgia to serve as a representative to the Legislative Sessions of the American Speech-Language-Hearing Association in Atlanta, Georgia.

k. Susan Rush served as a speaker to the special state legislative committee appointed for hearings related to Medicaid cuts in the financing of Hearing Aids. The proposed cuts were stopped.

l. Karen Kurowski was named to a committee of the American Academy of Audiology whose purpose is to initiate state affiliates of the organization.

m. Russell Claybrook, Graduate Assistant, served as the President of the National Student Speech, Language, and Hearing Association. Russell was flown to Washington, D.C. for training at the beginning of his term in office. Later, in that capacity, he participated in the Plenary Session of the National Convention of the American Speech-Language-Hearing Association in Atlanta, Georgia. He also served as a panelist for the "In Search of Self" conference held by The American Speech-Language-Hearing Association in Rockville, Maryland.

n. Chris Brown served on the executive board of the New Mexico Association for Augmentative and Alternative Communication (NEWMAAC) as the Continuing Education Officer. She also served as one of the founders of this organization during this year.

o. Judy Williams served on the executive board of the New Mexico Association for Augmentative and Alternative Communication (NEWMAAC) as a Director-at-Large. She also served as one of the founders of this organization during this year.

p. Karen Banks served on the executive board of the New Mexico Association for Augmentative and Alternative Communication (NEWMAAC) as the Student Representative.

q. Ann Marquis was invited to participate in a conference on development of therapy materials sponsored by Communication Skill Builders in Tucson, AZ.

## 7. Outside sponsored research and training.

a. Dolores Butt. Award from the New Mexico Elks Cerebral Palsy Program: \$5,000 for development of an assessment protocol for non-speaking individuals.

b. Dolores Butt. Augmentative Communication Training for Speech-Language Pathology. U.S. Department of Education. \$63,110.87.

c. Carol Westby. Multicultural Education in Communicative Disorders. U.S. Department of Education. \$80,904.18.

d. Carol Westby and Mary Bolton-Koppenhaver. Project HITOS. U.S. Department of Education. \$91,415.62.

e. Richard Hood. Herzstein Project \$1,690.73.

## Appendices

## Graduate and Applicant Statistics

	Sum 91	Fall 91	Sp 92
Number of Program Graduates	2	5	13
Number of Program Applicants	5	15	24
Number of Program Applicants meeting minimum GPA requirement of 3.2 in ComDs	4	13	20
Number of Students Accepted	3	9*	15**

\* 1 declined, 1 withdrew after starting

\*\* 2 declined, 1 withdrew after starting

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 Percentile Scores on CCC (National) Examination by Graduation Semester

Summer 91=	43, 59
Fall 91=	20, 42, 69, 75, 93
Spring 92=	14, 19, 38, 42, 48, 58, 58, 63, 83, 91, 91, 95, 97

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## Master's Theses Completed

Director

Riensch  
Riensch  
Riensch  
Lamb

Student

Carin White  
Karen Stauch  
Christy Spill  
Laura Pengilly



Enrollment Statistics  
Summer 1991

Course #	Section	Instructor	Enrolled	Credit	Hours
500 Clin Practicum	002	Marquis	08	V	19
500 Clin Practicum	003	Williams	08	V	24
500 Clin Practicum	005	Hood	06	V	18
500 Clin Practicum	006	Koppenhaver	6	V	18
500 Clin Practicum	007	Kurowski	02	V	5
500 Clin Practicum	008	Lewis	02	V	6
506 Res & Wrtg	001	Riensch	13	03	39
535 Cleft Palate	400	Porch	19	03	57
539 Head Injury	200	Brown	18	01	18
551 Problems	005	Marquis	01	V	1
558 Clin Intern	001	Koppenhaver	02	V	12
565 Sem Aur Rhb	001	Hood	06	03	3
599 Thesis	005	Riensch	03	V	3
599 Thesis	007	Lamb	01	V	3
599 Thesis	009	Porch	01	V	2
		Total	96		228

Enrollment Statistics  
Fall 1991

Course	Section	Instructor	Enrolled	Credit	Hours
302 Intro Com Dis	U 002	Williams	44	03	132
303 Phonetics	U 001	Bybee, J.	14	03	042
321 Intro Aud	U 001	Hood	65	03	195
350 Anatomy Sp	U 001	Riensch*	56	03	168
428 Articulation	U 001	Patterson	42	03	126
431 Lang Dis	U 001	Patterson	35	03	105
450 Neuro Sp Lang	U 001	Porch	24	03	072
451 Problems	U 016	Rouse	03	01	003
451 Problems	U 017	Rouse	09	01	009
458 Preclinic	U 001	Marquis	10	04	040
500 Clin Practicum	M 001	Koppenhaver	09	V	027
500 Clin Practicum	M 002	Hood	02	V	006
500 Clin Practicum	M 005	Butt	09	V	025
500 Clin Practicum	M 009	Patterson	06	V	018
500 Clin Practicum	M 010	Finn	11	V	033
506 Res & Wrtg	M 001	Riensch**	10	03	030
510 Sem Multicult	M 001	Westby	13	V	019
531 Neuro Sp Dis	M 001	Butt	29	03	087
536 Sem SLP	M 001	Butt	07	V	008
537 Clin Aphas	M 001	Porch	17	03	051
538 Stuttering	M 001	Finn	11	03	033
551 Problems	M 006	Koppenhaver	02	V	005
551 Problems	M 009	Rouse	02	01	002
558 Clin Intern	M 001	Westby	01	01	001
599 Thesis	M 003	Riensch	02	V	002
599 Thesis	M 006	Porch	01	V	003
		Total	434		1,242

\* Listed under Riensch but taught by Finn.

\*\*Listed under Riensch but taught by Holland.

Enrollment Statistics  
Spring 1992

Course	Section	Instructor	Enrolled	Credit	Hours
302 Intro Com Dis	001	Williams	33	03	099
303 Phonetics	001	Rodriguez	26	03	078
303 Phonetics	002	Gorbet	12	03	036
321 Intro Aud	001	Hood	19	03	057
407 Aud LD	001	Riensché	22	03	066
425 Aural Rehab	001	Hood	47	03	141
430 Lang Dev	001	Patterson	58	03	174
432 Lang Assess	001	Patterson	16	03	048
451 Problems	009	Rouse	09	01	009
451 Problems	015	Montgomery	02	V	002
458 Preclinic	001	Marquis	14	04	056
500 Clin Practicum	001	Koppenhaver	01	03	003
500 Clin Practicum	003	Finn	15	03	045
500 Clin Practicum	113	Hood	04	03	012
500 Clin Practicum	005	Riensché	05	03	015
507 Aphasia	001	Porch	17	03	051
510 Sem Multicul	001	Westby	06	V	010
525 Voice Disorder	001	Finn	16	03	048
536 Sem SLP	001	Brown	07	01	007
538 Stuttering	001	Finn	21	03	063
539 Topics-Dysph	001	Lang	06	03	018
539 Topics-Inf/Tod	002	Koppenhaver	13	V	039
551 Problems	006	Montgomery	04	01	004
558 Internship	001	Koppenhaver	15	09	135
599 Thesis	006	Riensché	02	V	002
599 Thesis	011	Porch	01	V	002
		Total	391		1,220

Clinical Hour Statistics  
(in hours and minutes)

<u>UNM Speech &amp; Hearing Center</u>		Sum 91	Fall 91	Sp 92
Evaluation	Speech Child	6:28	142:10	49:46
	Speech Adult	5:59	16:42	3:05
	Language Child	8:35	139:45	64:22
	Language Adult	18:47	7:20	13:16
	Audiology	<u>24:00</u>	<u>84:00</u>	<u>72:00</u>
Subtotal		63:49	389:57	202:29
Treatment	Speech Child	143:36	218:56	95:34
	Speech Adult	103:25	144:53	154:35
	Language Child	46:00	408:48	367:47
	Language Adult	70:05	181:18	144:33
	Aural rehab	<u>15:00</u>	<u>18:00</u>	<u>96:48</u>
Subtotal		378:06	971:55	859:17
Total		<u>441:55</u>	<u>1,361:52</u>	<u>1,061:46</u>
<u>Outside Clinical Placements</u>		Sum 91	Fall 91	Sp 92
Evaluation	Speech Child	11:35	63:47	23:50
	Speech Adult	80:35	97:45	71:55
	Language Child	8:45	113:29	29:40
	Language Adult	<u>48:19</u>	<u>92:30</u>	<u>59:24</u>
Subtotal		149:14	367:31	184:49
Treatment	Speech Child	51:25	118:50	6:00
	Speech Adult	22:55	75:06	38:35
	Language Child	109:15	117:45	96:00
	Language Adult	77:50	97:10	199:20
	Aural Rehab	<u>132:00</u>	<u>3:00</u>	<u>41:00</u>
Subtotal		393:25	411:51	380:55
Total		<u>542:39</u>	<u>779:22</u>	<u>565:44</u>
<u>Internships</u>		Sum 91	Fall 91	Sp 92
Evaluation	Speech Child	11:30	27:17	45:00
	Speech Adult	14:15	11:15	65:51
	Language Child	--	61:35	126:55
	Language Adult	<u>42:30</u>	<u>69:00</u>	<u>167:45</u>
Subtotal		68:15	169:07	405:31
Treatment	Speech Child	7:45	128:37	352:40
	Speech Adult	26:20	38:00	144:28
	Language Child	2:15	221:31	1,081:05
	Language Adult	115:40	188:25	764:12
	Aural Rehab	<u>5:15</u>	<u>5:15</u>	<u>8:25</u>
Subtotal		152:00	581:48	2,350:50
Total		<u>220:15</u>	<u>750:55</u>	<u>2,756:21</u>

Audiology Clinic

Number of appointments based on an average of one hour each:

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
149	136	133	164	137	84	136	151	154	130	137	186

Clinical Hour Statistical Totals  
(in hours and minutes)

UNM Speech & Hearing Center	Sum 91	Fall 91	Sp 92
Total	441;55	1,361;52	1,061;46
Outside Clinical Placements			
Total	542;39	779;22	565;44
Internships			
Total	220;15	750;55	2,756;21
GRAND TOTALS	1204;49	2,892;09	4,383;51
ANNUAL TOTAL for Speech-Language Pathology			8480 hrs. 49 min.
ANNUAL TOTAL for Audiology Clinic			1697 hrs.

## College of Arts and Sciences

## Department of Economics

July 1, 1991 - June 30, 1992

Ronald G. Cummings, Chairman

This report provides a general discussion of some of the major achievements of the UNM Department of Economics during the 1991-1992 academic year. It also identifies the major problems that the Department faces at this time and the Department's plans for the 1992-93 academic year.

A. Significant Achievements During the Academic Year 1991-92

The Department has achieved results that are worthy of note in the following areas.

1. Sponsored Research. As indicated in Table 1, the dollar amount of sponsored research generated by the Department during 1991-92 was 23% higher than that generated during 1990-91. The \$209,804 in grant research funds received by the department during 1991-92 were obtained from five different agencies: New Mexico Department of Energy, Minerals and Natural Resources; the National Science Foundation; the Soil Conservation Service of the U.S. Department of Agriculture; the N.M. Water Resources Research Institute; and the U.S. Geological Survey. While we are pleased with our success in attracting research funds over the last two years, the level of grant research in the department remains below levels to which we aspire. We hope to increase the amount of grant research over the next few years and have good reasons for expecting success in these regards.

2. Degrees Awarded. During the 1991-92 academic year 79 students received their B.A. degree with a major in economics (Table 2). During this period, the Department of Economics awarded eight (8) M.A. degrees. While there were no recipients of the Ph.D. during the period ending June 1, 1992, three Ph.D.

students completed their degrees during August, 1992 and two additional students will complete their Ph.D. degrees during Fall, 1992 academic semester. Thus, five Ph.D. graduates will be reported in our Annual Report for the 1992-93 academic year.

3. The Evening Degree Program. Beginning with the Fall 1988 semester, the Department expanded the courses offered in the evening. With 8 to 10 different undergraduate courses and some 6 graduate courses offered in the evening, evening students may earn any degree offered by the Department -- a B.A. an M.A., or a Ph.D. Enrollment in the Department's evening courses exceeded 600 SCH during the 1991-92 academic year. Based upon a survey taken last year, the following indications of the program's impact on our community were obtained.

\*59% of the students can only take courses in the evenings. Thus, the Evening Degree Program offers educational opportunities in economics to a substantial number of our community who might otherwise be denied such opportunities.

\*88% of our evening students are pursuing an undergraduate degree; 10% are pursuing a graduate degree; and 2% are non-degree students.

\*roughly half of our evening degree students are economics majors. Thus, our evening courses provide service to students pursuing degrees in other disciplines.

4. Improving the Quality of Teacher-Student Contact. Over the past three years, the Department has instituted a program to restructure undergraduate courses to provide students with greater exposure to tenure-line faculty. For the critical introductory and intermediate courses, graduate students are typically no longer assigned as teachers. Tenure-line faculty were assigned to these courses, and Teaching Assistants support faculty by holding small help-

sessions for students. The feedback which we have had thus far suggests that the students appreciate the benefits from this restructuring.

5. The Hispanic Economics Program. Over the last four years, the Department has made special efforts to (i) encourage Hispanic students to choose economics as a field of study; (ii) develop teaching and research programs which focus on issues of relevance to the Hispanic community; and (iii) search for grant funds to support the Department's efforts to recruit and train Hispanics in economics. During the last year, students -- Hispanic and non-Hispanic -- showing particular promise and interest in economics were identified in our 200 and 300 level courses. These students were invited to enroll in a special course offered during the Fall, 1991 semester, taught by Professor Davila. Students enrolled in this course were introduced to practical research techniques and their application to problems in labor markets characterized by high proportions of Hispanic workers. The course was well received by students. We plan to institutionalize such courses over the upcoming year.

In terms of research, Professor Davila obtained from SHRI financial support for two Hispanic graduate students for the 1991-92 academic year. Professors Santos and Ganderton were successful in obtaining a renewal of their grant research program from the Social Science Research Council. The title of this program is: "Education and Work Patterns of Hispanic High School Graduates: Evidence from High School and Beyond Surveys."

6. Outreach to the New Mexico Community. In the department's 1990-91 Annual Report, our plans to become more involved with other research organizations in the state and here at UNM, as well as with agencies of state and local governments were described. We have been particularly successful in these regards. Over the last year, we have accomplished the following.

\* Ms. Shirley Wozniak, Director of Albuquerque's City Planning Department, created a program that provides the opportunity for graduate students to work as a Student Intern with the City Planning Department. We are also now assisting the Planning Department in their efforts to estimate non-market values attributable to parks and recreational areas.

\* We have initiated a program of collaboration with UNM's Bureau of Business and Economic Research. The BBER is providing support for three of our graduate students during the 1992-93 academic year.

\* Professors Parker, Ganderton and McKee have initiated a Policy Workshop and Seminar with the State's Department of Energy, Minerals and Natural Resources.

\* We have been working with Dr. Ann Watkins with the City of Albuquerque's Solid Waste Disposal Department to the end of establishing an Intern program with this City organization.

\* As a result of Professor Lee Zink's efforts, the State of New Mexico initiated a Summer Intern Program that makes available work-study opportunities for graduate students in various agencies of state government.

#### B. Significant Plans and Recommendations

As is set out in Part A above, the Department of Economics has continued efforts to improve its undergraduate and graduate offerings to better meet the needs of our students and to take advantage of the strengths of our faculty. The Department's plans for the upcoming year are primarily focused on expanded and improved activities initiated during the 1991-92 academic year. A brief sketch of planned expansions is given below, along with recommendations related to



expansion in support for graduate students.

1. The faculty are committed to expanded efforts to seek grant research funds to support research in established programs, as well as for greater research activity in issues related to Hispanic problems.

2. Plans are being made for expanded efforts to recruit Hispanics to the study of economics at both undergraduate and graduate levels.

3. Plans are under way for a program of advertising, including faculty visits to selected firms and government organizations in the city, to make Hispanics (and others) aware of the graduate education opportunities, particularly in the Department's evening degree program.

#### C. Appointments to Staff

The following two faculty members joined the Department at the beginning of the 1991-92 academic year:

Michael McKee, Ph. D., Carleton University, Associate Professor. Area of specialization: Public Finance and experimental economics.

Kishore Gawande, Ph.D., University of California, Los Angeles, Assistant Professor. Area of specialization: International Trade and econometrics.

#### D. Separation of Staff

Professor Albert Church retired in January, 1992. Professor Church served with the faculty of the department of economics since 1968.

#### E. Economics Graduate Program -- A Status Report

We presently have some 40 students in the Department's graduate programs. This number represents an increase of between 15% and 20% over earlier years, due

primarily to the effects of our evening degree program. Our Department's graduate programs have long suffered from inadequate financial support for students. In an effort to improve this situation, Dean Wildenthal increased the number of Teaching Assistantships available to the Department from 8 to 12 for the 1990-91 academic term, and from 12 to 14 for the 1991-92 term. This has allowed the Department to more actively recruit high quality graduate students. It is too early to assess our success in such recruitment, but the Department has high expectations for improving the quality of its graduate program over the next few years.

#### F. Long Term Goals for the Unit

The Department's long term goals are essentially extensions of the plans and programs which have been initiated over the last two to three years. They include the following.

1. The Department hopes to increase the level of sponsored research to levels of about \$500,000 per year, with a substantial proportion of this sponsored research focused on Hispanic labor problems.

2. The Department has as its goal greater involvement of Hispanics in its undergraduate and graduate programs. Our goal for undergraduates is 40 or more Hispanic majors. For our graduate program, we hope to have 10 to 15 Hispanics in the M.A. and Ph.D. programs.

3. The Department plans to seek ways by which last year's successes in promoting outreach to New Mexico organizations might be enhanced and expanded during the upcoming year.

#### G. Affirmative Action

The Department of Economics has made a significant effort over the past decade to enhance the cultural and ethnic diversity of its faculty. Special efforts have been made to identify and hire qualified minority and women economists to fill positions in the Department. The result has been particularly satisfying as is exemplified by the diverse backgrounds of our faculty during the 1991-92 academic year. Of the Department's present 16.25 faculty, 2 are women and 3 are Hispanic. Moreover, cultural backgrounds of faculty reflect eight different nationalities: Germany, Spain, Canada, India, Nepal, Israel, Australia and Vietnam. We are understandably proud of this record, and expect to continue our efforts to add high quality individuals with diverse cultural and ethnic backgrounds.

Table 1 -- UNM Department of Economics  
Sponsored Research Money Generated

<u>Academic Year</u>	<u>Grant Research</u>
1979-80	\$1,371,552
1980-81	997,210
1981-82	194,826
1982-83	57,591
1983-84	103,533
1984-85	522,298
1985-86	380,662
1986-87	310,667
1987-88	285,000
1988-89	250,000
1989-90	146,394
1990-91	170,452
1991-92	209,804

Table 2 -- Degrees Awarded by the  
UNM Department of Economics

<u>Academic Year</u>	<u>Economics Majors</u>	<u>Economics Minors</u>	<u>Masters Degree</u>	<u>Ph.D. Degree</u>
1980-81	45	12	6	3
1981-82	42	13	5	1
1982-83	59	16	4	3
1983-84	32	6	5	1
1984-85	47	1	1	5
1985-86	18	3	4	2
1986-87	37	6	2	6
1987-88	29	4	5	2
1988-89	65	unk	12	1
1989-90	89	18	4	2
1990-91	70	unk	9	1
1991-92	79	unk	8	0

## ANNUAL REPORT

## DEPARTMENT OF ENGLISH

July 1, 1991 to June 30, 1992

by Lee Bartlett, Chair

## A. Significant Achievements

This was another animated year in our department, with several highs and some significant lows. Certainly the most important event of this past academic year was the death of Professor Joe Zavadil, who had served the department as Chair for over a decade in the 1960s-1970s, served as Director of the Comparative Literature program, and was one of our most popular and successful teachers.

Our administration remained stable--Michael Fischer continued as Director of Graduate Studies, Barry Gaines as Director of Undergraduate Studies, Scott Sanders as Director of our Writing Programs. Michael Hogan assumed the position of Director of the Freshman English program this year for a three-year term. This year concludes Lee Bartlett's term as Chair. Following faculty discussion, voting, and confirmation by the Dean, next year Michael Fischer will assume the duties of the Chair. Peter White will become Director of Graduate Studies, while Scott Sanders will merge the positions of Director of the Writing Programs and

Throughout the year we continued our fairly massive reorganization. The Department of English remains one of the two largest academic departments on campus. Our full-time tenure stream faculty hovers at around thirty-five; we've got about 60 teaching assistants and PTI; we've got six full-time staff members and another nine work-study students; all undergraduates (and many graduate students) enrolled at UNM have at least minimal contact with our Department. During any given semester, we offer over 120 sections of FE, another 40 courses in advanced writing (technical, scientific, creative), and another 50+ undergraduate and graduate courses in literature and language. Further, each semester we continue to provide myriad independent study sections, as is appropriate for a department offering both an undergraduate major and minor, as well as programs leading to the M.A. and Ph.D. degrees. The Department continues to publish four important journals, administers an ongoing Reader/Lecturer series open to the public, and administers numerous awards.

To better fulfill these responsibilities, our reorganization efforts this year have focused on coming to terms with our ongoing and relentless PTI problem. Working with the Dean, we have greatly reduced the number of FE and 200-level writing and literature sections taught by PTI by substantially increasing our graduate teaching assistantship offerings. Further, finally we have been able to institute a very modest program which allows a few teaching assistants to work with tenured faculty on both more advanced courses and research projects. In addition, we have continued to encourage our graduate students through developing more research funding possibilities for them, as well as again

significantly encouraging their sponsorship of the annual university-wide Southwest Symposium.

Our Department houses academic and creative journals of international reputation--American Literary Realism (edited by Robert Fleming, Gary Scharnhorst, and James Barbour), American Poetry (edited by Lee Bartlett and Peter White), Shakespeare Studies (edited by Barry Gaines), Blue Mesa Review (edited by Rudolfo Anaya, David Johnson, Gene Frumkin, Joy Harjo, and Pat Smith), and IEEE (edited by Scott Sanders)--all under the direction of editorial assistant Uma Kukathas. Additionally, the second volume in a new series of books focusing on American poetry and poetics (edited in the Department, sponsored by the College, and distributed by UNM Press), William Everson's Naked Heart: Talking on Poetry, Mysticism, and the Erotic, was prepared for early fall release; future volumes include collections by Michael McClure, Diane Wakoski, Michael Palmer, and a group of writers associated with Naropa Institute.

This year's Third Annual Southwest Symposium--sponsored by EGSA, with departmental support--once again offered two days of graduate student critical and creative papers. Once again the Symposium was coordinated with a departmental effort to recruit minority students to our graduate program; Prof. Mary Power, who continues to serve as our department's coordinator of these efforts, worked hard to bring a number of prospective students from both in and out of the state to the Symposium.

Another major achievement this year was the completion of our third-floor video theater. With a 70-inch screen, 85 seats, and state-of-the-art video equipment, the theater will allow instructors to make far greater use of video possibilities in

current courses, as well as encourage the development of new courses. Already, the theater is pretty fully booked for class use from morning to evening, and other departments have inquired about its use.

Patrick Gallacher was promoted to Full Professor this year; Hector Torres was promoted to Associate Professor.

A number of faculty members published books this year: Rudolfo Anaya's Albuquerque (UNM Press), Lee Bartlett's Kenneth Rexroth / James Laughlin: Selected Letters (Norton), Lynn Beene's Riverside Handbook of Rhetoric and Grammar (Houghton-Mifflin), Gene Frumkin's Saturn Is Mostly Weather: Selected and Uncollected Poems (Cinco Puntos), David McPherson's Shakespeare, Jonson, and the Myth of Venice (Delaware), and Gary Scharnhorst's Brett Harte (G.K. Hall).

#### B. Significant Plans and Recommendations

We will begin the 1992-93 year with a new College Dean and a new departmental administration, though we expect the transition to be orderly. We plan to continue strengthening the organizational framework within the department over the next few years, as well as strengthening both the graduate and undergraduate programs.

A few particular recommendations:

We need to renew our efforts to hire someone in professional/technical writing. Two years ago we agreed to postpone our search rather than hire a second-choice candidate, then last year were forced to put the search on hold again due to the hiring freeze. By any method of accounting, this entry-level position should be one of the first on the College list of hiring priorities.



We need to conclude our discussion/debate on the question of graduate reading lists and fields of examination.

We need to continue our aggressive campaign to promote research in the Department; obviously, increased financial support from the College (travel funds, material, etc.) is necessary. While our faculty continues to look for funding opportunities with outside agencies, the sad truth is that there is very little outside funding available for scholars in the Humanities. Thus, we feel that both the University and the College have a special responsibility to researchers in our discipline.

Our support staff does a heroic job managing the day-to-day domestic aspects of running the Department. However, given our size we certainly could use one (or better, two) more full-time assistants. Further, our staff salaries continue to be woefully inadequate.

#### c. Appointments to Staff

None.

#### d. Separations from Staff

As I noted at the outset, this year we suffered the loss of Professor Joe Zavadil.

Following is a report from the Director of Graduate Studies, as well as charts relating to our enrollments.

## ENGLISH GRADUATE PROGRAM ANNUAL REPORT 1991 - 1992

Director: Michael Fischer

1991-92 was another productive year for the Graduate Committee, which included professors Wanda Martin, David McPherson, Minrose Gwin, Gene Frumkin, Cheryl Fresch and Michael Fischer (Director), as well as graduate student representative Lynne Dahlgren. The Committee was ably assisted by JoAnn Lucero.

The year featured still another significant increase in the number of students applying to our graduate program. The Graduate Committee reviewed 156 applications, awarding teaching assistantships to 18 students. We were impressed not simply by the number of applicants but by their quality. Students are applying to our program from such prestigious universities as Brown and the University of California, Berkeley; their Graduate Record Examination scores rank in the top ten per cent. We continue to hope to expand the number of assistantships and kinds of financial aid we can offer, especially to students from underrepresented groups.

In 1991-92 we completed the revision of our M.A. and Ph.D. examination reading lists, adding works (especially by women writers) and updating the critical studies students now need to know. The study of literature is rapidly changing and applicants to our program often declare their interest in relatively new fields such as Native American literature, Chicano/a literature, literary theory, and feminist criticism. A proposal to add Native American, African-American, and Chicano/a literature as new Ph.D. fields will be taken up next year.

This year's Southwest Symposium again succeeded in allowing faculty and graduate students to present papers and discuss their research. Working with a committee chaired by Professor Mary Power, we used the symposium as a recruiting event for college juniors considering graduate school in English, especially students from underrepresented groups. Students from as far away as Wisconsin as well as from the Southwest attended the symposium and met with the Director of Graduate Studies and other faculty.

Three students deserve special recognition: Susan Field, this year's winner of the Buchanan-Arms Award; Juliette Cunico, a Ph.D. student who was appointed to a tenure-track, assistant professor position at Bradley University; and Seth Bovey, a Ph.D. student who was appointed to a tenure-track, assistant professor position at Louisiana State University-Alexandria. Even in a difficult job market, our placement record remains outstanding.

Congratulations are also in order to the following graduate students: Iris Barkman, Mary Buckelew, Lynne Dahlgren, John Fitzpatrick, Ann Grigsby, Donna Hall, Carolyn Holbert, Nicholas Macaluso, Catherine Matovich, Susan Meyers, Joseph Mills, Lori Ostlund, Donald Reese, Anna Rieve, Melinda Russell-Haight and Michael Smedshammer passed the M.A. comprehensive exams; James Burkhead, Susan Field, and Susan McFatter passed the Ph.D. comprehensive exams; Susan Brill, Dixie Lee Larson and Henry Sikorski successfully defended their doctoral dissertations; and Jean Anderson, David Gillette, Ana González, Patrick Houlihan, Perry Novelli, Stefani Odom, David Teagle and Richard Ward were awarded an M.A. in our Writing Program.

Ph.D. Comprehensive Exams

Spring 1992

James Burkhead	19th-Century American Literature The Novel
Susan Field	19th-Century American Literature Literary Criticism & Theory
Susan McFatter	19th-Century American Literature British Romanticism

M.A. in Literature/Language & Rhetoric

Fall 1991 Graduation List (Comprehensive taken July 1991)

Mary Buckelew	Literature
John Fitzpatrick	Literature
Ann M. Grigsby	Literature
Donna Purser Hall	Literature
Carolyn D. Holbert	Literature
Nicholas P. Macaluso	Literature
Catherine Matovich	Literature
Susan V. Meyers	Literature
Lori Ostlund	Literature
Donald R. Reese	Literature/Language & Rhetoric
Anna Hammond Rieve	Literature/Language & Rhetoric
Melinda Russell-Haight	Literature
Michael Smedshammer	Literature

Spring 1992 Graduation List (Comprehensive taken January 1992)

Iris Barkman	Literature
Lynne Marie Dahlgren	Literature
Joseph Robert Mills	Literature

M.A. Writing Program

Spring 1992

Jean L. Anderson	Fiction
David Delmar Gillette	Fiction
Anna Maria González	Fiction
Patrick E. Houlihan	Poetry
Perry James Novelli	Fiction
Stefani Lyn Odom	Fiction
David Warren Teagle	Fiction
Richard Sanger Ward	Fiction

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PHD/Dissertation Defense

**Summer 1991 Graduation List**

Susan Berry Brill

Chair: Michael Fischer

Title: "Limiting Investigations: Wittgenstein and Critical Theory"

Dixie Lee Larson

Chair: Hugh Witemeyer

Title: "The Motif of the Drowned Woman in Nineteenth-Century  
Literature and Art"

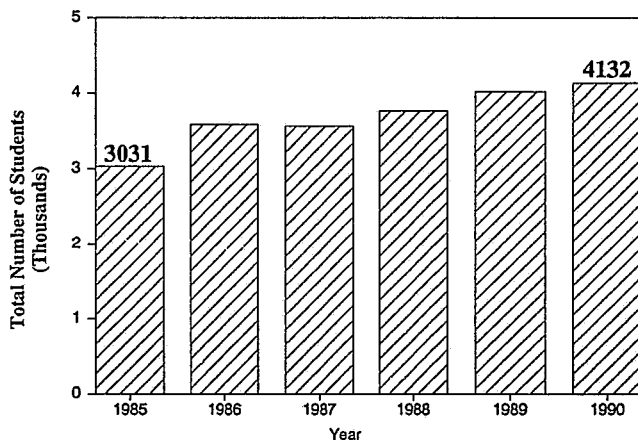
**Spring 1992 Graduation List**

Henry Sikorski

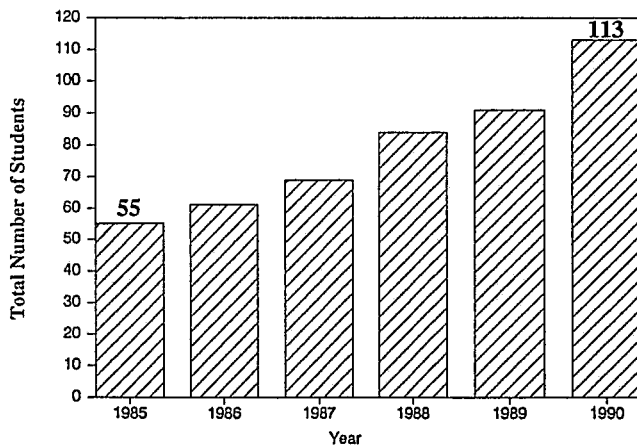
Chair: Paul Davis

Title: "The Influence of Joseph Conrad's Polish Background on Lord  
Jim, and Heart of Darkness"

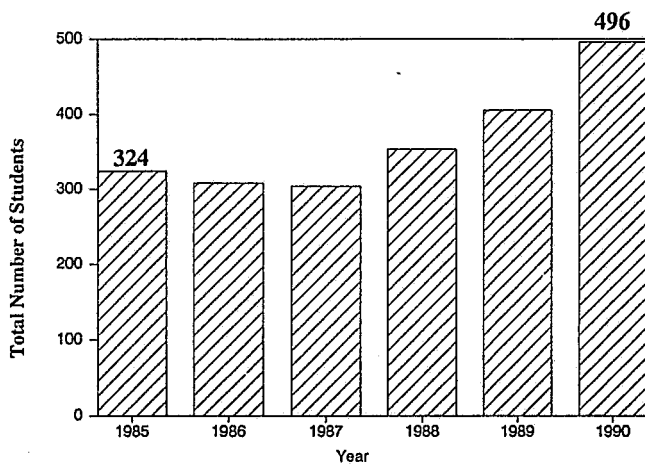
### Enrollment In English Courses Other Than Freshman English



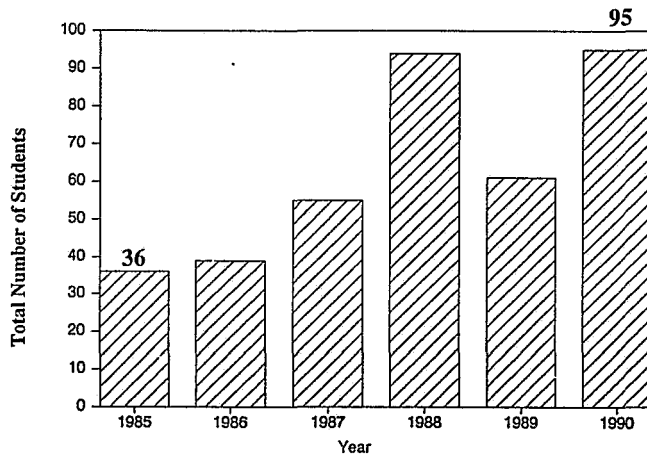
### Enrolled In English Graduate Program



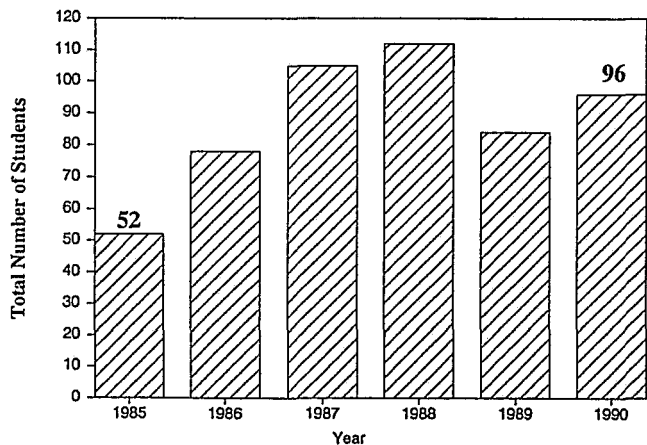
## Enrollment In English Graduate Courses



### Independent Study / Undergraduate English



### Independent Study / Graduate English



UNM ANNUAL REPORT  
GEOGRAPHY DEPARTMENT  
July 1, 1991 To June 30, 1992  
Dr. Stanley A. Morain

Significant Developments During the Academic Year

In August, Provost and Vice President for Academic Affairs Dr. Paul Risser released his plan for reallocation of UNM Resources. In that plan he announced his desire to review the Geography Program. For all practical purposes this preempted the normal functions and activities of the Department for the remainder of the fiscal year. The faculty became, at first, alarmed that our academic unit should be singled out of a host of nonacademic units for possible elimination; then was doubly stunned when, in March, Dean Wildenthal announced his plan to reassign the individual faculty to allied academic units. The faculty responded throughout the year by soliciting statements of support from its alumni and friends both within and outside New Mexico. They participated in several review committees and took their case to the UNM Planning Council and Academic Senate. Except for the Dean, none of the official documentation derived from the reallocation process concluded that Geography should be eliminated as an academic unit. There did seem to be consensus that modernization of the curriculum and restoration of the faculty to at least its 1986/87 strength should be seriously considered. In the end, no decisions regarding the Department were forthcoming. The Dean resigned in April, 1992, following which the Provost assigned the task of resolving the Department question to an Interim Dean. So disruptive was the experience that there was speculation the Department would self-



destruct--a result that would have eased the decision making process, but would have left an indelible blot on the faculty and the administration.

Compounding the core questions of reallocation, there was an additional problem arising from course cancellations. In the eleventh hour (in fact, the weekend before classes began in August), the Chair was notified that funding for Part Time/Temporary instruction would not be available. The prospect for this circumstance was known in June, 1991, but action was deferred by the Dean in hopes that the Central Administration would restore funding to the College. The net result was that Geography had to cancel eight classes. This sent an additional shock wave through the faculty and the student body, adding apparent credence to the runaway view that Geography was indeed singled out for elimination.

Despite these administrative and academic disruptions, the faculty managed to maintain its academic program. Both the undergraduate and graduate degree programs were serviced. It was, however, necessary to adopt creative advisement strategies for our majors to replace courses that were co-opted to offer "service" courses for the College. A new course in Image Processing was initiated on an experimental basis to enhance the five courses already offered in remote sensing and GIS, and to provide laboratory-oriented, hands-on training in this technology.

#### Significant Plans and Recommendations

The only plan at present is to continue resolving the question

of Geography's future at UNM. An external review of the entire program will be undertaken in October, 1992. The results from this should weigh importantly on the internal review process, but whether this will occur in context of reallocation or under some other guise is unknown. In the meantime, Provost and VPAA Risser has resigned, and Dr. Morain has stepped down from the Chair. Since the entire administrative structure, from Chair through Dean to Provost, will be undergoing change, it is unlikely that any decisions about the Department will be made during the 1992/93 Academic year. In the meantime, the faculty hopes to regain its composure and to continue servicing its degree programs.

#### Appointments to Staff

None

#### Separations from Staff

None

#### Publications

None in addition to those given in *Annual Biographical Supplements*

#### Outside Professional Activities of Staff Members

Dr. Bradley Cullen serves as President of the Southwest Association of American Geographers (SWAAG) and has been a leading figure in its activities. Dr. Stanley Morain serves as President of the American Society for Photogrammetry and Remote Sensing

(ASPRS) and is on the editorial board for *Geocarto International: an Interdisciplinary Journal of Remote Sensing*.

#### Outside Sponsored Research

Readers are referred to the Annual Report for Technology Application Center (TAC), a Division of the Institute for Applied Research Services (IARS) at UNM. This organization reports the funded research for Dr. Morain as its Director, as well as the funded research that supports some thirteen graduate and undergraduate students in Geography.

**THE ANNUAL REPORT  
OF THE  
DEPARTMENT OF GEOLOGY**

**July 1, 1991 to June 30, 1992**

**Department of Geology**

**Annual Report**

**July 1, 1991 - June 30, 1992**

**Barry S. Kues, Chairman**

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## I. GENERAL DEPARTMENTAL INFORMATION

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## FACULTY AND STAFF

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### FULL PROFESSORS:

Roger A. Anderson, Ph.D., Stanford University, 1960.  
Wolfgang E. Elston, Ph.D., Columbia University, 1953.  
Rodney C. Ewing, Ph.D., Stanford University, 1974.  
Jeffrey A. Grambling, Ph.D., Princeton University, 1979.  
Cornelis ("Kase") Klein, Ph.D., Harvard University, 1965.  
Albert M. Kudo, Ph.D., University of California, San Diego, 1967.  
James J. Papike, Ph.D., University of Minnesota, 1964.  
Lee A. Woodward, Ph.D., University of Washington, 1962.

### ASSOCIATE PROFESSORS:

Michael E. Campana, Ph.D., University of Arizona, 1975.  
John W. Geissman, Ph.D., University of Michigan, 1980.  
Stephen P. Huestis, Ph.D., University of California, San Diego, 1976.  
Karl E. Karlstrom, Ph.D., Wyoming, 1981.  
Barry S. Kues, Ph.D., Indiana University, 1974.  
Leslie D. McFadden, Ph.D., University of Arizona, 1982.  
Crayton J. Yapp, Ph.D., California Institute of Technology, 1980.

### ASSISTANT PROFESSORS:

Laura J. Crossey, Ph.D., University of Wyoming, 1985.  
Maya Elrick, Ph.D., Virginia Tech., 1990.

### CASWELL SILVER RESEARCH PROFESSOR:

Gary Acton, Ph.D., Northwestern, 1990.

### PROFESSOR EMERITI:

J. Paul Fitzsimmons, Ph.D., University of Washington, 1949.  
Stuart A. Northrop, Ph.D., Yale University, 1929.  
Sherman A. Wengard, Ph.D., Harvard University, 1947.

### RESEARCH STAFF:

Adrian J. Brearley, Senior Research Associate, (Institute of Meteoritics), Ph.D., University of Manchester, Great Britain, 1984.  
James Connolly, Research Associate, (Institute of Meteoritics), M.S., University of New Mexico, 1981.  
John Husler, Senior Staff Chemist, M.S., University of New Mexico, 1968.  
Janusz Janeczek, Post-Doctoral Fellow, Ph.D., The Wroclaw University, Poland, 1983.  
Rhian H. Jones, Senior Research Associate, (Institute of Meteoritics), Ph.D., University of Manchester, Great Britain, 1986.  
Horton Newsom, Senior Research Associate, (Inst. of Meteoritics), Ph.D., University of Arizona, 1981.



Frank V. Perry, Senior Research Associate, Ph.D., University of California at Los Angeles, 1988.  
 Harald Poths, Senior Research Associate, Ph.D., Johannes Gutenberg University, 1981.  
 Franciscus J.M. Rietmeijer, Senior Research Associate, Ph.D., Rijksuniversiteit-Utrecht, Netherlands, 1979.  
 Charles K. Shearer, Jr., Senior Research Associate, (Institute of Meteoritics), Ph.D., University of Massachusetts, 1983.  
 Gary A. Smith, Curator/Senior Research Associate, Ph.D., Oregon State University, 1986.  
 Michael N. Spilde, Research Associate, (Institute of Meteoritics), M.S., South Dakota School of Mines and Technology, 1987.  
 Lu-Min Wang, Senior Research Associate, Ph.D., University of Wisconsin-Madison, 1988.  
 David B. Ward, Research Associate, M.S., University of New Mexico, 1986.

#### ADJUNCT PROFESSORS:

M. Susan Barger, Ph.D., The Pennsylvania State University, 1982.  
 Warren S. Baldrige, Ph.D., Caltech University, 1978.  
 William F. Chambers, Ph.D., Duke University, 1967.  
 Ernest S. Gladney, Ph.D., University of Maryland, 1974.  
 Robert J. Glass, Ph.D., Cornell University, 1988.  
 Fraser E. Goff, Ph.D. University of California, Santa Cruz, 1977.  
 Charles D. Harrington, Ph.D., Indiana University, 1970.  
 Grant H. Heiken, Ph.D., University of California, Santa Barbara, 1972.  
 Steven J. Lambert, Ph.D., Caltech University, 1975.  
 Spencer G. Lucas, Ph.D., Yale University, 1983.  
 Christopher K. Mawer, Ph.D., Monash University, 1981.  
 Katerina Petronotis, Ph.D. Northwestern University, 1991.  
 Harrison "Jack" H. Schmitt, Ph.D., Harvard University, 1964.  
 John Shomaker, M.S., University of New Mexico, 1965.  
 Carol L. Stein, Ph.D., Harvard University, 1977.  
 Daniel B. Stephens, Ph.D., University of Arizona, 1979.  
 Stephen G. Wells, Ph.D., University of Cincinnati, 1976.  
 Kenneth H. Woheltz, Ph.D., Arizona State University, 1980.

#### STAFF:

George Carnako, Building Systems Mechanic  
 Mabel T. Chavez, Editorial Assistant II  
 Sara Coulie, Clerk Specialist V  
 Mohd I. Ghweir, Thin Section Preparator  
 Gilbert E. Griego, Harding Mine Maintenance Mechanic  
 Sally E. Hayes, Accounting Technician  
 Cindy Jaramillo, Staff Assistant  
 Stacy A. Kaser, STEM Laboratory Technician  
 Dagoberto Lopez, Drafting Technician  
 Kenneth M. Nichols, Photographer, Institute of Meteoritics  
 Alice Quattrocchi, Administrative Coordinator  
 Florine Rietmeijer, Lab Aide  
 Thomas Servilla, Expert Technician II, Institute of Meteoritics  
 Mary L. Sherman, Editorial Assistant II  
 Diane K. Sparago, Administrative Coordinator  
 Anna M. Smetana, Staff Assistant, Institute of Meteoritics  
 Debra A. Spilde, Administrative Assistant, Institute of Meteoritics.

VISITING SCIENTISTS (in residence, 1991-1992):

Dr. Susan Barger, in-residence Adjunct Professor, on leave from John Hopkins University.  
Dr. Maryellen Cameron, Chair, Department of Geology, Miami University (Ohio) - Sabbatical research.  
Dr. Hiroshi Isobe, Japan Atomic Research Institute, visiting scientist working with R. Ewing.  
Dr. Charles McCabe, Department of Geology, Louisiana State University, Sabbatical research.  
Dr. Robert Molina-Garza, post-doctoral appointment with J. Geissman.  
Dr. Katerina Petronotis, in-residence Adjunct Professor, conducting research.  
Dr. Janet Slate, post-doctoral appointment with G. Smith.

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**DEPARTMENTAL COMMITTEES, 1991-92**

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**GRADUATE COMMITTEE**

J. Geissman  
W. Elston  
J. Grambling  
J. Papike  
M. Campana

**UNDERGRADUATE COMMITTEE**

C. Klein  
L. Crossey  
M. Elrick  
S. Huestis  
L. Woodward

**SCHOLARSHIP COMMITTEE**

B. Kudo  
L. Crossey  
M. Elrick  
C. Yapp

**LONG-RANGE PLANNING COMMITTEE**

L. McFadden  
R. Ewing  
J. Geissman  
C. Klein  
J. Papike  
(B. Kues)

**FACILITIES COMMITTEE**

R. Ewing  
A. Brearley  
J. Geissman  
J. Papike  
C. Yapp  
(B. Kues)

**COLLECTIONS COMMITTEE**

G. Smith  
R. Ewing  
C. Klein  
(B. Kues)

**COMMITTEE ON STATUS OF RESEARCH  
SCIENTISTS**

J. Grambling  
R. Ewing  
R. Jones  
J. Papike  
G. Smith  
(B. Kues)

**COMPUTER USE & PLANNING COMMITTEE**

S. Huestis  
J. Geissman  
(Grad. students, as needed)

**ALUMNI RELATIONS COMMITTEE**

L. Crossey  
W. Elston

**VEHICLE COMMITTEE**

B. Kues  
G. Carnako  
D. Sparago  
(Student Representative)

**LECTURE & COLLOQUIUM COMMITTEE**

B. Kudo  
M. Campana

**EEE PROFESSORSHIP**

L. Woodward

B. Kues

**MICROSCOPE COMMITTEE**

J. Grambling

M. Elrick

B. Kudo

**LIBRARY LIASON**

S. Huestis

**THIN SECTION LAB**

J. Grambling

**DEPARTMENTAL PUBLICATIONS**

B. Kudo

D. Sparago

(B. Kues)

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## APPOINTMENTS AND SEPARATIONS

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### APPOINTMENTS TO FACULTY

Gary A. Acton, Caswell Silver Distinguished Research Professor, January 1992.  
Karl E. Karlstrom, Associate Professor, January 1992.

### SEPARATIONS FROM FACULTY

Wolfgang E. Elston, Retirement, June 30, 1992.

### APPOINTMENTS TO STAFF

Alice Quattrocchi, Administrative Coordinator, January 2, 1992.  
Sara Coulie, Clerk Specialist V., July 1, 1991.

### SEPARATIONS FROM STAFF

Ann Smetana, Staff Assistant, Institute of Meteoritics, March, 1992.  
Diane Sparago, Administrative Coordinator, November, 1991.

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## II. SIGNIFICANT DEVELOPMENTS, ACCOMPLISHMENTS, AND PLANS

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## SIGNIFICANT ACHIEVEMENTS AND GOALS

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### Introduction

This annual report summarizes the activities and accomplishments of the Department of Geology, including the Institute of Meteoritics, during the 1991-92 academic year. Most details of faculty activities are derived from biographical supplements for calendar year 1991, whereas the general discussions include the period from July 1, 1991 to June 30, 1992. This inconsistency in reporting UNM data (calendar year for individuals; academic year for departments) is unfortunate and UNM should choose one or the other period for its standardized reports. As this is the only document comprehensively summarizing the Department's history during the past year, and will be "used as a working document by the President and other administrative office" (memo from A. Brown, June 24, 1992), we have endeavored to make it as complete as possible.

During the 1991-92 academic year, the Department of Geology included 17 regular tenured or tenure-stream faculty, and the Caswell Silver Research Professor, an endowed Chair. In addition, 7 Ph.D. - level scientists (4 in the IOM) filled staff positions, with specific responsibilities relating to the analytical labs or collections; these people each maintained active research programs and in some cases participated in the teaching of courses as well. Two research scientists (Perry and Rietmeijer) were entirely supported by external funding, and one other (Janeczek) was a post-doctoral scientist. The Department of Geology faculty is thus augmented by a significant number of other Ph.D. - level geoscientists, who add to the research and teaching missions, as well as to the scholarly reputation of the Department.

Permanent scientific staff also includes several Master's level technicians; and office and administrative clerical staff also contribute vitally to the functioning of the Department. Several other geoscientists were in extended residence in the Department (for periods ranging from several weeks to the entire year), conducting research as visiting scientists or adjunct professors in residence. The names of all of these departmental personnel are included in Part I of this report.

### FACULTY AND STAFF ACTIVITIES

#### Position Changes in Faculty

Both Full Professor faculty positions vacated in 1991 (death of D. Brookins in April; departure of S. Wells to University of California, Riverside in June) remained vacant through the 1991-92 academic year. Searches to fill these critical faculty positions were not authorized because of the hiring "pause" imposed by the Provost during the University's year-long Reallocation process. The Department expects to begin searching for faculty to fill both positions, at the Assistant Professor level, during the 1992-93 academic year. The delay in searches will result in a two-year hiatus in these positions, with some negative consequences for the Department (see below).

Dr. Karl E. Karlstrom joined the faculty as a tenured Associate Professor in January 1992. Dr. Karlstrom moved to UNM from Northern Arizona University, where for nearly a decade he conducted research in the evolution of tectonic styles in the Precambrian, and processes of continental accretion, assembly and stabilization in Precambrian and Phanerozoic orogens. His arrival strengthens our program in Precambrian/structural/metamorphic geology, and strong and immediate research collaborations with other members of the faculty and graduate students are already in progress.

A second arrival, also in January, 1992, was Dr. Gary Acton, who began a two-year appointment as Caswell Silver Research Professor. Dr. Acton (Ph.D., Northwestern, 1990) moved to UNM following a post-doctorate at Woods Hole Oceanographic Institute. His research interests center on geodynamics and paleomagnetism, with applications to problems involving lithosphere plate motion in the Mesozoic and Cenozoic, areas that complement the research interests of faculty members Stephen Huestis and John Geissman. Dr. Katerina Petronotis arrived with Dr. Acton, as an in-residence Adjunct Assistant Professor.

A third vacancy in the faculty's ranks occurred with the retirement of Wolf Elston at the end of the academic year. Dr. Elston arrived at UNM in 1957, and served 35 years as a faculty member in the Department, including a year as Acting Chair in 1982. During his time here, he brought distinction to the Department and University through his studies recognizing and documenting the numerous giant mid-Tertiary calderas in southwestern New Mexico, and in other areas of study as well. He directed the graduate research of about 50 Master's and Doctoral students. Although Dr. Elston is retiring from the faculty, he will continue to contribute his knowledge and wisdom to the Department as an Emeritus Professor and Director of our new volcanology program (see below). Wolf presented his views of the past 35 years at UNM and in the science of geology as the featured Commencement speaker in May, 1992.

During Spring 1992, Dr. Gary Smith, Curator/Senior Research Associate in the Department, and formerly a Caswell Silver Research Professor, was converted to a faculty position as Associate Professor. This was done by recommendation of the faculty, with the approval and support of Dean Wildenthal. He will begin in Fall 1992. Dr. Smith's research interests are an unusual combination of volcanology and sedimentology, and in his new role will strengthen the faculty's expertise and endeavors in both fields.

Following Steve Wells' decision to move to University of California, Riverside, the faculty chose Barry Kues to be Chair of the Department, and he was appointed to a four-year term beginning in August 1991. Les McFadden served as Assistant Chair during the 1991-92 academic year.

#### Other Position Changes

Alice Quattrocchi replaced Diane Sparago as Administrative Coordinator in January 1992, following Diane's resignation to assume a position elsewhere in the University. The faculty decided to phase out the draftsman staff position, and instead will provide partial support for a research scientist to supervise the X-ray diffraction lab, beginning in July 1992. A search was conducted by the departmental Facilities Committee during the Spring semester, for a person to fill the position of Instrumentation Technician V, to maintain and repair our analytical and electronics equipment. This position was previously shared with the Biology Department, but had been vacant since October 1990. Dean Wildenthal approved raising the position from 0.5 FTE to 1.0 FTE. The search was successful, and the top applicant, Robert Macy, will begin work in early August 1992.

#### Faculty Advancement

Three faculty members were promoted during the 1991-92 academic year. Laura Crossey was promoted to Associate Professor and granted tenure; Michael Campana received tenure; and Barry Kues was promoted to Full Professor.

#### Sabbatical Activities

None of the faculty was on sabbatical leave in 1991-92.



### Teaching

Student enrollments in Geology Department courses during academic year 1991-92, as indicated by total student credit hours (SCH), was 7,595, a minute decline from the 7,606 of academic year 1990-91. The Department had three vacant faculty positions in its ranks in Fall 1991, and two in Spring 1992, which prevented several upper division undergraduate and graduate level courses, and a couple of 100-200 level sections, from being taught. In this context, maintaining enrollment virtually at the previous year's figures represents a significant accomplishment. The 1991-92 figures represent a 5-year increase in SCH of 18% over the 1986-87 totals. Establishment of several new courses at the 100-200 level, development of a more flexible B.A. degree program, and maintenance of our traditionally strong graduate program are primary factors in the increase in SCH. According to College records, 54 undergraduate students were declared Geology majors in 1991-92.

The graduate student population is discussed in detail in a later section of this report.

The Department continued its tradition of having virtually all faculty members teach at least one 100-200 level course during the year. Except for laboratory sections, and a single lecture section of G-101 reserved for a Ph.D. student, few courses offered by the Department are taught by non-faculty instructors. This results in the Geology Department having one of the lowest ratios of non-tenure stream (part-time and graduate student instructors) to tenure-stream faculty instructors in the College.

A major development in the Department's educational program was the establishment, with several Los Alamos National Lab scientists, of a joint volcanology program, described in more detail in a following section of this report.

A summary of individual faculty teaching accomplishments is presented in Part III-1 of this report.

### Research

The faculty, research staff, and students of the Department continued their high level of activity and productivity in research in 1991-92. Research -- contributing to human knowledge in one's discipline -- is an essential and fundamental function of the Department of Geology at UNM. The Department's status and respect within its discipline depends primarily on the quality and quantity of its research, just as a university's reputation depends mainly on the scholarly activities of its entire faculty. In addition, active research programs form an essential teaching tool in keeping students up to date, in educating them not only about facts but as to how knowledge is developed, and (especially with graduate students) providing support for thesis/dissertation work and in the mentoring process of future geoscientists.

During 1991, members of the Department of Geology and Institute of Meteoritics, including faculty, staff and students, produced more than 200 publications. This includes 2 edited books, 51 papers in refereed journals, 20 papers in refereed conference/symposium proceedings, 16 book chapters, 8 nonrefereed articles, 10 technical reports, and 109 abstracts. Of this total, about 25% of the journal/conference-symposium/book chapter papers were coauthored by graduate students, and about 43% of the published abstracts had student sole or coauthors. These figures indicate the significant role graduate students play in the Department's research endeavors, and the close interaction between faculty and graduate students in collaborative research projects. 1991 publications are listed by category in Part III-2 of this report.

Faculty and research staff continue to attract a large number of grants and contracts to the Department in support of their research and graduate student education. About 60 separate grants/contracts were in effect during 1991 (see Part III-3), amounting to a total of \$4.225 million. Of this, new awards obtained in 1991 totalled \$1.86 million. During the first six months of 1992, 18 new grants were awarded to Department of Geology/IOM personnel, valued at \$826,000. More than 99% of these grant/contract funds were derived from external funding agencies, chiefly NSF, NASA and DOE, in rigorous competition with other investigators across the country.

~~Not only do these grant/contract funds support a large proportion of departmental research, and benefit~~ the University as a whole through the overhead funds they generate, but also many graduate students are supported by these funds as well (see Part VI). In addition, Geology graduate students are becoming increasingly successful in attracting awards supporting their thesis/dissertation research, from institutions such as the Geological Society of America, Sigma Xi and NASA. Total support raised by graduate students (excluding grants in which they were co-principal investigators with faculty members) in 1991 exceeded \$18,000.

In addition to publications and funded grant/contract research, the faculty and staff also pursued a wide variety of other research projects during 1991 that were not externally supported or published upon that year (see Part III-4).

Faculty and research staff participated widely in professional societies and organizations, presenting numerous talks and poster sessions, organizing and chairing symposia, leading field trips, and serving as officers in professional societies. Such activities are a form of service to the profession, but also increase professional recognition, contacts, the exchange of ideas and potential for joint research, and leads to greater visibility for UNM and the work of its faculty. This participation is summarized in Part III-5 of this report; other professional activities are outlined in Part III-6.

Some of these activities are worthy of special note. Inadvertently omitted from the 1991-92 annual report was the Department's hosting of the combined Rocky Mountain/South-Central Section annual Geological Society of America meeting in Albuquerque in April 1991. John Geissman served as president of the Rocky Mountain section and was co-chair and registration chairman for the meeting. Campana, Grambling, Smith and Woodward all organized/chaired symposia and/or led field trips during the meeting. Jim Papike served as president of the Geochemical Society and presented the presidential address at the annual G.S.A. meeting in San Diego in October 1991. Rod Ewing was nominated first vice-president (president-elect) of the Materials Research Society, served on several other MRS committees, and is a member of a National Academy of Science/National Research Council panel on the Waste Isolation Pilot Plant. Kase Klein, long a member of the international Center for the Study of Evolution and the Origin of Life, coedited a 1350-page book, The Proterozoic Biosphere, published in April 1992, and the definitive reference on the subject. Several faculty and research staff members served as Associate Editors of international refereed journals, including J. Geissman (Geological Society of America Bulletin; Journal of Geophysical Research); J. Grambling (Geology, Journal of Metamorphic Geology), K. Klein (Precambrian Research; Canadian Journal of Mineralogy), L. McFadden (Catena), and H. Newsom (Geochimica et Cosmochimica Acta).

#### University and Public Service

Service to the University and to the public is an important component of the Department's activities. During the past year, Geology faculty participated on numerous College and University committees, and served as a resource of expertise in the geosciences for individuals, groups and organizations outside the University (see Parts III-7 and III-10 for lists of these activities). Members of the Department routinely identify rock, mineral, fossil and suspected meteorite specimens for the public, give talks to civic groups and public school classes, judge in science fairs, answer questions for radio, TV and newspaper reporters, and host open houses for local gem and mineral groups.

An important resource provided by the Department to the University and the public is maintenance (without specified University support) of two public museum, one devoted to geology (rocks, minerals, fossils, New Mexico geology) and the other to meteorites. These museums are open each weekday, are free, and are visited by thousands of school children and adults each year. A free pamphlet provides information for a self-guided tour, and faculty and graduate students on occasion lead tours when arrangements have been made in advance. A more complete description of activities involving the Department's museum and geological collections is presented in the report by Curator Gary Smith (Part V of this report).

The Department also maintains the Harding Pegmatite mine in southern Taos county, donated to UNM by Dr. Arthur Montgomery as an unusual mineral-collecting locality and outdoor geological laboratory. Mr. Gilbert Griego, a Department staff member, is the long-time caretaker of the property. Last year nearly 2,000 people visited the Harding mine. The Geology Department welcomes visitors, but permission from the Chairperson of the Department must be obtained prior to each visit.

### ALUMNI PROGRAMS AND SUPPORT

The Department is very fortunate in being supported by a large group of active and enthusiastic alumni. Individually and collectively these graduates of the Department provide generous financial, advisory and moral support for many departmental activities, which contribute significantly to our success in our research and educational missions.

First among sources of alumni support is the Caswell Silver Foundation. Funds generated by the Foundation in 1991-92 supported Dr. Gary Acton, the current Caswell Silver Research Professor, who began a two-year appointment in January 1992. The Foundation also subsidized the bulk of faculty travel to scientific meetings during the past year, and provided generous stipends fully supporting two Silver-Kelley graduate student Fellow (Laurel Shastri and Tracey Cascadden). No Silver Distinguished Lecturer visited the Department in 1991-92.

The Silver Foundation also made possible, as it does each year, two \$500 Caswell Silver Meritorious Staff Awards, presented to two outstanding, nonacademic staff members. These awards are a tangible way the Geology faculty expresses its deep appreciation to the Department's staff for their efforts in contributing to the operation and advancement of the Department. This year's recipients were Cindy Jaramillo (Staff Assistant) and Mary Sherman (Editorial Assistant II).

Donations and contributions from alumni, faculty and friends of the Department support about a dozen scholarship funds. The interest generated by these funds, which grow annually, are utilized to award scholarships to undergraduate and graduate students (see Part VI). This year, more than \$16,000, in the form of scholarships ranging from about \$100 to \$1,000, were awarded to 33 students. Some of these scholarship funds are offered to potential new graduate students, in order to supplement a teaching assistantship offer. This provides a further inducement for an undecided potential student to attend UNM, and helps to supplement the TA salaries, which are typically less than at most competing universities.

The Department also maintains contact with its alumni through gatherings at professional meetings, newsletters, and quite a lot of personal contacts by the faculty.

### DEPARTMENT ENDEAVORS, PLANS AND DEVELOPMENTS

#### General Introduction

The Department operated at less than full strength during the 1991-92 academic year, with vacancies in the faculty positions occupied previously by Wells and Brookins, and in the structural geology position that was filled with the arrival of Karlstrom in January 1992. Normal replacement/search procedures were suspended as the University initiated a wide spectrum of internal reviews related to its Reallocation program, which occupied the entire academic year and extended into summer 1992. Reallocation was designed to analyze most UNM programs in order to determine ways in which the University might become more efficient, and refocus its goals and programs towards areas identified in the "UNM-2000" plan. One consequence was a "hiring pause" during the academic year; essentially no searches for faculty to fill existing vacancies were approved by the

**Provost for the College of Arts and Sciences.** Because searches normally take most of an academic year, this pause means that open positions within the Department will be vacant for two years instead of the normal one year, assuming that authorization to search is granted early in the 1992-93 academic year. This hiatus in filling two vacant positions essential to major departmental programs is of great concern to the faculty, and will have a detrimental impact on those programs in terms of graduate student recruitment, untaught courses, loss of some research and interdisciplinary initiatives, loss of momentum within the programs, all of which adversely affects the Department's scholarly reputation.

Accompanying Reallocation was a small barrage of initiatives from the central Administration during the 1991-92 academic year, involving fundamental changes and new directions for UNM. These included recommendations for an Honors College, a core curriculum, and a plan to transform UNM into a "University for the Americas". Geology faculty were involved in the first two of these; R. Ewing served on the Honors task force, and L. Crossey and W. Elston on the core curriculum committee. Other faculty served on College committees that studied various aspects of the Reallocation plan.

Within this general University environment, the Department of Geology developed several important plans and goals for its future, and made progress in several areas relating to its operation and advancement. Much of this planning was carried out in the context of a self-study and five-year plan, composed during the early part of the Fall 1991 semester at the request of Dean Wildenthal (a copy of this report is Appendix 1). This study involved much discussion among the faculty.

Major planning decisions and other developments are discussed below.

#### Name Change

The Department decided to change its name from Department of Geology to Department of Earth and Planetary Sciences. The new name reflects more accurately the scope of the geosciences in the 1990s, the traditionally close ties between the Department and the Institute of Meteoritics, the research of the faculty and the educational training received by students. The proposal for the name change had received the approval of the A&S faculty and the Dean's office by the end of the Spring semester, and is expected to be implemented sometime in the Fall 1992.

#### Faculty Vacancies

The Department decided that its highest priority was to fill Dr. S. Wells' position with a geomorphologist. A radiogenic isotope/geochronology geochemist, and a low temperature/environmental geochemist were the next highest priorities for replacement faculty. Extensive discussion of Brookins' geochemistry position ultimately resulted in a decision to search for a low-temperature geochemist with expertise in one or more of the following areas: transport of inorganic/organic constituents in geologic environments; geochemical cycling; surface processes and mineral corrosion; application of isotope and other geochemical tracers; and environmental geochemistry. The potential importance of a radiogenic isotope geochemist/geochronologist to the Department's programs was also emphasized during these discussions. Searches for both the geomorphologist and geochemist are expected to be approved early in the 1992-93 academic year, after the Reallocation "hiring pause" is lifted.

The faculty agreed to fill the position opened by Elston's retirement immediately, by converting Curator/Senior Research Associate G. Smith to faculty status as an Associate Professor. This was approved and accomplished by the end of the Spring 1992 semester, although at the expense of giving up our 0.75 FTE Curator staff position. Smith will participate in both the volcanology and basin studies programs, and will continue to devote part of his time to supervising and maintaining the Department's collections of geological materials.

### Analytical Facilities

The departmental Facilities Committee, beginning in summer 1991, undertook a comprehensive examination of the Department's analytical facilities and laboratories. Detailed information about all of the Department's laboratories was compiled, including annual operating expenses, current support and funding, staff requirements, use of the labs by faculty, staff and students both within and outside of the Geology Department, and possible future needs. The Department adopted guidelines concerning the use of these facilities for outside or contract work, and the expectations for faculty, student and departmental support for continued operation of these labs. Fee schedules were compiled, and in some cases, fees were raised. One of the most significant difficulties is the fact that the Department conducts several courses designed to instruct students (many from other departments) in the use of the instruments, which they need for their thesis/dissertation work, but the instructional uses of the labs, often thousands of dollars per course, are not adequately supported by the University. Also, payment of laboratory fees by users has been, in some cases, erratic, and has contributed to difficulties in fully supporting the costs of maintaining the labs. The Department believes that the University would benefit by developing a thorough review and comprehensive plan relating to all of UNM's multi-user laboratory facilities, in order to avoid duplication in facilities among different units, to better direct resources in such a way that the entire array of facilities is maintained or enhanced, and to enhance multidisciplinary research interactions. The Department brought these ideas to the attention of the Dean and Provost at appropriate times.

An outgrowth of these discussions was a decision to end the drafting staff position and convert it to partial support for a research technician to supervise the day-to-day operation of the X-ray diffraction lab. Dr. Mark Miller will assume this position as a Senior Research Associate in July 1992. The addition of a full-time electronics technician in August 1992 will also improve the Department's ability to manage and support its analytical facilities.

The Department's large, well-equipped isotope/geochronology laboratory, established and supported by Brookins, was also discussed in conjunction with the geochemistry position. This lab will continue to operate at its current relatively low level of activity, with a 0.5 FTE staff member, until the new geochemist arrives. At that time a more definite determination of its status will be made.

During the coming year, two additional large instruments will be added to UNM's complement, through the efforts of Department of Geology faculty and research staff. First, installation of a secondary ion mass spectrometry (SIMS) microprobe in the UNM-Sandia Labs Advanced Materials Laboratory on the south campus progressed during the summer of 1992. This instrument, purchased at a cost of above \$1.3 million by Sandia in 1989, will be jointly operated and its operation jointly funded by Sandia and the Institute of Meteoritics. A search was conducted this year for a Ph.D. - level geochemist to operate/manage the SIMS lab; Dr. Graham Layne will assume this position (as Senior Research Associate in the Institute of Meteoritics) in July, 1992.

Second, a proposal submitted in February by R. Ewing and L-M Wang (Department of Geology) and A.K. Datye (Department of Chemical and Nuclear Engineering) to NSF for the acquisition of a high-resolution analytical electron microscope was successful. The instrument will be installed in the Department of Geology in 1992-93. Funds matching half of the \$460,000 cost were committed by the Research Administration Office, College of Arts and Sciences, Department of Geology, Center for Microengineered Ceramics, and Center for High-technology Materials. Acquisition of this instrument forms an instructive paradigm for how the University and several units within it can combine efforts to obtain a multi-user facility that will benefit researchers and students across departmental and college lines, and augment UNM's array of advanced analytical facilities.

### Volcanology Program

The Department's volcanology program, conducted in collaboration with volcanologists at Los Alamos National Lab, successfully completed its first year in 1991-92. This program, established through the initiative and leadership of W. Elston, and with the support of Dean Wildenthal and LANL (see Appendix 2 of the 1990-91 annual report), utilizes the expertise of several Departmental (Smith, Elston, Kudo) and LANL (S. Baldridge, F. Goff, G. Heiken, K. Wohletz) volcanologists, and New Mexico's excellent record of volcanoes and volcanic rocks.

Courses taught during the 1991-92 academic year included G-547 (Seminar on explosive volcanism; G. Smith and K. Wohletz, instructors) and G548 (seminar in Volcanology, W. Elston, F. Goff and K. Wohletz, instructors). Several new courses within the program were approved by the University to be taught beginning in the 1992-93 academic year. These include G-252 (Volcanoes, benign and malign); G-450 (Volcanology); G-451 (Field studies in volcanology); and G-550 (Advanced volcanology). During the summer session, 1992, G. Heiken instructed G-300 (Volcanoes and human affairs), and in late summer the inaugural session of the field volcanology course will be held, with instructional participation by G. Smith, W. Elston, and the four LANL volcanologists. The field course will operate out of UNM's newly renovated Young Ranch facility near Cochiti, and has attracted an enrollment of 14 students, from Italy, Canada, Austria and Czechoslovakia, as well as the United States. G. Smith, in particular, was instrumental in organizing this course, and attending to the details of advertising, student registration, and the renovation of Young Ranch.

The volcanology program is virtually unique in North America, and with the participation of the Los Alamos scientists, is on its way to becoming a highly successful and distinctive UNM program.

### Status of Research Scientists

A committee chaired by J. Grambling examined the status of the research scientists in the Department, in order to formalize titles and the ways in which these valued colleagues participate in departmental activities. Ph.D. level non-faculty scientists who are in-residence in the Department for an extended period of time and more closely integrated into departmental activities than adjunct professors or visiting scientists, are considered Senior Research Associates. Many have designated duties within the Department and formal staff positions, supported through the departmental budget and by grants. Others are supported entirely by external funds. One member of this group is selected each semester as a representative at faculty meetings. Subject to departmental approval, they may advise graduate students and teach courses. Master's level scientists are considered Research Associates, and have designated technical duties within the Department. Clarification of status, representation, and opportunities to interact with students answered some long-standing concerns of the research staff.

### Capital Improvements

No significant capital improvements to the Geology Building occurred in 1991-92. The Department submitted two proposals for such improvements to the Dean for 1992-93. Of highest priority was upgrading the Department's Ethernet computer linkages, so as to improve and make more efficient its internal networking, communication, and end-product preparation capabilities. A second project, one that has been on the University's list for several years, is the enclosure of the existing exterior lightwell along the north side of Northrop Hall, in order to create additional secure storage space for departmental collections and as a place to carry out rock-processing and preparation activities. Only the second of these projects appeared on the College's list of high-priority capital improvements, but at present, the Department has received no indication whether it will be accomplished in 1992-93. Funding for the upgrading of the computer network will be sought from sources outside the University.

In addition to these relatively small capital improvement needs, the general matter of space within Northrop Hall will require attention in the near future. At present, there is barely enough room to accommodate faculty and research staff offices and laboratories, offices for graduate students, classrooms and teaching labs, our growing collections of rocks, minerals and fossils, and rooms for general departmental functions. The Department attracts a significant number of visiting scholars each year as well, who deserve a modest amount of office space that is becoming increasingly difficult to provide. Further, in the past 8-10 years the Department has been very successful in attracting funding for advanced analytical instruments and laboratories; a new high-resolution electron microscope will arrive during the 1992-93 year. These facilities require space.

In the near future, our ability to expand in a planned way to provide reasonable space for current personnel and laboratories, and to accommodate a modest degree of growth that comes with successful research endeavors, will be severely curtailed. Construction of an additional wing of Northrop Hall will eventually be needed, and would alleviate these space problems for at least a decade.

#### Basin Studies Program

A Basin Studies Program was proposed in 1990 to provide students with a curriculum emphasizing process-related understanding of the development and resources of sedimentary basins. Training of this kind of applicable to careers in the energy and mineral fields, in environmental geology, and academia. Areas of emphasis would include basin analysis, depositional processes, thermal and hydrologic evolution of basins, stratigraphy, diagenetic modification of strata, interactions between climate change and sedimentation, economic accumulations of oil and gas, coal, and other resources, and technological impacts on basin processes. Lead faculty participants include M. Campana, L. Crossey, M. Elrick and G. Smith, with other faculty involved in a more limited way (See Appendix 3, 1990-91 Annual Report, for more information).

Relatively little progress was made in 1991-92 in formalizing and expanding the nascent Basin Studies Program, largely because the Department's attention was focused upon considerations related to filling vacant faculty positions in the Quaternary Studies and Geochemistry programs. Good potential for an expansion of the Basin Studies Program exists. This could involve closer integration of the program with the Energy, Exploration, Education Fund, which in the past has been utilized to support visiting petroleum geologists to teach courses on that subject within the Department. In 1992-93, the Department will discuss the various actual and potential components of the Basin Studies Program in more detail, with a view towards more fully defining its scope, activities, and requirements for support.

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### **III. ACTIVITIES OF THE FACULTY AND RESEARCH SCIENTISTS**

**(Calender Year 1991)**

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## 1. TEACHING ACCOMPLISHMENTS

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### Roger Y. Anderson

Spring 1991:     Geol. 209, Earth Environment (51 enrolled)  
                  Geol. 101, Physical Geology (40 enrolled)

Fall 1991:       Geol. 209, Earth Environment (45 enrolled)  
                  Geol. 439, Paleoclimatology (23 enrolled)

### Adrian Brearley

Co-taught Geology 518, Electron microprobe and scanning electron microscopy, Fall Semester, 12 students  
Presented invited lecture in course G-519 "Crystal Chemistry of Trace Elements" on April 3, 1991 entitled "TEM approaches and insights".

Present invited lecture in course G-265 "Lunar and Planetary Geology" on October, 21st, 1991, entitled "Introduction to Meteorites, Pt. 1".

Institute of Meteoritics, Achondrite seminar. Presented talk, "Cooling histories of achondrites", February 27, 1991.

Institute of Meteoritics, research seminar "Geophysical importance of the mechanisms of the olivine to spinel transformation to mantle dynamics" September 20, 1991.

Instructed several graduate students and staff members in the operation of the electron microprobe.

### Michael Campana

Spring 1991:     Geol. 102, Historical Geology (32 enrolled)  
                  Geol. 562, Groundwater Mechanics (11 enrolled)  
                  Geol. 492, Problems (1 enrolled)  
                  Geol. 401, Seminar (25 enrolled)

Summer 1991:    Geol. 491, Problems (1 enrolled)

Fall 1991:       Geol. 462, Hydrogeology (52 enrolled)  
                  Geol. 474, Hydrogeology Laboratory (13 enrolled)  
                  Geol. 401, Seminar (20 enrolled)

### Graduate Students

#### Thesis Completions:

Robert M. Byer, Jr., M.S. University of Nevada-Reno, A carbon-14 calibrated discrete-state compartment model of the groundwater flow system, Yucca Mountain and vicinity, Nevada-California (March 1991).

Student Advisement:

Kelley Bitner (M.S. in Geology)  
 Gregory Wroblicky (M.S. in Geology)  
 John Appel (M.S. in Geology)  
 Peter Scott (M.S. in Geology)

Franz Lauffer (M.S. in Geology)  
 Gregory Wroblicky (M.S. in Geology)  
 Armand Groffman (M.S. in Geology)

Service on Examination Committee:

Armando Groffman (M.S. Geology)  
 Tracey Cascadden (Ph.D. in Geology)  
 Paul Tashjian (Ph.D. in Geology)

Service on Thesis/Dissertation Committee:

Drew Baird (Ph.D. in Civil Engineering)  
 Dana Baer (M.S. in Civil Engineering)  
 Rob Pine (M.S. in Hydrology, NM Tech)  
 Judy Stoores (M.S. in Geology)  
 David Ward (Ph.D. in Geology)

Erik McDonald (Ph.D. in Geology)  
 Paul Tashjian (Ph.D. in Geology)  
 Armando Groffman (M.S. in Geology)  
 Franz Lauffer (M.S. in Geology)

New Courses Developed:

Spring 1991: Geol. 562, Groundwater Mechanics

Fall 1991: Geol. 474, Hydrogeology Laboratory

Laura Crossey

Spring 1991: Geol. 101, Physical Geology (85 enrolled)\*  
 Geol. 503, Petroleum Geochemistry (7 enrolled)

Fall 1991: Geol. 304, Sedimentology/Stratigraphy (co-taught) (11 enrolled)  
 Geol. 314L, Sedimentology/Stratigraphy (co-taught) (11 enrolled)  
 Geol. 547, Clastic Diagenesis (6 enrolled) "

\* Enrollment

\*\* Curricular Development

Student Advising/Committees:PhD Committees:

P. Longmire (1991\*, co-chair)  
 D. Larsen (chair)  
 P. Eberly (co-chair)  
 D. Ward (committee member)  
 B. Allen (committee member)

P. Tashjian (committee member)  
 R. Finch (committee member)  
 D. Carr (biology; committee member)  
 Carol Treadwell (exam)

MS Committees:

T. Royek (1991, committee member)  
 D. Milligan (1991, committee member)  
 K. Fox (1991, chemistry dept.; research advisor)  
 T. Wibert (committee member)  
 F. Lauffer (committee member)

Undergraduate:

D. Hicks (1991, senior thesis advisor)  
 C. Inoue (1991, senior thesis advisor)  
 G. Savarese (senior thesis advisory)  
 C. Timm (senior thesis advisor)

\* indicates date of graduation

Maya Elrick

Spring 1991: Geol. 441, Advanced Sedimentology (10 enrolled)  
 Summer 1991: Geol. 319, Introduction to Field Geology (10 enrolled)  
 Fall 1991: Geol. 304, Stratigraphy Sedimentology (12 enrolled)  
 Geol. 537, Basin Analysis (8 enrolled)

Wolfgang E. Elston

Spring 1991: Geol. 101, Physical Geology (82 enrolled)  
 Geol. 492, Problems (2 enrolled)  
 Geol. 552, Problems (2 enrolled)  
 Geol. 599, Dissertation (1 enrolled)  
 Fall 1991: Geol. 101, Physical Geology (72 enrolled)  
 Geol. 491, Problems (1 enrolled)  
 Geol. 547, Seminar/Physical Geology (11 enrolled)  
 Geol. 699, Dissertation (1 enrolled)

Guest Teaching:

September 6, 1991: Geol. 265, Lunar and Planetary Geology: "Mars"  
 November 25, 1991: Geol. 548, Volcanology Seminar: "Calderas"

Graduate Student Committees:Chairman:

Ph.D. Candidates: Charles Bryan, Bill Criswell  
 M.S. Candidate: Kevin McKeown

Thesis Committees:

M.S. Candidates: Kyle Gay, Judy Stoores  
 Ph.D. Candidates: Dan Larsen, Tom Williamson

Examination Committees:

M.S. Candidates: Lon Davidek, Judy Stoopes, Kevin McKeown

External Examiner, Ph.D.:

Ulrich Knittel, Technische Hochschule Aachen, Germany

Joachim Schweitzer, University of Pretoria, South Africa

Curriculum Development:

Coordinator of a new program in Volcanology jointly between UNM and Los Alamos National Laboratory (LANL). Other members of the Volcanology Group are A.M. Kudo, J.J. Papike, and G.A. Smith (UNM) and W.S. Baldrige, F. Goff, G. Heiken, K.H. Wohletz (LANL). Submitted plans for the following new Volcanology courses for approval:

<u>Course Number</u>	<u>Cr.</u>	<u>Course Title</u>	<u>Instructor(s)</u>
Geol. 252	3	Volcanoes, benign and malign	Kudo, Elston
Geol. 450L	4	Volcanology	Elston, Wohletz, Goff, Kudo
Geol. 451L	4	Field Volcanology	Smith, Goff, Baldrige, Heiken, Wohletz, Elston
Geol. 550	3	Advanced Volcanology	Staff

Note: Geology 450L, 451L, and 550 are team-taught; Geology 550 may be repeated for credit, as content varies.

Rodney C. EwingCourses Taught (semester) [enrollment]:

General Honors 302: In Darwin's Foot Steps (Spring, 1991) (9 enrolled)  
 Geol. 492, Problems (Spring, 1991) (1 enrolled)  
 Geol. 493, Independent Study (Spring, 1991) (3 enrolled)  
 Geol. 495, Senior Thesis (Spring, 1991) (2 enrolled)  
 Geol. 506, Mathematical Crystallography (Spring, 1991) (6 enrolled)  
 Geol. 599, Masters thesis (Spring, 1991) (1 enrolled)  
 Geol. 699, Dissertation (Spring, 1991) (3 enrolled)  
 Geol. 301, Mineralogy I (Fall, 1991) (26 enrolled)  
 Geol. 311, Mineralogy I Laboratory (Fall, 1991) (12 enrolled) Ray Eby, T.A.  
 Geol. 311, Mineralogy I Laboratory (Fall, 1991) (11 enrolled) Peter Scott, T.A.  
 Geol. 486, X-Ray Mineralogy (Fall, 1991) (14 enrolled)  
 Geol. 551, X-Ray Laboratory (Fall, 1991) (13 enrolled) Mark Miller, T.A.  
 Geol. 699, Dissertation (Fall, 1991) (13 enrolled)

New Courses:

General Honors 302 was a new course in which physical geology was taught entirely in the field (all day on Saturdays). Charles Lyell's Principles of Geology (1833 edition) was used as a textbook.

Guest Lecturer:

I presented two lectures (October 9, 1991) in the video conference training series, "Hazardous/Radioactive Waste Management", Program 9, sponsored by the Waste-Management Education and Research Consortium.  
I received the highest ranking of the five presenters in this series.

Graduate Students:

Ph.D. Candidates: M.L. Miller (supported by BES/DOE, defended Dec. 1991) "Image Simulation of Partially Amorphous Zircon,  $\text{ZrSiO}_4$ : Implications for the Interpretation of HRTEM Images"  
R. Eby (supported by BES/DOE)  
R. Finch (supported by SKB)

M.S. Candidates: J. Warner (completed, Spring, 1991) "Crystal Chemistry, Alteration Effects and Annealing Characteristics of Samarskite"

Examination Committees: Bill Fahrenholtz (CMEC, Dept. of Chem. & Nucl. Eng.)

John Geissman

Spring 1991: Geol. 490, Geologic Presentations (9 students);  
Summer 1990: Geol. 420L, Advanced Field Geology (12 students)  
Fall 1991: Geol. 101, Physical Geology (75 students)  
Geol. 490, Geologic Presentations (7 students)  
Geol. 508, Paleomagnetism (16 students)

Graduate Student Thesis Committees:

Steve Harlan, PhD  
Richard Livacarri, PhD  
James Callian, PhD  
Steve Hayden, PhD  
Hope Mullally, MS  
Cathy Ratcliff, MS  
Mike Grubensky, PhD  
Drew Coleman, PhD, Univ. Kansas  
John Bird, PhD, Univ. Utah  
Daniel Holm, PhD, Harvard Univ.  
Suzanne Meuret, MS

Graduate Student Exam Committees:

Mike Grubensky, PhD comprehensive exam  
Dana Bahar, PhD qualifying exam  
Tracey Cascadden, PhD qualifying exam  
Suzanne Meuret, MS comprehensive exam  
Hope Mullally, MS comprehensive exam  
Sean Mullally, PhD qualifying exam  
Aurora Pun, PhD qualifying exam  
Laurel Shastri, MS comprehensive exam  
Paula Watt, PhD qualifying exam  
Judy Stoopes, PhD qualifying exam

Student Supported by Grants and Contracts:

Richard Livaccari, Hope Jacunski and Suzanne Meuret

Course Development:

Continue to modify/improve undergraduate field geology program; taught, for the first time, the Advanced Field Geology course and introduced two new projects

Undergraduate Advising: Brian Horton and David Schwarting

Jeffrey A. Grambling

- Spring 1991:    Geol. 302, Mineralogy II (12 enrolled)  
                   Geol. 312L, Mineralogy II Lab (12 enrolled)  
                   Geol. 521, Metamorphism (10 enrolled)  
                   Geol. 521L, Metamorphism Lab (10 enrolled)  
                   Geol. 101, Physical Geology, (25 enrolled; Faculty supervisor of Christine A. White)
- Fall 1991:     Geol. 303, Igneous & Metamorphic Petrology (12 enrolled)  
                   Geol. 313L, Igneous & Metamorphic Petrology Lab (12 enrolled)  
                   Geol. 101, Physical Geology (49 enrolled)  
                   Geol. 101, Physical Geology (26 enrolled; Faculty supervisor of Amy G. Thompson)

Graduate student supervision:

Christopher G. Daniel (M.S.), Summer support provided  
 Laurel Shastri (M.S.)  
 Jane N. Pedrick (Ph.D.), Summer support provided  
 Amy G. Thompson (Ph.D.), \$3,200 salary/Summer support provided  
 Christine A. White (Ph.D.), \$4,900 (deferred)  
 Sean Mullally (Ph.D.) (temporary advisor)

Exam committees:

Laurel Shastri (Chairman, M.S. comprehensive exam)  
 Suzanne Meuret (Chairman, M.S. comprehensive exam)  
 Sean Mullally (Chairman, Ph.D. Qualifying exam)  
 James Keith (Member, M.S. comprehensive exam)

Stephen P. Huestis

- Spring 1991:    Geol. 101, Physical Geology  
                   Geol. 215, Interior of the Earth  
                   Geol. 552, Linear algebra for geology students
- Fall 1991:     Geol. 225, Oceanography  
                   Geol. 318, Applications of Mathematics in Earth Sciences

Ph.D. Committee Member:     Mark Miller

**John Husler**

Instructor for Right to Know occupational safety information.

**Rhian Jones**

- Geol. 519, "Crystal chemistry of trace elements". Guest lecture: "Experimental approaches". 18th Feb., 1991.  
 Institute of Meteoritics, Achondrite seminar. Presented talk, "Experimental petrology: applications to problems in HED achondrites and aubrites". 13th Feb., 1991.  
 Institute of Meteoritics, research seminar. presented talk, "The origin and importance of relic grains in chondrules". 13th September, 1991.  
 Geol. 265, "Lunar and planetary geology". Guest lecture: "Introduction to meteorites: Part 2". 23rd October, 1991. Tour of Meteorite Museum, 28th October, 1991.  
 Geol. 518, "Microprobe analysis and scanning electron microscopy". Guest lecture: "Zoning and diffusion phenomena". 6th November, 1991.

**Cornelis Klein****Courses Taught:**

- Spring 1991: Geol. 302, Mineralogy II (10 students)  
 Spring 1991: Geol. 322L, Introduction to Petrology (14 students)  
 Fall 1991: Geol. 101, Physical Geology (84 students)  
 Fall 1991: Geol. 321L, Introductory Mineralogy (17 students)  
 Fall 1991: Geol. 105L, Physical Geology Lab (229 students)

**Course development:**

As part of our new B.A. program in Geology, which was approved in the fall of 1989, the G322L course (Introduction to Petrology) was given by me for the first time in the spring of 1991. Quite extensive work by me, as well as my teaching assistant, was necessary to develop the outline and materials for the laboratory part of this course, for its first time offering. This new G322L is also the course taken by students who minor in Geology. Although this course was not yet listed in the printed catalogue (for 1991), it had an enrollment of 14 students.

In the late spring of 1991, I was asked by our then Chair, Steve Wells, to take on the responsibility for the G105L laboratory sections. This would involve (see p. 14, Geology Department Annual Report, 1990-91) a) completely redesigning the curriculum and teaching collections and materials, and b) enhancing the mentoring of all of the graduate students who are involved in the teaching of G105L sections. Steve Wells wrote me that I was selected for this major task (memo dated April 29, 1991) on account of "University-recognized leadership role in undergraduate education".

The preparation for the above outlined revamping of G105L sections was enormously time-consuming and took five full weeks of curriculum review, ordering of teaching materials, and completely revamping the lay-out of the actual laboratory used (Room 117 in Northrop Hall). These five summer weeks were taken out of my normal NSF-Supported summer research schedule. The overseeing of the graduate students in the subsequent fall term of 1991 was also very demanding of time because all the TA's had to be instructed in new approaches. The final results of all these efforts, in terms of students' and graduate instructors' responses was very gratifying.

Graduate Students:M.S. Committee Chair:

Keith James  
Kevin McKeown

M.S. Committee Member:

Julie Warner Pier (M.S. thesis title: "Samarskite")  
Aurora Pun (M.S. thesis title: "Kapoeta: implications for the Igneous History and regolith evolution of the HED parent body")

Ph.D. Qualifier Examination Committee:

Carol J. Treadwell and Raymond Eby

Ph.D. Thesis Committee Member:

Robert Finch and Susan Foltz (Ph.D. in Physics)

UNM Teaching Honor:

May 2, 1991: "Burlington Resources Faculty Achievement Award for Excellence in Teaching"

Undergraduate Advising:

I continue as Chairman of the Undergraduate Committee in Geology as well as the main Undergraduate Advisor. I consider this a high priority commitment in terms of our undergraduate programs. It means meeting with individual students regarding programs, program sequence, course petitions, degree checks, and other matters. Although I do not keep track of specific hours spent, it is quite time consuming.

Albert M. Kudo

Spring 1991: Geol. 225, Oceanography (115 students enrolled).  
Geol. 548, Volcanology (9 enrolled).

Summer 1991: Geol. 101, Physical Geology (60 enrolled).  
Geol. 225, Oceanography (47 enrolled).

Fall 1991: Geol. 101, Physical Geology (121 enrolled).  
Geol. 303, Igneous and Metamorphic Petrology (12 enrolled).  
Geol. 313L, Igneous and Metamorphic Petrology lab (6 enrolled).

Guest lecturer for Geology 101, Physical Geology, (Crossey) in spring semester.

Guest lecturer for Civil Engineering 534, Environmental Engineering Chemistry, (J. Matthews) in spring semester.

Planned curricula for Volcanology Program with committee headed by W.E. Elston.



Students:

Graduate student supervised: D.W. Erskine.  
 M.S. thesis committee (reader): Robert Morris, Aurora Pun.  
 Ph.D. dissertation committee (reader): Ignacio Casanova.  
 M.S. comprehensive exam committee: Judy Stoores, Kyle Gay, Laurel Shastri.  
 Ph.D. qualifying exam committee: Mike Grubensky, Dana Bahar, Aurora Pun, Tracey Cascadden.  
 Ph.D. comprehensive exam committee: Mike Grubensky.

Barry S. Kues

Spring 1991: Geol. 101, two sections (146 and 27 enrolled)  
 Geol. 492, (1 student problem)  
 Geol. 552, (1 student problem)

Fall 1991: Geol. 411, (11 enrolled)

Graduate Students:

Chair, Ph.D. dissertation committee: Adrian Hunt, Thomas Williamson  
 Chair, M.S. thesis committee: Thomas Goodspeed  
 Member, M.S. thesis committee: Lon Davidek, Thomas Wiberg  
 M.S. exam committees: Thomas Goodspeed (chaired); Kyle Gay

Leslie D. McFadden

Spring 1990: Sabbatical Leave

Fall 1991: Geol. 101, Physical Geology (80 students)  
 Geol. 485L, Soil Morphology/Stratigraphy (14 students)

Guest Lecturer, Advanced Physical Geology (for Dr. Wolf Elston)  
 Guest Lecturer, Methods in Quaternary Geology (for Dr. Chuck Harrington)

Graduate Students Supervised:

Bruce Harrison (Ph.D.)  
 Paul Eberly (Ph.D.)  
 Eric McDonald (Ph.D., Funded R.A., NASA)  
 Carol Treadwell (Ph.D., Funded R.A., D.O.E./L.A.N.L.)  
 Teresa Royek (M.S.)  
 David Simpson (M.S.)  
 Cristina Terhune (M.S.)  
 Catherine Kendrick (M.S.)

Supervised Theses Completed:

T. Royek: "Soil Stratigraphic and Soil Geomorphic Studies in Eolian Deposits Mantling Late Pleistocene Basalt Flows, Cima Volcanic Field, Mojave Desert, California"  
 David Simpson: "Soils and Geomorphology of the Quaternary Alluvial Sequence on the Western Piedmont of the Ajo Mountains, Organ Pipe Cactus National Monument, Pima County, Arizona"

Thesis Committee: Reader

Paula Slavin, M.S. Thesis

Horton E. NewsomGraduate students:Research advisor for the following graduate students:

Masters students: Robert Morris

Ph.D. students: Phillip Noll, Jr.

Undergraduates: Troy B. Beserra, Stephanie Maehr and Greg Britelle

Students supported by NSF grants:

Ph.D. student: Phillip Noll, Jr.

Undergraduate students: Troy Bessera, Stephanie Maehr, Greg Britelle

Other teaching:

Trained graduate students in the use of the Neutron Activation Analysis Laboratory.

Directed research activities of three undergraduate students.

James J. Papike

Spring 1991: Geol. 519, Crystal Chemistry of Trace Elements (13 Students)

Fall 1991: Geol. 265, Lunar & Planetary Geology (14 Students)

Guest Lecture on November 13, in Geol. 518L "Microprobe Analysis and Scanning Electron Microscopy"

Ph.D. Graduate Advisor for Jordi Llorca, Aurora Pun, Ignacio Casanova, and Mark Servilla.

Partial support provided by NASA NAG 9-30, 9-497, and NGT-70223(Pun) and by DOE DE-FG04-90ER14149.

M.S. exam committees served on: Aurora Pun, Rob Morris, Hope Jacunski, Thomas Goodspeed

Ph.D. exam committees served on: Ignacio Casanova, Aurora Pun, Mike Grubensky, Jordi Llorca, Mark Servilla

Thesis/Dissertation Committees served on in addition to those chaired: Charles Bryan, Ray Eby, Phil Noll, Jane Pedrick

Frank V. PerryGuest lecture:

"Terrestrial Magmatism", Geology 265, Lunar and Planetary Geology, Sept. 23, 1991.

Graduate Students Supported:

Richard Livaccari, Eric McDonald, Hope Mullally, Carol Treadwell, supported by Los Alamos National Laboratory Yucca Mountain Project

Harald Poths

Fall 1991: Geol. 550, Instructed students in sample preparation and mass spectrometry (3 enrolled).

Franz J.M. Rietmeijer

Guest Lecturer, Lunar and Planetary Geology [GEOL 265], on Cosmic Dust.

Charles K. Shearer

Co-Lecturer (with J.J. Papike) in Trace Element Crystal Chemistry. Coordinator of Achondrite Meteorite Seminar.

Gary Smith

Fall 1991: Geol. 547, Explosive Volcanism and its Products (12 enrolled)

Co-instructed with Adjunct Professors Grant Heiken and Ken Wohletz as part of the UNM-LANL Volcanology Program.

Guest lecture in Geology 365, "Volcanic Landforms on Earth and other Planets"

Graduate Students Supervised:

Lon Davidek (M.S.)  
Thomas Wiberg (M.S.)  
Mike Grubensky (Ph.D.)  
Kyle Gay (M.S.)

Mark Gonzalez (Ph.D., co-advisor)

John Rogers (M.S.)  
Judith Stoores (M.S.)  
Dana Bahar (Ph.D.)  
Grant Meyer (Ph.D. co-advisor)

Graduate students supported with external funds:

Rick Livaccari, August 1991-May 1992  
Mike Grubensky, January-June 1992

Reader on thesis/dissertation committees:

Bruce Harrison (Ph.D.)  
Katherine Kendrick-Harms (M.S.)  
James Callian (Ph.D.)

Thomas Bullard (Ph.D.)  
Steve Hayden (Ph.D.)

M.S./Ph.D. Examination Committees:

Kyle Gay (M.S.)  
 Mike Grubensky (Ph.D.)  
 Carol Treadwell (Ph.D.)

Judy Stoopes (M.S.)  
 Dana Bahar (Ph.D.)  
 Tracey Cascadden (Ph.D.)

Undergraduate Honors Thesis Completed:

Joan E. Lotosky: " The effects of volcanic processes, source-area weathering, and fluvial transport on the composition of andesitic sand"

Michael N. Spilde

Fall 1991: Geol. 518, Electron Microprobe Analysis and Scanning Electron Microscopy (14 students)  
 (taught with Adrian Brearley).

Guest lecture, Geology 265: Lunar and Planetary Geology, December 6, 1991.

Conducted Microprobe, SEM, and ICP/MS Lab tours and demonstrations for Geology 265 class, December 11 and 13, 1991

Training of graduate student on the electron microprobe, May and June, 1991.

Guest lecture, "Microprobe Analysis of Trace Minerals", Geology 519: Crystal Chemistry of Trace Elements, April 8, 1991.

Tutorial training on scanning electron microscope for professor and students from New Mexico Tech., February, 1991.

Lu-Min Wang

Developed and taught a new course, Geol. 538L "Practical Analytical Electron Microscopy" (3 Cr.) to 8 students from 5 different UNM departments in spring.

Served as a Ph.D. thesis reader and exam committee member for M.L. Miller.

Lee A. Woodward

Spring 1991: Geol. 105L, Physical Geology Lab (238 enrolled)  
 Geol. 255L, New Mexico Field Geology (18 enrolled)  
 Geol. 307 L, Structural Geology (17 enrolled)  
 Geol. 317L, Structural Geology Lab, (10 enrolled)

Fall 1991: Geol. 255L, New Mexico Field Geology (20 enrolled)  
 Geol. 491, Problem (1 enrolled)  
 Geol. 551, Problem, (2 enrolled)

Thesis Supervised: Sally Paschal

**Crayton Yapp**

Spring 1991: Geol. 101, Physical Geology (102 enrolled)  
 Geol. 505, Stable Isotope Geochemistry (8 enrolled)  
 Fall 1991: Geol. 101, Physical Geology (39 enrolled)  
 Geol. 551, Stable Isotope Laboratory Methods (3 enrolled)

**Graduate Students****Thesis Committees:**

Darin Milligan (M.S.) - Co-chair (defended 5/7/91)  
 Rob Morris (M.S.) - Chair (defended 5/8/91)  
 Pat Longmire (Ph.D.) - Reader (defended 5/10/91)  
 Mark Miller (Ph.D.) - Reader (defended 10/10/91)  
 David Ward (Ph.D.) - Co-chair  
 Dan Larson (Ph.D.) - Reader  
 Charles Bryan (Ph.D.) - Reader  
 Robert Finch (M.S.) - Reader  
 Bruce Allen (Ph.D.) - Reader

**Exam Committees:**

Kyle Gay - M.S. comp  
 Sean Mullally - Ph.D. qualifier  
 Paula Watt - Ph.D. qualifier  
 Aurora Pun - Ph.D. qualifier

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## 2. 1991 PUBLICATIONS

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### Books Edited

Geology of the Sierra Blanca, Sacramento and Capitan Ranges, New Mexico  
J.M. Barker, B.S. Kues, G.S. Austin and S.G. Lucas (eds.)  
New Mexico Geological Society, Guidebook 42, 365 p. (1991)

Sedimentation in volcanic settings  
R.V. Fisher and G.A. Smith\*\* (eds.)  
Society for Sedimentology, Special Publication 45, 257 p. (1991)

### Articles in Refereed Journals

Middle to Late Cenozoic magmatism of the southeastern Colorado Plateau and central Rio Grande rift (New Mexico and Arizona, USA): a model for continental rifting  
W.S. Baldrige, F.V. Perry\*\*, D.T. Vanniman, L.D. Nealy, B. Leavy, A.W. Laughlin, P. Kyle, Y. Bartov, G. Steinitz and E.S. Gladney  
Tectonophysics, vol. 197, p. 327-354 (1991)

Microstructural changes induced in  $Zr_2Al$  and  $U_3Si$  during irradiation of the crystalline state  
R.C. Birtcher and L.M. Wang\*\*  
Nuclear Instrument and Methods in Physical Research, vol. B59-60, p. 966-969 (1991)

Mineralogy and possible origin of an unusual Cr-rich inclusion in the Los Martinez (L6) chondrite  
A.J. Brearley\*\*, I. Casanova\*, M.L. Miller\* and K. Keil  
Meteoritics, vol. 26, p. 287-300 (1991)

Correlation of soil radon and uranium with indoor radon in the Albuquerque, New Mexico area  
D.G. Brookins  
Environmental Geology and Water Science, vol. 17, p. 209-217 (1991)

The petrology of Poas Volcano lavas: basalt-andesite relationships and their petrogenesis within the magmatic arc of Costa Rica  
C. Cigolini, A.M. Kudo, D.G. Brookins, and D. Ward\*  
Journal of Volcanology and Geothermal Research, vol. 48, p. 1-19 (1991)

Stored energy in natural zirconolite and its synthetic counterpart after alpha-recoil self-irradiation damage  
F.W. Clinard, Jr., E.M. Foltyn, and R.C. Ewing  
Journal of Nuclear Materials, vol. 185, p. 202-207 (1991)

Aqueous thermal degradation of oxalate  
L.J. Crossey  
Geochimica et Cosmochimica Acta, vol. 55, p. 1515-1527 (1991)

Faculty authors underlined; \*\* = research staff; \* = students

**The Katmai scientific drilling project, surface phase: investigation of an exceptional igneous system**J.C. Eichelberger, W. Hildreth and J.J. Papike

Geophysical Research Letters, vol. 18, p. 1513-1516 (1991)

**Cyclic ramp-to-basin carbonate deposits, Lower Mississippian, Wyoming and Montana: a combined field and computer modeling study**M. Elrick, and J.F. Read

Journal of Sedimentary Petrology, vol. 66, p. 1194-1224 (1991)

**Short-term paleoclimatic fluctuations expressed in Lower Mississippian ramp-slope deposits, southwestern Montana**M. Elrick, J.F. Read and C. Coruh

Geology, vol. 19, p. 799-802 (1991)

**High-level nuclear waste immobilization with ceramics**R.C. Ewing and W. Lutze

Ceramics International, vol. 17, p. 287-293 (1991)

**Alteration of natural  $UO_2$  under oxidizing conditions from Shinkolobwe, Katanga, Zaire: a natural analogue for the corrosion of spent fuel**R.J. Finch\* and R.C. Ewing

Radiochimica Acta, vol. 52/53, p. 395-401 (1991)

**Latest Cambrian-Early Ordovician palcomagnetism of the Florida Mountains, southwest New Mexico**J.W. Geissman, M. Jackson, S.S. Harlan\* and R. Van der Voo

Journal of Geophysical Research, vol. 96, p. 6053-6071 (1991)

**Paleomagnetic poles, apparent polar wander paths, paleomagnetic Euler pole analysis, and true polar wander**J.W. Geissman and R.G. Gordon

Reviews of Geophysics, Supplement, U.S. national report to International Union of Geodesy and Geophysics, p. 384-394 (1991)

**A Sr-isotopic comparison between thermal waters, rocks, and hydrothermal calcites, Long Valley caldera, California**F. Goff, H.A. Wallenberg, D.G. Brookins and R.W. Kestler

Journal of Volcanology and Geothermal Research, vol. 48, p. 265-201 (1991)

**Rates of soil development from four soil chronosequences in the southern Great Basin**J.W. Harden, E.M. Taylor, C. Hill, R.K. Mark, L.D. McFadden, M.C. Reheis, J.M. Sowers and S.G. Wells

Quaternary Research, vol. 35, p. 383-399 (1991)

**Alpha-decay damage in titanite**F.C. Hawthorne, L.A. Groat, M. Raudsepp, N.A. Ball, M. Kimata, F.D. Spike, R. Gaba, N.M. Halden, G.R. Lumpkin, R.C. Ewing, R.B. Gregor, F.W. Lytle, T.S. Ercit, G.R. Ercit, G.R. Rossman, F.J. Wicks, R.A. Ramik, B.L. Sherriff, M.E. Fleet and C. McCammon

American Mineralogist, vol. 76, p. 370-396 (1991)

**A new perspective on staurolite crystal chemistry: use of stoichiometric and chemical end-members for a mole fraction model**M.J. Holdaway, B. Mukhopadhyay, M.D. Dyan, B.L. Dutrow, D. Rumble III and J.A. Grambling

American Mineralogist, vol. 76, p. 1910-1919 (1991)

**Paleomagnetic evidence for the age and extent of middle Tertiary counter clockwise rotation, Dixie Valley region, west-central Nevada**

M.R. Hudson and J.W. Geissman

Journal of Geophysical Research, vol. 96, p. 3979-4006 (1991)

Some comments on the optimization problem for shear stress magnitude

S.P. Huestis

SIAM Review, vol. 33, p. 106-108 (1991)

**Integrated vertebrate, invertebrate and plant taphonomy of the Fossil Forest area, Fruitland and Kirtland formations: Late Cretaceous, San Juan County, New Mexico**

A.P. Hunt\*

Palaeogeography, Palaeoclimatology, Palaeoecology, vol. 88, p. 85-107 (1991)

**A new aetosaur from the Redonda Formation (Late Triassic: middle Norian) of east-central New Mexico, USA**

A.P. Hunt\* and S.G. Lucas

Neues Jahrbuch für Geologie und Paläontologie, p. 728-736 (1991)

**Localized rotation during Paleogene extension in east-central Idaho: paleomagnetic and geologic evidence**

S.U. Janeczek, J.W. Geissman and R.L. Bruhn

Tectonics, vol. 10, p. 403-432 (1991)

**X-ray powder diffraction study of annealed uraninite**

J. Janeczek\*\* and R.C. Ewing

Journal of Nuclear Materials, vol. 185, p. 66-77 (1991)

**Liquidus phase relationships in the system  $\text{KAlSi}_3\text{O}_8\text{-CaAl}_2\text{Si}_2\text{O}_8\text{-KA1SiO}_4$  at  $P(\text{H}_2\text{O}) = 5\text{ kbar}$**

R.H. Jones\*\* and W.S. MacKenzie

American Mineralogist, vol. 76, p. 200-204 (1991)

**Thermal histories of  $\text{CO}_2$  chondrites: application of olivine diffusion modelling to parent body metamorphism**

R.H. Jones\*\* and D.C. Rubie

Earth and Planetary Science Letters, vol. 106, p. 73-86 (1991)

**A marine invertebrate assemblage from the Middle Pennsylvanian Los Moyos Limestone (Madera Group), Manzanita Mountains, New Mexico**

B.S. Kues and J. Koubek\*

New Mexico Journal of Science, vol. 31, p. 49-63 (1991)

**Non-quadrilateral components in amphiboles: an example from metamorphosed iron-formations from the Ruby Mountains, Montana**

T.C. Labotka and J.J. Papike

American Journal of Science, vol. 291, p. 800-823 (1991)

**Role of crustal thickening and extensional collapse in the tectonic evolution of the Sevier-Laramide orogeny, western United States**

R.F. Livaccari\*

Geology, vol. 19, p. 1104-1107 (1991)

**Type section of the Permian Bernal Formation and the Permian-Triassic boundary in north-central New Mexico**

S.G. Lucas and S.N. Hayden\*

New Mexico Geology, vol. 13, p. 9-15 (1991)



**Parent body metamorphism of 113-5 ordinary chondrites**

T.J. McCoy, E.R.D. Scott, R.H. Jones\*\*, K. Keil and G.J. Taylor  
*Geochimica et Cosmochimica Acta*, vol. 55, p. 601-619 (1991)

Spinel-bearing, Al-rich chondrules in two chondrite finds from Roosevelt County, New Mexico: indicators of nebular and parent body processes

T.J. McCoy, A. Pun\* and K. Keil  
*Meteoritics*, vol. 26, p. 301-309 (1991)

Paleomagnetism of the Moenkopi and Chinle Formations in central New Mexico: implications for Triassic magnetostratigraphy and the North American apparent polar wander path

R. Molina-Garza, J.W. Geissman, R. Van der Voo, S.G. Lucas and S.N. Hayden\*  
*Journal of Geophysical Research*, vol. 96, p. 14,239-14,262 (1991)

Alpha-decay event damage in zircon

T. Murakami, B.C. Chakoumakos, R.C. Ewing, G.R. Lumpkin and W.J. Weber  
*American Mineralogist*, vol. 76, p. 1510-1532 (1991)

Alpha-recoil damage in titanite (CaTiSiO<sub>6</sub>): direct observation and annealing study using high resolution transmission electron microscopy

G.R. Lumpkin, R.K. Eby\* and R.C. Ewing  
*Journal of Materials Research*, vol. 6, p. 560-564 (1991)

Core formation during early accretion of the Earth

H.E. Newsom\*\* and K.W.W. Sims  
*Science*, vol. 252, p. 926-933 (1991)

Geochemistry and mineralogy of fumarolic deposits, Valley of Ten Thousand Smokes, Alaska: bulk chemical and mineralogical evolution of dacite-rich protolith

J.J. Papike, T.E.C. Keith, M.N. Spilde\*\*, K.C. Galbreath, C.K. Shearer\*\* and J.C. Laul  
*American Mineralogist*, vol. 76, p. 1662-1673 (1991)

Major and trace element mass flux in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska: rhyolite-rich protolith

J.J. Papike, T.E.C. Keith, M.N. Spilde\*\*, K.C. Galbreath, C.K. Shearer\*\* and J.C. Laul  
*Geophysical Research Letters*, vol. 18, p. 1545-1548 (1991)

Aqueous alteration in five chondritic porous interplanetary dust particles

F.J.M. Rietmeijer\*\*  
*Earth and Planetary Science Letters*, vol. 102, p. 148-157 (1991)

Mixed layering in disordered Sri Lanka graphite

F.J.M. Rietmeijer\*\*  
*Carbon*, vol. 29, p. 669-675 (1991)

Tridymite and maghemite formation in a Fe-SiO smoke

F.J.M. Rietmeijer\*\* and J.A. Nuth  
*Lunar and Planetary Science*, vol. 21, p. 591-599 (1991)

Microbeam analyses of carbon-rich materials in chondritic porous micrometeorites

F.J.M. Rietmeijer\*\*  
*Microbeam Analysis 1991*, p. 289-292 (1991)

Magnetic fabric of the Bloodgood Canyon and Shelley Peak Tuffs, southwestern New Mexico: implications for emplacement and alteration processes

S.J. Seaman, W.C. McIntosh, J.W. Geissman, M.L. Williams and W.E. Elston

Bulletin of Volcanology, vol. 53, p. 460-476 (1991)

Exploring the lunar mantle with secondary ion mass spectrometry: a comparison of lunar picritic glass beads from the Apollo 14 and Apollo 17 sites

C.K. Shearer\*\*, J.J. Papike, K.C. Galbreath and N. Shimizu

Earth and Planetary Science Letters, vol. 102, p. 134-147 (1991)

Pyroxene/melt trace element behavior: a study of pyroxenes from the Valley of Ten Thousand Smokes, Alaska

C.K. Shearer\*\*, J.J. Papike, M.N. Spilde\*\* and N. Shimizu

Geophysical Research Letters, vol. 18, p. 1557-1560 (1991)

A field guide to depositional processes and facies geometry of Neogene continental volcanoclastic rocks, Deschutes Basin, central Oregon

G.A. Smith\*\*

Oregon Geology, vol. 53, p. 3-20 (1991)

Discrimination of eolian and pyroclastic-surge processes in the generation of cross-bedded tuffs, Jemez Mountains volcanic field, New Mexico

G.A. Smith and D. Katzman\*

Geology, vol. 19, p. 465-468 (1991)

Amorphization, morphological instability and crystallization of Krypton ion irradiated germanium

L.M. Wang\*\* and R.C. Birtcher

Philosophical Magazine, vol. A64, p. 1209-1233 (1991)

In situ TEM study of ion-beam-induced amorphization of complex silicate structures

L.M. Wang\*\*, R.K. Eby\*, J. Janeczek\*\* and R.C. Ewing

Nuclear Instruments and Methods for Physics Research, B59/60, p. 395-400 (1991)

Accumulation of structural defects in ion-irradiated  $\text{Ca}_2\text{Nd}_4(\text{SiO}_4)_6\text{O}_2$

W.J. Weber, R.K. Eby\* and R.C. Ewing

Journal of Materials Research, vol. 6, p. 1334-1345 (1991)

Reply to Comment on article "Geomorphic assessment of Late Quaternary volcanism in the Yucca Mountain area, southern Nevada: implications for the proposed high-level radioactive waste repository"

S.G. Wells, L.D. McFadden, C.E. Renault and B.M. Crowe

Geology, vol. 19, p. 661-662 (1991)

The Cretaceous elasmobranch Ptychodus decurrens from North America

T.E. Williamson\* and S.G. Lucas

Geobios, vol. 24, p. 595-599 (1991)

Oxygen isotopes in an oolitic limestone and the determination of goethite  $\delta^{18}\text{O}$  values by selective dissolution of impurities - the 5M NaOH method

C.J. Yapp

Geochimica et Cosmochimica Acta, vol. 55, p. 2627-2634 (1991)

Articles in Conference and Symposium Proceedings

Effect of climatic change on Estancia Valley, New Mexico: sedimentation and landscape evolution in a closed-drainage basin

B.D. Allen\*

New Mexico Bureau of Mines and Mineral Resources, Bulletin 137, p. 166-171 (1991)

Geochronologic study of clay minerals from WIPP: implications for site stability

D.G. Brookings, D. Milligan\* and D.B. Ward\*

Waste Management 91, Proceedings of the Symposium on Waste Management, p. 555-561 (1991)

Ion-radiation study of the "exotic" mineral neptunite:  $\text{LiNaK}(\text{Fe, Mg, Mn})_2\text{Ti}_2\text{Si}_8\text{O}_{24}$

R.K. Eby\*, L.M. Wang\*\*, G.W. Arnold and R.C. Ewing

Surface chemistry and beam-solid interactions, Materials Research Society Symposium Proceedings, vol. 201, p. 283-288 (1991)

Some primary directional features of the Holocene Carrizozo (Valley of Fires) pahoehoe basalt flow, Lincoln County, New Mexico

W.E. Elston

New Mexico Geological Society, Guidebook 42, p. 69-70 (1991)

The Capitan dike-and-sill swarm (Lincoln County, New Mexico) revisited

W.E. Elston

New Mexico Geological Society, Guidebook 42, p. 72-73 (1991)

The use of natural systems to predict radionuclide migration

R.C. Ewing

Global Environment and Nuclear Energy, Proceedings of the Third International Symposium on Advanced Nuclear Energy Research, Japan Atomic Energy Research Institute, p. 167-175 (1991)

High-level nuclear waste immobilization with ceramics

R.C. Ewing and W. Lutze

Ceramics Today - Tomorrow's Ceramics, Proceedings of Seventh World Ceramics Congress, Elsevier, p. 3097-3110 (1991)

Phase relations of the uranyl oxide hydrates and their relevance to the disposal of spent fuel

R.J. Finch\* and R.C. Ewing

Scientific Basis for Nuclear Waste Management XIV (J. Abrajano and L. Johnson, eds.), Materials Research Society Proceedings, vol. 212, p. 241-246 (1991)

The Mudpuppy-Waterdog prospect, an alkalic copper-gold porphyry system in the Nogal-Bonito mining district, Lincoln County, New Mexico

M.S. Fulp and L.A. Woodward

New Mexico Geological Society, Guidebook 42, p. 327-328 (1991)

High temperature annealing of natural  $\text{UO}_2$

J. Janeczek\*\* and R.C. Ewing

Scientific Basis for Nuclear Waste Management XIV, Materials Research Society Proceedings, vol. 212, p. 235-240 (1991)

Some gastropods from the lower Wolfcampian (basal Permian) Laborcita Formation, Sacramento Mountains, New Mexico

B.S. Kues

New Mexico Geological Society, Guidebook 42, p. 221-230 (1991)

Some pelecypods and scaphopods from the lower Wolfcampian (basal Permian) Laborcita Formation, Sacramento Mountains, New Mexico

B.S. Kues

New Mexico Geological Society, Guidebook 42, p. 231-242 (1991)

Tectonics, intrusive rocks, and mineralization of the San Pedro-Ortiz porphyry belt, north-central New Mexico  
S.R. Maynard, L.A. Woodward, and D.L. Giles

New Mexico Bureau of Mines and Mineral Resources, Bulletin 137, p. 57-69 (1991)

The formation of the Ries crater, West Germany: implications for atmospheric interactions during a large cratering event

H.E. Newsom\*\*, G. Graup, D.A. Iseri\*, J.W. Geissman and K. Keil

Global catastrophes in earth history, Geological Society of America, Special Paper 247, p. 195-206 (1990)

A tale of two volcanoclastic aprons: field guide to the sedimentology and physical volcanology of the Oligocene Espinazo Formation and Miocene Peralta Tuff, north-central New Mexico

G.A. Smith\*\*, D. Larsen\*, S.S. Harlan\*, W.C. McIntosh, D.W. Erskine\* and S. Taylor

New Mexico Bureau of Mines and Mineral Resources, Bulletin 137, p. 87-103 (1991)

Proterozoic tectonic history of the Manzano Mountains, central New Mexico

A.G. Thompson\*, J.A. Grambling and R.D. Dallmeyer

New Mexico Bureau of Mines and Mineral Resources, Bulletin 137, p. 71-77 (1991)

High resolution TEM observation of displacement cascades in Krypton ion irradiated silicate minerals

L.M. Wang\*\*, M.L. Miller\* and R.C. Ewing

Proceedings, 49th Annual Meeting of the Electron Microscopy Society of America, p. 910-911 (1991)

Metallic mineralization in the Yogo and Running Wolf mining districts, Little Belt Mountains, Montana

L.A. Woodward

Montana Bureau of Mines and Geology, Special Publication 100, p. 19-27 (1991)

Tectono-metallogenic maps of mining districts in the Lincoln County porphyry belt, New Mexico

L.A. Woodward

New Mexico Geological Society, Guidebook 42, p. 283-290 (1991)

Gold mineralization associated with alkali trachyte breccia in the Gallinas mining district, Lincoln County, New Mexico

L.A. Woodward and M.S. Fulp

New Mexico Geological Society, Guidebook 42, p. 323-325 (1991)

### Book Chapters

Solar variability captured in climatic and high-resolution paleoclimatic records: a geologic perspective

R.Y. Anderson

The Sun in Time (C.P. Sovett, M.S. Giampapa and M.S. Mathews, eds.), University of Arizona Press, p. (1991)

**Subsidence across the Anther Foreland of Montana and Idaho: tectonic versus eustatic effects**S.L. Dorobek, S.K. Reid, M. Elrick, G.C. Bord and M.A. Kominz

Sedimentary modeling: computer simulations and methods for improved parameter definition, Kansas Geological Survey, Bulletin 233, p. 231-252 (1991)

**Volcanism, tectonics, and sedimentation**

R.V. Fisher and G.A. Smith\*\*

Society for Sedimentology, Special Publication 45, p. 1-5 (1991)

**Paleomagnetism**J.W. Geissman

Encyclopedia of Earth System Science, vol. 3 (W.A. Nierenberg, ed.), Academic Press, p. 565-578 (1991)

**Calcic, gypsic, and siliceous soil chronosequences in arid and semi-arid environments**J.W. Harden, E.M. Taylor, L.D. McFadden and M.C. Reheis

Soil Science Society of America, Special Publication, no. 26, p. 1-16 (1991)

**San Felipe Volcano**A.M. Kudo

Volcanoes of North America: U.S. and Canada (eds. C.A. Wood and J. Kienle), Cambridge University Press, p. 299-300 (1991)

**Albuquerque Volcanoes**A.M. Kudo

Volcanoes of North America: U.S. and Canada (eds., C.A. Wood and J. Kienle), Cambridge University Press, p. 302-303 (1991)

**Cat Hills Volcanoes**A.M. Kudo

Volcanoes of North America, U.S. and Canada (eds., C.A. Wood and J. Kienle), Cambridge University Press, p. 303

**Critical factors influencing carbonate accumulation in soils of arid regions as shown through numerical modeling, chemical, and isotopic studies**L.D. McFadden, R.G. Amundsen and O.A. Chadwick

Soil Science Society of America, Special Publication, no. 26, p. 17-36 (1991)

**Stratigraphy and geomorphology of Quaternary piedmont deposits**L.D. McFadden, W.B. Bull and S.G. Wells

Chapter 11 - Quaternary geology of the Basin and Range province in California, The geology of North America, vol. K-2, Quaternary nonglacial geology: conterminous United States, Geological Society of America, p. 327-331 (1991)

**The Lunar regolith**D.S. McKay, G.H. Heiken, A. Basu, G. Blanford, S.B. Simon, R. Reedy, B.M. French and J.J. Papike

Lunar Sourcebook: a user's guide to the Moon, Cambridge University Press, p. 285-356 (1991)

**Lunar minerals**J.J. Papike, L.A. Taylor and S.E. Simon

Lunar sourcebook: a user's guide to the Moon, Cambridge University Press, p. 121-181 (1991)

# Two-dimensional modeling of carbonate ramp sequences and component cycles

J.F. Read, D.A. Osleger and M. Elrick

Sedimentary modeling: computer simulations and methods for improved parameter definition, Kansas Geological Survey Bulletin 233, p. 473-488 (1991)

# Facies sequences and geometries in continental volcanoclastic sediments

G.A. Smith\*\*

Society for Sedimentology, Special Publication 45, p. 109-122 (1991)

# Lahars: volcano-hydrologic events and deposition in the debris flow - hyperconcentrated flow continuum

G.A. Smith\*\* and R. Lowe

Society for Sedimentology, Special Publication 45, p. 58-70 (1991)

# $^{13}\text{C}/^{12}\text{C}$ ratios of the Fe (III) carbonate component in natural goethites

C.J. Yapp and H. Poths\*\*

Stable Isotope Geochemistry: A Tribute to Samuel Epstein, Geochemical Society Special Publication, no. 3, p. 257-270 (1991)

## Other Publications

### Editors' message

J.M. Barker, B.S. Kues, G.S. Austin and S.G. Lucas

New Mexico Geological Society, Guidebook 42, p. VII (1991)

### Supplemental road log, from junction of US 380 and NM 37 to Capitan

S.M. Cather and W.E. Elston

New Mexico Geological Society, Guidebook 42, p. 71-75 (1991)

### International Union of Materials Research Societies established

R.C. Ewing

Materials Research Society Bulletin, vol. 16, no. 2, p. 33 (1991)

### Metamict state

R.C. Ewing

McGraw-Hill Encyclopedia of Science and Technology, 7th Edition

### Conference summary: 1991 Albuquerque GSA meeting

J.A. Grambling and C.M. Conway

Proterozoic Orogenesis and Metallogenesis Project Newsletter, no. 1, p. 3-4 (1991)

### Stratigraphic nomenclature chart

B.S. Kues (among 12 others)

New Mexico Geological Society, Guidebook 42, back end sheets (1991)

### Citation for William B. Bull: Neil Miner awards for 1991

L.D. McFadden

Journal of Geological Education, vol. 40, p. 1 (1991)

### Computer modeling of cyclic carbonate sequences

J.F. Read, D.A. Osleger and M. Elrick

Geological Society of America, Short Course, Dallas, Texas, 54 p.

Technical Reports

Role of direct observation in predicting climatic change

R.Y. Anderson

Proceedings, 7th Pacific Climate (PACCLIM) Workshop, California Dept. of Water Resources Technical Report, p. (1991)

Geochemical evidence for enhanced upwelling and organic productivity during the late Quaternary on the continental margin of northern California

W.E. Dean, J.V. Gardner and R.Y. Anderson

Proceedings, 7th Pacific Climate (PACCLIM) Workshop, California, Dept. of Water Resources Technical Report, p. (1991)

ANL technical support program for DOE environmental restoration and waste management, annual report, October, 1990 - September 1991

J.K. Bates, G.R. Bradley, E.C. Buck, J.C. Cunnane, N.L. Dietz, W.L. Ebert, J.W. Emry, X. Ferg, T.J. Gerding, J.C. Hoh, J.J. Mazer, D.J. Wronkiewicz, R.C. Ewing, L.M. Wang\*\*, M. Tomozawa and W.T. Han  
Argonne National Laboratory Report, 236 p. (1991)

Mineralogy, petrology and whole-rock chemistry data compilation for selected samples of Yucca Mountain tuffs

J.R. Connolly

Sandia National Laboratories, Report SAND91-7031 (1991)

Mineralogy, petrology and whole-rock chemistry of selected mechanical test samples of Yucca Mountain tuffs

J.R. Connolly

Sandia National Laboratories Report SAND90-7058 (1991)

Preliminary geologic map of the Sleeping Butte volcanic centers

B.M. Crowe and F.V. Perry\*\*

Los Alamos National Laboratory Report, LA-12101-MS (1991)

Uraninite alteration in an oxidizing environment and its relevance to the disposal of spent nuclear fuel

R.J. Finch\* and R.C. Ewing

SKB Technical Report 91-15, 138 p. (1991)

Evaluation of the oil, gas, mineral, geothermal, and underground water resources on state lands in parts of Luna, Grant, and Hidalgo Counties, New Mexico, with special emphasis on the Gray Ranch

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F.B. Nimick and J.R. Connolly

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L.M. Wang\*\*

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Abstracts

Geologic and geochronologic data from Gneiss Canyon shear zone of NW Arizona: timing and development of orthogonal fabrics

A.A. Albin, L.L. Shastri\*, S.A. Bowring and K.E. Karlstrom

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Century-scale climatic oscillation in the American Southwest during the last glacial maximum: evidence from paleo-lake Estancia, NM

B.D. Allen\* and R.Y. Anderson

EOS, vol. 72, p. 173 (1991)

Century-scale oscillations in climate as a response to solar-geomagnetic forcing: possible evidence in varved sediments from northern Minnesota

R.Y. Anderson

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Stability of crystalline and amorphous uranium silicides during high energy ion irradiation

R.C. Birtcher and L.M. Wang\*\*

Abstracts, Materials Research Society Fall Meeting, Boston, p. 29 (1991)

Mineralogy and chemistry of accretionary dust mantles in the Murchison CM chondrite

A.J. Brearley\*\*

Annales geophysicae, vol. 9, supplement, p. C381-382 (1991)

Mineralogical and chemical studies of matrix in the Adelaide meteorite, a unique carbonaceous chondrite with affinities to ALH 77307 (CO<sub>3</sub>)

A.J. Brearley\*\*

Lunar and Planetary Science XXII, p. 133-134 (1991)

Subsolidus microstructures and cooling history of pyroxenes in the Zagami shergottite

A.J. Brearley\*\*

Lunar and Planetary Science XXII, p. 135-136 (1991)

Mineralogy of an unusual Cr-rich inclusion in the Los Martinez (L6) chondritic breccia

A.J. Brearley\*\*, I. Casanova\*, M.L. Miller\* and K. Keil

Meteoritics, vol. 26, p. 323 (1991)

Mineralogical and chemical studies bearing on the origin of accretionary rims in the Murchison CM2 carbonaceous chondrites

A.J. Brearley\*\* and T. Geiger

Meteoritics, vol. 26, p. 323 (1991)

Mechanisms for phase transformations involving  $\beta$  (Mg, Fe)<sub>2</sub>SiO<sub>4</sub> and some implications for mantle dynamics

A.J. Brearley\*\* and D.C. Rubie

EOS, vol. 72, p. 474 (1991)

Regional groundwater flow and recharge, Yucca Mountain and vicinity, Nevada-California

R.M. Byer, Jr. and M.E. Campana

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**The hyporheic zone and catchment hydrology**M.E. Campana and C.N. Dahm

EOS, vol. 72, no. 44, p. 199 (1991)

An approach to modeling and validating hyporheic flow dynamics in montane catchments with variable parent lithologies

M.E. Campana and C.N. Dahm

North American Benthological Society Bulletin, vol. 8, no. 1, p. 107 (1991)

Geochemistry and origin of metal in aubrites

I. Casanova\*, K. Keil and H.E. Newsom\*\*

Lunar and Planetary Science XXII, p. 185-186 (1991)

The eastern boundary of the extensional allochthon in the eastern Basin and Range: volcanic and structural geology of the northern White Hills, Arizona

T.E. Cascadden\* and E.I. Smith

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A390 (1991)

Intermediate and mafic volcanic rocks of the northern White Hills, Arizona: implications for the production of intermediate composition volcanic rocks during regional extension

T.E. Cascadden\* and E.I. Smith

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A390 (1991)

Structural and paleomagnetic evidence for variable foot-wall tilt during uplift, Mineral Mountains, Utah

D.S. Coleman J.W. Geissman and J.D. Walter

EOS, vol. 72, p. 468-469 (1991)

Petrography of Bishop Tuff in phase 1 core from the LVF 51-20 drill hole: a small window into a hydrothermal system in a resurgent caldera, Long Valley, California

J.R. Connolly\*\*, C.K. Shearer\*\* and J.J. Papike

EOS, vol. 72, p. 505 (1991)

Thermal stability of organic acids in sedimentary basins

L.J. Crossey

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L.J. Crossey and D. Larsen\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 14 (1991)

Deformational history and metamorphic P-T-t paths from Proterozoic rocks in the Truchas and Rio Mora areas, northern New Mexico

C.J. Daniel\*, C.A. White\* and J.A. Grambling

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 14 (1991)

Varved sediment records of the Little Ice Age from Elk Lake, Minnesota and the Black Sea

W.E. Dean, R.Y. Anderson, M.A. Arthur, J.P. Bradbury, B.J. Hay, E.D. Neff and S.G. Wakeman

EOS, vol. 72, p. 66 (1991)

<sup>29</sup>Si MASNMR shows no structural similarity between amorphous-crystalline pairs in zircon

B.H.W.S. de Jorg, R.C. Ewing and W.S. Veeman

Abstracts, American Geophysical Union Fall Meeting, San Francisco, p. 555 (1991)

**Geochemistry of Archean and Lower Proterozoic iron-formations in the Black Hills, South Dakota**

E.J. Duke, J.J. Papike, R.L. Bachman and M.D. Glasscock

Geological Society of America, Abstracts with Program, vol. 23, no. 5, p. A452-A453 (1991)

**Mineralization related to ash-flow tuff (ignimbrite) calderas: a progress report**

W.E. Elston

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 19-20 (1991)

**Quartz-tridymite inversion in siliciclastic sediments beneath Rooiberg Felsite: clue to a 2.05 Ga Bushveld-Vredefort impact (?) catastrophe, South Africa**

W.E. Elston and J. Sadow

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A402 (1991)

**Evidence from a shoshonitic dike in support of the continuous allochthon model, Heart Mountain fault, northwestern Wyoming**

D.W. Erskine\* and A.M. Kudo

EOS, vol. 72, p. 490 (1991)

**Compositional characterization of volcanism in a portion of the Ortiz porphyry belt**

D.W. Erskine\* and G.A. Smith\*\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 20 (1991)

**Radiation effects in ceramic waste forms**

R.C. Ewing

Abstracts, 120th Annual Meeting of the Minerals, Metals and Materials Society, New Orleans, p. 132 (1991)

**The use of natural systems to predict radionuclide migration**

R.C. Ewing

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**Amorphization of zirconolite: alpha-decay versus krypton ions**

R.C. Ewing and L.M. Wang\*\*

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**Alteration of natural uranyl oxide hydrates in Si-rich groundwaters: implications for uranium solubility**

R.J. Finch\* and R.C. Ewing

Abstracts, Fall Meeting, European Materials Research Society, Strasbourg, France, p. A. VIII, P7 (1991)

**Cyclic weathering of natural uranyl oxide hydrates: schoepite polytypes and dehydration effects**

R.J. Finch\*, M.L. Miller and R.C. Ewing

Abstracts, Third International Conference on Chemistry and Migration Behavior of Actinides and Fission Products in the Geosphere, Jerez de la Frontera, Spain, p. 202-203 (1991)

**Mineral deposits of the New Mexico alkalic province**

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**Vertical axis rotation of continental crust in an extensional orogen - Basin and Range province, western United States**

J.W. Geissman

EOS, vol. 72, p. 124 (1991)

**Paleomagnetism of the Late Cambrian - Early Ordovician Ignacio Formation, San Juan Mountains, southwest Colorado**

J.W. Geissman

EOS, vol. 72, p. 136 (1991)

**Neotectonic analysis of rift-margin faults in the Abiquiu embayment of the Rio Grande rift, northern New Mexico**

M.A. Gonzalez\*

New Mexico Geology, vol. 13, p. 94 (1991)

**Proterozoic tectonic evolution of the Cimarron Mountains, New Mexico**

J.A. Grambling and R.D. Dallmeyer

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 26 (1991)

**A problem with garnet thermometry in staurolite schist**

J.A. Grambling, J.N. Pedrick\* and C.G. Daniel\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A333 (1991)

**Heterogeneity of Proterozoic continental crust in northern New Mexico**

J.A. Grambling, A.G. Thompson\*, C.J. Daniel\*, J.N. Pedrick\* and C.A. White\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 26 (1991)

**The influence of deposition on rates of soil development**

J.B.J. Harrison\* and L.D. McFadden

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A63 (1991)

**Dextral oblique-slip deformation along the Montosa fault zone at Abo Pass, Valencia and Socorro Counties, New Mexico**

S.N. Hayden\*

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**Depositional controls on sandstone petrology and diagenesis of the Point Lookout Sandstone, San Juan Basin, southwestern Colorado**

D.L. Hicks\*

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**Late Triassic fish from the Tucumcari basin, east-central New Mexico**

P. Huber\*, A.P. Hunt\* and S.G. Lucas

New Mexico Geology, vol. 13, p. 18-19 (1991)

**Tetrapod fauna of the Redonda Formation (Upper Triassic), east-central New Mexico**

A.P. Hunt\*

New Mexico Geology, vol. 13, p. 18 (1991)

**Two phytosaur (Reptilia: Archosauria) skeletons from the Bull Canyon Formation (Late Triassic) of east-central New Mexico with preserved stomach contents**

A.P. Hunt\*

New Mexico Geology, vol. 13, p. 93 (1991)

The first tetrapod faunas from the Trujillo Formation (Late Triassic) of east-central New Mexico and their biochronological and paleoecological significance

A.P. Hunt\*

New Mexico Geology, vol. 13, p. 93 (1991)

The phylogeny of the Metoposauridae (Amphibia: Temnospondyli)

A.P. Hunt\*

Journal of Vertebrate Paleontology, vol. 11, supplement, p. 36-37A (1991)

The most complete actosaur skeleton in the Western Hemisphere: Typothorax coccinarum from the Bull Canyon Formation (Late Triassic: Norian) of east-central New Mexico

A.P. Hunt\*

Journal of Vertebrate Paleontology, vol. 11, supplement, p. 37A

Mineralogical trends in the detrital clay fraction of the Westwater Canyon Member of the Morrison Formation, San Juan Basin, New Mexico

C.W. Inoue\* and L.J. Crossey

New Mexico Geology, vol. 13, p. 62-63 (1991)

Coffinization - a possible mechanism for the alteration of spent fuel under reducing conditions

J. Janeczek\*\* and R.C. Ewing

Abstracts, Fall Meeting, European Materials Research Society, Strasbourg, France, p. A. VIII, P4 (1991)

Derivation of isolated olivine grains in the carbonaceous chondrite ALH A77307 by fragmentation of chondrules

R.H. Jones\*\*

Lunar and Planetary Science XXII, p. 659-660 (1991)

Effect of metamorphism on isolated olivine grains in CO<sub>2</sub> chondrites

R.H. Jones\*\*

Meteoritics, vol. 26, p. 353-354 (1991)

A comparison of zoning profiles in FeO-rich PO chondrule olivines and experimental analogues: evidence for metamorphic reheating of chondrules

R.H. Jones\*\* and G.E. Lofgren

Lunar and Planetary Science XXII, p. 661-662 (1991)

Asbestos: mineralogy and misunderstanding

C. Klein

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Permian - Triassic pseudoisochrons for Pleistocene andesites, El Pico de Orizaba, Trans-Mexican volcanic belt, Mexico

A.M. Kudo, E.M. Calvin\*, D.G. Brookins and D. Ward\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 39 (1991)

A Late Pennsylvanian Lingula-Solemya-Myalina community, Kinney quarry, Manzanita Mountains, central New Mexico

B.S. Kues

New Mexico Geology, vol. 13, p. 18 (1991)

**Paleomagnetic evaluation of synkinematic footwall tilting along the Miocene South Mountains metamorphic core complex, Arizona**

R.F. Livaccari\*, J.W. Geissman and S.J. Reynolds

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A189 (1991)

**Sedimentation patterns in Pennsylvanian strata at the Kinney Brick Quarry, Bernalillo County, New Mexico**

J.C. Lorenz, S.G. Lucas and G.A. Smith\*\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 44 (1991)

**Reptile footprints from the Middle Triassic Moenkopi Formation, Cibola County, New Mexico**

S.G. Lucas and A.P. Hunt\*

New Mexico Geology, vol. 13, p. 93 (1991)

**Comparison of in-situ and laboratory corrosion experiments with borosilicate nuclear waste glass**

W. Lutze and R.C. Ewing

Abstracts, Fall Meeting, European Materials Research Society, Strasbourg, France, p. A. II.2 (1991)

**Impacts of Holocene acidification on the formation of calcic soils on the Providence Mountains piedmont, Mojave Desert, California**

E.V. McDonald\* and L.D. McFadden

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A355 (1991)

**A model of pedogenesis in Quaternary siliciclastic fan deposits in an arid climate: implications for interpreting pre-Quaternary paleosols**

L.D. McFadden

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A63 (1991)

**Debris-flow events following forest fires in Yellowstone National Park, Wyoming**

G.A. Meyer\* and S.G. Wells

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 48 (1991)

**Investigation of fire-climate-alluvial system linkages in Yellowstone National Park**

G.A. Meyer\*, S.G. Wells and R.C. Balling, Jr.

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**Late Cretaceous - early Tertiary remagnetization of strata at and near the Permian - Triassic disconformity in central New Mexico: a relationship to Mesozoic tectonism?**

R. Molina-Garza, J.W. Geissman and R. Van der Voo

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 50 (1991)

**Paleomagnetism and magnetostratigraphy of the Middle and Upper Triassic section of northeastern New Mexico**

R.S. Molina-Garza, J.W. Geissman and R. Van der Voo

European Geophysical Union Meeting, Annales Geophysicae, Supplement, vol. 9, p. 83 (1991)

**Accretion and core formation in the Earth**

H.E. Newsom\*\*

International Union of Geodesy and Geophysics, Program and Abstracts, p. 14 (1991)

**Pressure regimes and core formation in the accreting Earth**

H.E. Newsom\*\*

Abstracts for "The physics and chemistry of magma ocean from 1 bar to 4  $\mu$ bar", San Francisco (1991)

**New constraints on the size of the lunar core and the origin of the moon**

H.E. Newsom\*\* and S.K. Runcorn

Lunar and Planetary Science XXII, p. 973-974 (1991)

**The Valley of Ten Thousand Smokes, Katmai, Alaska: a unique geochemistry laboratory**

J.J. Papike

Geological Society of America, Abstracts with Programs (Presidential Address), vol. 23, no. 5, p. A37 (1991)

**Planetary volcanic processes: vapor phase transport in terrestrial and lunar pyroclastic deposits**

J.J. Papike, C.K. Shearer\*\* and M.N. Spilde\*\*

Lunar and Planetary Science XXII, p. 1019-1020 (1991)

**Chemical mass flux in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska: influence of assumed protolith composition on enrichment/depletion systematics**

J.J. Papike, M.N. Spilde\*\* and T.E.C. Keith

EOS, vol. 72, p. 551 (1991)

**Paleomagnetic test of the age of gold mineralization in the Mercur District, Utah**

W.T. Parry and J.W. Geissman

EOS, vol. 72, p. 144 (1991)

**Juxtaposition of contrasting Proterozoic tectono-metamorphic units in the northern Taos Range, New Mexico**

J.N. Pedrick\* and J.A. Grambling

New Mexico Geology, vol. 13, p. 63-64 (1991)

**Contrasting Proterozoic tectonometamorphic terranes in the northern Taos Range, New Mexico**

J.N. Pedrick\* J.A. Grambling and R.D. Dallmeyer

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 56 (1991)

**Isotopic evidence for a decline in crustal contributions to caldera-forming rhyolites of the western United States during the middle to late Cenozoic**

F.V. Perry\*\*, D.J. DePaolo and W.S. Baldrige

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A441 (1991)

**$^3\text{He}$  surface exposure dates and paleomagnetism of the Quaternary Potrillo volcanic field, Rio Grande rift, south-central New Mexico**

J. Poths, E.Y. Anthony, M. Whitclaw, J. Hoffer and J.W. Geissman

EOS, vol. 72, p. 577 (1991)

**A unique eucrite clast from the Kapoeta howardite**

A. Pun\*, K. Keil, G.J. Taylor and E.A. King

Lunar and Planetary Science Conference XXII, p. 1105-1106 (1991)

**Chemistry and petrology of low-nickel stratospheric particles: a new class of interplanetary dust particles or not?**

F.J.M. Rietmeijer\*\*

Lunar and Planetary Science XXII, p. 1119-1120 (1991)

**Hydrated low-nickel stratospheric particles compared to the smectite subclass of hydrated interplanetary dust particles**

F.J.M. Rietmeijer\*\*

Lunar and Planetary Science XXII, p. 1121-1122 (1991)

## Carbon petrology in comets

F.J.M. Rietmeijer\*\*

Abstracts, International Conference on Asteroids, Comets and Meteors, Lunar and Planetary Institute Contribution 765, p. 177 (1991)

## A SIMS study of trace element distributions in garnet-biotite assemblages

C.S. Schwardt\*\*, J.J. Papike and C.K. Shearer\*\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 91 (1991)

## Inherited zircon from ca. 1.1 Ga mafic dikes, NW Arizona

L.L. Shastri\*, K.R. Chamberlin and S.A. Bowring

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 93 (1991)

## Deciphering the volcanic and hydrothermal history recorded in magma exploratory hole LFV 51-20, Long Valley, California: a perspective from isotopic and trace element analysis using secondary ion mass spectrometry

C.K. Shearer\*\*, J.R. Connolly\*\* and J.J. Papike

EOS, vol. 72, p. 551 (1991)

## Proton induced X-ray emission (PIXE) micro-analysis of Apollo 15 green glass: preliminary experiments

C.K. Shearer\*\*, D.D. Hickmott, P.S. Z., Rogers and J.J. Papike

Lunar and Planetary Science XXII, p. 1227-1228 (1991)

## Another re(view) of lunar basaltic magmatism

C.K. Shearer\*\* and J.J. Papike

Lunar and Planetary Science XXII, p. 1225-1226 (1991)

## Melting and crystallization models for the generation of rare element peraluminous granitic magmas: a perspective from the Harvey Peak Granite, Black Hills of South Dakota

C.K. Shearer\*\* and J.J. Papike

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 94 (1991)

## Discriminating pyroclastic surge on colian genesis for cross-bedded tuffs, Jemez Mountains, New Mexico

G.A. Smith and D. Katzman\*

New Mexico Geology, vol. 13, p. 38-39 (1991)

## A record of terrestrial sedimentation responding to climate changes: the Plio-Pleistocene St. David Formation, southwestern Arizona

G.A. Smith\*\*, D. Katzman\*, J.W. Geissman, Y. Wang and T.E. Cerling

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A301 (1991)

## Vapor phase and hydrothermal alteration of plagioclase and pyroxene phenocrysts in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska

M.N. Spilde\*\*, A.J. Brearley\*\* and J.J. Papike

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A452 (1991)

## Characteristics of Sn-, Ta-, and Nb- mineralization associated with the Harvey Peak granite-pegmatite system, Black Hills, South Dakota

M.N. Spilde\*\* and C.K. Shearer\*\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 96 (1991)

**Proterozoic granitic magmatism in central New Mexico: syntectonic or anorogenic?**

A.G. Thompson\* and C.G. Barnes

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A328 (1991)

**Polymetamorphism in Proterozoic rocks of the Manzano Mountains, central New Mexico**

A.G. Thompson\*, J.A. Grambling and R.D. Dallmeyer

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 98 (1991)

**In-situ TEM study of ion-beam induced amorphization of zircon**

L.M. Wang\*\* and R.C. Ewing

Abstracts, Sixth International Conference on Radiation Effects in Insulators, Weimar, Germany, p. 91 (1991)

**Effects of ion beam irradiation on the complex structures of minerals**

L.M. Wang\*\* and R.C. Ewing

Abstracts, Material Research Society Fall Meeting, Boston, p. 28 (1991)

**Use of cosmogenic  $^3\text{He}$  and  $^{21}\text{Ne}$  to understand desert pavement formation**

S.G. Wells, L.D. McFadden and C.T. Olinger

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A207 (1991)

**A Proterozoic ductile thrust in the Pecos Wilderness, northern New Mexico**

C.A. White\* and J.A. Grambling

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 104 (1991)

**Cyclic sedimentation on a Middle Pennsylvanian (Desmoinesian) carbonate-clastic ramp, Sandia Mountains, north-central New Mexico**

T.L. Wiberg\* and G.A. Smith\*\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 105 (1991)

**Type section of the Paleocene Nacimiento Formation, San Juan Basin, northwestern New Mexico**

T.E. Williamson\* and S.G. Lucas

New Mexico Geology, vol. 13, p. 61 (1991)

**Late Cretaceous selachian fauna from the Mulatto Tongue of the Mancos Shale, central New Mexico**

T.E. Williamson\* and S.G. Lucas

New Mexico Geology, vol. 13, p. 19 (1991)

**Paleocene dinosaurs**

T.E. Williamson\* and S.G. Lucas

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A185 (1991)

**Early Paleocene freshwater stingrays and a sawfish? from the San Juan Basin, New Mexico**

T.E. Williamson\* and S.G. Lucas

Journal of Vertebrate Paleontology, vol. 11, supplement, p. 62A

**What is the Puercan - Torrejonian boundary?**

T.E. Williamson\*, S.G. Lucas and R.M. Sullivan

Geological Society of America, Abstracts with Programs, vol. 23, no. 4, p. 106.

**Stable isotopes in Fe(III) and Al "oxides" as indicators of continental paleoclimates**

C.J. Yapp

Abstracts, Chapman Conferences, Continental Isotopic Indicators of Climate, p. 12 (1991)



**Ancient atmospheric CO<sub>2</sub> partial pressures: indications from oolitic iron stones**

C.Y. Yapp and H. Poths\*\*

Abstracts of American Geophysical Society Spring Meeting, vol. 72, p. 166

**Globally significant paleoclimatic parameters: stable isotopes in FeOOH**

C.J. Yapp and H. Poths\*\*

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A303 (1991)

**Climatic and ecologic changes during the Pliocene and early Pleistocene in southeastern Arizona: stable isotopic records from the St. David Formation**

Y. Wang, T.E. Cerling, G.A. Smith\*\*, J.W. Geissman, J. Quade, E.H. Lindsey and J.R. Bowman

Geological Society of America, Abstracts with Programs, vol. 23, no. 5, p. A30 (1991)

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### 3. RESEARCH GRANTS AND CONTRACTS

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#### NEW AWARDS 1991

High-resolution stratigraphy: application to hydroclimate reconstruction in Southwestern United States

R.Y. Anderson

National Science Foundation

\$55,132; 1991 - 1993

Investigation into new methods for preservation of adobe plasters based on indigenous technologies

Susan Barger\*\*

Albuquerque Community Foundation

\$1,400; Sept. 25, 1991 - Sept. 24, 1992

Mechanisms of high pressure phase transformations between the  $\alpha$ ,  $\beta$  and  $\gamma$  polymorphs of  $Mg_2SiO_4$  and  $(Mg, Fe)_2SiO_4$

A.J. Brearley\*\* (IOM)

National Science Foundation

\$56,811; July 15, 1991 - December 31, 1993

Stream hyporheic zones: hydrology, biogeochemistry, and links to surface waters and plant riparian communities

M.E. Campana and C.N. Dahm (Biology Dept.)

National Science Foundation

\$568,909; March 1, 1991 - February 28, 1994

REU supplement to stream hyporheic zones award

M.E. Campana and C.N. Dahm

National Science Foundation

\$10,000; May 1, 1991 - April 30, 1992

RAMHSS supplement to stream hyporheic zones award

M.E. Campana and C.N. Dahm

National Science Foundation

\$6,000; June 1, 1991 - May 31, 1992

Evaluation of unsaturated zone contaminant transport models for waste management

M.E. Campana and T.W. Sammis (NMSU)

Waste Management Education and Research Consortium

\$46,307; February 16, 1991 - February 15, 1992

Development of integrated water budget models

T. Moore, B. Thomson, M.E. Campana and R. Heggen

U.S. Fish and Wildlife Service

\$34,136; May 15, 1991 - September 30, 1992

Research supplement to environments of sedimentation and controls on diagenesis of the Creede Formation, Colorado

L.J. Crossey

National Science Foundation

\$4,071; August 6, 1991 - December 31, 1992

Development of Middle Pennsylvanian limestone cycles in the Pedregosa Basin of New Mexico and Arizona

M. Elrick

University of New Mexico - Research Allocations Committee

\$2,200; February 1991 - October 1991

Possible asteroid-impact origin of the Bushveld-Vredefort Complex, South Africa

W.E. Elston

University of New Mexico - Research Allocations Committee

\$7,500; April 30, 1991 - March 31, 1992

Application of volcanology to lunar and planetary geology, Supplement 32

W.E. Elston

National Aeronautics and Space Administration

\$10,000; July 1, 1991 - June 30, 1992

Supplemental award, radiation effects and annealing kinetics in crystalline complex Nb-Ta-Ti oxides, phosphates and silicates

R.C. Ewing

DOE - Office of Basic Energy Sciences

\$35,000; 1991

Low temperature alteration of natural uraninite

R.C. Ewing

Swedish Nuclear Power and Waste Management Company

\$87,970; Sept. 1, 1991 - Aug. 30, 1992

Research experiences for undergraduates

J.W. Geissman

National Science Foundation

\$5,000; April 15, 1991 - September 30, 1992

Paleomagnetic and rock magnetic investigation of New Mexico rocks

J.W. Geissman

New Mexico Bureau of Mines and Mineral Resources

\$2,400; May 1, 1991 - April 30, 1992

Geologic field work at archeological sites near Reserve, New Mexico

Mark Gonzalez\*

Museum of New Mexico

\$710; July 25, 1991 - August 15, 1991

Infiltration pathways during the regional metamorphism of pelitic schists and quartzites

J.A. Grambling

National Science Foundation

\$79,953; June 1, 1991 - November 30, 1993

**Geologic studies of Proterozoic rocks in the Rincon and Taos Ranges, New Mexico**

J.A. Grambling

New Mexico Bureau of Mines and Mineral Resources

\$4,385; May 15, 1991 - August 15, 1991

**Evaluating the Early and Middle Proterozoic tectonic evolution of Southwestern North America**

J.A. Grambling and K.E. Karlstrom

National Science Foundation

\$154,700; November 25, 1991 - June 30, 1994

**Analysis of ceramic materials: phosphate complexes**

J. Husler\*\*

University of New Mexico, Chemical and Nuclear Engineering Departments

\$1,600; January 1, 1991 - December 31, 1991

**Trace element analysis**

J. Husler\*\*

University of New Mexico Occupational Safety

\$7,200; January 1, 1991 - December 31, 1991

**Yucca Mountain nuclear depository study**

J. Husler\*\*

Sandia and Los Alamos National Labs

\$1,000; January 1, 1991 - December 31, 1991

**XRF tuff analysis**

J. Husler\*\*

Oklahoma University

\$430; October 1, 1991 - November 1, 1991

**Zeolite adsorption of toxic elements in mine waters**

J. Husler\*\*

Zeotech, Inc.

\$700; August 1991 - December 1991

**Minority Student Support**

B.S. Kues

National Science Foundation

\$20,000; August 1991 - March 1993

**Petrologic and geochemical studies of volcanic rocks in support of the Nevada nuclear waste storage investigations**

L.D. McFadden, (with others)

DOE - Los Alamos National Labs

\$115,000; October 1, 1991 - September 30, 1992

**Relationships between soil processes and environmental changes/soil parent materials in deserts**

L.D. McFadden

National Aeronautics and Space Administration

\$73,500; December 1991 - July 1993

**Direct observation of a young igneous system: research drilling at Katmai, Alaska**J.J. Papike

National Science Foundation

\$44,400; March 15, 1991 - March 15, 1992

**Proposal to upgrade an electron microprobe X-ray analysis system**J.J. Papike, A.J. Brearley\*\* and M.N. Spilde\*\*

National Science Foundation

\$40,000; July 1, 1991 - June 30, 1992

**Proposal to upgrade an electron microprobe X-ray analysis system**J.J. Papike, A.J. Brearley\*\* and M.N. Spilde\*\*

National Aeronautics and Space Administration

\$43,707; December 15, 1991 - December 1, 1992

**Trace element studies of pyroxenes in rocks of the HED Association**J.J. Papike and A. Pun\*

National Aeronautics and Space Administration

\$22,000; August 1, 1991 - August 1, 1992

**Mineralogy of fine-grained primitive extra-terrestrial materials**

F.J.M. Rietmeijer

National Aeronautics and Space Administration

\$80,000, April 1, 1991 - March 31, 1992

**Volcanic breccias: evaluation of fragment and deposit origins and distribution within small-volume composite volcanoes**G.A. Smith

National Science Foundation

\$74,268; December 18, 1991 - December 31, 1993

**Technical review of analytical electron microscopy studies of simulated nuclear waste glass reaction**

L.M. Wang\*\*

Argonne National Laboratory

\$135,000; February 1, 1991 - September 30, 1992

**Effects of ion irradiation in orthosilicate materials**

L.M. Wang\*\*

Battelle Pacific NW Laboratories

\$30,000; December 23, 1991 - September 30, 1992

**AWARDS CONTINUING FROM PREVIOUS YEAR****High-resolution stratigraphy: application to hydroclimatic reconstruction in the southwestern United States**R.Y. Anderson

National Science Foundation

\$13,842; 1989-1991

**Organic-inorganic interactions in sedimentary basins: experimental studies of water-soluble organic compounds**L.J. Crossey

Shell Development Basic Research Grant

\$10,000; Oct, 1987 (open)

**Environments of sedimentation and controls on diagenesis of the Creede Formation, Colorado**L.J. Crossey

National Science Foundation

\$73,157; June 1, 1990 - December 31, 1992

**Application of volcanology to lunar and planetary geology, Supplement 28-31**W.E. Elston

National Aeronautics and Space Administration

\$47,897; January 31, 1989 - December 31, 1991

**Radiation effects and annealing kinetics in crystalline silicates, complex oxides and phosphates**R.C. Ewing

Office of Basic Energy Sciences, Department of Energy

\$279,129; 1990-1993

**Characterization of alteration products and processes in natural  $UO_2$** R.C. Ewing

Svensk Kärnbränslehantering AB, Sweden

\$131,500; Sept. 1, 1990 - Aug. 30, 1992

**Paleomagnetism and  $^{40}Ar/^{39}Ar$  thermochronology of Precambrian mafic dykes and other igneous units, central and southern Rocky Mountains, USA**J.W. Geissman

National Science Foundation

\$50,000; Jan. 1, 1989 - November 30, 1991

**Paleomagnetism and tectonics of dikes of the Independence Swarm, Mohave Desert, California**J.W. Geissman

University of New Mexico Research Allocations Committee

\$2,300; October 1, 1990 - July 1, 1991

**Magnetostratigraphy and  $^{40}Ar/^{39}Ar$  geochronology of volcanic rocks of late Eocene and Oligocene age, New Mexico, Texas, and Colorado**J.W. Geissman and Wm. McIntosh

National Science Foundation

\$45,000; June 1, 1989 - May 30, 1991

**Structural metamorphic, and  $^{40}Ar/^{39}Ar$  Studies of Proterozoic tectonism in New Mexico**J.A. Grambling and C.K. Mawer

National Science Foundation

\$110,021; Feb. 1, 1989 - July 1, 1991

**Geochemistry, petrology and geologic setting of selected Precambrian banded iron-formations in the Quadrilátero Ferrífero, Minas Gerais, Brazil**C. Klein

National Science Foundation

\$119,600; July 1990 - Nov. 30, 1992

**Characterization of Quaternary soils of the western Ajo Mountains piedmont, southern Arizona**L.D. McFadden

U.S. Geological Survey

\$17,523; August 7, 1989 - Sept. 30, 1991

Geoarchaeological and pedological studies of soils in the Bolack land exchange site near Farmington, New Mexico

L.D. McFadden

University of New Mexico, Office of Contract Archeology

\$5,017; November, 1988 to December 31, 1991

Regional patterns of soil formation and paleoclimatic inferences from remotely sensed images

L.D. McFadden

University of Washington/NASA

\$40,600; July, 1989 - December 31, 1992

Accretion and core formation in the Earth: evidence from siderophile and chalcophile trace elements

H.E. Newsom\*\* (IOM)

National Science Foundation

\$88,400; June 1, 1988 - Dec. 30, 1991

Supplement to Accretion and core formation in the Earth: evidence from siderophile and chalcophile trace elements

H.E. Newsom\*\* (IOM)

Research Experience for Undergraduates Program; National Science Foundation

\$4,000; December 1, 1990 - December 30, 1991

Accretion and core formation in the Earth: evidence from siderophile and chalcophile trace elements

H.E. Newsom\*\* (IOM)

National Science Foundation

\$92,000; June 1, 1990 - Nov. 30, 1992

Microbeam studies of planetary materials

J.J. Papike

NASA

\$182,000; Dec. 15, 1990 to Dec. 15, 1991

Chemical transport through continental crust

J.J. Papike

DOE

\$100,000; Sept. 1, 1990 - Sept. 1, 1991

Mineralogical characterization of mechanical test samples

J.J. Papike

Sandia National Laboratories

\$110,239; Oct. 1, 1990 - May 31, 1992

Petrologic, geochemical and soils studies of Pliocene and Quaternary volcanic rocks for the Yucca Mountain Project

F.V. Perry\*\* and S.G. Wells

Los Alamos National Laboratory

\$407,779; June 1, 1990 - Sept. 30, 1993

**Mineralogy of fine-grained primitive extraterrestrial materials**

F.J.M. Rietmeijer\*\*\*

National Aeronautics and Space Administration

\$85,000; Apr. 1, 1990 - Mar. 31, 1991

**Volcaniclastic sedimentation related to intracontinental volcanic fields and rift basins**

G.A. Smith\*\*

American Chemical Society, Petroleum Research Fund

\$18,000; Feb. 1988 - Aug. 1991

**Nontectonic influences on continental basin-fill sedimentation and post-orogenic sedimentation in a late Cenozoic extensional basin**

G.A. Smith\*\*

National Science Foundation

\$99,902; Feb. 1990 - July 1992

**Pliocene and Pleistocene climate change in south-central Colorado**

K.L. Rogers (subcontract to G.A. Smith\*\*)

National Science Foundation

\$7,100; Jan. 1990 - June 1991

**The stable isotope and minor element geochemistry of iron-rich chemical sediments**C.J. Yapp

National Science Foundation

\$110,013; June 15, 1990 - Nov. 30, 1992

**Holocene and modern geomorphic responses to wildfires and climate change in northeastern Yellowstone National Park**S.G. Wells and G.A. Meyer\*

National Science Foundation

\$71,640; June 1, 1990 - June 30, 1992

**Basin and Range Geophysical Experiment (BARGE)**B.P. Wernicke and J.W. Geissman, (subcontract)

National Science Foundation

\$42,000; July 1, 1990 - June 30, 1992

**NEW GRANTS, January-March, 1992****Sedimentation and diagenesis of the Creede Formation, CO; subsurface evaluation and correlation with outcrop studies**L.J. Crossey

National Science Foundation

\$79,200; January 1, 1992 - December 31, 1993

**The Proterozoic Bushveld catastrophe, South Africa**W.E. Elston

National Science Foundation

\$53,200; January 1, 1992 - June 30, 1993



**Did the Bushveld-Vredefort Complexes, South Africa, result from the largest known multiple-impact event on Earth?**

W.E. Elston

The Barringer Crater Company

\$5,000; January 1, 1992 - (No termination date)

Uraninite from Oklo, Gabon: alteration of spent fuel

R.C. Ewing

Nuclear Regulatory Commission

\$100,000; January 30, 1992 - January 26, 1994

Late Mesozoic history of the western Luning Fencemaker Belt and the Pine Nut Fault, west-central Nevada

J.W. Geissman (subcontract from Rice University)

National Science Foundation

\$5,708, January 15, 1992 - December 31, 1992

Collaborative research: tests of large-magnitude extensional intracontinental strain, Death Valley, Ca.

J.W. Geissman

National Science Foundation

\$20,000; February 15, 1992 - July 31, 1994

Modern chronologic and geochemical techniques applied to a young volcanic field in an active continental rift, PVF, NM

J.W. Geissman

National Science Foundation

\$20,710; January 15, 1992 - July 31, 1994

Paleomagnetic, rock magnetic and stable isotope investigation of late Paleozoic remagnetization of Precambrian basement

J.W. Geissman

American Chemical Society - Petroleum Research Fund

\$43,000; January 1, 1992 - August 31, 1994

Relative influences of climatic changes, dust flux, and lithology on soil hydrology and soil-geomorphic processes in arid and semiarid transitional environments

L.D. McFadden

National Science Foundation

\$54,890 - January 1, 1992 - June 30, 1993

Layer silicates and carbonaceous materials in chondritic porous interplanetary dust

F.J.M. Rietmeijer\*\*

National Aeronautics and Space Administration

\$80,000; April 1, 1992 - March 31, 1993

## STUDENT GRANTS

Robert Finch

Center for nuclear waste regulatory analyses, San Antonio, (travel expenses for attending workshop on the Role of Natural Analogues.....), \$200.

University of New Mexico, Student Research Allocations Committee, \$650.

**Michael Grubensky**

Geological Society of America, \$1,360 (April, 1991 - April, 1992)

University of New Mexico, Student Research Allocations Committee, \$250 (April, 1991 - April, 1992)

**Rick Livaccari**

Sigma Xi, \$552, (1991)

**Eric McDonald**

Geological Society of America, \$1,300 (1991)

Sigma Xi, \$300 (1991-92)

J. Hoover Mackin Award (G.S.A.), \$500.

**Grant Meyer**

Geological Society of America, \$1,000 (April, 1990 - March, 1991)

Sigma Xi, \$600 (April, 1990 - March, 1991)

**Phillip Noll**

National Aeronautics and Space Administration, \$6,000 (August, 1991 - July, 1992)

**Jane Pedrick**

Geological Society of America, \$1,266 (Summer, 1991)

Sigma Xi, \$350, (Fall, 1991)

**Amy Thompson**

University of New Mexico, Student Research Allocations Committee, \$125 (Summer, 1991)

**Tom Williamson**

Geological Society of America, \$1,443 (April, 1991 - October, 1991)

Sigma Xi, \$300 (April, 1991 - October, 1991)

New Mexico Geological Society Kottlowski Fellowship, \$1,000

University of New Mexico, Student Research Allocations Committee, \$150 (April, 1991 - October, 1991)

President's Graduate Research Fund, \$400 (April, 1991 - October, 1991)

New Mexico Friends of Paleontology, \$300 (April, 1991 - October, 1991)

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#### 4. RESEARCH PROJECTS IN PROGRESS

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##### Roger Y. Anderson

##### Grant Proposals submitted:

Solar-geomagnetic Modulation of Cosmic-particle Flux and Tropospheric Winds: Evidence in Varved Lake Sediments, submitted to National Institute for Global Environmental Change.

##### Manuscripts in Press:

R.Y. Anderson, A. Soutar, and T.C. Johnson, Cambridge Univ. Press, Long-term changes in ENSO: Evidence from marine and lacustrine sediments, in Markgraf, V., and Diaz, H. (eds.), Paleoclimatic Aspects of the El Nino-Southern Oscillation.

R.Y. Anderson, Cambridge Univ. Press, Long-term changes in the frequency of occurrence of El Nino events in Markgraf, V., and Diaz, H. (eds.), Paleoclimatic Aspects of the El Nino-Southern Oscillation.

##### Manuscripts Submitted:

R.Y. Anderson, Possible connection between changes in climate, solar activity, and Earth's magnetic field: Evidence in varved sediments from a Minnesota lake; *Nature*.

R.Y. Anderson, Filling the Delaware Basin: Hydrologic and climatic controls on the Permian Castile anhydrite in P.A. Scholle (ed.), Permian of the Northern Continents, Springer-Verlag Unsupported Research Projects.

##### Other Research:

Measurement of sediment Flux in Montreal Bay, California: Collaborative research with C. Piskal, Monterey Bay Aquarium Research Institute, Monterey, CA.

##### Adrian Brearley

##### Manuscripts (in press):

Mechanisms of the transformations between the  $\alpha$ ,  $\beta$  and  $\gamma$  polymorphs of  $Mg_2SiO_4$  at 900°C and 15 GPa., A.J. Brearley, D.C. Rubie, and E. Ito, *Physics and Chemistry of Minerals* (1992, in press).

Cl-like clasts in the Nilpena polymict ureilite: Implications for aqueous alteration processes in CI chondrites, A.J. Brearley and M. Prinz, *Geochimica et Cosmochimica Acta* (1992, in press).

##### Manuscripts submitted (or/in review):

Ti-oxides in carbonaceous chondrites: possible interstellar grains and carriers of  $^{50}Ti$  isotopic anomalies, A.J. Brearley, *Science* (submitted 1991).

Nature and genesis of clay minerals of the Rustler Formation in the vicinity of the waste isolation pilot plant, southeastern New Mexico, T. Sowards, A.J. Brearley, R. Glenn, I.D.R. Mackinnon and M.D. Siegel, Sandia National Laboratories Technical Report (in review, 1991).

**Kinetics of partial melting of muscovite + quartz and rate of multicomponent diffusion in H<sub>2</sub>O-saturated granitic liquid at 1 kbar**, Rubie, D.C. and Brearley, A.J., *Geochimica et Cosmochimica Acta*. (submitted, 1991).

Crystal chemical control on REE incorporation in garnets from the Broken Hill Pb-Zn-Ag orebodies, Australia, Schwandt, C.S., Papike, J.J., Shearer, C.K., Brearley, A.J. and Shimizu, N. (1991), *American Mineralogist* (submitted, 1991).

#### Manuscripts (in preparation):

Origin of matrix and rims in the unequilibrated CO<sub>3</sub> chondrite, ALH77307.

Synthesis and characterization of fluorophlogopite: with M. Pichavant, W.L. Brown and P. Barbey.

Mossbauer, X-ray diffraction and TEM studies of synthetic almandine-pyrope solid solutions: with C.A. Geiger.

Microstructures in synthetic low-Ca pyroxenes as a function of cooling rate: with Rhian Jones.

#### Unsupported research projects or creative work in progress:

Mechanisms of metamorphic reactions during contact metamorphism.

Petrology and mineralogy of low-grade pelitic and metabasic rocks.

Kinetics and mechanisms of breakdown and melting reactions in micas at high temperatures

#### Michael E. Campana

#### Manuscripts in Preparation:

Remote monitoring of stream hyporheic zones with inexpensive pressure transducer-data acquisition systems, Gregory J. Wroblicky, M.E. Campana, B.K. Horton, S.L. Matyk and J.M. Noe, *Proceedings, First International Conference on Ground-Water Ecology* (Tampa, 4/92).

Hyporheic zone hydrodynamics in first-order montane catchments, M.E. Campana and C.N. Dahm *Proceedings, First International Conference on Ground-Water Ecology* (Tampa, 4/92).

Regional groundwater flow, Nevada Test Site and vicinity, Nevada-California, M.E. Campana, N.L. Ingraham, W.R. Sadler and R.L. Jacobson, *Water Resources Research*.

A general mathematical model for the interpretation of tracer data and calculation of transit, times in hydrologic systems, I.E. Amin and M.E. Campana, *Proceedings, 6th International Symposium on Water Tracing* (Karlsruhe, 9/92).

Groundwater flow in the Railroad Valley flow system, central Nevada, M.E. Campana and J.G. Roth *Applied Hydrogeology or Ground Water*.

Groundwater recharge and age distributions, Yucca Mountain area, Nevada, M.E. Campana and R.M. Byer, Jr., *Applied Hydrogeology*.

#### Technical Reports in Review:

A new approach for simulating heat transfer and groundwater flow and its application to the Leach Hot Springs hydrothermal system, Pershing County, Nevada, E.J. Pottorff and M.E. Campana, *Pub. No. 41121*, Water Resources Center, Desert Research Institute, Reno, NV, 145 p.

Regional groundwater flow, Nevada test site and vicinity, N.L. Ingraham, M.E. Campana, W.L. Sadler and R.L. Jacobson, *Technical Report*, Water Resources Center, Desert Research Institute, Reno, NV.

Proposals Pending:

- Evaluation of unsaturated zone contaminant transport models for waste management - Phase II, M.E. Campana and T.W. Sammis (New Mexico State University), Waste Management Education and Research Consortium, \$58,975; 3/1/92-2/28/93 (pending).
- The role of colloids in contaminant transport in groundwater at uranium mill tailings sites, M.E. Campana and H.E. Nuttall (Chem. & Nuclear Engineering), Waste Management Education and Research Consortium, \$53,320; 3/1/92-2/28/93.
- Characterization of ground-water flow between the Estancia and Tularosa Basins, New Mexico, M.E. Campana, New Mexico Water Resources Research Institute, \$24,993; 7/1/92-6/30/93.

Unfunded Proposals:

- Evaluation of unsaturated zone contaminant transport models for pesticide management, T. Sammis, Z. Samani, T. Jones (NMSU) and M.E. Campana, U.S. Department of Agriculture, \$176,481; 4/1/91-3/31/93.
- Development of an interdisciplinary graduate program in hydrogeology, B. Thomson, M.E. Campana, R. Heggen, D. Brookins, New Mexico Water Resources Research Institute - Chino Mines Company Fund, \$45,553; 6/1/91-11/30/92.

James R. ConnollyProposals submitted in 1990 (Unfunded):

- Database and geographical information system for geochemical data obtained by microbeam analytical techniques, H.E. Newsom and J.R. Connolly, Co-Principal Investigators, Submitted to: National Science, Foundation, Division of Information, Robotics & Intelligent Systems, Research on Scientific Databases, Requested funding: \$163,914.44 from January 1, 1992 to December 31, 1993. (Received positive reviews; unfunded because of limited nature of "new" database innovation involved in proposed work.)

Other non-funded work in progress:

- Development of a database application utilizing the Alpha Four relational database software for curation of the Institute of Meteoritics meteorite collection.

Laura CrosseyProposals submitted:

- Movement of Metal Contaminants in the Upper San Juan Watershed: Identifying Pathways of Carriers and Measuring Seasonal Flux into Navajo Reservoir, submitted to New Mexico Water Resources Institute.
- Impact Deposits at the Manson Impact Structure: Diagnosis and Post-Impact Thermal History, submitted to National Science Foundation.

Un-sponsored Research:

Sandstone Diagenesis in Transgressive-Regressive Sequences, Point Lookout Sandstone, San Juan Basin, CO., (L. Crossey, C. Timm, R. Wright-Dunbar [Rice University]), Clay Mineralogy of the Westwater Canyon Member of the Morrison Formation, San Juan Basin, CO (L. Crossey, C. Inoue).

Sediment Alteration Beneath Lava Flows: the Santa Fe Group, North-Central NM (L. Crossey, A.M. Kudo, L.D. McFadden)

Granite Corestone Weathering: Mineralogic Aspects (L. Crossey, G. Savarese)

Maya ElrickProposals submitted:

Cyclostratigraphy and diagenesis of Middle Devonian carbonate deposits, eastern Great Basin, Maya Elrick, American Chemical Society - Petroleum Research Fund, \$18,000 - 2 years (pending); submitted 9/91.

Cyclostratigraphy of the Middle Pennsylvanian (Desmoinesian) Horquilla Formation, Pedregosa Basin, Maya Elrick, Petroleum Research Fund of the American Chemical Society, \$18,000 - 2 years (unfunded); submitted 2/5/91.

Middle Pennsylvanian carbonate cycles in the Horquilla Formation, southern New Mexico and southeastern Arizona, Maya Elrick, New Mexico Bureau of Mines and Mineral Resources Submitted 2/91 (unfunded).

Wolfgang E. ElstonUnsuccessful Proposal:

Origin of the Bushveld-Vredefort Complexes, South Africa: The case for multiple impacts, NASA, \$63,756, October 1, 1991 - September 30, 1992.

Manuscripts in Preparation:

High-temperature quartz-tridymite inversion in siliciclastic sedimentary rocks beneath Rooiberg Felsite: clue to a 2.05 Bushveld-Vredefort impact (?) catastrophe, South Africa.

What is The Bushveld Complex?

Un-sponsored Research:

Volcanic and tectonic evolution, southwestern New Mexico.  
Association of mineral deposits and volcanic centers

**Rodney C. Ewing****Sponsored Research:****Proposals submitted or pending in 1991:**

- Investigation of Inorganic Pathways for Formate Corrosion on Archaeological Objects and Works of Art, Susan Barger (P.I.) & R.C. Ewing (host), NSF/Materials Science (unfunded), \$146,851.00 (1 year).
- Uraninite from Oklo, Gabon: A Natural Analogue for the Corrosion and Alteration of Spent, Fuel, R.C. Ewing, Nuclear Regulatory Commission (approved), \$100,000.00 (2 years).
- High Resolution Transmission Electron Microscope, R.C. Ewing, Instrumentation Proposal, DOE, (pending), \$350,000.00.

**Papers in Refereed Journals (in press):**

- Hardness and elastic modulus of zircon as a function of heavy-particle irradiation dose: 1. In situ  $\alpha$ -decay event damage, B.C. Chakoumakos, W.C. Oliver, G.R. Lumpkin and R.C. Ewing, Radiation Effects and Defects in Solids.
- Detailed in situ study of ion beam-induced amorphization of zircon, L.M. Wang and R.C. Ewing, Nuclear Instruments and Methods for Physics Research, B: Beam Interactions with Materials and Atoms
- Geochemical alteration of pyrochlore group minerals: Part 1. Microlite subgroup, G.R. Lumpkin\* and R.C. Ewing, American Mineralogist, The structure of aperiodic, metamict, (CaTh)<sub>2</sub>Zr<sub>2</sub>Ti<sub>4</sub>O<sub>14</sub>: An EXAFS study of the Zr, Th, and U sites, F. Farges, R.C. Ewing and G.E. Brown, Journal of Materials Research
- Amorphization of zirconolite: Alpha-decay event damage versus krypton ion irradiation, R.C. Ewing and L.M. Wang, Nuclear Instruments and Methods for Physics Research, B: Beam Interactions with Materials, and Atoms
- Cyclic weathering of natural uranyl oxide hydrates: Schoepite polytypes and dehydration effects, R.J. Finch\*, M.L. Miller\* and R.C. Ewing, Radiochimica Acta

**Papers in Conference and Symposia Proceedings (in press):**

- Long-term predictions using natural analogues, R.C. Ewing, Proceedings of symposium sponsored by the Nuclear Regulatory Commission "The Role of Natural, Analogs in Geologic Disposal of High-Level Nuclear Waste", W.M. Murphy and K.A. Kovach, Eds.
- Alteration of natural uranyl oxide hydrates in Si-rich groundwaters: Implications for uranium solubility R.J. Finch\* and R.C. Ewing, Scientific Basis for Nuclear Waste Management XV, S. Sombret, Ed., Materials Research Society, Pittsburgh, Pennsylvania
- Coffinitization - A possible mechanisms for the alteration of spent fuel under reducing conditions, J. Janeczek and R.C. Ewing, Scientific Basis for Nuclear Waste Management XV, S. Sombret, Ed., Materials Research Society, Pittsburgh, Pennsylvania.
- Ion beam-induced amorphization of (Mg,Fe)<sub>2</sub>SiO<sub>4</sub> olivine series: An in situ transmission electron microscopy study, M. Wang and R.C. Ewing, Proceedings of the Materials Research Society

**Participation in International Working Groups**

- Cigar Lake, Canada: Natural Analogue Study sponsored by AECL, Canada.
- Oklo, Gabon: Natural Analogue Study sponsored by the CEA, France.
- Alligator Rivers, Australia: Natural Analogue Study sponsored by ANSTO, Australia.

Un-sponsored Research

Pegmatite mineralogy and genesis.  
Corrosion and hydration of natural and synthetic glasses.

John GeissmanProposals in review:

- Paleomagnetic, rock magnetic, and stable isotope investigation of Late Paleozoic remagnetization of Precambrian, basement and immediately overlying strata, central and southern Rocky Mountains, AWARDED, including a \$3,000 supplement for undergraduate support, J.W. Geissman and John R. Bowman (University of Utah), American Chemical Society/Petroleum Research Fund, \$43,000, 1 January, 1992 to 31 August, 1994.
- Collaborative Research: Modern chronologic and geochemical techniques applied to a young volcanic field in an active continental rift: Potrillo Volcanic Field, NM, AWARDED, Elizabeth Anthony (University of Texas, El Paso), Wm. McIntosh (New Mexico Bureau of Mines and Mineral Resources), J.W. Geissman, National Science Foundation, \$160,000, 15 January, 1992 to 30 June, 1994. UNM component: \$20,710.
- Paleomagnetic assessment of footwall deformation, South Mountains metamorphic core complex, southern Arizona, J.W. Geissman, National Science Foundation, \$62,414, 1 June, 1992 to 30 May, 1994.
- Volcanic breccias: Evaluation of fragment and deposit origins and distribution within small-volume composite volcanoes AWARDED, Gary A. Smith, J.W. Geissman, National Science Foundation, \$75,000, 1 January, 1992 to 31 December, 1993.
- Collaborative Research: Mesozoic and Cenozoic development of the Sevier Desert region, western Utah, J. Douglas Walker (University of Kansas), John M. Bartley (University of Utah), J.W. Geissman, National Science Foundation, \$200,000, 1 June, 1992-30 May, 1994.

Papers in Press:

- Structural setting and timing of emplacement of the Red Mountain intrusive system (Urad-Henderson molybdenum deposits), Colorado: Evidence from paleomagnetic data, J.W. Geissman, L.W. Snee, G.W. Graaskamp\*, R.b. Carten, and E.P. Geraghty Bulletin, Geological Society of America.
- Calibration of the latest Eocene-Oligocene geomagnetic polarity time scale using  $40^{Ar}/^{39}Ar$  dated ignimbrites, W.C. McIntosh, J.W. Geissman, C.E. Chapin, M.J. Kunk, and C.D. Henry.

Manuscripts in Review:

- Paleomagnetism of the Black Mountains, Death Valley, California, D. Holm\*, J.W. Geissman, and B. Wernicke, Geological Society of America Bulletin.
- Paleomagnetic data from the Hoover Dam area document approximately 45 degrees of counterclockwise rotation related to slip along the Lake Mead Fault System, J.W. Geissman, Geological Society of America Bulletin.
- Regional Late Paleozoic remagnetization of lower Paleozoic shallow water limestones in the eastern Great Basin: The utility of "micro"-fold tests from late compaction fabrics, S.L. Gillett, and J.W. Geissman, Society of Economic Paleontologists and Mineralogists, Special Volume on Magnetization of Carbonate Rocks.



Assessment of the tectonic significance of discordant paleomagnetic poles from the Coast Plutonic complex and the northern Cascades, J.S. Oldow, H.G. Ave Lallement, J.W. Geissman, American Journal of Science.

#### Manuscripts in Preparation:

- On the paleomagnetic signature of crystalline crust in extensional terranes, J.W. Geissman, Tectonics. Applications of Paleomagnetism in the Basin and Range province, western U.S.A., and relevance to models for crustal extension, J.W. Geissman, Reviews of Geophysics (invited).
- Paleomagnetism of the Hamblin-Cleopatra Volcano and related rocks, Lake Mead area, southern Nevada, Revisited, T. Wawryzniec, J.W. Geissman, J.E. Faulds, S.S. Harlan\*, and R.E. Anderson, Tectonics.
- Paleomagnetism of the Latest Archean Stillwater Complex, Beartooth Mountains, southern, Montana, J.W. Geissman, Precambrian Research, Transfer faulting in the Central Rio Grande Rift: Oblique slip on the Pajarito fault system and relationship to crystal growth in the Jemez volcanic field, W.S. Baldrige, J.N. Gardner, J.W. Geissman, and S. Reneau, Geological Soc. Amer. Bull.

#### Non-sponsored Research:

- "Generic" paleomagnetic and rock magnetic investigations of: Cenozoic volcanic rocks (Arizona, Nevada, California, New Mexico).
- Lower Paleozoic plutons (New Mexico, Colorado).
- Mesozoic sedimentary rocks (New Mexico, Colorado, West Texas, Nevada).
- Paleozoic sedimentary rocks (Nevada, New Mexico, Colorado, Utah).
- Meteorite ejecta blankets (West Germany).
- Cenozoic intrusions (Utah, Nevada, New Mexico).
- Mesozoic intrusions (Nevada, Colorado, California).

#### Jeffrey A. Grambling

#### Manuscripts in press:

- "Manganese, ferric iron, and the equilibrium between garnet and biotite: a correction", (M.L. Williams and J.A. Grambling), American Mineralogist, in press.
- "Proterozoic geology of New Mexico", (J.M. Robertson, J.A. Grambling, M.L. Williams, S.A. Bowring, P.W. Bauer, and L.A. Silver), Decade of North American Geology, Geological Society of America, in press.

#### Manuscripts in preparation/revision:

- "Middle Proterozoic tectometamorphic evolution of the Manzano Mountains, central New Mexico: Structural, metamorphic, and  $^{40}\text{Ar}/^{39}\text{Ar}$  evidence", (A.G. Thompson, J.A. Grambling, R.D. Dallmeyer, C.K. Mawer, and C.G. Daniel), Journal of Geology.
- "Tectonic evolution of Proterozoic rocks in the Cimarron Mountains, northern New Mexico", (J.A. Grambling and R.D. Dallmeyer), Journal of Metamorphic Geology.
- "A 1:24,000 scale geologic map of Proterozoic rocks in the Truchas Peak, Pecos Falls, and Gascon quadrangles, New Mexico", (J.A. Grambling), New Mexico Bureau of Mines and Mineral Resources

Abstracts in press:

"A mid-crustal extensional shear zone exposed in the southwestern U.S.A., (J.A. Grambling, C.G. Daniel, J.N. Pedrick, and R.D. Dallmeyer), 29th International Geological Congress.

"A potential problem with garnet thermobarometry in staurolite-bearing rocks", (J.A. Grambling), *ibid.*

Stephen P. HuestisPapers in review:

"The Backus-Gilbert problem for sampled band-limited functions". S.P. Huestis, submitted to Inverse Problems.

"An introduction to linear geophysical inverse theory". S.P. Huestis, submitted to SIAM Review.

"Interpolation formulas for oversampled bandlimited functions". S.P. Huestis, submitted to SIAM Review.

"Exploring complex-base logarithms". S.P. Huestis, submitted to Mathematics Magazine.

"Smallest non-negative solutions to linear inverse problems". S.P. Huestis, submitted to SIAM Review.

Paper in preparation:

"The Schwarz Inequality as a Special Case", S.P. Huestis.  
Dec. 1991

Rhian Jones

Visited Sandia National Laboratories to discuss future collaborative projects with Dr. H. Westrich.  
Completed safety training for working in high-pressure laboratory at Sandia.

Cornelis Klein

The Proterozoic Biosphere: A multidisciplinary study, J.W. Schopf and C. Klein, editors, 2 volumes, Cambridge University Press, in press, 1350 pp, 1992.

Albert M. KudoUnsuccessful proposals for grants submitted:

Geologic and isotopic study of igneous rocks, northern Great Basin, Nevada: Constraints on lithospheric structure and magma genesis, A.M. Kudo and F.V. Perry, National Science Foundation

Manuscripts in press:

Section on Igneous Rocks for Minerals and Rocks article in the Encyclopedia Britannica.

Manuscript in preparation:

Petrology of Lavas from El Pico de Orizaba, Mexico, to be submitted to Contributions to Mineralogy and Petrology.

Unsupported research projects:

Initiation of research with Laura Crossey on Effects of basalt lava flows on mineralogical and chemical changes in underlying soils.

Field work in northern Nevada (near Carlin) in July.

Field work around the state at various locations.

Barry S. KuesGrant proposal submitted:

To U.S. Geological Survey (with colleagues at the N.M. Museum of Natural History and N.M. Bureau of Mines and Mineral Resources), for additional study of paleoenvironments preserved at the Kinney Quarry, Manzanita Mountains, New Mexico.

Papers in press:

Overview of Upper Pennsylvanian stratigraphy and paleontology, Kinney quarry, Manzanita Mountains, New Mexico, B.S. Kues and S.G. Lucas, New Mexico Bureau of Mines and Mineral Resources, Bulletin 138 (Kinney Symposium Volume).

A Late Pennsylvanian restricted-marine fauna from the Kinney quarry, Manzanita Mountains, New Mexico, B.S. Kues, Ibid.

The bivalve Dunbarella in marine and nonmarine facies of the Upper Pennsylvanian sequence at the Kinney quarry, Manzanita Mountains, B.S. Kues, Ibid.

The geology of New Mexico, B.S. Kues, Rocks and Minerals, vol. 67.

The fossils of New Mexico, A.P. Hunt and B.S. Kues, Ibid.

Manuscripts in Preparation:

New gastropods from the early Wolfcampian (basal Permian) of central New Mexico (for Journal of Paleontology)

Gastropods from the Desmoinesian Flechado Formation, north-central New Mexico (for Journal of Paleontology)

Catalog of fossil vertebrate taxa documented from New Mexico (for New Mexico Museum of Natural History Bulletin)

Bibliography of New Mexico vertebrate paleontology (with S.G. Lucas, for New Mexico Museum of Natural History Bulletin)

Early geological studies of the San Juan Basin, New Mexico (for New Mexico Geological Society Guidebook 43)

The Geology of New Mexico (Book, with S.G. Lucas, University of New Mexico Press)

Leslie D. McFaddenManuscripts in press:

Soil genesis on beach ridges of pluvial Lake Mojave: Implications for Holocene lacustrine and eolian events in the Mojave Desert, southern California, McFadden, L.D., Wells, S.G., Brown, W.J., and Enzel, Y. Catena.

Manuscripts Submitted or in Review:

Morphology and genesis of calcic soils on the Kyle Canyon Fan, Nevada, U.S.A., Reheis, M.C., Sowers, J.M., Taylor, E.M., McFadden, L.D., and Harden, J.W., Geoderma.

Manuscripts in Preparation:

Predicted and observed responses of calcic soil development to Late Holocene neoglacal changes in climate.  
The influence of incorporation of eolian dust on the chemical composition of desert soils: A simple assimilation-mass balance model

Horton E. NewsomPapers in Press:

Mineralogy and geochemistry of metal in aubrites: constraints on core formation in their parent body, I. Casanova, K. Keil and H.E. Newsom, submitted to Geochim, Cosmochim, Acta.

Other proposals:

Impact and volcanic processes on early planetary surfaces, H.E. Newsom, Origins of Solar Systems Program, N.A.S.A., \$ 123,202 Not funded.  
Database and geographical information system for geochemical data obtained by microbeam analytical techniques, H.E. Newsom and J.R. Connolly, National Science Foundation, Div. of Robotics and Intelligent Systems, \$ 163,914 Not funded.  
Accretion and evolution of planets and meteorite parent bodies, H.E. Newsom, Planetary Materials Program, N.A.S.A., \$ 303,385 Approved by review panel, not funded.  
Accretion and Core Formation in the Earth: Evidence from Siderophile and Chalcophile Trace Elements, H.E. Newsom, National Science Foundation, Division of Earth Sciences, Petrology and Geochemistry Program, \$ 196,781 Not funded.  
Chemical Transport During Formation and Alteration of Martian Impact and Volcanic Deposits and the Composition of the Martian Crust, H.E. Newsom, Mars Observer Program, Participating Scientist Investigation, \$ 195,825 Submitted.

James J. PapikeManuscripts in Press:

Mineralogical and Chemical Evolution of the Harney Peak Rare-Element Granite-Pegmatite System, Black Hills, South Dakota: Petrogenetic Links Between Granites and Pegmatites, Shearer, C.K., J.J. Papike, E.F. Duke, and B.L. Jolliff, Canadian Mineralogist, in press.  
Geochemistry of a Boron-Rich Peraluminous Granite Pluton: The Calamity Peak Layered Granite-Pegmatite Complex, Black Hills, South Dakota, Duke, E.F., J.J. Papike, and J.C. Laul, Canadian Mineralogist, in press.  
Geochemistry of Muscovite and Implications for the Petrogenesis of Granitic Pegmatites in the Keystone Area, Black Hills, South Dakota, Jolliff, B.L., J.J. Papike, and C.K. Shearer, Geochimica et Cosmochimica Acta, in press.  
Papike, J.J. (1992) The Valley of Ten Thousand Smokes, Katmai, Alaska: A Unique Geochemistry Laboratory, Geochimica et Cosmochimica Acta, in press.

Manuscripts in preparation:

Crystal Chemical Control of REE Incorporation in Garnets from the Broken Hill Pb-Zn-Ag orebodies, Australia: Schwandt, C.S., J.J. Papike, C. K. Shearer, A.J. Brearley, and N. Shimizu, Canadian Mineralogist, in preparation.

Unsuccessful proposals for grants submitted:

The Role of Crystal Chemical Controls in Trace Element Behavior, Shearer/Papike/Brearley, National Science, Foundation, \$107,000; 1991 to 1993  
 Observation of A Young Igneous System Katmai, Alaska: Geochemistry and Mineralogy of Fumarolic Deposits, Papike/Shearer/Spilde, National Science Foundation, \$148,000; 1992 to 1994.  
 Impact and Volcanic Processes on Early Planetary Surfaces, H.E. Newsom, Papike, Spilde, Smith, Shearer, Geissman, NASA, \$461,000; 1991 to 1994.  
 Proposal for Educational Research Program, Papike/Jones, NASA, \$70,000; 1991 to 1993

Frank V. PerryManuscripts submitted:

Variations Across and Along a Major Continental Rift: An Interdisciplinary Study of the Basin and Range Province, Western USA, C.H. Jones, B.P. Wernicke, G. Lang Farmer, J.D. Walker, D.S. Coleman, L.W. McKenna, and F. V. Perry, Tectonophysics, submitted (1991).

Manuscripts in preparation:

The Origin of Large-Volume Rhyolites in the Western United States: Nd Isotopic Evidence for Declining, Crustal Contributions during the Middle and Late Cenozoic and Implications for the Thermal Evolution of the Cordilleran Lithosphere, F. V. Perry, D. J. DePaolo, and W. S. Baldrige, In preparation .

Unsuccessful proposals for grants submitted:

Geologic and Isotopic Study of Igneous Rocks, Northern great Basin, Nevada: Constraints on Lithospheric, Structure and Magma Genesis, A. M. Kudo and F. V. Perry, National Science Foundation, (1991).

Unsupported research projects:

Petrogenesis of silicic magmas in caldera-forming systems: A model for crustal growth in continental extensional settings. (unfunded collaboration with W.S. Baldrige and D.J. DePaolo) Institute of Geophysics and Planetary, Physics, Los Alamos Branch October, 1990 to September 1991.

Franz J.M. RietmeijerArticles in press:

A detailed petrological analysis of hydrated, low-nickel, nonchondritic stratospheric dust particles. Proc. Lunar Planet. Sci. 22, in press.

- Pre-graphitic and poorly graphitized carbons in porous chondritic micrometeorites.** Geochim. Cosmochim. Acta, in press.
- Dynamic pyrometamorphism of interplanetary dust particles compared to atmospheric entry model temperatures. Meteoritics, 26, in press.
- Metastable carbon in two chondritic porous interplanetary dust particles (REPRINTED from NATURE) In Low-Pressure Growth of Diamond: A Collection of Key Papers (R.C. DeVries and R. Roy, eds), Amer. Inst. Phys., in press. (co-authors: I.D.R. Mackinnon)
- Collection of stratospheric microparticles above the sulfate layer using balloon-borne collectors. In Proc. IAU Colloquium #126, Origins and Evolution of Interplanetary Dust, in press. (co-authors: J.R. Stephens, Y. Nakada and T. Onaka)
- What if chondritic porous interplanetary dust particles are not the real McCoy? NASA Conf. Publ., in press.
- Carbon petrology in cometary dust. In Proc. Intern. Conf. Asteroids, Comets, Meteors, in press.
- Cometary evolution: Clues on physical properties from chondritic interplanetary dust particles. NASA Conf. Publ., in press.
- Microscopy and Microchemistry. In ROSETTA, NASA/ESA Comet Nucleus Sample return Mission Document, in press.

#### Awards Beginning in 1991:

- Mineralogy of fine-grained primitive extraterrestrial materials, F.J.M. Reitmeijer (Principal Investigator), National Aeronautics and Space Administration Planetary Materials and Geochemistry Program, \$80,000; April 1, 1991 to March 31, 1992.

#### Awards Current 1991:

- Mineralogy of fine-grained primitive extraterrestrial materials, F.J.M. Rietmeijer (Principal Investigator), National Aeronautics and Space Administration Planetary Materials and Geochemistry Program, \$85,000; April 1, 1990. to March 31, 1991

#### Charles K. Shearer

#### Manuscripts in Press:

- Mineralogical and Chemical Evolution of the Harney Peak Rare-Element Granite-Pegmatite System, Black Hills, South Dakota: Petrogenetic Links Between Granites and Pegmatites, C.K. Shearer, J.J. Papike, E.F. Duke, and B.L. Jolliff, Canadian Mineralogist, in press (1992).
- Geochemistry of Muscovite and Implications for the Petrogenesis of Granitic Pegmatites in the Keystone Area, Black Hills, South Dakota, B.L. Jolliff, J.J. Papike, and C.K. Shearer, Geochimica et Cosmochimica Acta, in press, (1992).
- A comparison of tantalum-niobium minerals in two mineralogically distinct rare-element pegmatites, M.N. Spilde and C.K. Shearer, Canadian Mineralogist (in press).

#### Manuscripts in preparation:

- Crystal Chemical Control of REE Incorporation in Garnets from the Broken Hill Pb-Zn-Ag orebodies, Australia, C.S. Schwandt, J.J. Papike, C. K. Shearer, A.J. Brearley, and N. Shimizu (1992), Canadian Mineralogist, in preparation.

Unsuccessful proposals for grants submitted:

- The Role of Crystal Chemical Controls in Trace Element Behavior, National Science Foundation, 107,000; Jan 1, 1991 to December 31, 1993.
- Impact and Volcanic Processes on Early Planetary Surfaces, NASA, 461,000; June 1, 1991 to May 31, 1994.
- Observation of A Young Igneous System Katmai, Alaska: Geochemistry and Mineralogy of Fumarolic Deposits, National Science Foundation, 148,000; March 15, 1992 to March 15, 1994.
- Mechanisms of Trace Element Behavior in Crystal-Liquid Systems: A Perspective from SIMS Trace Element, Studies of Different Growth Sectors of Single Crystals, Sandia-University Research Program, 30,000; October 1, 1990 to September 30, 1991.
- The Role of Crystal Chemical Controls and Crystallization Kinetics in Trace Element Behavior, National Science Foundation, 84,000; July 1, 1991 to June 30, 1993.
- A Pilot Secondary Ion Mass Spectrometry Study of Isotopic Zoning in Galena, Department of Energy/Basic Energy Science, 53,000; September 1, 1991 to August 31, 1993.
- Vapor Phase Transport in Lunar Pyroclastic Deposits and the Role of Volatiles in Lunar Magmatic Processes, Los Alamos National Labs, 21,000; August 1, 1991 to July 31, 1992.
- Database and Geographical Information System for Geochemical Data Obtained by Microbeam Analytical, Techniques, National Science Foundation, 164,000; January 1, 1992 to December 31, 1993.
- The Role of Defect Equilibria and Crystallization Kinetics in Clinopyroxene Trace Element Behavior, National Science Foundation, 108,000; January 1, 1992 to December 31, 1993.
- Trace Element Mineralogical Reservoirs in the Continental Crust, 10/01/91-142.0K, National Science Foundation, 142,000; October 1, 1991 to September 30, 1993.

Pending Proposals:

- Origin and evolution of fluids within the Creede Epithermal System: A secondary ion mass spectrometry study of isotopic zoning in sulfides, Petroleum Research Foundation/American Chemical Society, 60,000; June 1, 1992 to August 31, 1995.
- The role of defect equilibria in trace element behavior and relevance to magmatic systems, National Science Foundation, 98,500; July 1, 1992 to June 30, 1994.

Gary SmithManuscripts in press:

- Sedimentation patterns in Pennsylvanian strata at the Kinney Brick Company quarry, Bernalillo County, New Mexico, J.C. Lorenz, G.A. Smith, S.G. Lucas, New Mexico Bureau of Mines and Mineral Resources Bulletin 138.

Manuscripts submitted or in review:

- Pliocene and Pleistocene geologic and climatic evolution in south-central, Colorado, K.L. Rogers, E.E. Larsen, G.A. Smith, and 9 others, Palaeogeography, Palaeoclimatology, Palaeoecology.
- Intra-arc basins, G.A. Smith, in R.V. Ingersoll and C. Busby-Spera, eds., Tectonics of Sedimentary Basins: London, Blackwell and Sons.

Manuscripts in Preparation:

- Sedimentology of Missoula-flood slackwater deposits on the Columbia Plateau, Washington: Constraint on flood dynamics and magnitude in the Channeled, Scablands, G.A. Smith, to be submitted to Geological Society of America Bulletin
- Sedimentology and physical volcanology of a composite pyroclastic-flow apron/alluvial fan: Peralta Tuff Member of the Bearhead Rhyolite, Jemez Mountains, New Mexico, G.A. Smith, to be submitted to Bulletin of Volcanology
- An evaluation of factors controlling the composition of andesitic sands and sandstones, G.A. Smith, J.E. Lotosky to be submitted to Sedimentary Geology.
- Reconstruction of petrologic evolution of volcanic centers from geochemical and mineralogical analyses of volcanoclastic sediments: An example from the Oligocene of north-central New Mexico, \*D.W. Erskine, G.A. Smith, to be submitted to Journal of Geology.
- Sedimentology of Glacial Lake Missoula varve sequences: Constraints on the number and magnitude of Late Wisconsin jokulhlaups, W.J. Fritz, G.A. Smith, to be submitted to Geology.
- The basalt of Prineville, north-central Oregon, P.R. Hooper, W.K. Steele, R.M. Conrey, G.A. Smith, J.L. Anderson, T.L. Tolan, D.G. Bailey, K. Urbanczyk to be submitted to Geological Society of America Bulletin.
- Stable isotopes of paleosol carbonates and fossil teeth as paleoecology and paleoclimate indicators: An example from the Upper Cenozoic nonmarine sediments in the San Pedro Valley, Arizona, Y. Wang, T.E. Cerling, G.A. Smith, J. Quade, E.H. Lindsay, J. Bowman, Continental isotopic records of climatic change: American Geophysical Union Monograph.

Michael N. SpildePublications in Press:

- Reference intensity ratio and mass absorption measurements of eleven natural biotites, Kath, R. L., B.L. Davis, and M.N.Spilde, Powder Diffraction (in press).

Publications in Review:

- A comparison of tantalum-niobium minerals in two mineralogically distinct rare-element pegmatites, M.N. Spilde and C.K. Shearer, Canadian Mineralogist (in review).

Lu-Min WangManuscripts in press:

- L.M. Wang and R.C. Ewing, Detailed in-situ Study of Ion Beam-Induced Amorphization of Zircon, Nuclear Instrument and Methods in Physical Research B: Beam Interactions with Materials and Atoms, in press.
- R.C. Ewing and L.M. Wang, Amorphization of Zirconolite: Alpha-Decay Event Damage versus Krypton Ion Irradiation, Nuclear Instruments and Methods in Physical Research B: Beam Interactions with Materials and Atoms, in press.
- L.M. Wang and R.C. Ewing, Ion Beam-Induced Amorphization of (Mg, Fe)<sub>2</sub>SiO<sub>4</sub> Olivine Series: An in situ Transmission Electron Microscopy Study, Materials Research Society Symposia Proceedings, Vol. 235, in press.
- R.C. Birtcher and L.M. Wang, Stability of Crystalline and Amorphous Uranium Silicides during High Energy Ion Irradiation, Materials Research Society Symposia Proceedings, Vol. 235, in press.



Manuscripts in Review:

L.M. Wang and R.C. Ewing, Ion Beam Induced Amorphization of Complex Ceramic Materials (invited paper), in review for publication in Materials Society Bulletin.

Collaboration with Maryellen Cameron of Miami University of Ohio on TEM Study of Fission Tracts in Apatite (funded to Maryellen Cameron by National Science Foundation)

Lee Woodward

Tectonic control of mineralization in the Proterozoic Belt Basin, Montana.  
Structural control of lode-gold deposits in the Pony mining district, Montana.

Crayton YappManuscripts in Press:

Ancient atmospheric CO<sub>2</sub> pressures inferred from natural goethites, C.J. Yapp and H. Poths, Nature, in press.

Manuscript in preparation:

Fe(CO)<sub>3</sub>OH in natural goethites as an indicator of low temperature CO<sub>2</sub> mixing processes.

Proposal submitted:

Ancient atmospheric P(CO<sub>2</sub>), paleoclimates and the stable isotope geochemistry of low temperature iron oxides, C.J. Yapp, P.I., Proposed award amount: \$237,821, Proposed project duration: 3 years

## 5. ACTIVITIES IN PROFESSIONAL SOCIETIES

### Roger Y. Anderson

AAAS: Member, Electorate Nominating Committee, Section on Geology and Geography

#### Conferences:

Speaker, Workshop on the Medieval Warm Period, Tucson, Arizona, 5-8 November (1991).

Title of Talk: Bicentennial oscillation of regional surface winds, Elk Lake, Minnesota and secular variation of  $^{14}\text{C}$ : Analog for climate-solar activity deviations associated with Medieval Warm Period.

Invited Speaker, American Geophysical Union, All Union Session on Paleoclimatology and Variation of Cosmogenic Isotopes, San Francisco, 9-13 December (1991). Title of talk: Century-scale oscillations in climate as a response to solar-geomagnetic forcing: Possible evidence in varved sediments from northern Minnesota.

### Adrian Brearley

#### Meetings attended:

Attended 22nd Lunar and Planetary Science Conference, Houston, TX, March 18-22, 1991.

Attended Geological Society of America, Rocky Mountain Section, meeting, Albuquerque, New Mexico. April 22-24, 1991.

Attended 53rd Meteoritical Society Meeting, Montreal, California, July 22-26th, 1991.

Attended Fall AGU meeting, San Francisco, December 9-13, 1991.

#### Professional papers read:

Presented talk: Subsolidus microstructures and cooling history of pyroxenes in the Zagami shergottite. 22nd Lunar and Planetary Science Conference, Houston, Texas, March 18-22, 1991.

Presented poster: Mineralogical and chemical studies of matrix in the Adelaide meteorite, a unique carbonaceous chondrite with affinities to ALH 77307 (CO3). 22nd Lunar and Planetary Science Conference, Houston, Texas, March 18-22, 1991.

Presented paper: Mineralogical and chemical studies bearing on the origin of accretionary rims in the Murchison CM2 carbonaceous chondrites. 54th Meteoritical Society Meeting, Monterey, California, 22-26th July, 1991.

Presented paper: Mineralogy of an unusual Cr-rich inclusion in the Los Martinez (L6) chondritic breccia. 54th Meteoritical Society Meeting, Monterey, California, 22-26th July, 1991.

Presented invited paper: Mechanisms of phase transformations involving  $\text{B}(\text{Mg,Fe})_2\text{SiO}_4$  and some implications for mantle dynamics. Fall AGU meeting, San Francisco, December 9-13, 1991.

### Michael E. Campana

Co-Convener, Symposium on Hydrogeology and Geochemistry of Waste Disposal and Contaminant Migration, Geological Society of America Rocky Mountain/South-Central Section Meeting, Albuquerque, NM, April 1991.

**Technical Program Co-Chair, Geological Society of America Rocky Mountain/South-Central Section Meeting, Albuquerque, April 1991**

Presented talk, "An approach to modeling and validating hyporheic flow dynamics in montane catchments with variable parent lithologies", North American Benthological Society Annual Meeting, Santa Fe, NM, May 24, 1991 (invited)

Vice President, New Mexico Water Resources Association (1991)

Conference Committee, NM Section AWRA Annual Meeting, Socorro, NM, September 18-19, 1991

Elected to U.S. National Committee, International Association of Hydrogeologists

Invited to attend Gordon Research Conference on Hydrological/Geochemical/Biological Processes in Forested Catchments, Plymouth, NH, July 1-5, 1991; presented poster on "Hyporheic zone hydrodynamics in montane catchments"

Presented poster, "Regional groundwater flow and recharge, Yucca Mountain and vicinity, Nevada-California", Geological Society of America Annual Meeting, San Diego, CA, October 21-24, 1991

Presented talk, "The hyporheic zone and catchment hydrology", Session on Hydrochemical Studies in Forested Catchments, American Geophysical Union Fall Annual Meeting, San Francisco, CA, December 9-13, 1991 (invited)

Presented talk, "Water in the West: quantity and quality", National Science Teacher's Association, Western Area Convention, Reno, NV, December 1991 (invited)

#### James R. Connolly

Vice-President and program chairman of the Albuquerque Geological Society for 1991.

Entertainment Chairman for 1991 Rocky Mountain/South Central combined meeting of the Geological Society of America held in Albuquerque, April 21st through 23rd, 1991.

Presented poster: "Petrography of Bishop Tuff in Phase 1 core from the LVF 51-20 drill hole: a small window into a hydrothermal system in a resurgent caldera, Long Valley, California," American Geophysical Union Fall Meeting, San Francisco, CA, December 13.

#### Laura Crossey

Attended New Mexico Geological Society Annual Spring Meeting, April 5, 1991, New Mexico Institute of Mining and Technology, Socorro, NM.

Attended American Association of Petroleum Geologists Annual Meeting (Short Course, Cathodoluminescence; Field Trip, Austin Chalk), April 7-10, 1991, Dallas, TX.

Attended Geological Society of America Annual Meeting (Short Course, SUPCRT91), November 18-21, 1991, San Diego, CA.

#### Society Committees, etc.:

American Association of Petroleum Geologists: Membership Committee (since 1989) Society of Economic Paleontologists and Mineralogists: Membership Committee (since 1990); Academic Liason (since 1991)

Association for Women Geoscientists: lecturer (since 1989)

Clay Minerals Society: *Ad Hoc* Committee on Legal Issues (since 1991)

Maya ElrickMeetings Attended:

GSA - Rocky Mountain and South-Central, Albuquerque, N.M., April 22-24, 1991  
 AAPG National Meeting, Dallas, TX, April 7-10, 1991

Wolfgang E. Elston

Member, American Geological Institute Minorities Participation Committee. Organized and attended annual meeting, Albuquerque, NM, March 9-12.  
 Vice President, Rocky Mountain Section, Geological Society of America, 1990-91  
 Co-Chairman and Budget Coordinator, joint 44th Annual Meeting, Rocky Mountain Section and 25th Annual Meeting, South-Central Section, Geological Society of America, Albuquerque, NM, April 22-24, 1991.  
 Attended meeting, co-convened and co-chaired Symposium No. 2: "Volcanic Centers as targets for mineral exploration". Read paper: "Mineralization related to ash-flow tuff (ignimbrite) calderas"  
 President, New Mexico Section, American Institute of Professional Geologists, 1990-91. Presided over Spring Meeting, April 22, 1991.  
 Attended annual meeting, Geological Society of America, San Diego, CA, October 21-24, 1991. Read paper: "Quartz-tridymite inversion in siliclastic sediments beneath Rooiberg Felsite: clue to a 2.06 Ga Bushveld-Vredefort impact (?) catastrophe". Leader, Geoscience Day field trip for Minority students from San Diego Junior High Schools. Attended meeting of American Geological Institute Minorities Participation Committee.  
 Invited Participant, American Geophysical Union Chapman Conference on "Rocky Mountains: Plate Puzzle?" Santa Fe, NM, October 27-31, 1991. Presented poster: "Regional and temporal evolution of mid-Tertiary volcanic rocks"  
 Annual Conference of U.S. Forest Service Geoscientists. Prepared to lead field trip across Jemez Mountains (Valles Caldera), October 31, 1991. Trip cancelled by snow conditions.  
 Member, Working Group on Explosive Volcanism, International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI)  
 Member, Working Group on Volcanic Data Files, IAVCEI  
 Member, Commission 17 (Moon and Planets), International Astronomical Union

Rodney C. EwingMaterials Research Society:

Nominated by the MRS Council to be a candidate for the office of First Vice-President (President Elect) of the Materials Research Society.  
 External Affairs Committee, 1987-1992  
 International Relations Subcommittee, 1987-1992  
 Membership Committee, 1985-1991  
 Long Range Planning Committee, 1986-1991  
 Program committee for the Scientific Basis for Nuclear Waste Management symposium sponsored by MRS, E-MRS and the CEA to be held in Strasbourg, France. I played a primary role in organizing the meeting, presented three papers, and chaired one session.

International Union of Materials Research Societies

Secretary (one of four officers) of the International Union of Materials Research Societies, 1990-1991

Nuclear Waste Disposal Research Center: (Lausanna, Switzerland)

Appointed a member of the Board of Directors

Geological Society of America:

Led field trip (April 24th) to the Harding Pegmatite during GSA section meeting in Albuquerque

Journal of Nuclear Materials:

Member of Advisory Editorial Board and presently guest editor for a special volume on nuclear waste forms.

Invited Presentations:

"Radiation Effects in Ceramic Nuclear Waste Forms": at the symposium on Radiation Effects in Non-Metallic Materials at the Annual Meeting of the Minerals, Metals and Materials Society, New Orleans, February 17-21, 1991.

"The Use of Natural Systems to Predict Radionuclide Migration": at the Third International Symposium on Advanced Nuclear Energy Research: Global Environment and Nuclear Energy, sponsored by the Atomic Energy Society of Japan Health Physics Society, Mito, Japan, March 14, 1991.

"Natural Analogue Studies and the Prediction of the Long-Term Behavior of Nuclear Waste Glasses": invited presentation to the United States Nuclear Waste Technical Review Board, Reno, Nevada, April 17, 1991.

"Long-Term Predictions Using Natural Analogues": invited presentation at plenary session of Center for Nuclear Waste Regulatory Analysis Workshop on "The Role of Natural Analogs in Geologic Disposal of High-Level Nuclear Waste", San Antonio, Texas, July 23, 1991.

John Geissman

Presented Talk, "Vertical axis rotation of continental crust in an extensional orogen--Basin and Range province, western United States", Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 9.

Presented Talk, "Late Cretaceous-early Tertiary remagnetization of strata at and near the Permian-Triassic disconformity in central New Mexico: A relationship to Mesozoic tectonism?", Geological Society of America, Rocky Mountain/South-Central Section meeting, Albuquerque, April 23.

Presented Talk, "Paleomagnetism of the Late Cambrian-Early Ordovician Ignacio Formation, San Juan Mountains, southwest Colorado", Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 11.

Presented Talk, "Paleomagnetic test of the age of gold mineralization in the Mercur District, Utah", Fall Meeting, American Geophysical Union, San Francisco, Dec. 12.

Secretary, Geomagnetism and Paleomagnetism Section, American Geophysical Union

Nominated for Fellow, Geological Society of America.

Co-Chairperson, 1991 combined Rocky Mountain and South-Central Geological Society of America Meeting, April, 1991.

Member, American Geophysical Union "Committee of 50"

University of New Mexico representative, DOSECC, Inc.  
 President, Rocky Mountain Section, Geological Society of America  
 Member, Board of Directors, DOSECC, Inc.  
 Geoscience "consultant", Albuquerque Petroglyphs

### Jeffrey A. Grambling

#### Talks presented:

- "Proterozoic tectonic evolution of the Cimarron Mountains, New Mexico": Geological Society of America Rocky Mountain/South Central Meeting, Albuquerque, New Mexico, April 23, 1991.
- "Heterogeneity of Proterozoic continental crust in northern New Mexico": *ibid*, April 23, 1991.
- "A problem with garnet thermobarometry in staurolite schist": Geological Society of America Annual Meeting, San Diego, California, Oct. 23, 1991.
- "Proterozoic tectonic evolution of central and northern New Mexico": American Geophysical Union Chapman Conference, Santa Fe, New Mexico, Oct. 29, 1991.

#### Field trips led:

- April 19-21, 1991: to Manzano Mountains for purpose of co-leading field trip for Geological Society of America: "Proterozoic tectonic history of the Manzano Mountains, central New Mexico" (co-leader: A.G. Thompson)

#### Professional meeting conceived and organized:

- Symposium, Geological Society of America Rocky Mountain/South Central Meeting, "Early, Middle, and Late Proterozoic tectonic evolution of southwestern North America" Albuquerque, April 22-24, 1991. (36 speakers)

#### Professional meetings chaired:

- "Early Proterozoic geology of Arizona": at Geological Society of America Rocky Mountain/South Central Meeting, April 22, 1991, Albuquerque, New Mexico.
- "Early to Middle Proterozoic geology of Colorado and New Mexico": *ibid*, April 23, 1991 Mineralogical Society of America Symposium: "Metamorphic petrology I: constraints on P-T-t paths, fluids and fluid flow": Geological Society of America Annual Meeting, October 23, 1991.

#### Organizational committees/editorial meetings:

- Proterozoic orogenesis and metallogenesis project (Steering committee)
- Chapman Conference, American Geophysical Union: Laramide orogenesis (Steering committee)
- Geology editorial board meetings
- Chairman, Housing Committee, Geological Society of America, Rocky Mountain/South Central Meeting, Albuquerque, NM, April 22-24, 1991.

Rhian JonesMeetings attended:

Attended 22nd Lunar and Planetary Science Conference, Houston, Texas. March 18-22, 1991.  
 Attended Geological Society of America, Rocky Mountain Section, meeting, Albuquerque, New Mexico. April 22-24, 1991.  
 Attended 54th Meteoritical Society Meeting, Monterey, California. July 22-26, 1991.  
 Attended American Geophysical Union meeting, San Francisco, California. December 9-12, 1991.

Professional papers read:

Presented talk, "Derivation of isolated olivine grains in the carbonaceous chondrite ALH A77307 by fragmentation of chondrules" 22nd Lunar and Planetary Science Conference, Houston, Texas. March 18-22, 1991.  
 Presented talk, "A comparison of zoning profiles in FeO-rich PO chondrule olivines and experimental analogues: Evidence for metamorphic reheating of chondrules". 22nd Lunar and Planetary Science Conference, Houston, Texas. March 18-22, 1991.  
 Presented talk, "Effect of metamorphism on isolated olivine grains in CO3 chondrites". 54th Meteoritical Society Meeting, Monterey, California. July 22-26, 1991.

Cornelis Klein

United States Representative to the International Mineralogical Commission on "History and Teaching" 1985 to present  
 Organizer of guest program for Geol. Soc. America, Regional Meetings, Albuquerque, N.M., April 22-24, 1991.

Albert M. Kudo

Presented paper on, "Permian-Triassic pseudoisochron for Pleistocene andesites, El Pico de Orizaba, Trans-Mexican Belt, Mexico" at the Annual Meeting of the Rocky Mountain and South-Central Sections of the Geological Society of America in Albuquerque, April 22-24.  
 Chaired session on, "Igneous and Metamorphic Petrology" at the Annual Meeting of the Rocky Mountain and South-Central Sections of the Geological Society of America in Albuquerque, April 22-24.  
 Presented poster on, "Evidence from a shoshonite dike in support of the continuous allochthon model, Heart Mountain fault, northwestern Wyoming" at 1991 Fall Meeting of the American Geophysical Union in San Francisco, December 9-13.

Barry S. Kues

Attended Geological Society of America Rocky Mountain/South-central Section annual meeting, Albuquerque, April 22-24; participated in GSA field trip to Kinney Quarry and presented short lecture.  
 Attended New Mexico Geological Society annual field conference, south-central New Mexico, October 9-12  
 Member of executive committee of New Mexico Academy of Science, and attended NMAS Annual Meeting, November 23.

**Leslie D. McFadden**

- Presented talk, "A model of pedogenesis in Quaternary siliciclastic fan deposits in an arid climate: Implications for interpreting pre-Quaternary paleosols" Annual Meetings of Geological Society of America, San Diego, California, October 21.
- Presented talk, "Citation for William B. Bull, 1991 Neil J. Miner Awardee", Annual Meetings of the Geological Society of America, San Diego, California, October 22
- Member, Quaternary Geology and Geomorphology Division Panel, Geological Society of America

**Horton E. Newsom****Meetings Attended:**

- Lunar and Planetary Science Conference, Houston, TX, March 12-16, 1990.
- Twentieth General Assembly, International Union of Geodesy and Geophysics, Vienna Austria (1991).
- 54th Annual Meeting of the Meteoritical Society, Monterey, CA, July 22-25, 1991.
- The Physics and Chemistry of Magma Oceans from 1bar to 4 Mbar", Dec. 6-8, 1991, San Francisco (1991).
- American Geophysical Union Annual Meeting, San Francisco, CA, Dec. 10-14, 1991.

**Professional papers read:**

- "New Constraints on the size of the lunar core and the origin of the Moon", Presented at the Twenty Second Lunar and Planetary Science Conference, Houston TX, 1991.
- "Accretion and core formation in the Earth (invited talk)" Presented in the Jeffreys Symposium, Twentieth General Assembly, International Union of Geodesy and Geophysics, Vienna Austria (1991).
- "Pressure regimes and core formation in the accreting earth" Presented at the topical meeting "The Physics and Chemistry of Magma Oceans from 1bar to 4 Mbar", Dec. 6-8, 1991, San Francisco (1991).

**James J. Papike**

- "The Valley of Ten Thousand Smokes, Katmai, Alaska: A Unique Geochemistry Laboratory" Geochemical Society Presidential Address at Geological Society of America convention in San Diego, California, October 21
- President, Geochemical Society.
- Councilor, Society of Economic Geologists.
- Member, Lunar and Planetary Sample Team (LAPST).
- Member, Lunar Outpost Site Selection Committee.
- Member, Organizing Committee for the FORUM for Continental Scientific Drilling.

**Frank V. Perry**

- Attended meeting, Geological Society of America, Rocky Mountain Section, Albuquerque, NM, April 22-24.
- Led field trip to the southeastern Colorado Plateau Margin for the Rocky Mountain and South-Central Section of the Geological Society of America, Albuquerque, NM, April 25-27.



**Presented Talk, "Isotopic Evidence for a Decline in Crustal Contributions to Caldera-Forming rhyolites of the Western United States During the Middle to Late Cenozoic,"** 1991 Annual Meeting , Geological Society of America, San Diego, CA, October 21-24.

Attended meeting, American Geophysical Union Chapman Conference "Rocky Mountains: Plate Tectonics Puzzle?", Santa Fe, NM, October 26-29.

#### Harald Poths

Alfred O. Nier Symposium on inorganic mass spectrometry, Durango, 1991  
AGU Fall Meeting, San Francisco, Calif., 1991

#### Franz J.M. Rietmeijer

##### Professional Papers Read:

Chemistry and petrology of low-nickel stratospheric particles: A new class of interplanetary dust particles or not? 22nd Lunar and Planetary Science Conference, Houston, Texas, March 18-22.  
Carbon petrology in comets. The International Conf. on Asteroids, Comets, Meteorite 1991, Flagstaff, Arizona, June 24-28.  
Microbeam analyses of carbon-rich materials in chondritic porous micrometeorites. (Invited) The 49th Annual Meeting of the Electron Microscopy Society of America, San Jose, California, August 4-9.

##### Professional Meetings Attended:

22nd Lunar and Planetary Science Conference, Houston, Texas, March 18-22, 1990.  
The International Conference on Asteroids, Comets, Meteors 1991, Flagstaff, Arizona, June 24-28.  
Gordon Research Conference on the Origins of Solar Systems, Colby-Sawyer College, New London, New Hampshire, July 8-12.  
The 49th Annual Meeting of the Electron Microscopy Society of America, San Jose, California, August 4-9.

#### Charles K. Shearer

Lunar & Planetary Science Meeting, Houston, TX, March 1991  
American Geophysical Union Spring Meeting, Baltimore, MD, May 1991  
Long Valley Science Plan Workshop, Albuquerque, NM, June 1991  
American Geophysical Union Fall Meeting, San Francisco, CA, December 1991  
Long Valley Science Plan Meeting, San Francisco, CA, December 1991  
Scientific Drilling Meeting, San Francisco, CA, December 1991  
Co-chairman for American Geophysical Union session, "Long Valley, Katami, and Hydrothermal systems (with T.E.C. Keith, USGS).

#### Gary Smith

Presented talk, "A record of terrestrial sedimentation responding to climate changes: The Plio-Pleistocene St. David Formation, southeastern Arizona", Geological Society of America Annual Meeting, San Diego, CA, October 23.

Field Trip Coordinator, Geological Society of America, Rocky Mountain-South Central Meeting, Albuquerque, NM.  
 Field Trip Leader, Geological Society of America, Rocky Mountain-South Central Meeting, Albuquerque, NM.  
 Convened Symposium, "Pennsylvanian-Wolfcampian cyclic sedimentation in the Ancestral Rocky Mountains and Ouachita-Marathon Foreland", Geological Society of America, Rocky Mountain-South Central Meeting, Albuquerque, NM.  
 Publications Committee, SEPM (The Society for Sedimentary Geology).  
 Attended, Mineral Museum Advisory Council, Tucson, AZ, February 14.  
 Attended, New Mexico Geological Society Annual Meeting, Socorro, NM, April 5.

#### Michael N. Spilde

Presented poster: "Vapor phase and hydrothermal alteration of plagioclase and pyroxene phenocrysts in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska," Geological Society of America Annual Meeting, San Diego, CA, October 24, 1991.  
 Presented talk: "Characteristics of Sn-, Ta-, and Nb-mineralization associated with the Harney Peak granite-pegmatite system, Black Hills, South Dakota," Rocky Mountain/South-Central Section meeting of GSA, Albuquerque, NM, April 23, 1991.

#### Lu-Min Wang

Presented talk, "High-Resolution TEM Observation of Displacement Cascades in Krypton Ion Irradiated Silicate Minerals", at the 49th Annual Meeting of the Electron Microscopy Society of America, San Jose, CA, Aug. 7.  
 Presented talk, "Effects of Ion beam Irradiation on the Complex Structures of Minerals", at the Materials Research Society 1991 Fall Meeting, Boston, MA, Dec. 4.

#### Lee Woodward

Program Co-chairman, Geological Society of America Rocky Mountain Section meeting, April 22-25, 1991, Albuquerque, N.M.  
 Field trip leader to Ortiz porphyry belt, Geological Society of America Rocky Mountain Section meeting, April 20-21, 1991, Albuquerque, N.M.  
 Symposium Chairman "Gold in the New Mexico alkalic belt", Geological Society of America Rocky Mountain Section meeting, April 22, 1991, Albuquerque, N.M.  
 Presented paper on "Mineral deposits of the New Mexico alkalic province" at Geological Society of America Rocky Mountain Section meeting, April 22, 1991, Albuquerque, N.M.  
 Attended Tobacco Root Geological Society meeting and field trips, Aug. 14-18, 1991, Great Falls, Montana.

#### Crayton Yapp

##### Talks presented at professional meetings:

"Ancient atmospheric CO<sub>2</sub> pressures: indications from oolitic ironstones", Spring 1991 Meeting of the American Geophysical Union, Baltimore, Maryland, May 31, 1991.

"Stable isotopes in Fe(III) and Al "oxides" as indicators of continental paleoclimates", invited plenary talk at AGU Chapman Conference on Continental Isotopic Indicators of Climate, Jackson, Wyoming, June 10, 1991.

"Globally significant paleoclimatic parameters: stable isotopes in FeOOH", Annual Meeting of the Geological Society of America, San Diego, California, October 23, 1991.

Exhibits Coordinator for the combined Rocky Mountain/South Central GSA Meeting, Albuquerque, New Mexico, April 22-24, 1991.

Chaired technical session at AGU Chapman Conference on Continental Isotopic Indicators of Climate, Jackson, WY, June 13, 1991.

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## 6. OTHER PROFESSIONAL ACTIVITIES

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### Roger Y. Anderson

Press Conference, American Geophysical Union, San Francisco, 12 December (1991). Presentation of evidence for a solar-climate connection related to Earth's magnetic field.  
News Interview, National Public Radio, Geotechnical problems at the WIPP site, aired December, 1991.  
Invited Scientific Observer and Commentator, U.S. Geological Survey, Workshop on the Ocean-land Connection (USGS Paleoclimate Program), Pajaro Dunes, California, April 1991.  
Review of Research Proposals: National Science Foundation, 6 proposals  
Review of Journal Manuscripts: Various, 4 manuscripts

### Adrian Brearley

Reviewed 2 scientific papers submitted to Geochimica Cosmochimica Acts, 1 to Contributions to Mineralogy and Petrology, 1 to Mineralogical Magazine, 1 to Proceedings of the 22nd Lunar and Planetary Conference and 1 to European Journal of Mineralogy.  
Reviewed one proposal submitted to the National Science Foundation Geophysics Program.  
Had television interview with James Quinones, Campus News TV about the Meteorite Museum. Program broadcast on 3 and 5, March on Community TV channel 27.  
Acted as abstractor for Mineralogical Abstracts, abstracted papers from Analytical Chemistry.

### Michael Campana

Invited lecture, "Water issues in Nevada", Nevada Science Project, UNLV, July 22, 1991.  
Invited lecture, "Adventures in the hyporheic zone - the interface between aquatic biology and ecology", NM Tech Hydrology seminar, September 23, 1991.  
Invited lecture, "The hyporheic zone - the interface between hydrology and stream ecology", UNLV, November 1, 1991.  
Invited lecture, "Water in the west: quality and quantity", National Science Teachers Association, Reno, NV, December 5, 1991.  
Reviewed manuscripts for: Journal of Ground Water (1); Hydrological Processes (1); Applied Hydrogeology (1); and Journal Hydrology (2).  
Reviewed 1 proposal for the National Science Foundation.

### James R. Connolly

Consultant to Newsboy Gold Corporation, Reno, Nevada for petrographic evaluation of ore mineral samples.  
Consultant to City of Albuquerque, Environmental Health Department for mineralogical analysis of airborne particulates sampled at air quality stations.

Laura J. CrosseyOff-Campus Talks:

Organic-Inorganic Interactions During Diagenesis, March 15, 1991. University of Nebraska, Lincoln, Nebraska.

Reviews of Manuscripts and Proposals:

Economic Geology  
Geological Society of America Bulletin  
Geology  
Organic Geochemistry  
Society of Economic Paleontologists and Mineralogists Special Publication  
Department of Energy, Basic Sciences Division (2)  
National Science Foundation (4)  
Petroleum Research Fund, American Chemical Society (1)  
Texas A & M Center for Energy and Mineral Resources (1)

Maya ElrickJournal Reviews:

Journal of Sedimentary Petrology  
Geological Society of America Bulletin  
New Mexico Geology

Field trip:

Mexico; Houston Geological Society, October 11-16, 1991

Wolfgang E. ElstonOff-campus Talks:

August 19, 1991 - "Bushveld and Vredefort: a multiple catastrophic event?" University of Pretoria, South Africa  
August 22, 1991 - "Bushveld and Vredefort: a multiple catastrophic event?" University of the Witwatersrand, Johannesburg, South Africa

Proposal Reviews:

National Science Foundation  
Center for Field Research

Visitor Hosted:

January 30-February 1, 1991, Dr. James Franklin, Lindsley Thayer Distinguished Lecturer, Society of Economic Geologists

Professional Contacts:

July 19-August 24: In South Africa, conferred with numerous scientists of universities, the Geological Survey, and the mining industry.

July 18, 1991: Conferred with Prof. Otto W. Flörke, University of Bochum and Dr. Hartmut Schneider, Head of Ceramics Division, Deutsche Forschungsanstalt für Luftfahrt und Raumfahrt (German Research Institute for Aviation and Space Travel) Cologne, Germany.

Rodney C. EwingReviewed manuscripts, texts and proposals for the following (#in parenthesis):

Journal of Geology (1)  
 Applied Geochemistry (1)  
 Journal of Geochemical Exploration (1)  
 Neues Jahrbuch (1)  
 Nature (1)  
 Journal of the American Ceramic Society (1)  
 Chemical Geology (1)  
 Journal of Nuclear Materials (1)  
 Scientific Basis for Nuclear Waste Disposal XV (16)  
 Bureau of Mines Scenic Trip 2, "Walking Tour of the Harding Pegmatite" (1)  
 National Science Foundation, Div. of Earth Sciences (2)  
 National Science Foundation, National Facilities and Instrumentation (1)  
 Natural Sciences and Engineering Research Council of Canada (2)  
 Argonne National Laboratory, Advanced Photon Source proposals (2)  
 Israel Academy of Sciences and Humanities (1)  
 Basic Energy Sciences, Division of Materials Sciences (2)

Served as a panel or committee member for:

National Academy of Sciences and National Research Council Panel on the Waste Isolation Plant (Professor Charles Fairhurst, Chairman). This has required extensive review of documents related to the WIPP.

John GeissmanProfessional talks:

Presented Talk, "The paleomagnetic record of tilted continental crust", University of Kansas, Lawrence, January 31.  
 Presented Talk, "The paleomagnetic record of tilted continental crust: Considerations and examples", University of Michigan, September 19.  
 Presented Talk, "Paleomagnetism in an extensional orogen: The Basin and Range province of the western Cordillera", University of New Orleans, November 16.

Reviews of manuscripts and proposals:

Reviewed proposals for National Science Foundation(8), American Chemical Society (4), Department of Energy(1), U.S. Geological Survey (1), The Third World Academy of Sciences (2).

Reviewed manuscripts for Journal of Geophysical Research (4), Geological Society of America Bulletin (6), Earth and Planetary Science Letters (1), Geophysical Research Letters (2), Canadian Journal of Earth Science (2), Geophysical International (1), Annales Tectonicae (2), Geology (3), Tectonophysics (2).

Reviewed book by Rob Van der Voo, to be published

Adjunct or associate-type positions at other institutions:

Member of dissertation committee for Mr. John Bird, Univ. of Utah

Member of dissertation committee for Mr. Daniel Holm, Harvard University

Member of dissertation committee for Mr. Drew Coleman, University of Kansas.

Other:

Technician, UNM Paleomagnetism and Rock Magnetism Laboratory

Consultancies:

Volcanism Project, Los Alamos National Laboratory, November, 1990-

Editorship:

Associate Editor, Geological Society of America Bulletin.

Associate Editor, Journal of Geophysical Research.

Jeffery A. GramblingTalk presented:

Proterozoic tectonic history of part of southwestern North America": Department of Geophysical Science, University of Chicago, Illinois, April 26, 1991.

Manuscripts reviewed:

Geology (9)

Journal of Metamorphic Geology (3)

Contributions to Mineralogy and Petrology (1)

Proposals reviewed:

National Science Foundation: Tectonics program (5)

National Science Foundation: Petrology and Geochemistry Program (6)

National Science Foundation: Petroleum Research Fund (2)

Editorial activities:

Associate Editor, Geology

Associate Editor, Journal of Metamorphic Geology

External advisory to faculty search committees:

Lehigh University, metamorphic petrologist faculty search  
 New Mexico Institute of Technology, structural geologist search

Stephen P. HuestisReviews:

Manuscript for Journal Geophysical Research  
 Textbook proposals for Prentice-Hall, Springer-Verlag  
 Research proposal for Petroleum Research Fund of the American Chemical Society

Rhian Jones

Served as a panel reviewer for the National Science Foundation program, Instrumentation and Laboratory Improvement. Reviewed 20 proposals.  
 Wrote articles entitled "Chondrules: Drops of Fiery Rain" and "The history of the Institute of Meteoritics, University of New Mexico" for Impact!, the journal of the Society of Meteoritophiles.  
 Reviewed two papers for the journal Geochimica et Cosmochimica Acta, and one for Meteoritics.  
 Reviewed one proposal submitted to the Lunar and Planetary Geosciences Review Panel.  
 Abstracted papers from the journal Meteoritics for Mineralogical Abstracts.

Cornelis Klein

Member, New Mexico Museum of Natural History, Advisory Committee on Geology, 1985 to present  
 Appointed Adjunct Curator of Mineralogy, New Mexico Museum of Natural History

Invited lecturer:

Geological Sciences Symposium, Department of Geology, University of Texas at El Paso, October 4, 1991, lecture entitled "What do banded iron-formations tell us about conditions in the Precambrian?"  
 New Mexico Mineral Symposium, New Mexico Bureau of Mines and Mineral Resources, New Mexico Institute of Mining and Technology, Socorro, N.M., Nov. 9, 1991, lecture entitled "Asbestos: mineralogy and misunderstanding".  
 Colloquium Speaker, Department of Geological Sciences, Arizona State Univ., Tempe, AZ., "Asbestos: mineralogy and misunderstanding", Dec. 4, 1991.  
 Colloquium Speaker, Department of Geology, UNM, "Asbestos: mineralogy and misunderstanding", Nov. 14, 1991.  
 VIP speaker, UNM, Geology Department, "Brazilian Images", Dec. 13, 1991.

Editor:

Associate Editor, Precambrian Research, a journal of Elsevier Science Publishers, Amsterdam  
 Associate Editor, The Canadian Mineralogist, a journal of the Mineralogical Association of Canada  
 Member of the Board of Directors, Economic Geology Publishing Company, 1990-1993.



Reviews:

Reviewed journal manuscripts for Precambrian Research, The American Mineralogist, the Canadian Mineralogist, Nature, and Brazil Gold '91.

Reviewed research projects for the National Science Foundation

Reviewed two book manuscripts for West Educational Publishing

Albert M. Kudo

Reviewed several manuscripts for potential books on Physical Geology and Oceanography for Mosby Year Book, West Publications, Freeman and Prentice-Hall.

Reviewed road logs by Gary Smith and students on northern Albuquerque basin (for field trips associated with GSA meeting).

Helped curators of the NM Museum of Natural History with their Volcanoes movie and presided at the Grand Opening of the showing in the Dynamax Theatre, August 2.

Interview for Channel 4 TV news (Bill Eisenhood) on Albuquerque volcanoes.

Interview with writer for article in Albuquerque Tribune on effect of volcanic eruptions on climate and sunsets.

Barry S. Kues

Reviewed two manuscripts for New Mexico Geological Society Guidebook

Reviewed one manuscript for N.M. Bureau of Mines and Mineral Resources Bulletin 138 (Kinney quarry symposium volume)

Reviewed final paleontological report on the "Fossil Forest" area, San Juan Basin, submitted to the Bureau of Land Management

Reviewed the draft Long-range Planning Report for the "Fossil Forest" prepared by the Bureau of Land Management

Associate Curator of Paleontology, New Mexico Museum of Natural History

Managing Editor, New Mexico Geological Society Publication

Editor, New Mexico Journal of Science

Leslie D. McFaddenOff-Campus Talks:

Presented talk, "Impact of late Holocene Neoglacial climatic change on soil development in the Mojave Desert," California Institute of Technology Geology Club Colloquium, Pasadena, Calif., March 6

Presented talk, "Soil-geomorphic evidence for polycyclic cinder cone eruptions near the proposed high-level waste repository, Yucca Mountains, Nevada," Department of Geosciences Colloquium Program, University of Colorado, April 3

Peer Reviews of Articles and Proposals:

Reviewed 1 paper for a Soil Science Society of America Special Publication

Reviewed 1 paper for the Geological Society of America Bulletin

Reviewed 1 paper for Quaternary Research

Reviewed 1 paper for Paleo-3

Reviewed 1 paper for Journal of Geology

Reviewed 1 chapter in Special Volume of the Soil Science Society of America  
 Informally reviewed paper for Zeitschrift für Geomorphologie  
 Reviewed 2 Proposals to the National Science Foundation

Editorship:

Editorial Board, Catena

Consultancies:

Los Alamos National Laboratories/Department of Energy: Field studies in volcanic fields, Mojave Desert and Great Basin in support of the Yucca Mountain Program to evaluate the proposed high-grade nuclear waste repository  
 Los Alamos National Laboratories: Technical studies in support of the Los Alamos National Laboratory Environmental Restoration Program  
 Dushoff, McCall, and Zeitlin, Attorneys at Law: Field studies to evaluate impacts of grazing on erosion and plant communities in the Navajo and Hopi Partitioned Lands, Arizona

Horton E. Newsom

Associate Editor, *Geochimica et Cosmochimica Acta*  
 Reviewed scientific papers submitted for publication in *Geochimica et Cosmochimica Acta* (2 papers), *Chemical Geology* (1), *Proceedings of the 22nd Lunar and Planetary Science Conference* (1), *Physics of Earth and Planetary Interiors* (1), *Geophysical Research Letters* (1), *Nature* (1), and the *Geological Society of America Bulletin* (1).  
 Reviewed one grant proposal submitted to NASA and one proposal submitted to the Institute of Geophysics and Planetary Physics.

James J. Papike

~ 20 manuscripts reviewed, ~ 12 proposals reviewed

Frank V. Perry

Gave presentation to United States Nuclear Waste Technical Review Board, Panel on Structural Geology and Geoengineering, Tucson, AZ, March 1  
 Reviewed 2 proposals for the National Science Foundation

Harald Poths

Gave seminar on isotopic signatures in meteorites, UNM Institute of Meteoritics  
 Collaborator with LANL, group INC-7

**Franz J.M. Rietmeijer****Peer reviews of Scientific Papers:**

Proceedings 22nd Lunar and Planetary Science Conference, Nature, Science.

**Panel Reviews:**

External Reviewer National Aeronautics and Space Administration Lunar and Planetary Geoscience Review Panel.

External Reviewer National Aeronautics and Space Administration Origins of Solar Systems Review Panel.

National Science Foundation, Division of Astronomical Sciences

Acting Member of the National Aeronautics and Space Administration Johnson Space Center Cosmic Dust Review Panel.

**Charles K. Shearer**

Reviewer for Geochimica et Cosmochimica Acta.

Reviewer for Canadian Journal of Earth Science.

**Gary Smith**

Adjunct Curator, New Mexico Museum of Natural History

Secretary, International Commission on Volcanogenic Sediments

Presented talk, "Continental volcanoclastic sequences: Examples of the Wedding of Volcanology and Sedimentology", New Mexico State University, Las Cruces, New Mexico, February 21.

Reviewed manuscripts for Journal of Sedimentary Petrology (1), Bulletin of Volcanology (1), Geological Society of America Bulletin (1), Geology (2), Sedimentary Geology (1)

Reviewed proposals for American Chemical Society Petroleum Research Fund (2), National Science Foundation (4).

**Michael N. Spilde**

Arranged and coordinated audio-visual equipment for the Rocky Mountain/South-Central Section meeting of the Geological Society of America, Albuquerque, held on April 22-24, 1991.

Consultant on pegmatite geology to Pacer Corporation, Custer, South Dakota.

**Lu-Min Wang**

At Argonne National Laboratory, Argonne, IL, for discussion on analytical electron microscopy of nuclear waste glass reactions, and for conducting experiment on radiation effects in minerals with the HVEM-Tandem National User Facility, Mar. 25-29.

At Argonne National Laboratory, Argonne, IL, for delivery an oral progress report and discussion on analytical electron microscopy of nuclear waste glass reactions, and for conducting experiment on radiation effects in minerals with the HVEM-Tandem National User Facility, July 22-25

At Argonne National Laboratory, Argonne, IL, for delivering an annual progress report on analytical electron microscopy of nuclear waste glass reactions, and for conducting experiment on radiation effects in minerals with the HVEM-Tandem National User Facility, Oct. 14-18.

Presented a talk, "Technical Review of Analytical Electron Microscopy of Glass Reaction" on the program guidance meeting for ANL Technical Support Program for DOE Environmental Restoration and Waste Management, Argonne, IL, Nov. 20

Attended a Radiation Effects Contractors Organizational Meeting (organized by Los Alamos National Laboratory for DOE/BES), Boston, MA, Dec. 2

Crayton Yapp

Invited talks given:

University of Arizona, Tucson, September 12-13, 1991

University of New Mexico, Albuquerque, September 19, 1991

Southern Methodist University, Dallas, Texas, September 20, 1991

Manuscripts and proposals reviewed:

National Science Foundation - 7 proposals

Journal of Sedimentary Petrology - 1 manuscript

Applied Geochemistry - 1 manuscript

Water Resources Research - 1 manuscript

Geochimica et Cosmochimica Acta - 1 manuscript

Global Biogeochemical Cycles - 1 manuscript

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## 7. NON-TEACHING UNIVERSITY SERVICE

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### Roger Y. Anderson

Chairperson, Quaternary Studies Program, University of New Mexico

### Adrian Brearley

Curator of the Meteorite Museum and Collection, Institute of Meteoritics, engaged in cataloging, acquiring and loaning of meteorites.

Manager of the scanning electron microscope and electron microprobe laboratory. Supervised the laboratory, trained and advised students and other users in the use of the instruments.

Supervisor of thin section laboratory in the Institute of Meteoritics.

Presented Geology Department VIP seminar on Geology of Great Britain, November 1, 1991.

Member, Geology Department and Institute of Meteoritics Facilities Committee Research Staff Faculty Representative, Fall Semester, 1991.

Conducted numerous guided tours of the electron microprobe and transmission electron microscope laboratories for visitors to the Geology Department.

### Michael Campana

#### University:

Interdisciplinary Water Curriculum Committee, Master of Water Resources Administration Program

#### Departmental:

#### Committees:

Graduate Committee

Silver Research Professorship Search Committee

Lecture and Colloquium Series Committee

Nominations Committee

#### Other Services:

Organized speaker series, Spring 1991 and Fall 1991

Hosted visits of Drs. S.W. Wheatcraft, D.F. McTigue, G. Bergantz, N. McMillan, W. Stone, C. Barton, Ms. Carol Hill and Ms. C. Koltermann

### James R. Connolly

#### University service and activities:

Member of UNM Database Developers Group.

Participant in the one-on-one program for new students on campus.

Departmental service:

Assisted with setup and advice in Geology Department office regarding use of personal computers for word processing and departmental accounting.

Laura CrosseyDepartment:

Alumni Relations  
Undergraduate Committee  
Lectures Committee  
Undergraduate Geology Club- Faculty Advisor  
Sigma Gamma Epsilon (Honorary Geological Society)- Faculty Advisor  
Scholarship Committee

College:

Undergraduate Committee

University:

Core Curriculum Committee  
Undergraduate Committee  
Ad Hoc Committee on Natural Science Courses

Maya Elrick

Undergraduate Committee  
Microscope Committee  
Scholarship Committee

Wolfgang E. ElstonUniversity:

Core Curriculum Committee  
Long-Range Planning Committee and Subcommittee on Planning Processes and Policies

Arts & Sciences College:

Graduate Committee

Geology Department:

Graduate Committee  
Coordinator, Volcanology Program

**Rodney C. Ewing****University Committees:**

Academic Freedom and Tenure Committee (elected)  
 College of Arts & Sciences Promotion Committee (1991-1992)  
 Honors Task Force (1991)  
 A&S Committee for review of the Office of Graduate Studies (Fall, 1991)

**Department:**

Honors Advisor  
 Collections Committee: (chair, spring 91; member, fall 91)  
 Facilities Committee: (chair)  
 Promotion Committee (to full professor): (chair)  
  
 NTTR Committee: (member)  
 Radiation Safety Permit Holder for: XRD Laboratory, AEM Laboratory, Mineral Collections, and XRF Laboratory

**Supervision of:**

Harding Pegmatite property  
 X-ray Diffraction Laboratory (with M. Miller)  
 Analytical Electron Microscopy Laboratory (with L.M. Wang)  
 Mineralogy Collections (with Gary Smith)

**Host and sponsor of:**

Dr. Janusz Janeczek, Uniwersytet Slaski, Poland, as a Fulbright Fellow.  
 Dr. Susan Barger, Johns Hopkins University, as an Adjunct Associate Professor  
 Dr. Hiroshi Isobe, Japan Atomic Energy Research Institute, as a Visiting Scientist  
 Dr. Maryellen Cameron, Miami University, as a Visiting Scholar

**John Geissman****University service and activities:**

Member, Faculty Senate, 1991-1992. responded positively to solicitations to serve on faculty committees, yet have not been contacted

**Departmental service:**

Geology Department Graduate Committee; Chair, Fall, 89-  
 Geology Department Role of Research Scientists Committee  
 Geology Department Vehicle Committee  
 Geology Department Search Committee, Structural Geology Position

Special Projects:

Co-Chair, 1991 combined Rocky Mountain and South Central Geological Society of America Meeting,  
 April, 1991  
 Registration coordinator, 1991 combined Rocky Mountain and South Central Geological Society of  
 America Meeting, April, 1991

Administrative Positions: Chair, Graduate Committee

Jeffrey A. Grambling

Supervisor, UNM Geology thin-section laboratory  
 Chair, UNM Geology microscope committee (included evaluation and purchase of new microscopes in  
 1991-1992)  
 Chair, committee to evaluate role of Non-tenure-track Research Scientists (UNM Geology)  
 Member, UNM Geology Structural Geology search committee (included taking 3 finalist candidates into  
 the field for 1 day each)  
  
 Host, UNM Geology departmental speaker M. Darby Dyar (March 27-29, 1991)  
 Member, evaluation committee for UNM Popejoy Prize (Best Dissertation)

Stephen P. HuestisDepartment Committees:

Centennial Library liaison  
 Undergraduate  
 Computer  
 Structural geologist search  
 UNM One-on-One Program volunteer (2 students)

John Husler

Chemical laboratory demonstrations.

Rhian Jones

Manager of experimental petrology laboratory.  
 Assistant curator of meteorite collection.  
 Revised and prepared for publication new brochure for Meteorite Museum.  
 Member of Chemical Hygiene Committee.  
 Member of Committee on Status of Research Scientists



**Cornelis Klein**

Since August 1989, Chairman of the Undergraduate Committee in Geology  
 Undergraduate advisor in Geology  
 Chairman, search committee for faculty replacement for the Caswell Silver Research Professorship  
 Member, Arts and Sciences Committee to Review Advisement in the College  
 Member, Senior Faculty Promotion and Tenure Committee for 1991-92, College of Arts and Sciences  
 Member, Long Range Planning Committee, Department of Geology  
 Chairman, Guest Program, Rocky Mountain GSA Meetings, Albuquerque, N.M., April 21-24, 1991

Geology Department host to:

Dr. E-an Zen, Caswell Silver  
 Distinguished Lecturer, Feb. 20 & 22, 1991

Dr. John P. Grotzinger  
 G401 Colloquium Speaker, April 9-11, 1991

Geology Department Faculty Coordinator of departmental Commencement Exercises, May 11, 1991

**Albert M. Kudo**

Chair of the Structural Geologist Search Committee: selection of top candidates, writing of all proceedings to demonstrate that we followed the guidelines according to Affirmative Action, arranged for on-site interviews of top candidates, hosted interviewees.  
 Chair of UNM-Sandia Colloquium Committees: screened applicants, wrote proposal to Sandia for continued funding, managed budget.  
 Gave French exams to Mike Grubensky and Ray Eby.  
 Chair of the Scholarship Committee.  
 Member of the Microscope Committee.  
 Member of Advisory Council to Leisure Services.

**Barry S. Kues****College**

Member, ad-hoc committee on the status of the Geography Department

**Department**

Member, Undergraduate and Facilities Committees; member of ad-hoc committee on status of research scientists in department  
 Editor, Departmental Publications  
 Compiled Geology Department information brochure (Edition 6), 24 p.  
 Compiled Geology Department annual report, 136 p.  
 Chairperson of Department, August, 1991, on.

**Leslie D. McFadden**

Member of College of Arts and Sciences Ad-Hoc Committee to evaluate the Department of Geography and Technical Applications Center, University of New Mexico  
 Chairman, Department of Geology Long-Range Planning Committee  
 Assistant Chairman, Department of Geology (Beginning August, 1991)  
 Hosted Visit to UNM Campus of Elise Pendall, Finalist for Department of Geology Silver-Kelley Fellowship  
 Presented Talk to UNM Geology Club

**Horton E. Newsom**

Acted as Executive Officer of the Institute of Meteoritics beginning June 1, 1990.  
 Directed operation and development of the Neutron Activation Analysis Laboratory, Institute of Meteoritics.  
 Conducted guided tours of the Neutron Activation Analysis Laboratory for numerous university, and other professional visitors.  
 Hosted the visits to the Department of Geology and the Institute of Meteoritics of several scholars.

**James J. Papike**

Member-Committee for the Assessment of the Future of the Geography Department and TAC  
 Member-Geology Graduate Admissions Committee  
 Member-Committee Defining the Role of Research Scientist within the Geology Department  
 Member-Geology Department Facilities Committee  
 Member-Geology Department Long Range Planning Committee

**Harald Poths**

Member of geology lab, hygiene committee.

**Gary Smith**

Chairman, Geology Department Collections Committee.  
 Member, Provost's Committee on the Development of the Young Range Research Property.

**Charles K. Shearer**

Coordination of Secondary Ion Mass Spectrometry Laboratory, joint UNM-SNL facility.  
 Coordination of ICP-MS Laboratory development.

**Michael N. Spilde**

UNM Geology Dept. Health & Safety Committee  
 Assistant Manager, Electron Microprobe and Scanning Electron Microscope Labs; supervision of laboratories, training and advising students and other users on the use of the instruments, scheduling users.

Microprobe and SEM Lab tours and demonstrations for Albuquerque Gem and Mineral Society, April 27, 1991  
SEM demonstrations for Gifted Students tour, April 8 & 9, 1991.

Lee A. Woodward

Member of undergraduate committee.

Crayton Yapp

Departmental Committees:

Scholarship committee - chaired through July, 1991  
Facilities committee  
Member of Caswell Silver Foundation Board of Directors  
Interim member of long-range planning committee

Administration:

Assistant Chair, Department of Geology, through July, 1991

Other service:

Supervisor of Geology Department Stable Isotope Laboratory  
"Master of ceremonies" at UNM Department of Geology commencement exercises, May 11, 1991  
"Conducted numerous tours of department facilities for faculty candidates and visiting 401 speakers.

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## 8. SCHOLASTIC HONORS AND FELLOWSHIPS

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### Adrian Brearley

Nominated for inclusion in Who's Who in America.

### Wolfgang E. Elston

#### Re-Listing

American Men and Women of Science

### Jeffrey Grambling

Promoted to Professor, August 1991

#### New academic honors:

Who's Who among rising young Americans  
Who's Who in the West (23rd edition)  
Who's Who of emerging leaders in America (4th ed.)  
2,000 Notable American men

### John Husler

Nominated for Gerald May UNM Service Award, Dec. 1991.

### Cornelis Klein

Recipient of "Burlington Resources Faculty Achievement Award for Excellence in Teaching", 1990-1992,  
UNM, May 2, 1991.

### Crayton Yapp

Nominated for Burlington Resources Faculty Achievement Award and Outstanding Teacher of the Year  
Award

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## 9. TRAVEL AND SABBATICALS

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### Adrian Brearley

March 18-22, 1991, 22nd Lunar and Planetary Science Conference, Houston, Texas.  
July 22-26th, 1991, 54th Meteoritical Society Meeting, Monterey, California.  
December 9-13, 1991, Fall AGU Meeting, San Francisco.  
December 17-18, 1991, Dow Chemicals, Freeport, Texas to see demonstration of Link Analytical electron probe automation and image analysis system.

### Michael Campana

Thesis defense, Robert M. Byer, Jr., University of Nevada, Reno, March 22, 1991  
North American Benthological Society Annual Meeting, Santa Fe, NM, May 24-25, 1991  
Gordon Research Conference, Plymouth, NH, July 1-5, 1991  
Nevada Science Project Lecture, UNLV, Las Vegas, NV, July 22, 1991  
NM Section American Water Resources Association Meeting, Socorro, NM, September 18-19, 1991  
Geological Society of America Annual Meeting, San Diego, CA, October 21-24, 1991  
Lecture at UNLV Geoscience Department, Las Vegas, NV, November 1, 1991  
National Science Teachers Association, Reno, NV, December 5-7, 1991  
American Geophysical Union Fall Meeting, San Francisco, CA, December 11-13, 1991

### James R. Connolly

Travel to San Francisco, California, to attend American Geophysical Union annual fall meeting, December 8-13, 1991.

### Wolfgang E. Elston

#### Foreign Travel

July 16-August 25, 1991: Travel to South Africa for research on the Bushveld Complex (mainly field work), on invitation from Institute for Geological Research on the Bushveld Complex, University of Pretoria, Prof. Gerhard von Gruenewaldt, Director. Stopover in Germany, July 17-18, to confer with scientists on problems related to the Bushveld project.

#### Other Travel

October 21-24, 1991, San Diego, CA. Annual Meeting of Geological Society of America  
October 27-31, 1991, Santa Fe, NM. American Geophysical Union Chapman Conference on "Rocky Mountains: Plate Puzzle"

R.C. Ewing

February 18-22, New Orleans, Annual Mtg. of Metals Society  
 March 8-19, Japan, Symposium on Global Environment and Nuclear Energy  
 March 19-21, Washington, D.C., NAS/WIPP Panel Meeting  
 April 16-17, Reno, Nevada, Nuclear Waste Technology Review Board  
 April 24, Harding Pegmatite field trip, GSA meeting  
 April 29-May 3, Saskatoon, Canada, Cigar Lake Workshop  
 May 13-14, Oak Ridge National Laboratory, NAS/WIPP review visit  
 May 26-June 1, Strasbourg, France, European Materials Research Society  
 June 3-4, Albuquerque, NM, NAS/WIPP Panel Meeting  
 June 11-15, Nice, France, MRS & E-MRS program committee meeting  
 June 23-29, Weimar, Germany, Radiation Effects in Insulators meeting.  
 July 22-25, San Antonio, NRC workshop on natural analogue studies  
 August 12-15, Idaho Falls, Idaho, NAS/WIPP Panel Meeting  
 October 12, Harding Pegmatite field trip (Mineralogy 301)  
 October 20-25, Jerez, Spain, Actinide, Migration in the Geosphere  
 October 28-30, Sitges, Spain, Spent Fuel Workshop  
 October 31, Barcelona, Spain, visit to MBT laboratories  
 November 4-8, Strasbourg, France, European Materials Research Society  
 November 19-20, Argonne National Laboratories, Workshop  
 December 10-12, Irvine, California, NAS/WIPP Panel meeting

John GeissmanSummer teaching:

University of Michigan Camp Davis, Geological Sciences 440, Advanced Field Geology, July 3-July 26.

Travel:

January 30-February 1, University of Kansas, Lawrence  
 February 8-9, Annual Meeting, DOSECC, Albuquerque  
 February 10-14, southern Arizona, field sampling  
 March 13-17, southern New Mexico, field sampling  
 April 25-28, southern New Mexico, field sampling  
 May 8-11, central Arizona, field sampling  
 May 28-30, southwest Colorado, UNM Introductory Field Geology course and field sampling.  
 June 4-28, New Mexico, central Colorado, UNM Advanced Field Geology course.  
 July 3-July 25, Wyoming, Field Camp  
 July 26-29, central Utah, field sampling  
 September 19-22, University of Michigan, Ann Arbor  
 October 21-24, San Diego, California, Geological Society of America Annual Meeting  
 October 29, Santa Fe, American Geophysical Union Chapman Conference  
 November 14-16, University of New Orleans, Louisiana  
 December 8-12, San Francisco, California, American Geophysical Union Meeting

Jeffrey A. Grambling

March 3, 1991: Picuris Mountains, New Mexico (Geol. 521)  
 March 10, 1991: Manzano Mountains, NM (Structural search committee)  
 March 23, 1991: Manzano Mountains, NM (Structural search committee)  
 March 30, 1991: Manzano Mountains, NM (Structural search committee)  
 April 19-21, 1991: Manzano Mountains, NM (Geological Society of America field trip)  
 April 25-27, 1991: Chicago, Illinois (to give talk at University of Chicago and meet their faculty)  
 May 3-5, 1991: Guadalupita, NM (Geol. 521)  
 June 1 - July 20, 1991: northern New Mexico (geologic research)  
 Sept. 13-15, 1991: Guadalupita, NM (geologic research)  
 Oct. 20-24, 1991: San Diego, CA (Annual Meeting, Geological Society of America)  
 Oct. 27-30, 1991: Santa Fe, NM (Chapman Conference on the Laramide orogeny)  
 Nov. 23, 1991: Manzano Mountains, NM (Geol. 303)

Rhian Jones

Review panel for National Science Foundation, Instrumentation and Laboratory Improvement program.  
 Washington, D.C. January 23-26, 1991.  
 Attended 22nd Lunar and Planetary Science Conference, Houston, Texas. March 18-22, 1991.  
 Attended 54th Meteoritical Society meeting, Monterey, California. July 22-26, 1991.  
 Attended American Geophysical Union meeting, San Francisco, California. December 9-12, 1991.

Cornelis Klein

February 13, 14, 15, 1991, attended Tucson Gem and Mineral Show, as official representative (adjunct curator of Mineralogy) of the N.M. Museum of Natural History. Made several mineral purchases for "Gem Minerals and Gems exhibit at the Museum."  
 July 27 - August 8, 1991, Field research in Brazil, sponsored by my on-going NSF grant.  
 October 3-5, 1991, Invited guest speaker at Geological Sciences Symposium, at the opening ceremony of a new Geological Sciences building at Univ. of Texas, El Paso.  
 October 9-12, 1991, Participated in New Mexico Geologic Field Excursion in the South Central Mountain Ranges of N.M.  
 October 21-24, 1991, attended Annual Meetings of the Geological Soc. of America, San Diego, Calif.  
 November 9, 1991, Invited plenary lecturer at the 12th Annual N.M. Mineral Symposium, Socorro, N.M.

Barry S. KuesProfessional travel

To Socorro, April 4 and July 12, meetings of N.M. Geological Society Executive Committee  
 To Los Pinos Mountains, Aug. 12-13, fieldwork with G. Smith and Master's student L. Davidek  
 To Ruidoso area, Oct. 9-12, New Mexico Geological Society Annual Field Conference  
 To Rio Puerco area, Oct. 27, field research  
 To Lake Valley, Nov. 10, field research

Sabbatical leave, Spring 1991.

**Travel:**

Feb. 27	Fieldwork, Cima Volcanic Field, southern California
Feb. 28, March 1	Attended Yucca Mountain Program, United States Nuclear Waste Technical Review Board Meeting, Tucson, AZ
March 6, 7	Invited Presentation, California Institute of Technology, Pasadena, CA
March 11-15	Fieldwork, Cima volcanic field, southern California
April 3, 4	Invited Presentation, University of Colorado, Boulder, CO
May 21, 22	Fieldwork, Yucca Mountain, NV
June 3-7	Fieldwork, northeast Arizona
June 9-11	Fieldwork, Snake River Plain, southern Idaho
June 23-25	Fieldwork, Providence Mountains, southern California
June 26-29	Fieldwork, northeast Arizona
July 15, 16	Review of thesis fieldwork, Riverside, CA
July 19	Fieldwork, near Farmington, NM
August 18-21	Fieldwork, northeast Arizona
September 25-29	Fieldwork, northeast Arizona
October 21-24	Attendance, National Meeting, Geological Society of America, San Diego, CA
December 16, 17	Fieldwork, near Lathrop Wells, NV

**Horton E. Newsom**

Mar. 18-22 - Houston, TX. Attended the Lunar and Planetary Science Conference and presented one talk.

May 15 - Los Alamos, NM. Attended Institute of Geophysics and Planetary Physics Review Panel Meeting.

July 22-25 - Monterey, CA. Attended the Annual Meteoritical Society Meeting.

Aug. 11-16 - Vienna, Austria. Attended Twentieth General Assembly, International Union of Geodesy and Geophysics, and presented one invited talk.

Aug. 17-21 - Nördlingen, Germany. Conducted field work at the Ries Impact Crater.

Aug. 21-27 - Vienna, Austria. Visited Dr. Theo Ntafos and conducted research at the University of Vienna.

Dec. 6-8 - San Francisco, CA. Attended the topical conference - The Physics and Chemistry of Magma Oceans from 1bar to 4 Mbar, and presented one poster.

Dec. 9-13 - San Francisco, CA. Attended the American Geophysical Union Fall Meeting.

**Frank V. Perry**

March 1, Tucson, AZ, Nuclear Waste Technical Review Board presentation

March 5-7, Los Alamos, NM, Research collaboration

March 14, Cima volcanic field, CA, field work

April 25-27, Western New Mexico, led field trip

May 14-16, Cima volcanic field, field work

May 22-23, Lathrop Wells, NV, and Cima volcanic field, CA, field work

June 10-11, Snake River Plain, ID, field work

July 9-10, Lathrop Wells, NV, field work



August 26-28, Lathrop Wells, NV, field work  
September 16-20, Arizona and Utah, field work  
October 8, Berkeley, CA, volcanism planning meeting  
October 21-24, San Diego, Ca, Geological Society of America, Annual Meeting  
October 26-29, Santa Fe, NM, American Geophysical Union Chapman Conference  
November 18, Las Vegas, NV, public talk on volcanoes  
December 16-17, Lathrop Wells, NV, field work

Charles K. Shearer

Visiting research scientist, SIMS laboratory, Woods Hole Oceanographic Institute, February 1991, September 1991.

Visiting research scientist SNL (SIMS lab) and LANL (PIXE lab).

Gary Smith

July 21: Collections of samples for Physical Geology labs in Jemez Mountains, New Mexico.  
August 12-13: Field work in Los Pinos Mountains, New Mexico with B.S. Kues and L. Davidek.  
October 24-26: Participated in Geological Society of America field trip near La Jolla, California.  
March 18-23: Field work in southeastern California with T.E. Cerling (University of Utah), and E.H. Lindsay (University of Arizona).

Michael N. Spilde

May 20-June 1: collect mineral samples for microanalysis, Black Hills, South Dakota .  
June 15-20: short course at Lehigh University, Bethlehem, Pennsylvania.  
October 18-20: GSA Field Trip on pegmatites, San Diego County, California.  
October 21-24: GSA Annual Meeting, San Diego, California.  
December 16-18: evaluate microprobe X-ray analysis system, Freeport, Texas.

Lee A. Woodward

Travel to Europe, Montana, Colorado, Wyoming, Oregon, and Idaho for geologic field trips.

Crayton Yapp

Travel:

Baltimore, Maryland, to present talk at Spring, 1991, meeting of the American Geophysical Union, May 27-31, 1991  
Jackson, Wyoming, to present invited plenary talk at the AGU Chapman Conference on Continental Isotopic Indicators of Climate, June 10-14, 1991  
Tucson, Arizona, to present talk at the University of Arizona, September 12-13, 1991  
Dallas, Texas, to present talk at Southern Methodist University, September 20, 1991  
San Diego, California, to present talk at the Annual Meeting of the Geological Society of America, October 21-24, 1991

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## 10. PUBLIC SERVICE

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### Roger Y. Anderson

Presentation to Albuquerque Chapter, American Humanists Society on the history of the WIPP Project, November, 1991.  
Identifying fossils and rocks for public

### Adrian Brearley

Provided a number of guided tours of the Meteorite Museum to school parties, groups from other University Departments and interested individuals.  
Identified numerous suspect meteorites for members of the public from both within and outside New Mexico.  
Provided information about meteorites to members of the public from both with in and outside New Mexico.  
Host in Meteorite Museum for Geology Department/ Albuquerque Gem and Mineral Society open house. April 27th, 1991.

### Michael Campana

Volunteers in Technical Assistance: provided technical assessment for certain aspects of the Lake Assal (Djibouti) power project and Brazilian well drilling project  
Provided water resources and related information to the general public  
Provided pro bono publico consulting for the New Mexico Environmental Law Center and the UNM Law School Legal Clinic

### James R. Connolly

Judge for the Northwestern New Mexico Regional Science and Engineering Fair, and Special Award Judge for the Albuquerque Geological Society, March, 1991.  
Taught introductory Earth Science at YWCA Science Camp for 4th through and 6th Grade Students, March through May, 1991, and September and October, 1991.

### Laura Crossey

Judge, Regional Science Fair

### Wolfgang E. Elston

#### Information:

Responded to numerous requests for information on mineral resources, geology, earthquakes, volcanic eruptions, and other geological hazards, etc.; identified rocks, minerals, and fossils for the public.

Interviews:

- April 17, 1991: Interviewed by John Taylor, TV Channel 30, on volcanoes, earthquakes and the environment  
 June 16, 1991: Appeared twice on TV Channel 7, Action 7 News, interviewed by Augusta Myers on volcanic eruptions in New Mexico  
 June 19, 1991: Interviewed by Steve Brewer, Albuquerque Journal, on volcanoes of New Mexico. Appeared as lead story in Trends section, Sunday Journal, June 20, 1991.

Public lectures sponsored by UNM Speakers' Bureau:

- February 5, 1991, Manzano del Sol Retirement Home: "Voyage to the planets"  
 February 21, 1991, American Association of Retired Persons, Encino House: "Politics of South Africa"  
 February 19, 1991, Thunderbird Travel Club, Northside Senior Citizens Center: "The Eruption of Mount St. Helens, May 18, 1980"

Other:

- February 22, 1991: UNM Centennial Speaker Series, introduced the speaker, Harold Farley (Geology alumnus, circa 1960), Chief Test Pilot, Lockheed Corp.  
 April 8, 1991: Gave talk at CIMTE state-wide conference for high school science students: "Exploration of space" Information

Rodney Ewing

- Rotary International  
 Amnesty International

John Geissman

- Geoscience Advisor, Albuquerque Petroglyphs National Monument committee  
 Geologic field excursion leader, miscellaneous Girl Scout groups

Jeffrey A. Grambling

- Identified rock and minerals for the public  
 Donated rock samples to Bandelier Elementary School  
 Gave presentation on Geology at Bandelier Elementary School

Stephen P. Huestis

- Treasurer - New Mexico Folk Music and Dance Society  
 Member of Virginia Creepers String Band - provided volunteer performances for:  
   Eco-Fest (6/22)  
   New Mexico State Fair  
   Endangered Species Fair at the New Mexico Museum of Natural History (9/28)  
   Cub Scout Pack 130 Pioneer Days (11/26)

**John Husler**

President, Highland School Band Boosters.

Member, Albuquerque Concert Band - played for Jr. Olympics, St. Joseph Rehab. Center, E. San Jose Community Center, Civic Plaza.

Judge, N.W. Regional Science Fair, Los Lunas Elementary Science Fair.

Coordinator, Central Ave Landscaping project, Mesilla-Española, N.E.

**Rhian Jones**

Host in Meteorite Museum for Geology Department / Albuquerque Gem and Mineral Society open house. April 27th, 1991.

Interviewed by news team from KGGM (Channel 13) for piece on Meteorite Museum.

Hosted visit of Zia Middle School, Santa Fe for tour of Meteorite Museum and electron microprobe laboratory. 23rd September, 1991.

Met with numerous members of the public to identify suspect meteorites.

Participated in "One on One" Program as staff volunteer.

**Cornelis Klein**

Curator in charge of "Facets: Gem Minerals and Gems", which opened at the N.M. Museum of Natural History, Albuquerque, on March 17, 1991. This exhibit continues until mid-February, 1992.

I also served as the official host for representatives of Harry Winston, Inc., New York, and the mineralogy curator of the Harvard Mineralogy Museum, for the period March 15-18, 1991.

Member of Rotary Club of Albuquerque

March 21, 1991, gave a lecture "Precious Gems" to the Inner Wheel of the Rotary Club of Albuquerque  
 April 4, 1991, attended the Albuquerque Gem and Mineral Club Silent Auction and Open House, Geology Department, UNM.

**Albert M. Kudo**

Identification of minerals and rocks, presented talks to public school students.

**Barry S. Kues**

Talk on dinosaurs to Monte Vista Elementary School class, Mar. 11.

Judge in northwestern New Mexico Regional Science and Engineering Fair, Albuquerque, Mar. 15.

Evaluated applications for New Mexico State Dept. of Education, for Presidential awards for excellence in science teaching.

**Leslie D. McFadden**

Participation in V. Long's class in the UNM Dept. of Education, "Non-sexist Counseling."

Active in organization, New Mexicans for Science and Reason.

Responded to numerous requests for advice and assistance from the public concerning issues related to soils and geology.

**Horton E. Newcom**

Provided tours and information for members of the general public.

**Frank V. Perry**

Presented talk, "Volcanoes" at Green Valley Public Library, Las Vegas, NV, November 18

**Gary Smith**

Responded to 27 personal inquires for assistance in identifying fossil and mineral specimens.

Responded to 15 written inquires for information on rock, mineral, and scenic geological localities in New Mexico.

Provided specimens to Albuquerque Public Schools elementaries.

Arranged for the Geology Department to host the Albuquerque Gem and Mineral Club Silent Auction and open house of the departments facilities.

**Crayton Yapp**

Identification of rocks and minerals for the public

Member, Hoffmantown Neighborhood Association

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#### IV. PROFESSIONAL TALKS PRESENTED IN DEPARTMENT

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**PROFESSIONAL LECTURES TO THE DEPARTMENT OF GEOLOGY AND  
INSTITUTE OF METEORITICS, FALL 1991 - SPRING 1992**

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- Dr. William J. Stone, Newmont Gold Company: "Water Problems in Gold Mining, Carlin Trend, Nevada" (September 5, 1991)
- Dr. J. Douglas Walker, University of Kansas: "Jurassic deformation from the Mojave Desert to the eastern margin of the Sierra Nevada batholith" (September 12, 1991)
- Dr. Crayton J. Yapp, University of New Mexico: "Paleoclimates and the stable isotope geochemistry of FeOOH - was the Earth a CO<sub>2</sub> greenhouse in the Late Ordovician?" (September 19, 1991)
- Dr. Christopher C. Barton, U.S. Geological Survey: "Introduction to fractal geometry and its application to the earth sciences" (September 26, 1991)
- Drs. Jud May and Lee Russell, Atlantic Richfield Company: "Tectonics of Rio Grande Rift" (September 27, 1991)
- Dr. Stanley N. Williams, Arizona State University: "The geology of Nevado del Ruiz volcano, Colombia" (October 3, 1991)
- Dr. William Weber, Pacific Northwest Laboratories: "Radiation effects in zircon" (October 10, 1991)
- Dr. Carol L. Stein, Sandia National Laboratories: "Thermal migration of fluid inclusions in Permian salt" (October 31, 1991)
- Dr. Michael D. Lewan, United States Geological Survey: "Understanding Generation and Expulsion of Hydrocarbons in Sedimentary Basins Through Experiments" (November 6, 1991)
- Dr. Nancy J. McMillan, New Mexico State University: "Chemical, spatial and temporal constraints on Andean magmatism" (November 7, 1991)
- Dr. Cornelis Klein, University of New Mexico: "Asbestos mineralogy and misunderstanding" (November 14, 1991)
- Dr. Christine Koltermann, Stanford University: "How to build an aquifer on a computer" (November 21, 1991)
- Dr. Robert L. Folk, University of Texas, Austin: "Egyptian Pyramids Made of Concrete: Fact or Fiction?" (November 22, 1991)
- Dr. Robert L. Folk, University of Texas, Austin: "Bacteria in Rocks: The New Revolution in Diagenesis" (November 22, 1991)
- Dr. William C. Haneberg, New Mexico Bureau of Mines and Mineral Resources: "Deformation of Surficial deposits and the origin of earth fissures in the American Southwest" (December 5, 1991)
- Dr. Peter S. Mozley, New Mexico Tech: "Carbonate concretions as indicators of the chemical evolution of pore waters" (December 12, 1991)
- Dr. Wolfgang E. Elston, University of New Mexico: "What is the Bushveld Complex?" (January 23, 1992)
- Dr. Joaquin Ruiz, University of Arizona: "Paleozoic & Mesozoic Evolution of Mexico" (January 30, 1992)
- Dr. Isabel Montanez, University of California, Riverside: "Eustatic Control on Deposition and Diagenesis of Middle Cambrian Bonanza King Formation Great Basin" [Association of Women Geoscientists Distinguished Lecturer] (February 6, 1992)
- Dr. Chad McCabe, Louisiana State University: "Reconstructing Iapetus in the British sector: A Case Study in Paleozoic Plate Tectonics" (February 13, 1992)
- Dr. Jeffrey Hanor, Louisiana State University: "Physical and Chemical Controls on the Composition of Formation Waters in Sedimentary Basins" (February 20, 1992)
- Dr. Paul Dixon, Los Alamos National Laboratories: "Iron Isotope Measurements in Terrestrial Materials" (February 20, 1992)
- Dr. John Bowman, University of Utah: "Processes and Patterns of Fluid Flow in Crustal Hydrothermal Systems: Insights from Transport Models of Isotopic Exchange" (February 27, 1992)

- Dr. John Bowman, University of Utah:** "Transfer Models of Isotopic Exchange: Controlling Parameters -- A Status Report" (February 28, 1992)
- Dr. Robert M. Carter, James Cook University, Townsville, Australia:** "Mid-Pleistocene Orbital Forcing and Continental Margin Cyclotherms" (February 28, 1992)
- Dr. Scott Tyler, Desert Research Institute, Reno, NV:** "The Role of Convection in Ground Water Flow Beneath Salt Lakes & Playas" (March 5, 1992)
- Dr. Shirley Dreiss, University of California-Santa Cruz:** "The Hydrogeology of an Active Subduction Zone" (March 12, 1992)
- Dr. Francis Riley, U.S.G.S., Menlo Park, CA:** "Applications of Aquifer Mechanics to Subsidence and Earthquake Predictions" (March 26, 1992)
- Dr. Pat Browne, University of Auckland, NZ:** "Geothermal Minerals" (April 2, 1992)
- Dr. Thure Cerling, University of Utah:** "Isotope Systematics of Soils: Evolution of Man, Monsoons and Atmospheric CO<sub>2</sub> Levels" (April 16, 1992)
- Dr. Michael Leshner, University of Alabama:** "Geochemistry of Komatiite-Associated Nickel Sulfide Deposits" (April 23, 1992)
- Dr. Charles Shearer, University of New Mexico:** "Granite/Pegmatite Systems of the Black Hills, South Dakota" (April 30, 1992)
- Dr. N.A. Logatchev, Institute of the Earth's Crust Siberian Branch of the Russian Academy of Science, Irkutsk:** "Tectonics of the Baikal Rift" (May 4, 1992)
- Dr. Chuck Chapin, New Mexico Bureau of Mines and Mineral Resources, Socorro, NM:** "Origin and Evolution of Southern Rocky Mountains" (May 7, 1992)



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## V. GEOLOGY MUSEUM AND COLLECTIONS

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## GEOLOGY MUSEUM AND COLLECTIONS

More than 5,000 people visited the Geology Museum during the 1991-1992 academic year. Most of the visitors were school children, many of whom were ably guided by volunteer guide and interpreter Judy Stoores, who is a geology graduate student. Three new exhibits, featuring recent acquisitions and minerals of New Mexico, were added to the museum displays. The UNM Psychology Department used the museum for a reception on October 25, 1991. The Los Alamos Geological Society toured the Geology Museum and many of the department's laboratories on February 17, 1992. For the second consecutive year, the Geology Department hosted the Albuquerque Gem and Mineral Club's Silent Auction to benefit their scholarship and science-fair award funds on May 1, 1992. The Geology Club provided a barbecue luncheon following the auction and an open house of eight analytical laboratories and the museums rounded out the day's activities.

With the assistance of work-study students Chris Andronicos and Kyle Gay and community volunteer Florence La Bruzza, computer cataloging of the mineralogy and paleontology collections is now nearly complete. Progress continues on the preparation of the Harding Pegmatite Mine catalog, which will list archival materials as well as mineral specimens and will also feature short articles on the geology and history of the mine. The history of mining activity will include information gained from oral-history interviews of the mine's former owner, Dr. Arthur Montgomery, and of former miners, which are being obtained by University Archivist, Terry Gugliotta.

The recently completed Mineral Museum Advisory Council Directory of Mineral Museums lists the UNM collection among only 19 sizeable, curated university mineral collections in North America. Ours is 12th in size among these academic collections. In terms of number of specimens cataloged on computer, however, we rank 7th and have the distinction of being the only university collection (and one of only 5 of the 54 museums in the directory) that claim to have computerized their entire mineral catalog.

The Museum received several significant donations of mineral specimens during the year. The most important donation came from Albin Wicklund (UNM, BS., '63) who presented over 400 ore and mineral specimens to us in December 1991. These specimens provided important additions to the Department's teaching collections and 92 samples were cataloged into the permanent collection. Many of these cataloged specimens appeared prominently in the Museum's recent acquisition display, which was completed in February 1992. Other specimens were donated by the estate of Mrs. Bernd Matthias, Jack and Valerie Dille, Ray Demark, and Mason Estes. Additional mineral and fossil specimens were purchased with money placed in the Museum donation box by patrons; these are the first purchased specimens that have been acquired in many years. The endowed UNM Geology Museum and Collections Fund, administered by the UNM Foundation, is growing quickly since its initiation in August 1991. Once the minimum principal level is reached, revenue from this fund will permit purchase of other fine specimens for the museum.

**MUSEUM LOG**  
**JULY 1, 1991 -- JUNE 30, 1992**

DATE	ORGANIZATION	GRADE	# OF STUDENTS	# OF NON STUDENTS
7/01/91	<del>Ponderosa Child Care</del>	Pre-1st	5	2
7/03/91	West Mesa Parks and Recreation	6th-9th	20	3
7/10/91	UNM Child Care	Pre-1st	15	5
7/11/91	West Pre-School	6th-10th	12	3
7/12/91	Student Outreach	Pre-1st	16	2
7/12/91	Kindercare	Pre-1st	30	3
7/18/91	West Pre-School	8th	12	3
7/18/91	Student Outreach	8th-10th	50	4
7/22/91	Hogares School		10	3
JULY, 91 TOTAL			170	28
8/06/91	National History Group	N/A	13	2
8/15/91	Bright Beginnings	Pre-1st	20	3
8/21/91	Ponderosa Child Develop.	Pre-1st	10	2
AUGUST, 91 TOTAL			43	7
9/11/91	Cub Scouts	2nd-4th	5	1
9/12/91	Kirtland Elem.	3rd	35	7
9/24/91	Kirtland Elem.	3rd	35	3
9/25/91	Longfellow Elem.	1st-2nd	20	5
9/25/91	Girl Scouts	4th-6th	9	4
9/26/91	Inez YMCA	1st-5th	15	3
9/25/91	Inez YMCA	1st-5th	15	3
SEPTEMBER, 1991 TOTAL			134	26
10/03/91	Monte Vista Elem.	Kinder.	34	6
10/03/91	Powell Elem.	4th	19	1
10/09/91	Duranes Elem.	3rd-5th	6	3
10/10/91	Vineyard Home	1st-5th	15	3
10/15/91	Los Padillas Comm. Ctr.	Pre-School	7	2
10/15/91	Matheson Park Elem.	2nd	50	10
10/16/91	Rio Grande Elem.	2nd	20	4
10/17/91	Home School Group	1st-5th	20	4
10/21/91	Matheson Park Elem.	3rd	50	10
10/24/91	Bear Canyon Sr. Ctr.	N/A	0	29
10/24/91	Rio Grande Elem.	5th	50	6
OCTOBER, 1991 TOTAL			271	78
11/08/91	Home School Group	1st-5th	12	5
11/11/91	St. Mary's	Kinder.	20	8
11/13/91	Emmerson	4th	20	5
11/15/91	Van Buren Middle	6th-8th	60	5
11/19/91	Zia Middle	6th-8th	15	2
11/19/91	Mitchell Elem.	4th	26	4
11/27/91	Cub Scouts	5th	7	2
NOVEMBER, 1991 TOTAL			160	31
12/03/91	Wilson Middle	6th-8th	55	6
12/05/91	Gov. Bent Elem.	2nd	20	5
12/10/91	Hawthorne Elem.	3rd-5th	15	3
12/12/91	Chelwood Elem.	Kinder.	20	7
12/13/91	Home School Group	1st-5th	8	3
DECEMBER, 1991 TOTAL			118	24

DATE	ORGANIZATION	GRADE	# OF STUDENTS	# OF NON STUDENTS
1/13/92	Jefferson Middle	6th-8th	8	2
1/15/92	Jefferson Middle	6th-8th	14	2
1/15/92	Boy Scout Troop	4th-5th	15	3
1/17/92	Jefferson Middle	6th-8th	12	2
1/21/92	Jefferson Middle	6th-8th	8	2
1/23/92	Navajo Elem.	1st,2nd,3rd	25	5
1/28/92	Ray Gabaldon Elem.	2nd	85	20
1/29/92	Monte Vista Elem.	3rd	15	5
1/30/92	Monte Vista Elem.	2nd	16	3
1/31/92	Longfellow Elem.		20	5
JANUARY, 1992 TOTAL			218	49
2/5/92	Mary Anne Binford Elem.	3rd	28	6
2/5/92	Albuquerque Academy	9th-12th	12	3
2/6/92	Washington Middle	6th	18	6
2/6/92	Montezuma Elem.	5th	28	4
2/11/92	Ernie Pyle Middle	7th-8th	50	20
2/14/92	A. Montoya Elem.	4th	60	10
2/17/92	Los Alamos Geol.Soc.			30
2/18/92	Alavarado Elem.	1st-2nd	45	10
2/18/92	Santa Fe High	9th-12th	15	1
2/19/92	Cub Scout Troop	2nd-5th	10	4
2/21/92	Lavaland Elem.	3rd-5th	55	10
2/25/92	East San Jose Elem.	3rd.	25	4
2/26/92	Inez Elem.	2nd	22	6
2/27/92	Rio Grande Elem.	2nd	40	8
2/27/92	Belair Elem.	3rd-5th	40	10
FEBRUARY, 1992 TOTAL			448	132
3/3/92	La Esquela Nueva	10th	14	4
3/5/92	Zia Elem.	3rd-4th	25	6
3/5/92	Corrales Elem.	3rd	30	6
3/6/92	Wislon Middle	8th	7	3
3/9/92	Clara Espinosa Elem.	4th	28	3
3/9/92	Our Lady of Fatima	2nd	19	7
3/10/92	Lowell Elem.	4th	35	4
3/11/92	Hubert Humphrey	2nd	27	6
3/11/92	Cub Scout Troop	2nd-5th	8	2
3/12/92	Valle Vista Elem.	1st	17	2
3/13/92	La Mesa Elem.	3rd	50	5
3/17/92	Alvarado Elem.	3rd	45	10
3/19/92	Caroll Elem.	4th	25	3
3/20/92	Wilson Mid School	6th-8th	9	3
3/25/92	Valley High School	10th-12th	30	5
3/26/92	Taft Mid. School	6th	16	4
3/27/92	Armijo Elem.	3rd-5th	11	2
3/30/92	Emerson Elem.	1st	40	10
MARCH, 1992 TOTAL			436	85
4/1/92	Kennedy Mid School	7th-8th	60	5
4/2/92	Valley High School	9th-12th	60	10
4/2/92	Monte Vista Elem.	3rd-5th	6	2
4/6/92	Rio Grande Elem.	3rd-5th	40	8
4/6/92	Highland High School	9th-12th	60	10

DATE	ORGANIZATION	GRADE	# OF STUDENTS	# OF NON STUDENTS
4/7/92	Monte Vista Elem.	4th-5th	24	1
4/8/92	Los Lunas Mid.School	6th	80	10
4/9/92	Santo Domingo Elem.	3rd	90	20
4/10/92	Laland Elem.	3rd	50	8
4/10/92	Carlos Rey Elem.	2nd	25	4
4/10/92	Los Ranchos Elem.	1st	60	10
4/14/92	El Durado Elem.	2nd	44	10
4/14/92	Santa Fe High School	10th	30	5
4/15/92	Mtn. View/Moriarty	2nd	80	10
4/21/92	Navajo Elem.	4th-5th	8	2
4/21/92	Apache Elem.	4th-5th	20	4
4/22/92	Onate Elem.	Kinder.	90	15
4/23/92	Kathryn Gallegos	5th	55	8
4/23/92	Navajo Elem.	1st	4	3
4/23/92	Navajo Elem.	5th	22	3
4/24/92	S.Y. Jackson	2nd	50	20
4/24/92	Monte Vista Elem.	2nd	20	2
4/29/92	Monte Vista	5th	24	2
4/30/92	Our Lady of Sorrows	6th	40	8
APRIL, 1992 TOTAL			1,112	180
5/01/92	Sombre Del Monte	2nd	50	8
5/01/92	Apache Elem.	2nd	60	10
5/04/92	Corrales Elem.	2nd	24	5
5/05/92	Pajarito Elem.	3rd-5th	22	5
5/07/92	Alamosa H.S.	9th-12th	12	2
5/08/92	Student Out Reach	9th-12th	40	6
5/08/92	Oroyo Del Oso	1st	44	9
5/11/92	Daniel Fernandez Elem.	5th	100	10
5/13/92	La Mesa	Kinder	60	10
5/13/92	Serendipity	pre-sch.	13	2
5/14/92	St. Charles	5th	27	2
5/15/92	Bandalier Elem.	4th	25	5
5/18/92	Queen of Heaven	3rd	27	5
5/19/92	Valle Vista Elem.	3rd.	23	4
5/19/92	Toadalena Mid. Sch.	8th	25	4
5/21/92	Onate Elem.	1st, 2nd.	40	4
5/21/92	La Luz Elem.	2nd.	28	6
5/22/92	Emmerson Elem.	3rd.	30	5
5/26/92	Dennis Chavez. Elem.	3rd.	55	10
5/28/92	Cochiti Elem.	1st.	22	5
5/28/92	Santa Clara Day School	pre-school	13	3
5/29/92	Laguna Elem.	2nd-3rd.	40	5
MAY, 1992 TOTAL			780	125
6/5/92	Bright Beginnings	1st-5th	60	8
6/9/92	Inez YMCA	1st-2nd	15	2
6/12/92	Emmerson Elem.	K - 1st	50	10
6/16/92	Lapetite Academy	1st - 5th	20	2
6/18/92	Lapetite Academy	1st - 5th	30	3
JUNE, 1992 TOTAL			175	25
GRAND TOTAL			4,065	790

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## VI. GRADUATE AND UNDERGRADUATE PROGRAMS

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## SUMMARY OF GRADUATE PROGRAM

The Department of Geology regards the education and training of graduate students as modern geoscientists, as important and integral teaching and research functions. Through classroom, laboratory, and field experiences, graduate students acquire the mentoring, expertise, and skills required to become successful professional geoscientists in a spectrum of employment opportunities, including industry, government, and academia. Although the Department has never been nationally known as a "factory" of academicians at the Ph.D. level, it is worthy of note that three of our recent graduates, Dr. Rodney Metcalf, Dr. James Faulds, and Dr. Mark Gonzalez, recently were appointed to tenure-track faculty appointments at the University of Nevada-Las Vegas, the University of Iowa, and the University of Denver, respectively. Individualized teaching opportunities in a broad range of undergraduate courses (from introductory physical geology laboratory sections to advanced field geology), participation in graduate level seminars, and the opportunity to present the results of their graduate research at professional geoscience meetings all further enhance interpersonal skills and abilities of graduate students to discuss their knowledge of and research in geoscience in a range of settings and situations.

During the Fall 1991 term, a total of 61 students were working toward M.S. and Ph.D. degrees in the Department of Geology, with 10 students entering the program in the Fall 1991 term (Table 1). Of the entire group, 24 were M.S. students and 37 were Ph.D. students. The number of full-time students was 47; the number of part-time (less than 6 hours/term with course work completed and in final stages of completing M.S. theses or Ph.D. dissertations) students was 14. The male/female ratio of M.S. students was 12/12 and 29/8 for Ph.D. students, with a total ratio of 41/20. With two (one man and one woman) students entering the program during the Spring 1992 term, there were no significant changes in the total graduate enrollment during this time period. A total of 8 M.S. degrees and 4 Ph.D. degrees were awarded by the Department in the 1991-1992 academic year, including the prior summer. During the summer and fall terms a total of 8 degrees, 2 Ph.D. and 6 M.S., were awarded. During the Spring term 2 M.S. and 2 Ph.D. degrees were awarded.

Over the past decade the Department has considerably improved its ability to support the full-time students enrolled in the graduate program. For the 1991-1992 academic year, an impressive statistic is that over 90 percent of the Ph.D. students in residence during the spring term were supported financially through the Department, mostly by teaching and research assistantships (Table 2, 3). One Ph.D. student (Tracey Cascadden) was supported by a Kelley-Silver Fellowship, and two (Charles Bryan and Amy Thompson) were supported as part-time staff members teaching sections of Physical Geology (G101). Over 75 percent of the M.S. students in residence during the Spring term were supported financially, again, mainly by teaching and research assistantships. Laurel Shastri was supported on a Kelley-Silver Fellowship, Judy Stoores by a full-time NSF Minorities Fellowship, Aurora Pun by a NASA research fellowship, and Katherine Harms by a U.S. Geological Survey traineeship. A list of all graduate students supported by assistantships or major fellowships is presented in Table 2. It is important to note that during the spring 1992 semester, the support provided graduate students from RA-ships (through faculty contracts and grants) significantly exceeded the support provided by the University through TA-ships. This is one way in which the Department's emphasis on research enhances our educational efforts.

In addition to major support provided through teaching or research assistantships or fellowships, many graduate students also obtained scholarships and minor fellowships through (1) donations by alumni and other friends of the Department; and (2) professional organizations such as the New Mexico Geological Society, the Albuquerque Gem and Mineral Club, and the American Geological Institute. Travel support for some graduate students presenting research papers at scientific meetings, such as the annual and regional meetings of the Geological Society of America and the American Geophysical Union, was also provided by the Department and through research grants to faculty and graduate students and awards from the UNM Graduate Students Association.

Both M.S. and Ph.D. students continue to receive special recognition and/or research grants from professional organizations and major funding institutions. Several students obtained external funding for their graduate research endeavors exceeding several thousands of dollars (see Research Grants and Contracts Section). These accomplishments during the past year speak for the professional growth of and national recognition given to graduate students and their respective programs in the Department. In addition, State of New Mexico Graduate Fellowships were awarded to Aurora Pun and Paula Stout; Jane Pedrick received a Regent's Fellowship, and full-year Association of Western Universities Fellowships were awarded to Kyle Gay and Judy Stoopes (for the 1992-1993 academic year). Several graduate students received University of New Mexico Student Research Allocation Committee funds to support their research and/or help defray the cost of attending professional meetings. The above accomplishments attest to the strong and growing level of professional activity within our graduate program.

Many graduate students were active in presenting papers, as part of their research efforts, at professional meetings, many of which are of national caliber, during the 1991-92 year. As well, research efforts of several students were published in professional, peer-reviewed journals and society guidebooks, and numerous students presented talks on their research at professional meetings. These observations, in combination with the nationally competitive student awards discussed above, further indicate the high level of professional activity by the graduate students in our program. These activities are stimulated by individualized support and training provided by faculty members and/or research scientists supervising the students and their research efforts. The Department maintains that these experiences, including visibility at national and/or international geoscience meetings, are necessary components of well-rounded, modern graduate education. All students receiving degrees during the 1991-1992 year either successfully obtained employment with consulting firms, state and federal geoscience agencies, or companies in the oil industry. Some M.S. students continued their graduate careers, both at UNM and elsewhere.

#### GRADUATE ADMISSIONS

A summary of the applicants and admission statistics for the Fall 1991, and Spring 1992, terms is provided in Tables 4 and 5, respectively. The total number of completed applications to the graduate program increased considerably from the 1990-1991 academic year (total of 63) to the past 1991-1992 year (total of 83, 73 for the Fall and 10 for the Spring). However, over the past several years, the Department has been witnessing a general stabilization of the prior trend of nation-wide decline in the number of applications to the graduate program: a total of 98 applications in the 1986-1987 academic year; 91 for 1987-1988; 65 for 1988-1989; 63 for 1990-1991; and 83 for 1991-1992. The trend for declining numbers of applications was not at all unique to our Department, New Mexico in general, and the nation as a whole and reflected the general, long-term economic slump in the mineral and petroleum industries, where the largest number of professional geoscientists have been historically employed. This translated immediately into fewer and fewer undergraduate majors in most geoscience departments across the country. Recent discussions by the head of the Department Graduate Committee with several colleagues employed in the petroleum industry or at earth science oriented institutions with strong long-term ties to the petroleum industry indicate that the trend will continue for several years into the future. For example, AMOCO laid off over one thousand professional geoscientists this past summer (1992) alone. On a brighter note, since Fall 1990, undergraduate enrollments in the geosciences across the country have increased at least in part because of improving job markets in the fields of hydrogeology and environmental geology. An increasing percentage of applications for the graduate program at UNM list either hydrogeology or environmental geology as principal fields of research interest.

Compounding the problem of the diminishing number of students who would potentially apply to the program are the relatively low salaries, often by several thousands of dollars per academic year, which we are able to offer potential teaching assistants at UNM, in comparison with numerous competing, peer institutions. The Department attempts to maintain an aggressive recruitment program involving (1) offers of one-time \$1,000 scholarships to supplement UNM financial assistantships and (2) travel support for top applicants for the Fall



term to visit the Department during the prior academic term. Funds for these endeavors are provided through generous donations by our alumni but are limited in amount. The program of a more aggressive financial approach to graduate applications has paid off and we hope that through increasing teaching assistant stipends and additional alumni support it will become even more aggressive. The total number of new students enrolling in our program has fluctuated over the past few years--14 in 1986-1987, 20 in 1987-1988, 19 in 1988-1989, 12 in 1989-1990, 8 in 1990-1991, and 12 in 1991-1992. The Department has successfully maintained a graduate population of about 55 to 65 for the past five years. We emphasize that competition for top prospective graduate students in the geosciences remains keen across the country; we have attempted to attract a greater population of top applicants over the past several years.

The high admission standards for applicants to our graduate program continues, despite the reduction in completed applications and our ability to offer nationally competitive financial aid packages. Applicants for the 1991-1992 academic year had an average undergraduate grade-point average (GPA) of 3.17 and average M.S. GPA of 3.68. The average undergraduate GPA is approximately constant for the past several years. The graduate GPA for students applying to the Ph.D. program has increased considerably over the past few years as has the overall quality of the PhD students in the program. The average GPA for students not accepted into the graduate program was 2.90. Average scores for the Graduate Record Exam, in both general and geoscience subject test, remain as high as in previous years.

As noted in the 1989-1990 Department report, during the summer, 1989, the Department sent a questionnaire to all students who had applied for admission into the graduate program for the Fall 1989 term yet, for one reason or another, did not attend UNM. The applicants were requested to provide a minimum of generic information, including whether they enrolled in a graduate geoscience program for the 1989-1990 academic year, whether they received some form of financial aid, and when they made a decision to enroll in the particular program of their choice. It is interesting to note that over 95 percent of the respondents received some form of financial aid from a graduate program; over 75 percent received minimally a two-year financial aid package!

During the past four academic years, the percentage of completed applications by underrepresented groups in the geological sciences, particularly women, has fluctuated but remains quite high: 18 percent in 1986-1987, 24 percent in 1987-1988, 31 percent in 1988-1989, 21 percent in 1989-1990, 25 percent in 1990-1991, and 33 percent in 1991-1992. The growing percentage of women applicants in part reflects the potential for mentoring and guidance by women faculty members in the Department but also indicates a significant increase in the number of women as active members of the geoscience community. The number of financial aid offers to women applicants has varied from four to eight over the past four years, and the financial aid acceptance ratio for women has increased during this period. Averaged over the past four years, the percentage of men and women accepting financial aid offers has remained roughly constant, at approximately 50 percent. The total number of members of underrepresented ethnic groups who accepted our admission offer into the graduate program remains low, with no more than two students during each of the past several years. Overall, this is a reflection of the very low numbers of members of underrepresented ethnic groups in the geosciences at present.

TABLE 1: Master's and Doctoral Students, Fall, 1991 - Spring 1992

## Masters Students

Appel, John  
 Bitner, Kelly  
 Daniel, Christopher  
 Davidek, Lon A.  
 Gay, Kyle  
 Goodspeed, Thomas  
 Groffman, Armando R.  
 Kendrick, Katherine  
 Lauffer, Franz  
 McKeown, Kevin  
 Meuret, Suzanne  
 Moose, Llewellyn  
 Mullally, Hope (Jacunski)

Paschall, Sallyann  
 Pun, Aurora  
 Ratcliff, Catherine  
 Rogers, John  
 Ruzika, Christine (Terhune)  
 Scott, Peter  
 Shastri, Laurel L.  
 Slavin, Paula  
 Stoores, Judy  
 Verhage Kathleen M.  
 Wiberg, Thomas L.  
 Wroblicky, Gregory

## Doctoral Students

Allen, Bruce  
 Bahar, Dana  
 Bryan, Charles R.  
 Bullard, Thomas F.  
 Callian, James T.  
 Cascadden, Tracey  
 Eberly, Paul O.  
 Eby, Raymond K.  
 Erskine, Daniel W.  
 Finch, Robert J.  
 Gonzales, Mark A.  
 Grubensky, Michael  
 Harlan, Stephen S.  
 Harrison, James B.  
 Hayden, Steven M.  
 Hunt, Adrian P.  
 Larsen, Daniel  
 Livaccari, Richard F.  
 Llorca, Jordi  
 Longmire, Patrick

Loomis, Jennifer  
 McDonald, Eric  
 Meyer, Grant  
 Miller, Mark L.  
 Mullally, Sean  
 Noll, Phillip D.  
 Pedrick, Jane  
 Servilla, Mark  
 Tashjian, Paul  
 Thompson, Amy G.  
 Treadwell, Carol  
 Ward, David B.  
 Watt, Paula  
 White, Christine A.  
 Williamson, Thomas E.

**Table 2. Graduate Students Supported by Teaching Assistantships (TA), Research Assistantships (RA), or Fellowships during the 1991-1992 Academic Year**

Masters Students

Daniel, Chris	TA,RA
Gay, Kyle	TA
Goodspeed, Thomas	TA
Harms, Katherine	U.S.G.S. Traineeship
McKeown, Kevin	RA
Meuret, Susanne	TA,RA
Moose, Llewellyn	TA
Mullally, Hope	TA,RA
Pun, Aurora	NASA Research Fellowship
Ratcliff, Catherine	TA,RA
Rogers, John	TA
Scott, Peter	TA
Shastri, Laurel	Kelley-Silver Fellowship
Stoopes, Judy	NSF Minority Fellowship
Terhune, Christy	RA
Wroblicky, Greg,	RA

Doctoral Students

Allen, Bruce	RA
Bahar, Dana	TA
Bryan, Charles	TA,RA
Cascadden, Tracy	Kelley-Silver Fellowship
Eby, Ray	TA,RA
Erskine, Daniel	RA,TA
Finch, Robert	RA
Grubensky, Mike	TA,RA
Hayden, Steve	TA
Larsen, Dan	RA
Livacarri, Richard	TA,RA
Llora, Jordi	RA
Loomis, Jennifer	RA
McDonald, Eric	RA
Meyer, Grant	RA
Miller, Mark	RA,TA
Mullally, Sean	TA
Noll, Phil	RA
Pedrick, Jane	TA,RA
Servilla, Mark	TA,RA
Thompson, Amy	TA
Treadwell, Carol	RA,TA
Ward, David	Dept. Technician Position
Watt, Paula	TA
White, Chris	RA
Williamson, Thomas	TA

Table 3. Summary of support for Department of Geology graduate students, 1991-92

Type of Support	Masters		Doctoral	
	Fall	Spring	Fall	Spring
Teaching Assistantship (FTE)	4.5	7.5	10.0	6.5
Research Assistantship (FTE)	2.0	2.5	10.0	14.5
Department Fellowship (Full-time)	1.0	1.0	1.0	1.0
External Fellowship (Full-time)	3.0	3.0	0	0
Departmental job (FTE)	0	0	1.5	2.5
Working outside Department (FTE)	4.0	3.0	7.0	6.0
Not supported or support unknown	9.5	7.0	1.5	0.5
Total students supported through Department	12	14	24	25

**TABLE 4: DEPARTMENT OF GEOLOGY-SUMMARY OF GRADUATE APPLICANT DATA, FALL, 1991****A. Applicants to Graduate Program (73 Completed Applications)**

	Men	Women	TOTAL	Minority	Foreign	GPA
Admitted	3	1	4	0	0	3.28
Not Admitted	6	0	6	-	1	2.54
Accepted	1	1	2	-	0	
Not Accepted	2	-	2	-	-	
TOTALS			10			
Additional Incomplete	2	0			2	

**B. Financial Aid Data (Teaching Assistantships and Fellowships)**

Aid Offered	1	0	0	0
Aid Accepted	1	0	0	0
Percent Accepting Offer	100	-	-	-

TABLE 5. DEPARTMENT OF GEOLOGY-SUMMARY OF GRADUATE APPLICANT DATA, FALL, 1991

## A. Applicants to Graduate Program (73 Completed Applications)

	<u>Men</u>	<u>Women</u>	<u>Total</u>	<u>Minority</u>	<u>Foreign</u>	<u>GPA</u>
Admitted	26	20	46	1	3	3.25
Not Admitted	20	7	27	0	12	2.90
Accepted Admission	8	4	11	0	2	3.21
Did Not Accept Admission	18	16	34	1	1	
TOTALS			73			
Additional Incomplete Applications	15	2	17	0	12	

## B. Financial Aid Data (Teaching Assistantships and Fellowships)

Aid Offered	9	8	17	1	0	
Aid Accepted	5	3	10	0	0	
Percent Accepting Offer	--	--	--	0	--	

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## GRADUATE DEGREES AWARDED

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The following students listed below received M.S. or Ph.D. degrees in Geology, Summer 1991 through Spring 1992.

### Master of Science

- Daniel, Christopher G.**, Spring, 1992 - "Metamorphic P-T Paths From the Aluminum Silicate Triple-Point Rocks of North-Central New Mexico," Dr. Jeffrey A. Grambling, Advisor.
- Katzman, Danny**, Summer, 1991 - "Hierarchy of Transgressive-Regressive Shorelines and Transgressive Deposits in the Upper Cretaceous Point Lookout Sandstone, Southwestern Colorado," Dr. Gary A. Smith, Advisor.
- Milligan, Darin J.**, Summer, 1991 - "Rubidium-Strontium Studies of Clay Minerals from the Salado Formation, Southeastern New Mexico," Dr. Douglas G. Brookins, Dr. Crayton J. Yapp, Co-Advisors.
- Morris, Robert W.**, Summer, 1991 - "The Petrology and Geochemistry of Pristine and Impact Melt Rocks from Apollo 14 Soil Fines," Dr. Crayton J. Yapp, Advisor.
- Pun, Aurora**, Spring, 1992 - "KAPOETA: Implications for the Regolith Evolution and Igneous History of the HED Parent Body," Dr. James J. Papike, Advisor.
- Royek, Teresa M.**, Summer, 1991 - "Soil Stratigraphic and Soil Geomorphic Studies in Eolian Deposits Mantling Late Pleistocene Basalt Flows, Cima Volcanic Field, Mojave Desert, California," Dr. Leslie D. McFallen, Advisor.
- Simpson, David T.**, Summer, 1991 - "Soils and Geomorphology of the Quaternary Alluvial Deposits on the Western Piedmont of the Ajo Mountains, Organ Pipe Cactus National Monument, Pima County, Arizona," Dr. Leslie D. McFadden, Advisor.
- Warner, Julie K.**, Summer, 1991 - "Crystal Chemistry, Alteration Effects and Annealing Characteristics of Samarskite," Dr. Rodney C. Ewing, Advisor.

### Doctor of Philosophy

- Eby, Raymond K.**, Spring, 1992 - "The Amorphization of Silicates by Ion-Beam Irradiation," Dr. Rodney C. Ewing, Advisor.
- Harrison, James B.**, Fall, 1991 - "Temporal and spatial variability of soils in the Cajon Pass Chronosequence," Dr. Leslie D. McFadden, Advisor.
- Longmire, Patrick A.**, Summer, 1991 - "Hydrogeochemical Investigations at an Inactive Uranium-Mill Tailings Site, Maybell, Colorado," Dr. Laura J. Crossey, Dr. Bruce Thomson, Co-Advisors.
- Miller, Mark L.**, Spring, 1992 - "Image Simulation of Partially Amorphous Zircon, ZrSiO<sub>4</sub>: Implications for the Interpretation of HRTEM Images," Professor Rodney C. Ewing, Advisor.

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## UNDERGRADUATE DEGREES AWARDED

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The following students received undergraduate degrees in Geology, Summer 1991 through Spring, 1992:

### Bachelor of Arts

Loneragan, Eileen C. - Spring, 1992  
Lotosky, Joan E. - Fall, 1991  
Lott, Michele L. - Summer, 1991

### Bachelor of Science

Bartos, Timothy T. - Fall, 1991  
Beserra, Troy B. - Fall, 1991  
Burkhard, Mark E. - Summer, 1991 (Departmental Honors)  
Doubrava, Matthew R. - Spring, 1992  
Knight, Lorri - Fall, 1991  
Turnbull, Trevor - Summer, 1991



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**STUDENT SCHOLARSHIPS AND RESEARCH AWARDS**  
**1991-92**

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**A. GEOLOGY ALUMNI FELLOWSHIP FUND****Geology Alumni Fund Scholarships:**

Dana Bahar	\$ 450.00
Dan Erskine	\$ 450.00
Tom Goodspeed	\$ 250.00
Katherine Kendrick	\$ 250.00
Dan Larsen	\$ 500.00
Rick Livaccari	\$ 150.00
Eric McDonald	\$ 150.00
Grant Meyer	\$ 450.00
Suzanne Meuret	\$ 150.00
Hope Mullally	\$ 150.00
Sean Mullally	\$ 250.00
Phil Noll	\$ 250.00
Jane Pedrick	\$ 150.00
Cathy Ratcliff	\$ 250.00
John Rogers	\$ 250.00
Mark Servilla	\$ 250.00
Amy Thompson	\$ 450.00
Tom Williamson	\$ 250.00

**HARRY AND MABEL LEONARD SCHOLARSHIP:**

Diana Crowson	\$ 600.00
Brian Horton	\$ 500.00
Stephanie Machr	\$1,000.00
David Martinez	\$ 400.00
Mitchell Schneider	\$ 100.00
David Schwarting	\$ 500.00
Mary Simmons	\$ 700.00
Andrew Smith	\$1,000.00
Jessica Smith	\$ 300.00
Kathryn Smith	\$ 700.00
Thomas Tagliaferri	\$ 150.00
Thomas Wickham	\$ 850.00

**GENERAL THOMAS CAMPBELL AWARD:**

Christopher Andronicos	\$ 900.00
Timothy O'Lear	\$ 900.00

James Drew Pfeiffer Memorial Award:

Brian Horton                      \$ 150.00

Jean-Luc Miossec Memorial Scholarship:

Grant Meyer                      \$ 400.00

Rodney Rhodes Memorial Award:

Dan Larsen                      \$ 150.00

Richard P. Vann Memorial Scholarship:

Tom Goodspeed                      \$ 550.00

Wengerd Traveling Fellowship:

Jennifer Loomis                      \$1,000.00

J. Paul Fitzsimmons Outstanding Sophomore (Estwing rock pick):

Sharman Lee Carpenter

Sherman A. Wengerd Outstanding Junior (hand lens):

Stephanie Maehr

Stuart A. Northrop Outstanding Senior (brunton compass):

Brian Horton

V.C. Kelley Outstanding Field Geologist (Estwing rock pick):

Mark Burkhard

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**FUND CONTRIBUTORS: 1991-92**

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**Caswell Silver Foundation**

Mr. David B. Givens  
Chevron Corporation - Matching Gift

**Chair Discretionary Fund**

Mr. Harry F. Schram  
Ms. Julia S. Berger  
Mr. Harry C. Bergquist  
Dr. Saleh M. Billo  
Mrs. Elaine S. Brouillard  
Mr. Eugene R. Caprio  
Mr. James S. Jameson  
Mr. Russell John Keenan  
Mr. J.G. Kuhn  
Mr. Pierre J. McKenzie  
Dr. James Lee Martin  
Noble Foundation - Matching Gift  
Mr. Michael W. Putnam  
Mr. Brian L. Salem  
Mr. and Mrs. Richard W. Simms  
Mr. C. P. True  
Major John D. Woytych

**Geology Alumni Fellowship**

Mr. Alexander A. Wanek  
Lee A. Woodward

**Geology EEE Fund**

Mr. Michael L. Davies

**Geology Museum**

Mr. Clarence Westbrook Cook  
Mr. and Mrs. George Fullas

**Wengerd Travelling Fellowship Fund**

Dr. Sherman A. Wengerd and Florence Mather Wengerd

**APPENDIX**  
**DEPARTMENTAL REVIEW REPORT AND FIVE-YEAR PLAN**

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**DEPARTMENT OF GEOLOGY**  
**REVIEW REPORT AND FIVE-YEAR PLAN**

**September, 1991**

**DEPARTMENT OF GEOLOGY  
REVIEW AND FIVE-YEAR PLAN**

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**OTHER DOCUMENTS**

1. Department of Geology information brochure
2. Department of Geology Annual Report, 1990-1991
3. Department of Geology Research Report, 1988-1989
4. Institute of Meteoritics information brochure
5. Institute of Meteoritics Annual Report, 1990-1991
6. Department/IOM facilities booklet

## 1. MISSION STATEMENT

As part of the largest research university of New Mexico, the main missions of the Department of Geology are to conduct research and other scholarly activities contributing to human knowledge, and to educate students at the undergraduate, Master's and Doctoral levels in the earth and planetary sciences. Research and teaching are regarded as being of equal importance; indeed, each complements and enhances the other.

Each faculty member is expected to maintain an active research program that includes dissemination of the results of the research to the academic and professional geological community through publications, presentations at professional meetings and symposia, and to participate in other scholarly activities, such as service in professional organizations and on state, national and international panels and committees. The research of some faculty members involves extensive use of many outstanding analytical facilities within the Department. Part of our research mission is to augment the University's expanding laboratory resource base (as emphasized in UNM's recent initiatives in establishing high-technology centers), and to make department facilities available to researchers and students across campus as part of a University-wide array of modern analytical laboratories, that serves as a focus for inter- and multidisciplinary studies.

In its educational programs, the faculty maintains a strong commitment to high-quality teaching. A broad range of undergraduate geology courses are offered in order to prepare students for careers as professional geologists, for graduate school, or as earth science teachers in public schools, and to educate non-geology majors in the basic principles and applications of the geological sciences. A major responsibility of the faculty is to train graduate students at the Master's and Ph.D. levels in advanced topics covered in course work and in the process and practice of carrying out independent research for careers in industry, government, and academia.

The Department also feels a special responsibility to the larger world outside of the University. The science of geology plays a special role in New Mexico, because most of the state's yearly revenue is derived from its geological resources, and most of its limited supply of water comes from subsurface rock strata. Geology faculty regularly serve on advisory panels or as consultants to numerous city, state, federal and private agencies involved in such subjects as radioactive waste disposal, land use and environmental impacts, and water supply in New Mexico. The Department's two museums educate thousands of members of the public annually, including many school classes. In these and many other ways, the faculty and research staff of the Department of Geology provide the people of New Mexico with a pool of professional expertise that serves in the development of the state's resources, preservation and wise use of its environment, and a better awareness of the world they live in.

## 2. UNIVERSITY OF NEW MEXICO DEPARTMENT OF GEOLOGY AND INSTITUTE OF METEORITICS

### Faculty and Research Staff

#### Faculty

##### Professor

- Roger Y. Anderson, Ph.D., Stanford, 1960
- \*Douglas G. Brookins, Ph.D., Massachusetts Institute of Technology, 1963
- Wolfgang E. Elston, Ph.D., Columbia, 1953
- Rodney C. Ewing, Ph.D., Stanford, 1974
- Cornelis Klein, Ph.D., Harvard, 1965
- Albert M. Kudo, Ph.D., California-San Diego, 1967
- James J. Papike, Ph.D., Minnesota, 1964 (Director, Institute of Meteoritics)
- \*Stephen G. Wells, Ph.D., Cincinnati, 1976
- Lee A. Woodward, Ph.D., Washington, 1962

### 3. DEPARTMENT ROLE AND STATUS WITHIN THE COLLEGE AND UNIVERSITY

#### Introduction

The Department of Geology is one of 20 departments within the College of Arts and Sciences. With 18 faculty in 1990-1991 (4.9% of the College total), the Department of Geology is about half the size of the largest department and ranks 10th in size within the College. Details of the Department's faculty, staff, facilities and other information are presented in tabular form in a questionnaire (Appendix 1), which has also been sent to 9 other geology departments at peer institutions for comparable data on their programs.

In a general sense, the Department contributes to the educational, scholarly and service functions of the College within the area of the geosciences. In addition, the Department interacts with other departments within the College (especially Chemistry and Biology), and with other units of the University (e.g., Center for High Technology Materials, Center for Microengineered Ceramics, Graduate Program in Water Resources Administration); see Section 7 for additional information. In maintaining considerable interactions with National Laboratories and with many other groups outside the University (see Sections 8 and 9), the Department of Geology aids the University in its mission to serve the public in the broadest possible sense.

#### Teaching

The Department of Geology's teaching productivity is indicated in Table 1. Teaching effort (CHE-weighted semester student credit hours for tenure-stream faculty) for lower division undergraduate courses represents 3.3% of the A&S total (rank=7); for upper division undergraduate courses it is 2.1% (rank=15); for graduate courses, 6.4% (rank=6). Total effort or productivity by the Geology Department amounts to 3.7% of the College total (rank=8). Percentages for total instructional effort (as opposed to tenure-stream faculty only) are a little higher, but the Department's ranking is somewhat lower within the College. This reflects the fact that the Geology Department utilizes non-tenure-stream faculty instructors to a lesser extent for its courses than virtually all other A&S departments. The low numbers for upper division undergraduate courses reflects the current paucity of undergraduate geology majors, a nationwide consequence of the continuing slump in the petroleum/mineral industries, traditionally the main employers of professional geologists. There are indications that upper division enrollment has begun to increase and the Department has responded positively to this situation as well (see Section 10). The comparatively high numbers and ranking for graduate courses is a consequence of the Department's traditionally strong efforts and emphasis on its graduate programs. Considering that most A&S departments (and all science departments, Geology included) require their majors to take courses in other departments, yet no other department requires geology courses of its majors, the Geology Department's total teaching productivity compares well with the efforts of most other A&S departments. Its ranking in total instructional productivity, for example, is higher than its ranking based on total number of faculty.

Sections 10 and 11 provide more information about Department of Geology undergraduate and graduate programs. Courses taught, instructors, and enrollments for the past three years are presented in Appendix 2.

#### Research

The Department of Geology has long been one of the most productive UNM departments in its research and other scholarly activities. In 1990, Department faculty, staff and students accounted for 5 books, 103 refereed papers, and 76 abstracts. Inclusion of Institute of Meteoritics research scientists raises the totals to 6 books, 119 refereed papers, and 103 abstracts. The number and types of 1990 publications are similar to that of previous years. Comparative figures were not compiled for other departments in the College, but the Geology Department's efforts rank at or very near the top in the College, in total numbers of publications and in publications per capita (faculty + research staff).



#### 4. ROLE OF THE INSTITUTE OF METEORITICS

The University of New Mexico Institute of Meteoritics, established in 1944, is the oldest institution of its kind in the United States. It became formally affiliated with the Department of Geology in the 1960s, and occupies part of the geology building, Northrop Hall. The research of the Institute extends far beyond the study of meteorites; it is actually an institute of planetary sciences, with study of planet Earth an important part of its interests. Current research activities indicate the breadth of the Institute's mission. These include: 1) Microbeam studies of lunar samples and achondrite meteorites (funded by NASA), 2) study of the origin of chondrites (NASA), 3) participation in the drilling of a deep exploration well in Long Valley, California (DOE), 4) participation in the drilling of a young igneous system at Katmai, Alaska, as part of the Continental Scientific Drilling Program (NSF), 5) study of the accretion and core formation of the Earth utilizing evidence from siderophile and chalcophile trace elements (NSF), and 6) geochemical and mineralogic characterization of tuff from the Yucca Mountain Project, Nevada (Sandia National Lab./DOE).

Although an administratively separate unit within the College of Arts and Sciences, with its own budget, staff of research scientists, and overhead return on grants and contracts it generates, the Institute and the Department share a symbiotic, synergistic relationship. The Institute's Director, James Papike, is a Full Professor on the Department faculty, and members of its research staff on occasion teach geology courses, advise and support graduate students, and serve on departmental committees. Graduate students studying in the Institute are enrolled in, fulfill the requirements of, and receive their degrees from the Geology Department. Laboratory facilities within the Department are shared and in some cases co-supported by the Institute and Department, and some were established with funding obtained cooperatively by both entities. A high degree of professional collaborative interaction occurs between members of the department and Institute in research, publication, raising grant funding, and other scientific endeavors. Functionally and perceptually (from the perspective of both the Department and Institute) the Institute of Meteoritics is an integral part of the Department of Geology, and the close association benefits both. In our opinion, this relationship is an excellent model of how institutes and academic departments should interact within the University.

See the Institute of Meteoritics Research and Graduate Programs brochure and Annual Report for more information.

#### 5. RESEARCH PROGRAMS

During at least the past three decades, the Department has attempted to balance and integrate the responsibilities of providing broad educational programs in the geosciences for undergraduate and graduate students, with the establishment and maintenance of strong and innovative research programs. As a medium-sized geology department, we have recognized that we could not be equally strong in every subdiscipline of the geological sciences. Thus, when new faculty positions became available, and at other times as well, the Department has given careful consideration to the areas or programs it should emphasize, both to carry out its educational functions and to develop its research strengths in selected areas where the possibility of building unique or distinctive programs was high. The current composition of the faculty and research staff reflects our past decisions on these subjects.

Presently, several clusters of three or more faculty/research scientists working in related areas represent major programs within the Department. The distribution of faculty and research scientists within these programs is indicated in Tables 2 and 3. In some cases, there are strong interactions between two or more programs, and some faculty members participate significantly in more than one program. The existence and excellence of these programs in the UNM Department of Geology is widely known nationally and in some cases internationally, and they attract the great majority of graduate students and visiting scientists who choose to study within the Department.

Table 2 (continued).

GEOLOGY DEPARTMENT/INSTITUTE OF METEORITICS PROGRAMS

MIN. & MATERIALS	STRUC./PRECAM. METAMORPHISM	METEORITICS PLANET. SCIENCE	OTHER
------------------	--------------------------------	--------------------------------	-------

## FACULTY

ANDERSON				
CAMPANA				
CROSSEY				
ELRICK				
ELSTON			VOLCAN./PLANET.	
EWING	MINERALOGY/MATERIAL SCI.			
GEISSMAN		PALEOMAG./STRUCTURE		
GRAMBLING		METAMORPHIC PET.		
HUESTIS				GEOPHYSICS
KARLSTROM		STRUCTURE		
KLEIN	MINERALOGY/PRECAMBRIAN	MINERALOGY/PRECAMBRIAN		
KUDO				
KUES				PALEONTOLOGY
McFADDEN				
PAPIKE	MIN./PETROLOGY		MIN./PETROLOGY	
WOODWARD		STRUCTURE/TECTONICS		
YAPP				

## SENIOR RESEARCH ASSOCIATE

BREARLEY	MIN./PETROLOGY		MIN./PETROLOGY	
JONES	MIN./PETROLOGY		MIN./PETROLOGY	
NEWSOM			PLANET. GEOCHEM.	
PERRY				
POTHS				
RIETMEIJER	MIN./PETROLOGY		MIN./PETROLOGY	
SHEARER	MIN./PETROLOGY		MIN./PETROLOGY	
SMITH				
WANG	CRYSTAL/MATERIAL SCI.			

## I. Structure/Precambrian Geology/Metamorphism

One focus of this program is the Precambrian metamorphic/tectonic history of northern and central New Mexico, including studies by Grambling and students on interactions between metamorphic fluids and rocks, the effects of minor elements on geothermometry and geobarometry, and the processes that formed the Proterozoic continental crust in the Southwest. Local and regional studies, involving Precambrian and younger rocks, with emphasis on structural and tectonic development of the Cordilleran over-thrust belt and associated mineral deposits have long been conducted by Woodward and his students. Paleomagnetic and rock magnetic studies of Precambrian and selected Phanerozoic terranes in the western U.S. by Geissman and students help to define their geodynamics and crustal deformation, and have applications to better defining the geomagnetic polarity time scale and apparent polar wander paths for North America. Karlstrom, who will arrive in January, 1992, has studied the stratigraphy and structural history of Precambrian rocks, as well as the processes of orogen formation and ductile deformation, for more than a decade, and is an ideal addition to this program. Klein, a mineralogist, also devotes much time to the Precambrian. For many years a member of the Precambrian Paleobiology Research Group centered at U.C.L.A., his research emphasizes the mineralogy, petrology, geochemistry and sedimentology of Precambrian iron formations world wide.

## II. Mineralogy and Materials Science

This program includes a wide variety of studies, including "classical" mineralogic and crystallographic research (e.g., complex Nb-Ta-Ti oxides, pegmatite minerals, Precambrian banded-iron formations, by Ewing and Klein), as well as studies of radiation effects in minerals and ceramics, alteration of uraninite in diverse geological environments, and corrosion and alteration of low-silica glasses (Ewing). Many of these studies have applications to issues related to nuclear waste disposal. A significant component of the research of the Institute of Meteoritics also falls into this program; for example, studies of the crystal chemistry and mineralogy of meteorites and lunar and terrestrial rocks, kinetic and phase transformations of mineral reactions in geological/cosmochemical processes, origin and thermal history of chondrites involving experimental petrology and modelling, geochemistry of the formation of the moon and asteroids, and mineralogy of fine-grained interplanetary dust in the earth's atmosphere. This program is equipment-intensive, utilizing a variety of analytical techniques, including x-ray diffraction, AEM, SEM, microprobe analysis and x-ray absorption spectroscopy.

Last year the Department was a lead participant in a University effort to establish an Institute of Materials Science. The effort was unsuccessful, but the Department continues to regard materials sciences as a program that should be expanded when resources allow.

## III. Institute of Meteoritics

The Institute, by virtue of its unique status as an administratively separate entity closely affiliated with the Department, is considered a departmental program, and is more fully discussed in Section 4 of this report. A main focus of Institute research is in meteoritics and planetary sciences, but much of this research falls within the disciplinary confines of the mineralogy/materials science, volcanology, and geochemistry programs.

## IV. Volcanology

Recently formalized as a discrete program within the Department, volcanology emphasizes research into the geologic results and causes of volcanic activity. It involves field and petrologic studies of volcanic and volcanoclastic rocks and the relationships of volcanic processes to the formation of geothermal and mineral deposits, especially in the Southwest. This program is particularly appropriate for UNM, as New Mexico contains a large number and great variety of Tertiary-Quaternary volcanic structures, some of them among the best examples of their kind in the world. The work of Elston and students has primarily concentrated on the mid-Tertiary large volcanic centers in the southwestern part of the state, especially in documenting these calderas and

## 6. LABORATORIES AND ANALYTICAL FACILITIES

The laboratories and analytical facilities of the Department of Geology and Institute of Meteoritics, representing a capital investment (at time of purchase) of nearly \$3 million, are an unusual and significant resource for the University. During the past 10 years there has been a considerable expansion of the laboratories and specially designed facilities. Table 4 summarizes relevant information about these facilities, and Appendix 4 shows their location in the geology building, (Northrop Hall). Few departments in the country have direct access to a similar array of instrumentation. The presence of these laboratories puts the Department at the center of several important University initiatives, such as the Center for High Technology Materials, the Center for Microengineered Ceramics, the proposed Materials Research Laboratory, and the proposed Science and Technology Center. The interdisciplinary use of our laboratories contributes numerous students for our courses (e.g., 85% of the students in our XRD course are from outside the Department), generates some funding for their operation, generates matching funds for the purchase of new equipment, and creates intellectual exchanges that can lead to exciting research programs.

Yet, with these benefits comes an enormous cost in operating expenses, a need for well-trained staff, and a demand for time required in the training of users and the supervision of the laboratories. The laboratories have expanded their user base without a parallel expansion of University support. The expectation from users outside the Department can be high, and the disappointment great, when laboratories fail to meet their needs. We are operating, in some cases, multi-user facilities without the recognition or support that is necessary and appropriate. Responsible faculty members and staff shoulder a large burden in raising funds to operate their laboratories, and at the same time must facilitate the use of the laboratories by users who are unable to provide adequate support (e.g., graduate students). For the most part, the instructional use of the laboratories is supported from research grants, clearly an inappropriate state of affairs. We have no way to amortize equipment and replace it in a rational sequence. We have no clearly defined policy on "outside" work or approved fees for that work.

The status and vigor of the research and instruction -- both within the Department and in other University programs -- that is based on our analytical facilities is of great concern. The Department's plan for its future gives careful consideration to this issue, and includes a series of recommendation relating to it.

## 7. INTERDISCIPLINARY PROGRAMS AND RESEARCH

Geology is an exceptionally broad science, in that it encompasses or strongly complements portions of other disciplines, such as chemistry, physics, biology, anthropology and engineering. Because of this, the research interests of many geologists have a decidedly interdisciplinary focus, and this is true of members of the UNM Department of Geology as well. The following discussion summarizes the interdisciplinary programs and research activities that members of the Geology faculty participate in.

### Programs

Quaternary Studies (Anderson, McFadden and formerly Wells). Chaired by R. Anderson, this is an interdepartmental undergraduate and graduate program for Quaternary Studies minors in the departments of Anthropology, Biology, Chemistry and Geology. This program brings together a variety of disciplines to aid in educating students about the past 2 million years of earth evolution.

Master of Water Resources Administration Program (Campana, Adjunct Professor J. Shomaker, and formerly Wells and Brookins). An interdisciplinary professional program (involving Arts & Sciences, Engineering, Law, Management, Architecture & Planning, and Public Administration) to train water managers and administrators. Geology 462 (Hydrogeology) is a core course in this Master's program. Campana and Adjunct Professor Shomaker are on the MWRA faculty.

Table 4 (continued): Facilities and Laboratories (continued)

	Anal.Chm.	ThinSec.	Quat.Std.	Pal.Mag.	Geo.Chro. <sup>e</sup>	ICP <sup>d</sup>
Capital cost (\$K)*	150	46	100	380	350	210
Year of purchase	82,90	82	81-87	81-89	85	89
Annual S&E budget (\$K)**	6	2	0.5	5-7		32
Service contracts (\$K)	none	none	none	none		18
% Instructional use (time)	25% <sup>b</sup>	18%	25% <sup>a</sup>	<5% <sup>b</sup>		10%
% Support from dept.**	none	20%	none	10%		10%
% Support from UNM**	none	none	none	none		none
% Support from user&P.I. fees***	100%	80%	80%	90%		90%
Staff****:						
number of persons	4	2	0	0		1.0
(UNM FTE total)*****	1.75	1.1	0	0		.35
#Users*****	50	50	10	8(40%)		12
Faculty time (hrs/wk)	none	1	3	15-20		

\*aggregate for facility at the time of purchase. Note, replacement cost increases at approximate rate of 5%/year.

\*\*operating budget including service contracts, does not include personnel.

\*\*\*includes user fees paid by faculty member responsible for laboratory or directly from P.I.'s research grants.

\*\*\*\*does not include faculty, but does include research scientists, research assistants, part-time workers.

\*\*\*\*\*this is the maximum funding level by UNM for positions in these labs; but does not reflect other duties.

\*\*\*\*\*includes "hands-on" users, as well as those for whom work is done.

<sup>a</sup>includes use of laboratory for thesis work.

<sup>b</sup>includes only time related to course work.

<sup>c</sup>same two people as in the EMPA lab.

<sup>d</sup>new laboratory, estimates for first year.

<sup>e</sup>estimates not available due to death of Professor Bookins

others, presently collaborating in a massive environmental restoration program at LANL.

#### D. Brookins

Interacted on large scale for many years with researchers at LANL and SNL and researchers and students in Biology, Civil Engineering and Chemical and Nuclear Engineering. Served on student committees in the aforementioned departments. Co-taught courses with B. Thompson (Civil Engineering) and in the MWRA Program. Was Geology representative to WERC's Education Committee.

#### S.G. Wells

Was active in Quaternary Studies Program and Master of Water Resources Administration Program. Involved in unofficial effort between the Quaternary Studies Program and Office of Contract Archaeology.

### Interdisciplinary Initiatives

This past year the Geology Department, with support from the Dean of A&S and the Provost, led an important initiative to establish an Institute of Earth Materials and Materials Science at UNM. This institute would have been highly interdisciplinary, involving the Chemistry Department, School of Engineering, and Center for Micro-engineered Ceramics, and would have established new faculty, facilities and programs in Materials Science. The Institute was to have been headed by Dr. Alexandra Navrotsky, currently chairperson in the Department of Geology and Geophysics at Princeton. The initiative was very nearly successful (see also discussion in Annual Report).

## 8. INTERACTIONS WITH NATIONAL LABORATORIES

Members of the Department of Geology interact with all of the National Laboratories, but especially with Los Alamos (LANL) and Sandia (SNL) National Laboratories, situated in New Mexico. These laboratories conduct research in several areas of geology and materials science, and the expertise of their scientific personnel is a great resource for the State, University and Department. Interaction between LANL/SNL and the Department is considered highly desirable and mutually beneficial, and the Geology faculty has an extensive record of collaboration with scientists at these and other national laboratories (see Appendix 5). Several LANL and SNL scientists are Adjunct Professors in the Department.

In brief, 18 faculty/research staff members have interacted with 18 U.S. and foreign laboratories. These collaborations have brought in some \$2.9 million in direct research support. In addition, important access to advanced instrumentation has been made possible. Future collaboration involving LANL, SNL and UNM and other national/international laboratories will enrich our academic programs and provide vital partnerships to address national initiatives in energy independence and the environment.

In addition to the broad range of research interactions between Geology faculty and the National Laboratories, the Department has sought successfully to utilize the expertise of LANL and SNL scientists in our educational programs. Laboratory personnel have been members of several graduate student committees within the Department, and some students have utilized National Laboratory analytical facilities for part of their thesis and dissertation work. About a half-dozen geology students have been hired by National Laboratories immediately upon completion of their graduate studies, within the past 5 years.

In recent years, National Laboratory scientists have also participated directly in the teaching of Geology courses. For example, during the Spring 1991 semester, Dr. Charles Harrington (LANL) taught a graduate course in geomorphology (Geol.-516), and two volcanologists from LANL are participating with Department Senior Research Associate Dr. Gary Smith in a seminar on explosive volcanology during the Fall 1991 semester. The newly established volcanology program within the department will involve strong participation of four

The number of undergraduate Geology majors currently stands at about 50 to 60, down from more than 150 in the early 1980s. Dwindling numbers of geology majors and declines in enrollment in courses taken by majors have been a source of concern to the Department, and it has responded with several initiatives. Establishment of a new, more flexible B.A. program, involving several new courses (G-300, a topics course with changing subjects designed for public school teachers; and G-321 and G-322, a one-year introductory mineralogy-petrology sequence) have attracted additional students, some of whom have become majors, into the Department. These students will begin graduating with Bachelor's degrees in the next 2-3 years.

Enrollment in the entry-level B.S. course, G-301 (mineralogy) has increased dramatically this semester (Fall 1991), even with the B.A. mineralogy course being conducted concurrently. This suggests that the number of students who will eventually graduate with a Bachelor's degree in Geology will likewise rise significantly in the next few years. Current enrollment levels in G-301 (25-35 students) are about optimal, in terms of providing students with high levels of interaction with instructors and access to mineral specimens and microscopes. This trend of larger enrollments in 300-400-level courses for majors will continue as students currently in the mineralogy courses advance into subsequent geology courses.

One of the hallmarks of the undergraduate B.S. program is a significantly improved emphasis on field-oriented study of a range of geologic processes. In particular, over the past few years the undergraduate field geology program, traditionally the final component of a core geoscience curriculum, has been strengthened into a rigorous, comprehensive summer course of about seven weeks duration. One indication of the program's success is the fact that several students from other institutions have participated in the two field courses. The program could be further improved through the involvement of additional faculty. This would expose students to a broader range of interests and expertise in the geological sciences, as well as allow them to directly observe and benefit from scientific interactions among numerous instructors.

The Department offers numerous 100-200 level courses for non-majors, based on the conviction that every educated person should be aware of the many ways in which geologic processes influence their lives, and of the unique perspectives and principles of the science of geology. Most students enrolled in these courses are fulfilling science group requirements in the College of Arts and Sciences, but the courses also attract students pursuing B.A. degrees and minors in Geology, and some from related disciplines such as chemistry, biology, anthropology and engineering.

New lower-division courses introduced over the past four years, such as G-211 (Dinosaurs and their world), G-255 (New Mexico field geology), and G-263 (Geology of National Parks), have proven to be successful. G-255 in particular introduces students who are undecided as to their major into geology field studies at an elementary level, and has encouraged some students to take additional geology courses. In concert with University initiatives, the Department has made an effort to schedule some of these courses at evening and weekend times.

Each faculty member teaches at least one 100-200 level course per year, in addition to courses for undergraduate majors and graduate students. Only a small percentage of courses offered by the Department are ever taught by non-faculty.

A list of undergraduate courses offered by the Department, and requirements for B.S., B.A., and Minor degrees in Geology, is given in Appendix 7.

TABLE 6. Number of graduate degrees awarded, 1986-1990

	1986	1987	1988	1989	1990	Current Enrollment (Spring, 1991)
Master's						
Male	10	5	9	8	3	13
Female	3	2	3	3	3	18
TOTAL	13	7	12	11	6	31
Doctoral						
Male	0	1	3	4	7	29
Female	0	0	2	0	0	5
TOTAL	0	1	5	4	7	34

TABLE 7. Geology programmatic choices of graduate students who have received degrees in the past 5 years (1986-1990), and of current graduate students.

<u>Program</u>	1986-90 Degrees	Spring 1991 Students	New Students Fall, 1991
Structure/Prec./Metamorph.	15	13	1
Mineralogy/Material Sci.	3	4	-
Meteoritics*	11	2	2
Volcanology	11	7	3
Geochemistry	5	11	-
Quaternary Studies	15	14	4
Basin Studies**	5	3	-
Other	1	4	-

\*Students working in the Institute of Meteoritics (i.e., main thesis advisor was Director of Institute) completed theses on meteoritics, planetary sciences, and in the mineralogy/materials science, volcanology, and geochemistry programs.

\*\*Basin studies was not a formally defined program; these theses are mainly in the field of stratigraphy-sedimentology.

## 12. FIVE-YEAR PLAN

### Introduction

The Department of Geology is in a state of transition. In Spring 1989 its faculty numbered 18. Three of these had resigned and departed by the end of 1990 (Wright, Keil, Mawer); two have been replaced (by Elrick and Papike), with the third (Karlstrom) scheduled to arrive in January 1992. A new faculty position in hydrogeology was filled (by Campana) in 1989. In Spring 1991 one Full Professor resigned (Wells) and another died (Brookins). A third Full Professor (Elston) is scheduled to retire by the end of the 1991-92 academic year. Since Spring 1989 the Department has had three different Chairpersons. The Department, in concert with Dean



to create new departmental labs.

#### Outline of Five-Year Plan

Under normal conditions, a department such as Geology, with a strong record of research, external funding, and other scholarly activities, and excellence in its graduate and undergraduate programs, could anticipate enthusiastic support from the University and perhaps even modest expansion. However, in view of the present conditions of diminished resources within the College, the Department's plan for the next five years is based on the assumption of no growth. The components of the plan, taken together, require no additional support from the University beyond what the Department was receiving in Spring 1991. We recognize that because of the Reallocation process, delay in implementing some parts of the plan may be necessary. Discussion of various elements of this plan follows this outline.

- I. The Department of Geology intends to change its name to the Department of Earth and Planetary Sciences.
- II. Faculty
  - A. The two currently vacant, Full Professor faculty positions (Wells, Brookins) should be filled as soon as possible (to begin Fall, 1992) by:
    1. A field-based, broadly trained geomorphologist at the advanced Assistant Professor or Associate Professor level.
    2. An isotope geochemist at the Assistant Professor level.
  - B. The Full Professor position that will be vacant upon the retirement of Elston by June 1992 should be filled by an environmental geochemist, at the Assistant Professor level, to begin in Fall, 1993.
  - C. Decisions on filling faculty positions beyond the three noted above, which might become vacant due to retirement or departure, would depend on the discipline represented by the departing faculty member and its importance to the Department's research and educational programs.
- III. Facilities and Research Staff
  - A. With the exception of the AEM Lab, the instructional component of our analytical laboratories is currently unsupported by the University, despite the fact that these labs serve the University as a whole, particularly in high-technology programs, and much of the instructional time and cost commitments are for students from outside the Department of Geology. These laboratories require a total of \$25,000 per year additional funding (the instructional costs), either in support directly from the Provost's office or as an addition to the Department's S&E budget.
  - B. The Department has a vacant 0.5 FTE position for an electronics technician. Formerly this person was shared with the Biology Department, but the position has been vacant for more than a year. The departmental analytical facilities are extensive enough to require a full time technician. We request support for an additional 0.5 FTE for an electronics technician, and authorization to search for and hire a full-time (1.0 FTE) technician.
  - C. Depending on how and when vacant faculty positions are filled, the Department will carefully evaluate its other research staff positions and consider reallocating parts of some positions to duties of currently higher priority.
  - D. Over the longer term, timely replacement of older analytical instruments with more recent models will become a necessity if modern research is to continue in these laboratories. Replacement will depend not only on funding raised by Geology faculty, but also on necessary support from the College and University in the form of matching funds. This fruitful combination of support allowed the original acquisition of many of the instruments currently

University benefit from the process of nourishing the developing careers of young faculty, and from their identification with UNM as their stature and recognition grows. Thus, although the loss of three Full Professors within a year will temporarily set the Department back, we believe that filling their positions with junior faculty will ultimately result in a strengthening of our research and educational programs.

- B. Replacement of Wells with another geomorphologist is essential to maintaining the quality and integrity of our Quaternary Studies program. Geomorphology is a central discipline within Quaternary Studies, in that it integrates all of other components of the program, and was the core around which our program was originally built. Few programs at other universities offer the distinctive blend of geomorphology, hydrogeology, soils studies, paleoclimatology and environmental geology that characterizes the UNM Quaternary Studies program, and its national reputation has attracted a large number of excellent graduate students, and considerable external funding, in recent years. Filling this position at the advanced Assistant or Associate Professor level would bring someone with a proven record of research and funding, who would rapidly integrate into, and relatively quickly begin to advance the program. Filling this position as soon as possible is the Department's highest priority among the vacant and soon-to-be vacant faculty positions.
- C. Filling the second vacant position with an isotope geochemist will expand the Department's expertise in geochronology and in addition add capabilities in high-temperature geochemistry, with applications in fundamental problems of crust-mantle interactions, volcanogenic processes, and related areas. Such a geochemist would interact with and complement present research programs in structure/Precambrian geology/metamorphic geology, in the Institute of Meteoritics, and in volcanology. This person would assume direction of, and immediately put to use, the large, well-equipped geochronology lab in the Department, and would eventually, as resources permitted, expand its capabilities.
- D. The Department's decision to add an environmental geochemist when Elston retires is based on recognition that environmental geology is perhaps the most rapidly expanding field in the geosciences, promises to be exceptionally well funded in the foreseeable future, and is broadly interdisciplinary in its interests. An environmental geochemist working in the low-temperature regime would integrate well with the two other geochemists on our faculty (Yapp and Crossey), and in addition would add to the breadth and research capabilities of an already strong Quaternary Studies Program. Research collaborations with our hydrogeologist (Campana) would likely be especially strong.
- E. Choosing not to replace Elston with a volcanologist does not imply any lack of enthusiasm by the Department for that program. As noted above, Elston will continue in the Department as Director of the volcanology program, and will occasionally teach courses. The participation in this program of Kudo and Smith, as well as several of LANL's superb group of volcanologists and possibly the new isotope geochemist, will ensure the health of volcanology at UNM.

### III. Laboratories and Analytical Facilities

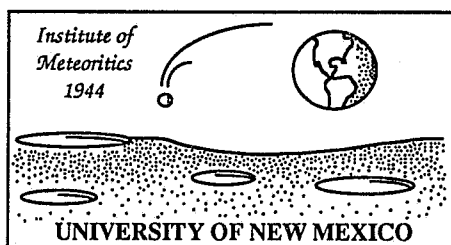
The Department's analytical facilities and laboratories complement and enhance the University's current investment in high-technology facilities and programs, are widely used by researchers and students outside the Department of Geology and function as multi-user, highly interdisciplinary resources. However, support for these laboratories largely comes from the Geology faculty (grant funds and user fees). There is little University support (with the exception of the AEM lab), despite the fact that approximately 20-25% of their use is devoted to instructional purposes, a significant percentage of which is for students outside the Department.

The University has given every indication that it places high priority in the achievement of excellence in several fields, such as materials science, which are interdisciplinary, utilize state-of-the-art analytical facilities, and include research strongly related to or coincident with that being conducted in

students who study here, the University as a whole, and the state and people of New Mexico are well served by the diverse scientific, educational, and public-service endeavors of the Department. Over the next five years, the Department will probably not grow significantly in number of faculty and research scientists, but it will change in important ways. Changes can be challenging and temporarily disrupting, but they also offer the opportunity for introspection, for some reconfiguration, and ultimately, with modest support from the College and University, for broadening and enhancing our ability to contribute significantly to the University's scholarly, educational, and public missions.

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**The Annual Report Of**  
**THE INSTITUTE OF METEORITICS**  
**July 1, 1991 through June 30, 1992**



**James J. Papike, Director**  
**Rhian Jones, Coeditor**

**Institute of Meteoritics**  
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## INTRODUCTION

The Institute of Meteoritics (IOM) was founded in 1944, and is one of the oldest institutions of its kind in the world. The Institute continues its role as a leading center in research and in the teaching of meteoritics, cosmochemistry and planetary sciences. Charter goals of the Institute of Meteoritics are:

1. To promote the identification and acquisition of meteorites. To participate in such exchange programs as may enhance the representative scope and scientific value of the Institute's collection of meteorites.
2. To preserve and place on public exhibition both meteorites and related meteoritic materials and to make these materials available to scientists working in fields closely allied to meteoritics.
3. To carry out research in the detailed laboratory analysis of meteoritic and other planetary materials and in other fields of planetary and geologic sciences.
4. To provide materials, facilities, and supervision for research by candidates for advanced degrees in geology and in other fields.

Research at the Institute of Meteoritics covers a wide range of problems, including studies of geological processes on meteorite parent bodies, the Moon and the Earth. Our research is aided by collaborations with investigators at other universities and at national laboratories. Microbeam analytical techniques (electron microprobe, scanning electron microscope, transmission electron microscope, ion microprobe) constitute the most important tools for this research that are available at UNM. Other important techniques for trace element geochemical analyses that are supported by IOM include inductively coupled plasma-mass spectrometry (ICP-MS) and instrumental neutron activation analysis (INAA). This academic year has been exciting with rapid developments in the progress of the UNM-Sandia National Laboratories SIMS (ion microprobe) facility taking place. This is described in more detail on p. 32. This facility will provide state-of-the-art capabilities for in situ trace element analysis of geologic materials, and a high demand for instrument time is anticipated from research groups throughout the country. Another significant improvement in our analytical facilities is the completion of the ICP-MS laboratory which is now fully operational.

Teaching activities of the staff of IOM consist of both formal courses and informal meetings with graduate students. We emphasize the direction and supervision of graduate student research and encourage presentation and publication of the results of this research at an international level.

The Meteorite Museum continues to play an important role in our educational efforts. Our recent acquisition of a spectacular specimen of the Navajo iron meteorite stimulated considerable interest from the press and public (see Appendix), and several school groups requested tours of the Museum and research laboratories.

Staff members of the Institute were asked to serve on influential national committees and editorial boards (p. 45), an indication of our personnel's reputation among the scientific community. Also, staff members participated in several committees within both the University and the Department of Earth and Planetary Sciences (p. 41).



**INSTITUTE OF METEORITICS FACULTY AND STAFF****Director, Institute of Meteoritics**

Dr. James J. Papike, Regents Professor of Earth & Planetary Sciences

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Greg Brittelle  
Stephanie Maehr

**SEPARATIONS FROM STAFF**

Dr. Craig Schwandt, August 31, 1991  
Anna M. Smetana, March 13, 1992

**ADDITIONS TO STAFF**

Dr. Graham Layne, July 1, 1992

## IOM PERSONNEL

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Standing left to right: Jim Connolly, Deb Spilde, Chip Shearer, Adrian Brearley, Rhian Jones and Tom Servilla. Sitting left to right: Horton Newsom, Aurora Pun, Phil Noll, Mark Servilla, Jim Papike and Mike Spilde. Front: Grant Fowler

Photograph taken by Ken Nichols. The remaining staff and graduate students, Graham Layne, Sarah Coulie, and Jordi Llorca were unavailable for the photograph.

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ORGANIZATIONAL CHART  
INSTITUTE OF METEORITICS  
DEPART. OF EARTH AND PLANETARY SCIENCES  
UNIVERSITY OF NEW MEXICO  
FY 92/93

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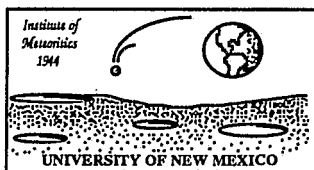
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G. LAYNE, MANAGER
TECHNICAL SUPPORT
K. NICHOLS, PHOTOGRAPHER
T. SERVILLA, PREPARATOR

SECTION I  
RESEARCH



## I. RESEARCH

Research activities of staff and students of the Institute of Meteoritics cover a wide range of topics, mostly aimed at understanding the origin and early history of our solar system and the evolution of the planets. More specifically, we have major research initiatives to investigate the igneous evolution of achondrite meteorites and the Moon, and research into an understanding of early solar system processes through the study of chondritic meteorites. The large scale problems of planetary evolution and core formation are being investigated using evidence from siderophile trace elements in the Earth and Moon. Research into planetary volcanic systems is being carried out on samples from Long Valley Caldera, California and Katmai, Alaska. The geophysical properties of the Earth's upper mantle are the subject of an experimental study. Mineralogical and geochemical studies of the Yucca Mountain, Nevada, proposed nuclear waste repository are also being performed.

Our research during the report period has resulted in the publication of 26 scientific articles in major national and international journals (p. 18), as well as in the publication of 38 abstracts of papers presented at national and international conferences (p. 20). The extensive involvement of students in original research projects in the Institute of Meteoritics is particularly important for their education and advanced training. Specifically, students were co-authors on three major scientific articles and presented six professional talks and one poster at national and international meetings.

We continue to be very successful in attracting research grants and contracts to the Institute of Meteoritics in support of the research activities of staff and students. Details are provided in Tables I-III (pp. 15-17). Funding was provided by the National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF), Department of Energy (DOE), and Sandia National Laboratories (SNL).

## 1. Specific Projects

### a. Microbeam Studies of Lunar Samples and Achondrite Meteorites (Funded by NASA)

The modern explosion of trace element geochemistry has resulted in a much better understanding of petrogenetic processes in the Earth, Moon, and meteorites. With the introduction and advancement of trace element microbeam technologies, the analysis of minute volumes in situ on petrographic thin sections increases the scope of this trace element revolution in the geological sciences. Our ongoing microbeam study of planetary materials combines ion- and electron-microprobe techniques focusing upon four major areas: (1) calibration of microbeam instruments for lunar and meteorite materials, (2) trace element studies of volcanic glass beads, (3) trace element studies of lunar pyroxenes, and (4) trace element studies of pyroxenes in howardite, eucrite, and diogenite (HED) meteorites.

Interpretation of these trace element data has produced new insights into the processes of lunar basalt generation. New data for volcanic glass beads and crystalline mare basalts provide a much better understanding of the crystallization history of mare basalts, the source of mare basalts, lunar mantle processes, and the relationships among mare basalts.

This past year we have emphasized two aspects directly related to the petrogenesis of HED meteorites. These studies involve the origin of olivine diogenites and their relationship to basaltic magmatism on the eucrite parent body and a comparison between a "unique" eucrite clast from the Kapoeta Howardite and the Pasamonte eucrite. In addition, we have also initiated a project involving the crystallization conditions and dynamics of the Zagami shergottite.

### b. Origin of Chondrites (Funded by NASA)

Chondritic meteorites are among the most pristine extraterrestrial materials available for study in the laboratory. The principal components of chondritic meteorites are chondrules (millimeter-size spherules of silicate material) and matrix (an ultrafine-grained assemblage of silicates, oxides, sulfides, and carbonaceous material). The study of such components provides important insights into processes occurring as the planets, comets, and asteroids formed from the cloud of interstellar dust and

gas, the solar nebula. Our overall aim is to integrate these observations with current astrophysical data to develop a viable model for the early solar nebula.

Specific questions relating to the origin of chondritic meteorites which we are currently addressing are: (1) How and under what conditions did chondrules and matrix form and in what location in the nebula? (2) How were chondrules and matrix processed in the solar nebula after their formation? (3) How much and what type of presolar material is preserved in fine-grained matrix material? (4) How were chondrules and matrix affected after accretion by parent body processes such as thermal metamorphism, aqueous alteration, and brecciation? (5) What were the physical conditions and mechanisms of these metamorphic processes?

Our studies of ordinary and carbonaceous chondrites use a combination of petrographic studies, electron microbeam techniques (SEM, EMP, and STEM) and SIMS analysis of mineral compositions, as well as experimental and isotopic studies.

#### **c. Long Valley Scientific Drilling Program (funded by DOE)**

Caldera-related deposits have been an important facet in our understanding of magma reservoirs, crustal melting events and hydrothermal systems. The Long Valley-Mono Craters volcanic complex is probably one of the best studied of these deposits. It is the most active major silicic system within the continental United States. The last major eruption of the system occurred only 550 years ago, and minor eruptions may have occurred as recently as 100 years ago. Present tectonic activity suggests a rejuvenation of the magmatic system. The main objective of this research is to study the state and evolution of the magmatic-hydrothermal system in Long Valley. We have focused upon three aspects of this system.

- Compositional and mineralogical zoning of the intra-caldera Bishop Tuff as a recorder of both eruptive dynamics and magma chamber evolution (SIMS trace element analyses of phenocrysts and melt inclusions)
- Intrusive activity under the resurgent dome (analyses of intrusions sampled by drilling).
- Nature and evolution of hydrothermal fluids and their impact on mineral fluid interaction (S and Pb isotope systematics and trace element analyses of sulfides by SIMS; TEM analysis of phenocryst alteration.)

Our research, thus far, has emphasized portions of the system sampled by Phase I and II of the Magma Exploratory Hole LVF51-20. The first phase of the Magma Exploratory Hole on Long Valley Caldera's resurgent dome reached 839 m depth in 1989. Phase II drilling, to a depth of ~2300 m, was completed in Fall 1991. The hole is planned for a final depth of 6 km, in the vicinity of the caldera's central magma chamber. The history of this chamber is recorded by surface eruptive and presumably by a subsurface array of intrusions and frozen chamber remnants. The first phase of drilling encountered a swarm of five such igneous units (or perhaps intersected five segments of the same irregular body) from 625 m to 829 m, intruded into welded and devitrified Bishop Tuff.

Continued textural, electron microprobe and ion microprobe studies of both primary magmatic phases and hydrothermal phases will allow us to reconstruct the magmatic and hydrothermal history of the Long Valley Caldera.

**d. Katmai, Alaska, Scientific Drilling Program (Funded by NSF)**

Drilling observations in a simple, young igneous system soon after its emplacement would greatly improve the understanding of magmatic and hydrothermal processes and of the rates at which such processes operate. As part of the Continental Scientific Drilling Program (CSDP), a program of coring and closely related research will be initiated to investigate active silicic igneous processes at the site of the historically important 1912 eruption at Katmai, Alaska. Primary objectives of the project are to: (1) test and improve physical and chemical models for silicic eruptions through three-dimensional investigation of a well-preserved ash-flow sheet/vent system; (2) determine the source, mechanisms, and conditions of the fumarolic transport of metals that occurred following ash-flow emplacement by means of geochemical profiles through a system not yet degraded by weathering or alteration; and (3) establish the rates and mechanism of ongoing cooling through measurement and interpretation of equilibrium temperature profiles and hydrothermal mineral assemblages in core holes within a simple system of known very young age.

Katmai is uniquely suited to achievement of these objectives because the 1912 activity was a single, well-described volcanic event in a simple, uniform geologic setting. Moreover, vent structures have not been modified by the large-scale



collapse that normally accompanies eruptions of this magnitude. The observations will provide the first view of early post-emplacement conditions in a major igneous system. Results will be applicable to assessing the course and hazards of explosive eruptions, understanding factors controlling ore formation, and predicting the lifetime of heat sources in the crust.

IOM personnel are involved in this important project through geochemical, mineralogical, and petrological study of surface samples (collected in summers 1989 and 1990) and core materials (planned to be collected in the summer of 95 and 96), emphasizing microbeam techniques. J.J. Papike, Director of IOM, is one of three principal investigators and currently is involved in preparing the operations plan for research drilling at Katmai, and in providing information for an Environmental Impact Statement that is in preparation.

**e. Accretion and Core Formation in the Earth: Evidence from Siderophile and Chalcophile Trace Elements (Funded by NSF)**

Important clues to early processes in the Earth are found in the depletions of siderophile (affinity for Fe-metal) and chalcophile (affinity for sulfur) elements. These depletions retain a record of the processes of accretion and core formation in rocks postdating these early events, because the major fractionation of siderophile and chalcophile elements from the lithophile (affinity for oxygen) elements ceased following core formation. We are investigating the accretion of the Earth and the separation of the Earth's core and crust from the Earth's mantle by analyzing samples from different geochemical reservoirs, using radiochemical neutron activation analysis for the moderately siderophile and chalcophile trace elements Mo, W, As, and Sb. Determining the abundances and depletions of these elements in samples from terrains of different geological ages provides information on the timing of core formation in the Earth. The metal/silicate partition coefficients for As and Sb are also being determined for use in theoretical modelling of accretion and core formation.

The fractionation of these metallic elements between the Earth's mantle and crust is another aspect of this project. Preliminary results indicate that the variable enrichments of the elements Pb, As, Sb, and W in different mantle and crustal reservoirs are due to the involvement of hydrothermal processes during the

formation of the continental crust. We are, therefore, investigating differences in the geochemical behavior of these elements during the process of crustal formation in volcanic arcs compared to ocean island and mid-ocean ridge volcanism.

**f. Geochemical and Mineralogical Characterization of Tuff and Related Rocks from Yucca Mountain, Nevada (Funded by Sandia National Laboratories/DOE)**

The Yucca Mountain Site Characterization Project of the U.S. Department of Energy (DOE) is concerned with evaluation of the Yucca Mountain site as the host for a proposed commercial high-level nuclear waste (CHLW) repository. The site is located about 90 miles north of Las Vegas, Nevada, in the vicinity of the Nevada Test Site. The project is now in the site characterization phase in which the suitability of the location and the welded ignimbrite host medium will be evaluated by detailed studies of all aspects of the site, including geologic, hydrologic, and geoengineering characteristics. Sandia National Laboratories (SNL) is the prime DOE contractor involved in gathering data on geoengineering properties for site characterization and for development of performance assessment models for all phases of the life of a repository based on the site-characterization data. The Institute of Meteoritics provides sample-specific geochemical and mineralogical analyses of rock as needed using many of the same techniques developed for the study of meteorite and lunar samples. Analyzed samples are usually restricted to those tested by SNL for thermal conductivity, specific heat, thermal expansion and other geoengineering properties needed for site characterization. These data may then be used by SNL as part of the information used to evaluate variations in tested properties, which are in turn used in finite-element models being developed to predict geoengineering behavior of the ignimbrite media under the stresses imposed by emplacement of CHLW.

**g. Mechanism of the Transformations Between the  $\alpha$ ,  $\beta$  and  $\gamma$  Polymorphs of  $\text{Mg}_2\text{SiO}_4$  and  $(\text{MgFe})_2\text{SiO}_4$ . (Funded by NSF).**

The importance of the phase transformations of the polymorphs of  $\text{Mg}_2\text{SiO}_4$  on the geophysical properties of the upper mantle has been widely recognised over the last 20 years. Olivine, the most volumetrically important phase in the Earth's upper mantle undergoes a series of transformations as a function of increasing depth in the

mantle, which result in the formation of modified spinel ( $\beta$ -phase) and finally, spinel ( $\gamma$ ). Transformations of olivine to  $\beta$ -phase are widely regarded as being responsible for the seismic velocity variations in the transition zone of the mantle in the 370-420 km range in the Earth. The mechanisms of the transformations have major implications for several important aspects of the behavior of the mantle in the transition zone, the dynamics of subduction zones and mantle convection. In particular the olivine-spinel transformation may provide one of the major forces for subduction, be one of the causes of deep focus earthquakes, and may significantly affect the rheology of subducting oceanic lithosphere.

The principal objective of this project is to study in detail the mechanisms of these high pressure mantle phase transformations over a wide range of pressure/temperature conditions relevant to the model mantle geotherm and subducting oceanic lithosphere. The research is a collaborative project involving high pressure experimental work coupled with transmission electron microscope characterization of the products of the experiments. The experimental work is carried out by Professor David Rubie on a multianvil press at the Bayerisches Geoinstitut, Germany, whilst transmission electron microscopy and subsequent interpretation are carried out in the Institute of Meteoritics. This study is the first to try and delineate the pressure/temperature regimes over which different transformation mechanisms may operate in the Earth's mantle and identify what factors may cause changes in the transformation mechanism. Based on current results it is clear that the mechanisms of these transformations are sensitive to variations of pressure, temperature and shear stress and can change from a classical nucleation and growth (diffusion controlled) mechanism to a martensitic (diffusionless) mechanism. These different mechanisms would have significantly different effects on the rheology of a subducting oceanic slab and hence on the chance of promoting deep focus earthquakes.

### 2. Grants and Contracts

Table 1 documents that IOM was funded by a variety of agencies during FY 91/92 (NSF, NASA, DOE, Sandia National Laboratory and the Geological Society of America). Total grant contract expenditures totaled \$439,300. Table 2 lists grants and contracts that are already in effect or have already been approved; \$364,600 remains in these grants and contracts including \$83,700 for an upgrade to the electron microprobe. Table 3 tabulates proposals that are now in the review process. These proposals request \$856,400 for IOM research support.

In summary, IOM continues to enjoy healthy grant/contract support even in these times of rigorous competition and limited budgets in the major funding agencies.

TABLE 1: EXPENDITURES ON GRANTS AND CONTRACTS IN EFFECT FOR FY 91/92

AGENCY	TITLE	P.I./CO. Ts	\$ EXPENDED
NSF	"Mechanisms of High Pressure Phase Transformations Between the $\alpha$ , $\beta$ and $\gamma$ Polymorphs of $Mg_2SiO_4$ and $(Mg,Fe)_2SiO_4$ " (EAR 91-04777)	A.J. Brearley	19.0K
NSF	"Accretion & Core Formation in the Earth: Siderophile & Chalcophile Trace Elements" (EAR-90-05199)	H.E. Newsom	57.5K
NSF	"Accretion & Core Formation in the Earth: Siderophile & Chalcophile Trace Elements" (EAR-88-04070)	H.E. Newsom	3.9K
NSF	American Geophysical Union, IUGG Travel Grant	H.E. Newsom	0.5K
NSF	"Direct Observation of a Young Igneous System, Katmai, Alaska"(EAR-89-16434)	J.J. Papike/Shearer, Spilde	0.4K
NSF	"Observation of a Young Igneous System, Katmai, Alaska: Coordination Activities" (EAR 90-96235)	J.J. Papike	16.3K
NASA	"Siderophile Trace Element Concentrations in Planetary Materials: Implications for Planetary Differentiation in the Earth, Moon, Mars, and the Eucrite Parent Body"	P.D. Noll, Jr.	6.0K
NASA	"Trace-element Studies of Pyroxenes in Rocks of the HED Association" (NGT-70223)	A. Pun/J.J. Papike	22.0K
NASA	"Microbeam Studies of Planetary Materials" (NAG 9-497)	J.J. Papike/Brearley, Jones, Shearer, Spilde	152.3K
DOE/BES	"Chemical Transport through Continental Crust" (DE-FG04-90ER14149)	J.J. Papike/Shearer, Spilde, Schwandt	81.6K
SANDIA	"Mineralogical Characterization of Mechanical Test Samples" (54-1058)	J.R. Connolly/Papike	75.7K
SANDIA	"Geologic Support for SNL activities for the Yucca Mountain Site Characterization Project" (AB-1106)	J. Connolly	3.1K
GSA	"Siderophile and Chalcophile Trace Element Concentrations in Subduction-Related Volcanics: Implications for Continental Crust Formation"	P.D. Noll, Jr.	1.0K
TOTAL			439.3K

TABLE 2: GRANTS AND CONTRACTS THAT WILL BE IN EFFECT FOR FY 92-93

AGENCY	TITLE	P.I./CO. I's	DATES	\$ REMAINING
NSF	"Determination of the Fe-Mg Interdiffusion Coefficient in Olivine: A Comparison of Electron Microprobe and SIMS Analytical Techniques" (EAR 91-04777)	R. Jones	7/1/92-12/31/93	18.0K
NSF	"Mechanisms of High Pressure Phase Transformations Between the $\alpha$ , $\beta$ and $\gamma$ Polymorphs of $Mg_2SiO_4$ and $(Mg,Fe)_2SiO_4$ " (EAR 91-04777)	A.J. Brearley	7/1/92-6/30/93	37.8K
NSF	"Accretion and Core Formation in the Earth: Evidence from Siderophile and Chalcophile Trace Elements" (EAR 92-05731)	H.E. Newsom	7/1/92-6/30/93	27.0K
NSF	"Accretion & Core Formation in the Earth: Siderophile & Chalcophile Trace Elements" (EAR-90-05199)	H.E. Newsom	7/1/92-6/30/93	8.3K
NSF	"Proposal to Upgrade Electron Microprobe X-Ray Analysis System" (EAR 91-05294)	J.J. Papike/Brearley, Spilde	3/1/92-2/29/94	40.0K
NSF	"Observation of a Young Igneous System, Katmai, Alaska: Coordination Activities" (EAR 90-96235)	J.J. Papike	7/1/92-3/15/94	26.3K
NASA	"Microbeam Studies of Planetary Materials" (NAG 9-497)	J.J. Papike/Brearley, Jones, Shearer, Spilde	12/15/91-12/15/92	98.1K
NASA	"Trace-element Studies of Pyroxenes in Rocks of the HED Association" (NGT-70223)	A. Pun/J.J. Papike	7/1/92-8/1/93	22.0K
NASA	"Proposal To Upgrade Electron Microprobe X-Ray Analysis System" (NAG 9-497)	J.J. Papike/Brearley, Spilde	12/15/91-12/15/92	43.7K
DOE	"Chemical Transport through Continental Crust" (DE-FG04-90ER14149)	J.J. Papike/Shearer, Spilde, Schwandt	7/1/92-8/31/92	4.2K
SANDIA	"Geologic Support for SNL activities for the Yucca Mtn Site Characterization Project" (AB-1106)	J. Connolly	7/1/92-5/31/93	39.2K
TOTALS				364.6K

TABLE 3: PROPOSALS IN REVIEW

AGENCY	TITLE	P.I./CO. I's	DATES	\$/YR	\$ TOTAL
NSF	"Siderophile and Chalcophile Trace Element Determination by Secondary Ion Mass Spectrometry"	H. Newsom/Layne, Shearer	12/1/92-11/30/94	70.1K	141.8K
NSF	"Siderophile and Chalcophile Trace Elements in the Earth's Oldest Rocks"	H. Newsom	12/1/92-11/30/95	62.2K	191.9K
NSF	"The Nature and Style of Fluid Evolution in the Continental Crust: A SIMS Study of S and Pb Isotopic Systematics in Sulfides from the KTB Hole."	C.K. Shearer	10/1/92-9/30/94	49.0K	98.5K
NASA	"Siderophile Trace Element Concentrations in Planetary Materials: Implications for Planetary Differentiation in the Earth, Moon, Mars, and the Eucrite Parent Body"	P.D. Noll, Jr.	08/01/92-07/31/93	6.0K	6.0K
NASA	"Siderophile element abundances and behavior: clues to planetary origins and evolution"	H. Newsom	12/16/92-12/15/93	67.6K	67.6K
NASA	"Microbeam Studies of Planetary Materials"	J.J. Papike/Brearely, Jones, Layne, Shearer, Spilde	12/16/92-12/15/93	204.1K	204.1K
NASA	"Proposal for Educational Research Program"	J.J. Papike/Casey Jones, Llorca	12/16/92-12/15/93	35.0K	35.0K
NASA	"Facilities Support for UNM-SNL-SIMS Facility"	J.Papike & G. Layne/Shearer	1/1/93-12/31/93	111.5K	111.5K
TOTALS				605.5K	856.4K

3. Papers Published in National and International Journals and Books (1991-1992)

- Brearley, A.J., and Prinz, M. (1992) CI-like clasts in the Nilpena polymict ureilite: Implications for aqueous alteration processes in CI chondrites. *Geochimica et Cosmochimica Acta* 56, 1373-1386.
- Brearley, A.J., Casanova, I., Miller, M.L. and Keil K. (1991) Mineralogy and possible origin of an unusual Cr-rich inclusion in the Los Martinez (L6) chondrite. *Meteoritics* 26, 287-300.
- Brearley, A.J., Rubie, D.C., and Ito, E. (1992) Mechanisms of the transformations between the  $\alpha$ ,  $\beta$  and  $\gamma$  polymorphs of  $\text{Mg}_2\text{SiO}_4$  at 15 GPa. *Physics and Chemistry of Minerals*, 18, 343-358.
- Condie, K.C., Noll, P.D., Jr., and Conway, C.M. (1992) Source of early proterozoic sediments from the Alder terrane, Central Arizona: Geochemical and detrital mode evidence for a continental back-arc basin. *Sedimentary Geology*, 77, 51-76.
- Duke, E.F., Papike, J.J., and Laul, J.C. (1992) Geochemistry of a boron-rich peraluminous granite pluton: The Calamity Peak layered granite-pegmatite complex, Black Hills, South Dakota. *Canadian Mineralogist*, in press.
- Eichelberger, J.C., Hildreth, W., and Papike, J.J. (1991) The Katmai scientific drilling project, surface phase: Investigation of an exceptional igneous system. *Geophysical Research Letters*, 18, 1513-1516.
- Ferrer, M., Llorca, J. and Martinez, M. (1992) Kinetic study of formation of  $[\text{Co}(\text{H}_2\text{PO}_4)(\text{H}_2\text{O})_5]^{2+}$  at various acidities and ionic strengths. *Journal of the Chemical Society. Dalton Transactions* 1992, 229-231.
- Jolliff, B.L., Papike, J.J., and Shearer, C.K. (1992) Petrogenetic relationships between pegmatite and granite based on geochemistry of muscovite in pegmatite wallzones, Black Hills, South Dakota. *Geochimica et Cosmochimica Acta*, 56, 1915-1939.
- Jones, R.H. (1992) On the relationship between isolated and chondrule olivine grains in the carbonaceous chondrite, ALH A77307. *Geochimica et Cosmochimica Acta*, 56, 467-482.
- Jones, R.H. and MacKenzie, W.S. (1991) Liquidus phase relationships in the system  $\text{KAlSi}_3\text{O}_8$ - $\text{CaAl}_2\text{Si}_2\text{O}_8$ - $\text{KAlSiO}_4$  at  $P(\text{H}_2\text{O})=5\text{ kbar}$ . *American Mineralogist*, 76, 200-204.
- Jones, R.H. and Rubie, D.C. (1991) Thermal histories of CO3 chondrites: application of olivine diffusion modelling to parent body metamorphism. *Earth and Planetary Science Letters*, 106, 73-86.

\* Members of IOM in bold print.



- Labotka, T.C., and **Papike, J.J.** (1991) Non-quadrilateral components in amphiboles: An example from metamorphosed iron-formations from the Ruby Mountains, Montana. *American Journal of Science*, 291, 800-823.
- McCoy, T.J., Scott, E.R.D., Jones, R.H., Keil, K. and Taylor, G.J. (1991) Composition of chondrule silicates in LL3-5 chondrites and implications for their nebular history and parent body metamorphism. *Geochimica et Cosmochimica Acta*, 55, 601-619.
- McCoy, T.J., Pun, A., and Keil, K. (1991) Spinel-bearing, Al-rich chondrules in two chondrite finds from Roosevelt County, New Mexico: Indicators of Nebular and Parent Body Processes. *Meteoritics*, 26, 301-309.
- McKay, D.S., Heiken, G.H., Basu, A., Blanford, G., Simon, S.B., Reedy, R., French, B.M., and **Papike, J.J.** (1991) The Lunar regolith. *Lunar Sourcebook: A User's Guide to the Moon*, Cambridge University Press, 285-356.
- Newsom, H.E. and Sims, K.W.W. (1991) Core formation during early accretion of the Earth. *Science* 252, 926-933.
- Papike, J.J.**, Keith, T.E.C., Spilde, M.N., Galbreath, K.C., Shearer, C.K., and Laul, J.C. (1991) Geochemistry and mineralogy of fumarolic deposits, Valley of Ten Thousand Smokes, Alaska: Bulk chemical and mineralogical evolution of dacite-rich protolith. *American Mineralogist*, 76, 1662-1673.
- Papike, J.J.**, Keith, T.E.C., Spilde, M.N., Galbreath, K.C., Shearer, C.K., and Laul, J.C. (1991) Major and trace element mass flux in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska: Rhyolite-rich protolith. *Geophysical Research Letters*, 18, 1545-1548.
- Papike, J.J.**, Taylor, L.A., and Simon, S.E. (1991) Lunar minerals. *Lunar Sourcebook: A User's Guide to the Moon*, Cambridge University Press, 121-181.
- Papike, J.J.** (1992) The Valley of Ten Thousand Smokes, Katmai, Alaska: A unique geochemistry laboratory. Geochemical Society Presidential Address. *Geochimica et Cosmochimica Acta*, 56, 1429-1449.
- Papike, J.J.**, and Eichelberger, J.C. (1992) Under the volcano. *New Scientist*, in press.
- Schwandt, C.S., **Papike, J.J.**, Shearer, C. K., Shimizu, N., and Brearley, A.J. (1992) A secondary ion mass spectrometry investigation of garnet REE chemistry: Broken Hill Pb-Zn-Ag ore bodies, Australia. *Canadian Mineralogist*, in press.
- Shearer, C.K., **Papike, J.J.**, Galbreath, K.C., and Shimizu, N. (1991) Exploring the Lunar mantle with secondary ion mass spectrometry: A comparison of Lunar picritic glass beads from the Apollo 14 and Apollo 17 sites. *Earth and Planetary Science Letters*, 102, 134-147.

- Shearer, C.K., Papike, J.J., Spilde, M.N. and Shimizu, N. (1991) Pyroxene/melt trace element behavior: A study of pyroxenes from the Valley of Ten Thousand Smokes, Alaska. *Geophysical Research Letters*, 18, 1557-1560.
- Shearer, C.K., Papike, J.J., and Jolliff, B.L. (1992) Petrogenetic links among granites and pegmatites in the Harney Peak rare-element granite-pegmatite system, Black Hills, South Dakota. *Canadian Mineralogist*, in press.
- Spilde, M.N., and Shearer, C.K. (1992) A comparison of tantalum-niobium mineral assemblages in two mineralogically distinct rare element pegmatites. *Canadian Mineralogist*, in press.

#### 4. Technical Reports Published

- Connolly J.R. (1991) Mineralogy, petrology and whole-rock chemistry of selected samples of Yucca Mountain tuffs. Sandia National Laboratories Contractor Report SAND91-7031.
- Connolly J.R. (1991) Mineralogy, petrology and whole-rock chemistry of selected mechanical test samples of Yucca Mountain tuffs. Sandia National Laboratories Contractor Report SAND90-7058.
- Nimick F.B. and Connolly J.R. (1991) Calculation of heat capacities for tuffaceous units from the unsaturated zone at Yucca Mountain, Nevada. Sandia National Laboratories Contractor Report SAND88-3050.

#### 5. Travel

During the period of the report, IOM Personnel attended nine international and national meetings. Twenty-three talks were presented, and seven papers were presented as posters. Six of these talks and one of these posters were presented by students. In addition, IOM Personnel were authors on five papers at meetings they did not attend. Abstracts of all presentations were published in abstract volumes for individual meetings. In the list of meetings below, names of speakers are underlined, and student contributions are indicated with an asterisk.

##### 54th Meteoritical Society Meeting, July 22-25, 1991. Monterey, California.

Attended by: A. Brearley, R. Jones, and H. Newsom

Abstracts were published in *Meteoritics*, Vol. 26(4).

Oral presentations:

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Brearely, A.J. and Geiger, T. "Mineralogical and chemical studies bearing on the origin of accretionary rims in the Murchison CM2 carbonaceous chondrites."

Brearely, A.J., Casanova, I., Miller, M.L. and Keil K. "Mineralogy of an unusual Cr-rich inclusion in the Los Martinez (L6) chondritic breccia."

Jones, R.H. "Effect of metamorphism on isolated olivine grains in CO<sub>3</sub> chondrites."

Twentieth General Assembly, International Union of Geodesy and Geophysics, August 11-24, 1991. Vienna, Austria.

Attended by: H. Newsom

Abstract was published in *IUGG Union Program and Abstracts*.

Oral presentation:

Newsom, H.E. "Accretion and core formation in the Earth."

Geological Society of America Annual Meeting, October 21-24, 1991. San Diego, California.

Attended by: J. Papike, A. Pun and M. Spilde

Abstracts were published in *GSA Abstracts with Programs*, Vol. 23.

Oral presentation:

Papike, J.J. (1991) "The Valley of Ten Thousand Smokes, Katmai, Alaska: A unique geochemistry laboratory." (Geochemical Society Presidential Address)

Poster presentations:

Duke, E.J., Papike, J.J., Bachman, R.L., and Glascock, M.D. "Geochemistry of archean and lower proterozoic iron-formations in the Black Hills, South Dakota."

Spilde, M.N., Brearely, A.J. and Papike, J.J. "Vapor phase and hydrothermal alteration of plagioclase and pyroxene phenocrysts in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska,"

The Physics and Chemistry of Magma Oceans from 1 bar to 4 Mbar, December 6-8, 1991. San Francisco, California.

Attended by: H. Newsom

Abstract was published in *Lunar and Planetary Institute Technical Report*, No. 92-03.

Poster presentation:

Newsom, H.E. "Pressure regimes and core formation in the accreting earth."

American Geophysical Union, Fall Meeting, December 9-12, 1991. San Francisco, California.

Attended by: A. Brearley, J. Connolly, R. Jones, H. Newsom, J. Papike and C. Shearer

Abstracts were published in *EOS*, Vol. 72(44).

Oral presentations:

Brearley, A.J. and Rubie, D.C. "Mechanisms of phase transformations involving  $\beta(\text{Mg,Fe})_2\text{SiO}_4$  and some implications for mantle dynamics."

Papike, J.J., Spilde, M.N., and Keith, T.E.C. "Chemical mass flux in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska: Influence of assumed protolith composition on enrichment/depletion systematics."

Shearer, C.K., J.R. Connolly, and J.J. Papike "Deciphering the volcanic and hydrothermal history recorded in magma exploratory hole LVF 51-20, Long Valley, California: A perspective from isotopic and trace element analysis using secondary ion mass spectrometry."

Poster presentation:

Connolly, J., Shearer, C.K. and Papike, J.J. "Petrography of bishop tuff in phase 1 core from the LVF 51-20 drill hole: A small window into a hydrothermal system in a resurgent caldera, Long Valley, California."

23rd Lunar and Planetary Science Conference, March 16-20, 1992. Houston, Texas.

Attended by: A. Brearley, R. Jones, J. Llorca, H. Newsom, P. Noll, Jr., J. Papike, A. Pun, C. Shearer and M. Spilde

Abstracts were published in *Lunar and Planetary Science XXXIII*.

Oral presentations:

Brearley, A.J. "Phyllosilicates in the matrix of the unusual carbonaceous chondrite, LEW 85332 and possible affinities to CI chondrites."

Jones, R.H. "Petrology of FeO-poor, porphyritic pyroxene chondrules in the Semarkona ordinary chondrite."

Llorca, J.\* and Brearley, A.J. "Alteration of chondrules in ALH 84034, an unusual CM2 carbonaceous chondrite."

Newsom, H.E., Noll, P.D. Jr.\*, Slane, F.A.,\* and Beserra, T.B.\* "Siderophile element abundances and behavior."

Shearer, C.K., and Papike, J.J. "Relationship between Apollo 12 high-Ti, red-picritic glass and high-Ti basaltic magmatism."

Shearer, C.K., and Papike, J.J. "Origin of olivine diogenites and their relationship to basaltic magmatism on the eucrite parent body."

Poster presentations:

Brearley, A.J. "Mineralogy of fine-grained matrix in the Ivuna CI carbonaceous chondrite."

Jones, R.H. "Classification of porphyritic, pyroxene-rich chondrules in the Semarkona ordinary chondrite."

Pun, A.,\* Keil, K., Taylor, G.J., Wieler, R. and King, E.A. "Clasts in Kapoeta: Implications for the regolith evolution of the HED parent body."

The following papers were presented by printed abstract only:

Pun, A.,\* Shearer, C.K., and Papike, J.J. "A comparison between a "unique" eucrite clast from the Kapoeta howardite and the Pasamonte eucrite."

Shearer, C.K., and Papike, J.J., "Intra-crystalline behavior of trace elements in pyroxene from mare basalts with different  $f_{O_2}$ -crystallization histories."

Shearer, C.K., and Brearley, A.J. "Trace element zoning and subsolidus microstructure of pigeonite in the Zagami Shergottite."

In addition, C. Shearer was co-chairman of the session: "Mare basalts, KREEP, and Copernican ejecta" and H. Newsom was co-chairman of the session, "Planetary Geochemistry."

3rd V.M. Goldschmidt International Geochemistry Conference, May 8-10, 1992. Reston, Virginia.

Attended by: H. Newsom, P. Noll, Jr., J. Papike and C. Shearer.

Abstract were published in *Abstracts for the V.M. Goldschmidt Conference, 1992*.

Oral presentations:

Newsom, H.E. and Sims, K.W.W. "Chemical fractionation in the continental crust: Clues from As, Sb, W, Mo and Pb in lower crustal xenoliths."

Noll, P.D., Jr.\*, Newsom, H.E. and Leeman, W.P. "Pb/Ce ratios in island arc basalts: Implications for the genesis of ocean island basalts."

Papike, J.J., and Shearer, C.K. "Trace element systematics in extraterrestrial silicates as recorders of igneous evolution."

Shearer, C.K., and J.J. Papike "Melting processes on the eucrite parent body: Evidence from trace element chemistry of orthopyroxene from olivine diogenites."

American Geophysical Union, Spring Meeting; May 12-16, 1992. Montreal, Canada.

Attended by: H. Newsom, P. Noll, Jr.

Abstracts were published in *EOS*, Vol. 73(14)

Oral presentations:

Newsom, H.E. and Sims, K.W.W. "Chemical fractionation in the continental crust: archean crust versus lower crustal xenoliths."

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Noll, P.D., Jr.\*, Newsom, H.E., Leeman, W.P., and Garcia, S.R. "Siderophile and chalcophile trace element concentrations in arc volcanics: implications for element transfer."

III Geological Congress of Spain and VIII Geological Congress of Latin America, June 22-26, 1992. Salamanca, Spain.

Attended by: J. Llorca

Abstracts were published in *Proceedings of the III Geological Congress of Spain and VIII Geological Congress of Latin America*

Oral presentations:

Casanova, I. and Llorca, J.\* "Influence of impact processes in the formation of the terrestrial planets -I: The geochemical nature of the planet Mercury."

Llorca, J.\* "Phyllosilicates in the Antarctic meteorite ALH 84034."

Llorca, J.\* and Casanova, I. "Influence of impact processes in the formation of the terrestrial planets -II: Isotopic evolution of the atmospheres."

**Institute Personnel were also authors of papers presented at the following meetings:**

IV Geochemical Congress of Spain, September 16-20, 1991. Soria, Spain.

Abstracts were published in *Proceedings of the IV Geochemical Congress of Spain*.

Oral presentations:

Llorca, J.\*, and Estevez, C. "D/H isotopic fractionation by impact processes".

Llorca, J.\*, and Pons, A. "Chemistry of the ozone layer."

Abstract only:

Llorca, J.\* "Prebiotic synthesis on Titan's surface."

Symposium on Experimental Mineralogy and Petrology, April 1992 Clermont Ferrand, France.

Abstract was published in *Terra Cognita*.

Oral presentation:

Brearely, A.J. and Rubie, D.C. "The transition of San Carlos olivine to  $\beta$ -phase and spinel at high pressure."

Geological Society of America, Rocky Mountain Section, May 1992. Ogden, Utah.

Abstract was published in *GSA Rocky Mountain Section, Abstracts with Programs*.

Schwandt, C.S., Papike, J.J., and Shearer, C.K. "Ion microprobe trace element chemistries of garnet types from a mica schist unit, Black Hills, South Dakota."

**Other meetings and workshops attended by IOM Personnel were:**

Asteriod Interception Workshop, Los Alamos, NM. Jan 15, 1992. H. Newsom

Fall and Spring meetings of New Mexico Microbeam Users Group. October 1991 and June 1992. Albuquerque, NM. M. Spilde and A. Brearely

Joint workshop on the New Technologies for Lunar Resource Assesment. Santa Fe, NM. April 6-7, 1992. J. Papike



## SECTION II

## FACILITIES



## II. FACILITIES

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### 1. Curation and Meteorite Museum

Several important developments occurred involving the Meteorite Collection and Museum during the past year. The Navajo iron meteorite was a major and significant new addition to the exhibits in the Meteorite Museum in 1992. This spectacular 1600 pound meteorite is on long term loan from the Field Museum of Natural History in Chicago. The acquisition of Navajo has caused a renewed interest in the Museum and the Institute of Meteoritics, as a result of a press release written by Sherry Robinson (UNM Public Affairs Department) which resulted in favorable publicity in the local and state press. Adrian Brearley had interviews with Bill Eisenhood (Channel 4) and Bill Wood (Channel 13) about the museum and the new meteorite which were broadcast on March 7 and April 18, respectively. The Albuquerque Tribune ran a major feature on the Museum on April, 14, 1992 and articles also appeared in the Campus News, Daily Lobo, Cibola County Beacon, Raton Range, Alamogordo Daily News, Las Vegas Daily Optic, Clovis News Journal, Farmington Daily Times, and Gallup Independent (see Appendix). Rhian Jones carried out a major revision of the Meteorite Museum brochure, resulting in the production of a new full-color version, which has attracted considerable attention. The new brochure provides a self-guided tour of the museum to the public. The Museum has continued to be an important educational resource for Albuquerque residents and New Mexico in general. The Museum is visited annually by school children from all over New Mexico, many of whom have guided tours of the museum provided by staff and graduate students of the Institute of Meteoritics.

The Institute has acquired a number of samples of new and unusual meteorites, which were not previously represented in the Meteorite collection, such as the rare carbonaceous chondrites, Isna, Acfer 214 and Acfer 270. These samples will provide exciting research material, as well as new exhibits for the museum.

To improve access to information about samples in the Institute's collection, Jim Connolly has actively worked to develop a computer database from the Institute's Meteorite Catalog. This system is still under development, but when complete will be able to provide comprehensive information, including chemical and mineralogical data, historical references, etc., on all individual samples in the collection.

### 2. Experimental Petrology Laboratory

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The experimental petrology laboratory currently consists of a single one-atmosphere furnace with gas-mixing capability. This set-up allows us to carry out experiments at temperatures up to 1600 °C under controlled oxygen fugacity conditions. Several different types of experiments are being conducted, including 1) an investigation of pyroxene microstructures formed at different controlled cooling rates, and during various annealing conditions, 2) determination of trace element partition coefficients in silicate and metal/silicate systems, and 3) measurement of diffusion coefficients.

In addition to this furnace, plans are being made to expand the current capability of the laboratory to include high-pressure furnace facilities. A considerable amount of the equipment necessary for this has been acquired from the New Mexico Museum of Natural History and Dr. T. Giordano of New Mexico State University. This equipment includes furnaces, pressure vessels, high-pressure tubing and valves, pumps, pressure gauges, temperature controllers and thermocouples. When this facility is operational it will be possible to conduct experiments up to pressures of approximately 5 kbar. This will enable us to investigate effects relevant to upper crustal processes in the Earth and Moon, as well as magmatic processes in meteorite parent bodies.

Work in the experimental petrology laboratory is benefitting from collaborations with Drs. H. Westrich, R. Cygan and C. Schwandt at Sandia National Laboratories. We currently have access to the experimental petrology facilities run by these investigators, which includes one-atmosphere furnaces, as well as several pressure vessels capable of pressures up to 10 kbar.

### 3. ICP/MS Laboratory

The ability to rapidly and precisely measure trace elements in sub-parts per billion concentrations is required in solving a wide range of environmental, petrogenetic, metallogenic and geochemical problems. For example, the analysis of "heavy metals" (e.g., As, Pb, Cu, Cd, Sb, Ag, Hg, Zn) in water/waste is critical to many environmental impact evaluations (e.g., ground water contamination). The same set of elements in planetary materials provides essential clues to early processes in the Earth and terrestrial planets, such as planetary accretion and core formation. In response to

this need, geochemists have shown considerable interest in developing inductively coupled plasma-mass spectrometry (ICP-MS) for the environmental and geological sciences. ICP-MS is a relatively new and promising analytical technique for multi-trace element and isotopic analysis. The technique combines an inductively coupled argon plasma generating ions at 8000 K and a quadrupole mass analyzer for ion detection. A VG Plasma Quad PQ2 ICP/MS has recently been acquired by the Institute of Meteoritics. It has potential to be an excellent and extremely powerful analytical tool in the earth sciences. The main advantages of ICP-MS as a method for geochemical analysis are its multi-element (and isotopic) capability, sensitivity, and speed at a reasonable cost. It is possible to routinely determine 33 elements spanning the realm of geochemical behavior with detection limits to .001 mg/ml.

A training course in ICP-MS is offered to graduate students interested in using trace element techniques in solving geologic problems.

#### 4. Neutron Activation Analysis Laboratory

Neutron Activation Analysis is a nuclear technique for trace element analysis in small samples of rocks or other planetary materials. The neutron activation laboratory includes 3 intrinsic germanium detectors, 1 Ge-Li detector, and facilities for radiochemical separations. A new 30% efficiency Ge detector was added to the laboratory in 1990, partially funded by the National Science Foundation. Spectra are collected with a Canberra Series 90 MCA and a personal computer. The spectra are processed on the University VAX 9650 using a recent version of the spectra processing software developed by H. Kruse at the Max-Planck-Institut für Chemie in Mainz, Germany. A version of this software will be used to process the gamma-ray spectra returned from the Mars Observer space probe that will be launched to Mars this year. In the last year the laboratory has been actively utilized for studies by instrumental neutron activation analysis, instrumental epithermal neutron activation, and radiochemical epithermal neutron activation analysis. During the last year the laboratory manager, Dr. H. Newsom, was approved by the UNM Radiation Control Committee to become a permit holder for radioactive materials.

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### 5. Electron Microprobe and SEM Laboratory

The electron microprobe and scanning electron microscope (SEM) laboratories are equipped with a JEOL 733 Superprobe electron microprobe, purchased in 1983 and a Hitachi S450 SEM, purchased in 1982. Both instruments are used extensively for a wide variety of problems in mineralogy, metamorphic and igneous petrology, meteoritics and lunar science by faculty, research staff and graduate students within the Department of Earth and Planetary Sciences and the Institute of Meteoritics. The electron probe currently has 22 users from within the Department of Earth and Planetary Sciences and IOM along with a number of outside users who also used the instrument at various times during the year (see below). The instruments were used extensively during the fall semester as part of a graduate class (GEOL 518) which offered the theory of scanning electron microscopy and X-ray microanalysis, coupled with extensive demonstrations and hands on training for 13 students. In fall, 1992 the electron microprobe will undergo a major and exciting upgrade, involving the replacement of the outdated Tracor Northern computer system with a state of the art Oxford Analytical xLII X-ray analysis and imaging system. This equipment will dramatically increase the imaging and energy dispersive analysis capabilities of the microprobe as well as being much faster and more user friendly than the current system. The new equipment will be purchased with funds from NSF, NASA and UNM.

Analytical work in these laboratories was performed for the following out-of-department personnel:

- A. Araya, Department of Geoscience, N.M. Tech (Microprobe).
- R. L. Beauchamp, Microphase, Albuquerque (SEM)
- J. Beery, Los Alamos Technical Associates, Los Alamos, NM (SEM)
- E. Bloomstein, Santa Fe-Pacific Mining Co., Albuquerque (SEM & Microprobe)
- L. S. Cordell, California Academy of Sciences, San Francisco, CA (SEM)
- B. Donegan, Albuquerque (SEM)
- J. Redden, SD School of Mines & Technology (SEM)
- B. Wernsman, Institute of Space Nuclear Power, UNM (SEM)
- J. Wortham, El Paso, TX (SEM)

## II. FACILITIES

The laboratories were used by the following out-of-department personnel with supervision and instruction by IOM personnel:

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- E. Armour, Center for High Technology Materials, UNM (SEM)
- E. Dunbar, Center for Explosives Research, N.M. Tech. (SEM)
- S. Kilcoyne, Center for High Technology Materials, UNM (SEM)
- R. Metcalf, Geology Department, University of Nevada, Las Vegas, NV (Microprobe)
- B. Macey, Civil Engineering Department, UNM (evaporative coater)
- G. Peterson, Center for High Technology Materials, UNM (SEM)
- C. Poore, Jacobs Engineering Group, Inc., Albuquerque (SEM)
- C. Stein, Sandia National Labs (SEM)
- N. Thadhani, Center for Explosives Research, N.M. Tech. (SEM)
- A. Vasil, Civil Engineering Department, UNM (evaporative coater)
- A. Wu, Center for High Technology Materials, UNM (SEM)

### 6. The UNM/SNL SIMS\* Facility

\* Secondary Ion Mass Spectrometry = ion microprobe.

The ion microprobe facility is a direct result of continued cooperation between Sandia National Laboratory and the University of New Mexico. The ion microprobe instrument was purchased by Sandia National Laboratory in 1989 for a price of approximately \$1.3 million. Formal dialog between UNM and SNL to establish a SIMS consortium was initiated in Fall 1990 in the form of a joint UNM-SNL committee, in the spirit of closer cooperation between national laboratories and universities. The formal letter of agreement states "The purpose of this agreement is to provide Sandia National Laboratories support to The University of New Mexico in development of a joint laboratory for geological analysis." The instrument was moved from the Sandia National Laboratory Analytical Facility to a new "UNM-SNL Advanced Materials Laboratory" on the UNM campus in June 1992.

Some of the terms of the agreement are:

- (1) SNL will locate the Cameca 4f IMS at the new UNM-SNL Advanced Materials Laboratory.

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- (2) SNL will provide an operator/manager with SIMS technical expertise (Ted Neil) and the Institute of Meteoritics and UNM will provide an operator/manager with both geochemical and SIMS expertise (Graham Layne).
- (3) UNM will lead the effort for outside funding of this Facility.

From UNM's viewpoint, partnership with SNL in this venture is absolutely essential because of the enormous cost of this type of instrumentation and the technical expertise SNL can contribute to the success of the project.

The instrument is a fully equipped Cameca IMS 4f ion microprobe. Secondary ion mass spectrometry (SIMS) machines of this same design have been used with considerable success for geochemical analysis since the first IMS 3f was installed at MIT in 1978. The newer UNM-SNL 4f has several features not present in the earliest 3f machines which offer substantial advantages for geochemical analysis. These include:

- 1) A primary beam mass filter/cesium microbeam source, in addition to the standard duoplasmatron source which generates  $O^+$  primary ions. The  $Cs^+$  ion source is particularly useful for light stable isotope analyses.
- 2) An improved vacuum system which uses a cryogenic pump to achieve a vacuum in the vicinity of the sample 5-10 times better than in the original 3f instrument. This improvement should provide reduction of background levels when analyzing elements such as hydrogen which are sensitive to contaminants in the machine vacuum.
- 3) A normal incidence electron gun. The use of such electron floodguns has proven particularly useful in the development of oxygen isotope ratio analysis of silicates.
- 4) A resistive anode encoder. This detection system allows the rapid acquisition of ion images at very low count rates and has considerable potential for studies which require mapping of trace element distributions on a microscopic scale.

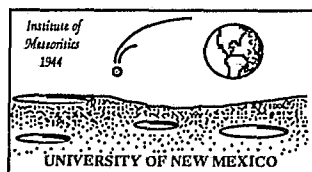
Development of the UNM-SNL-SIMS facility has progressed rapidly over the past year. In June 1991, Dr. Nobu Shimizu visited the lab to conduct a training workshop and to consult in laboratory development. In September 1991, C. Shearer and T. Neil (of SNL) travelled to Woods Hole Oceanographic Institute to collect data and to confer with N. Shimizu, S. Hart and G. Layne. During the Fall semester, SIMS development

at SNL continued and two talks were presented (at the fall American Geophysical Union Meeting and the Lunar and Planetary Science Conference) using data collected. Following a search in Fall, 1991, Dr. G. Layne accepted the position as operator/manager of the SIMS facility. He will begin this position July 1, 1992. The UNM/SNL Advanced Materials Laboratory was completed in May 1992, and the Cameca 4f instrument was moved to this site in June 1992. Further development of the facility will take place over the next few months, and the first funded investigators should have access to the facility early in 1993.



# SECTION III

## TEACHING



III. TEACHING

1. Courses Taught

Fall 1991

Geol. 265 "Exploring the Solar System." Taught by J. Papike.

Guest lectures by A. Brearley, R. Jones, H. Newsom, A. Pun, C. Shearer and M. Spilde

Geol. 518 "Electron Microprobe Analysis and Scanning Electron Microscopy."

Taught by A. Brearley and M. Spilde

Guest lectures by R. Jones, C. Shearer and J. Papike

Informal seminar "Mantle Geochemistry and the Formation of the Continental Crust." Led by H. Newsom

Spring 1992

Geol. 401 "Seminar" Organized by J. Papike.

Invited lecture by C. Shearer "Granite/Pegmatite systems of the Black Hills, South Dakota."

Geol. 513 "Meteoritics and Cosmochemistry." Taught by J. Papike, A. Brearley, R. Jones, H. Newsom, C. Shearer.

Geol. 517 "Inductively Coupled Plasma-Mass Spectrometry." Taught by C. Shearer. Guest lecture by H. Newsom

Geol. 548 "Proterozoic Geology of the Southwestern United States." Guest lecture by C. Shearer

Geol. 492 "Problems." Taught by R. Jones

Summer 1992

Geol. 551 "Problems." Taught by M. Spilde

#### 2. Fall IOM Research Seminar Series

- 706 August 30 C. Shearer  
An introduction to SIMS analysis of geologic materials.
- September 6 H. Newsom  
Rare earth element geochemistry of the Aubrite Meteorites.
- September 13 R. Jones  
The origin and importance of relic grains in chondrules.
- September 20 A. Brearley  
Geophysical importance of the mechanisms of the olivine to spinel transformation to mantle dynamics.
- September 27 C. Schwandt  
Introduction to inductively coupled plasma mass spectrometry.
- October 4 J. Papike  
Katmai volcanic systems.
- October 11 M. Spilde  
Vapor phase and hydrothermal alteration of plagioclase and pyroxene phenocrysts in fumarolic deposits, Valley of Ten Thousand Smokes, Alaska.
- November 1 J. Connolly  
Predicting whole rock heat capacity from major element chemistry: Comparison with calorimetric experiments.
- November 8 A. Pun  
Kapoeta: Implications for the regolith evolution of the HED parent body.
- November 15 J. Llorca  
Reaction mechanisms in inorganic chemistry: The Co(III) Ion.
- November 22 M. Servilla  
What's up at Long Valley, CA.
- December 6 P. Noll, Jr.  
Trace element geochemistry of subduction-related lavas.

### III. TEACHING

#### 3. Student Committees

##### Graduate Student Advisement

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<u>Student</u>	<u>Committee</u>	<u>IOM Committee Members</u>
Charles Bryan	Ph.D.	J. Papike
Chris Daniel	M.S.	J. Papike
Ray Eby	Ph.D.	J. Papike
Grant Fowler	M.S.	J. Papike (Advisor)
Tom Goodspeed	M.S.	J. Papike
Mike Grubensky	Ph.D.	J. Papike
Hope Jacunski	M.S.	J. Papike
Jordi Llorca	Ph.D.	J. Papike (Advisor), A. Brearley, R. Jones
Phil Noll, Jr.	Ph.D.	H. Newsom (Advisor), J. Papike, C. Shearer
Jane Pedrick	Ph.D.	J. Papike
Aurora Pun	Ph.D.	J. Papike (Advisor), C. Shearer
Mark Servilla	Ph.D.	J. Papike (Advisor), C. Shearer
Laurel Shastri	M.S.	C. Shearer
Fred Slane	M.S. (Physics)	H. Newsom
Amy Thompson	Ph.D.	C. Shearer

##### Undergraduate Student Advisement

Troy Beserra	(Senior Thesis)	H. Newsom
Greg Britelle		H. Newsom
Stephanie Maehr		H. Newsom

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Grant Fowler joined IOM as an M.S. graduate student in June, 1992. He graduated from NM State University, Las Cruces, with a major in Geology and a minor in Mathematics in May, 1992. He will initially carry out research on achondrite meteorites.

Jordi Llorca came to IOM in August 1991 to begin studies as a Ph.D. student. He obtained his B.S. and M.S. degrees in Chemistry at the University of Barcelona, Spain. His Ph.D. research focusses on microbeam studies of pyroxenes in ordinary chondrites. He passed his Ph.D. qualifying exam with distinction in February 1992. Jordi received travel grants of \$500 and gave oral presentations at two international conferences.

Phillip D. Noll, Jr. continues to make progress towards his Ph.D. degree. His research on siderophile element abundances in planetary materials has been presented in two talks at international meetings as well as at the Research Fellows Fall and Spring Semester seminars of the NASA Space Grant Consortium at UNM. Phil received \$650 from the Geology Alumni Scholarship fund and grants for \$450 to fund travel to conferences.

Aurora Pun completed her M.S. thesis in the Department of Geology in Fall, 1991. The thesis title is "Kapoeta: Implications for the Igneous history and Regolith Evolution of the HED parent body." She has now qualified for the Ph.D. program and will continue working on basaltic achondrites, using SIMS techniques. Aurora is a recipient of a \$3,000 scholarship from the American Geological Institute Minority Participation Program. She presented a poster at one international conference.

Mark Servilla joined IOM as a Ph.D. student in August 1991. He obtained his B.S. in Geology and M.S. in Computer Science at UNM. His Ph.D. research involves geochemical studies of the Long Valley Caldera, California.

5 Other

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Craig Schwandt completed his Ph.D. thesis in November, 1991, at the South Dakota School of Mines and Technology. The dissertation title is "Intra- and Intercrystalline Behavior of Trace Elements During Metamorphism: A SIMS Study of Garnets." Craig is now employed as a Post-Doctoral Associate at Sandia National Laboratories

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**SECTION IV**  
**DEPARTMENTAL AND UNIVERSITY ACTIVITIES**



IV. DEPARTMENTAL AND UNIVERSITY ACTIVITIES

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A. Brearley

Curator of the Meteorite Museum and Collection.

Manager of the Scanning Electron Microscope and Electron Microprobe Laboratories.

Supervisor of Thin Section Laboratory in the Institute of Meteoritics.

Member, Geology Department and Institute of Meteoritics Facilities Committee.

Senior Research Associate Faculty Representative, Fall Semester, 1991.

Member, Search Committee for Department of Geology Electronics Technician position.

R. Jones

Manager of Experimental Petrology Laboratory.

Assistant curator of Meteorite Collection.

Member of Chemical Hygiene Committee.

Member of Committee on Status of Research Scientists.

Senior Research Associate representative in Faculty Meetings, Spring 1992.

Certification in Radiological Safety Procedures.

H. Newsom

Executive Officer of the Institute of Meteoritics June 1, 1990 - Jan. 15, 1992.

Conducted the annual inventory for the Institute of Meteoritics, 1991.

Attended several College of Arts and Sciences Chairs and Directors Meetings as IOM representative, 1991.

Obtained permit holder status for use of radioactive materials from the UNM Radiation Control Committee.

Member New Mexico Space Grant Consortium, Space Research Fellowship Committee.

Faculty advisor for a University of New Mexico student club, "Students for the Exploration and Development of Space".

Directed operation and development of the Neutron Activation Analysis Laboratory.



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J. Papike

Director of IOM

Member, Committee to consider the future of the Geography Department.

Member, Geology Graduate Student Committee.

Member, Geology Long Range Planning Committee.

Member, Geology Department and IOM Facilities Committee.

C. Schwandt

Assistant Manager, ICP-MS Laboratory.

C. Shearer

Member, UNM-Sandia National Laboratory SIMS Development Committee.

Manager of ICP-MS Laboratory.

M. Spilde

Assistant Manager, Electron Microprobe and Scanning Electron Microscope Laboratories.

Served on Geology Chemical Hygiene Committee.

Visitors to IOM

Visitors to IOM during the period of this report included:

Karen Hogan, School of Geology and Geophysics, University of Oklahoma, visited IOM on August 12-15, 1991 for training in the preparation of geological thin sections with Tom Servilla.

Dr. Allan Kennedy, California Institute of Technology. Presented talk on September 30, 1991 entitled "Trace Element Distributions in Type B1 & Compact Type A CAI: Evidence for Dissolution of Perovskite During Crystallization"

Dr. Graham Layne, Woods Hole Oceanographic Institute. Presented talk on October 28, 1991 entitled "Ion Microprobe (SIMS) Analysis of Natural Materials"

Dr. Richard Ash and Mr. Jason Newton, Open University, UK. March 23-25, 1992.

Dr. D. Weill, Program Manager, NSF Facilities and Instrumentation Program. Presented a discussion on April 10, 1992, entitled "Introduction to NSF's Facilities and Instrumentation Program."

Dr. Johannes Obenholzener, Montanuniversität Leoben, Austria, visiting Los Alamos National Laboratory. Presented talk on May 27, 1992, entitled "Relict texture of pyroclastic rocks from the geological past--an SEM approach"

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## SECTION V

### PROFESSIONAL ACTIVITIES



V. PROFESSIONAL ACTIVITIES

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Adrian Brearley

Member, Lunar and Planetary Geoscience Review Panel (1992-1995). Houston, Texas. June 6-12, 1992.

Acted as abstractor for Mineralogical Abstracts, abstracted papers from Analytical Chemistry.

Rhian Jones

Panel reviewer for the National Science Foundation program, Instrumentation and Laboratory Improvement. Washington, D.C. January 22-25, 1992.

Abstracted papers from the journal Meteoritics for Mineralogical Abstracts.

Jordi Llorca

Council Member of the Association for Planetary Studies. Department of Geology, University of Barcelona.

Horton Newsom

Appointed Associate Editor for the international geochemistry journal *Geochimica et Cosmochimica Acta*, January 1, 1992.

Jim Papike

President of the Geochemical Society, 1989-1991.

Councillor for the Society of Economic Geologists, 1989-1992.

Member of the Lunar Outpost Site Selection Committee, 1990-1991.

Member of the Organizing Committee for the FORUM for Continental Scientific Drilling, 1990-1993.

Member of the Lunar and Planetary Sample Team (LAPST), Houston, Texas. 1990-1993.

Member of the Advisory Committee for the Institute of Geophysics and Planetary Physics, Los Alamos National Laboratory, 1991-1994.

Convenor of Symposium entitled "Trace element chemistry/crystal chemistry of the rock forming silicates." 3rd Goldschmidt Conference, Reston, Virginia, May 1992.

## V. PROFESSIONAL ACTIVITIES

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Guest Editor, Special Issue of Geophysical Research Letters, on "Katmai Volcanic Systems, Alaska," 1991.

### Chip Shearer

Member of the Long Valley Scientific Drilling Group.

In addition to the activities listed above, members of IOM acted as reviewers of manuscripts submitted to international journals and proposals submitted to federal funding agencies.

SECTION VI  
EDUCATIONAL OUTREACH  
AND  
PUBLIC SERVICE



71. VI. EDUCATIONAL OUTREACH AND PUBLIC SERVICE

1. Meteorite Museum

The Meteorite Museum is the most important focus of IOM's educational outreach. Several thousand people of all ages visit the Museum each year and many school parties visit the Museum to enhance scientific projects in Earth Sciences and Solar System studies. IOM personnel commonly volunteer to give guided tours of the Museum and laboratories to groups of visiting students. During the period of this report, some of the school groups that have been given tours include: Sandia Prep, Albuquerque; Zia Middle School, Santa Fe; Dennis Chavez Elementary School, Belen; St. Charles School, Albuquerque; Jemez Valley School; Taos Elementary School, Taos. In addition, participants in the New Mexico High School science symposium held at UNM also toured the Museum and SEM laboratory. New faculty visited the Museum on a Museum Crawl organized by Mrs. D. Peck on April 26, 1992.

The Earth and Planetary Science Department held an Open House for the Albuquerque Gem and Mineral Club on May 2, 1992, during which the Meteorite Museum, electron microprobe, SEM, ICP-MS and thin section laboratories were open to the public. Considerable interest was also generated by a display of meteorites set up by IOM at the Albuquerque Gem and Mineral Club show, March 6-8, 1992.

In addition to the public education provided by the Museum, we are routinely consulted by members of the public to help identify suspect meteorites and to provide information on meteorites and associated phenomena. We have met and corresponded with numerous people from all over the world in providing this service.

## VI. EDUCATIONAL OUTREACH AND PUBLIC SERVICE

### 2. Public Service

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#### Adrian Brearley

- Acted as consultant for author Madelyn Carlisle on a children's book about meteorites to be published in fall, 1992.

#### Jim Connolly

- Acted as judge for Northwestern Regional Science and Engineering Fair, Albuquerque, New Mexico, March 20, 1992.
- Was a participant in the One-on One program for new students on campus.
- Gave numerous introductory talks on Geology to elementary and secondary school students attending YWCA Science/Environment Camp program at Pinyon Camp, Tijeras, New Mexico, in September through November, 1991 and March through May, 1992.
- Acted as outside resource person and organizer for St. Charles elementary school computer club, Spring, 1992.
- Acted as Vice President & Program Chairman for Albuquerque Geological Society, 1991.

#### Rhian Jones

- Participated in the One-on-One Program as staff volunteer.
- Wrote an article entitled "The history of the Institute of Meteoritics, University of New Mexico" for Impact!, the journal of the Society of Meteoritophiles.
- Was consulted by Science World Magazine for an article on meteorites.

#### Horton Newsom

- Attended two meetings of the Hands on Science committee of the Albuquerque Public Schools.
- Instructed for the University of New Mexico Taekwondo Club.
- Was a participant in the One-on One program for new students on campus.

#### Ken Nichols

- Provided Photographs for author Madelyn Carlisle for a children's book about meteorites to be published in fall, 1992.



## VI. EDUCATIONAL OUTREACH AND PUBLIC SERVICE

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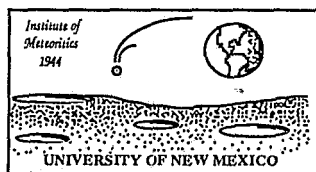
### Chip Shearer

- Developed planetary geology program at Sandia Prep.

### Mike Spilde

- Served on Board of Directors of the Albuquerque Gem and Mineral Club.

APPENDIX  
PUBLICITY



In this section:  
News to up you on entertainment,  
lifestyles and trends.

# OPTIONS

Neighborhood Trib, 2 ■  
TV, radio listings, 5 ■  
Comics, 6 ■

EDITOR: KEVIN HELLER 823-3629

The Albuquerque Tribune

TUESDAY APRIL 14, 1992 C



Rhian Jones, assistant curator of the Meteorite Museum, and her husband, museum curator A.J. Brantley, keep company with a cut-and-polished portion of the Navajo Iron meteorite.

## THEY CAME FROM OUTER SPACE

UNM's Meteorite Museum is no bigger than a shed but it's full of universal knowledge

By OLLIE REED Jr.

Staff reporter

**T**o look at it, you'd think it was just another big, ugly rock — sort of gray and squat. If you came across it in the Sandia foothills, you might sit on it to take a breather and munch on your granola bar.

How could you know it just happened to be the second-largest stone meteorite in the world?

It's called the Norton County meteorite because it fell on that county in Kansas in 1948. It didn't hit anything important, of course. It spewed some fragmenas over into Nebraska, too, but those pieces didn't find anything significant to land on either.

When the largest chunk, weighing in at 2,350 pounds, was found, it was sitting in a pit 7 feet wide and 10 feet deep. Now it's in Display Case No. 2 at the University of New Mexico's Meteorite Museum, on long-term loan from the University of Nebraska.

It's the heaviest meteorite among the 150 or so pieces in the museum. You can't help imagine how impressed you would have been with it if it had landed on your car or your best pet. But even after



Eighth-grade pupils from Los Lunas Middle School check out the Norton County meteorite during a visit to the University of New Mexico's Meteorite Museum. At 2,350 pounds, the meteorite is the museum's heaviest exhibit and the second-largest stone meteorite in the world.

you know what it is, the Norton County meteorite still looks like a big rock.

"Meteorites wouldn't be very interesting looking unless they were cut and polished," said Rhian Jones, the museum's assistant curator.

"It's only when they are cut open that you see the textures and the structures."

But dull or shiny, the messengers from space displayed in the small, dimly lit but illuminating museum are fascinating for the hints they can drop about things such as the origins of the universe.

The Meteorite Museum is part of the University of New Mexico's Institute of Meteoritics, which was founded in 1944 to do research in meteorites and planetary sciences. The museum was opened in 1974 to show off some of the institute's meteorite collection, the sixth-largest such collection in the world.

Much of that collection was accumulated by the late Dr. Lincoln LaPaix, founder of the institute and its director until 1966. LaPaix, for example, was very much involved in the recovery of the Norton County meteorite and its fragments.

Please see SPACE4

## SPACE From C1

Most meteorites are solid pieces of material that fall to Earth from the asteroid belt between Mars and Jupiter, although a few come from the moon and some may come from Mars itself.

They are made out of stone, stone and iron and just iron. Most are 4.5 billion years old, but there are some young whippersnapper meteorites that are only 1.3 billion years old.

UNM's Meteorite Museum has exhibits of just about every type. They go from pebble size to hefty chunks you wouldn't want to drop on your foot to old Norton County. The exhibits range from igneous rock meteorites found in Australia to an iron meteorite that plunged into eastern Siberia in 1947.

Thirty-five of the 200 or so meteorites that have been found in New Mexico are on display, too.

So is part of the Allende Carbonaceous Chondrite that ripped a blue-white slash across the night sky over Mexico on Feb. 8, 1969, before exploding noisily and falling to Earth near Chihuahua.

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T H E U N I V E R S



Meteorite Museum Assistant Curator Rhian Jones with 'Navajo'

## Large meteorite lands at Institute of Meteoritics

By Sherry Robinson

An iron meteorite named Navajo is one of the largest and most spectacular acquisitions to date by the Institute of Meteoritics.

The 1,600-pound specimen, which just went on display in the Institute's museum, 106 Northrop Hall, is on indefinite loan from the Field Museum in Chicago.

"It's by far the biggest iron meteorite we have here," says assistant curator Rhian Jones. "Because of its cut-and-polished surface, it is very spectacular. It really enhances the museum's display."

Scientists believe iron meteorites were formed when iron sank in the molten cores of asteroids soon after they formed.

The Navajo meteorite is an iron-nickel alloy formed at high temperature inside an asteroid, which then solidified as it cooled at a rate of a few degrees every 10 million years. In the cooling process, it took the form of an octahedron, which is a cross-hatched pattern of crystals. In Navajo, the crystals are large and look like metallic crossword-puzzle pieces.

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## SPACE From C1

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March 6, 1992



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## 2nd-largest stone meteorite on loan in New Mexico

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How could you know it just happened to be the second-largest stone meteorite in the world?

It's called the Norton County meteorite because it fell on that county in Kansas in 1948. It didn't hit anything important. It speckled some fragments over into Nebraska, too, but those pieces didn't find anything significant to land on, either.

When the largest chunk, weighing in at 2,250 pounds, was found, it was sitting in a pit 7 feet wide and 10 feet deep. Now it's in Display Case No. 1.

It's the University of New Mexico's Meteorite Museum, on long-term loan from the University of Nebraska.

It's the heaviest meteorite among the 150 pieces or so in the museum.

You can't help imagining how impressed you would have been with it if it had landed on your lawn.

But even after you know what it is, the Norton County meteorite still looks like a big rock.

"Meteorites wouldn't be very interesting looking unless they were

cut and polished," said Rhian Jones, the museum's assistant curator.

"It's only when they are cut open that you see the textures and the structures."

But dull or shiny, the messengers from space displayed in the small, dimly lit but illuminating museum are fascinating for the hints they can drop about things such as the origins of the universe.

The Meteorite Museum is part of the University of New Mexico's Institute of Meteoritics, which was founded in 1944 to do research in meteorites and planetary sciences. The museum was opened in 1974 to show off some of the institute's meteorite collection, the sixth-largest in the world.

Much of that collection was accumulated by the late Lincoln LaPaz, founder of the institute and its director until 1968. LaPaz was very much involved in the recovery of the Norton County meteorite and its fragments.

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Brearley and Jones also can tell you the largest meteorite craterers are the ones in Sudbury, Ontario, and Vredefort, South Africa. Both craters are 85 miles across.

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## Meteorites from Grants at Museum

Three meteorites that fell on Cibola County are among 34 of the outer-space objects that have fallen on New Mexico and are on display at the University of New Mexico's Meteorite Museum.

Two of them are simply known as "Grants" meteorite, and the third as "Bluwaters."

Scientists routinely name meteorites for the town nearest where it was found.

Cibola County Beacon  
March 4, 1992

Alamogordo Daily News  
May 15, 1992

## Meteorite Museum: They came from outer space

By OLLIE REED JR.  
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But even after you know what it is, the Norton County meteorite still looks like a big rock.

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Grand Canyon Inn  
1000 715  
Hook

## Meteorite museum comes from outer space to UNM

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"Rhian Jones, her husband, museum curator Adrian Breeley, has any scientific way of keeping track of the number of people who pass through the museum each year. But they know visitors' favorite question about meteorites."

"Have they ever hit people?" is one," Breeley said. "And they have done."

Breeley and Jones cite the case of Mrs. E. Hult Hodges who was visiting in a house in Sylacauga, Talladega County, Ala., on Nov. 30, 1954, when a 10-pound stony meteorite burst through the roof of the house and hit her. She was under two quilts, but the meteorite still bruised her left hip and slightly injured her hand.

It's pretty certain a meteorite killed a dog in Nakhla, Egypt, in June 1911. A piece of that culprit meteorite is in the collection of UNM's Institute of Meteoritics.

"Meteorite is a very important meteorite because we believe it may have come from Mars," Breeley said. Breeley and Jones also can tell you the largest meteorite craters are the ones in Sudbury, Ontario, and Vredefort, South Africa. Both craters are 85 miles across.

And they know the largest meteorite to slam into Earth is Hoba, an iron meteorite that landed in Namibia. It's biggest piece weighs 60 tons.

But they have taken to their new field with gusto because they find it fascinating.

## Meteorite museum houses many

Norton County meteorite is largest, heaviest in UNM Meteorite Museum

ALBUQUERQUE (AP) — To look at it, you'd think it was just another big, ugly rock, sort of gray and crusty. If you came across it in the foothills, you might sit on it to take a breather and munch on your granola bar.

How could you know it just happened to be the second-largest stony meteorite in the world?

It's called the Norton County meteorite because it fell on that spot in Kansas in 1946. It didn't hit anything important. It specked some fragments over into Nebraska, too, but those pieces didn't find anything significant to land on, either.

When the largest chunk, weighing in at 2,350 pounds, was found, it was sitting in a pit 7 feet wide and 10 feet deep. Now it's in Display Case No. 2 at the University of New Mexico's Meteorite Museum, on long-term loan from the University of Nebraska.

It's the heaviest meteorite among the 150 pieces or so in the museum. You can't help but wonder how impressed you would have been with it if it had landed on your car.

But even after you know what it is, the Norton County meteorite still looks like a big rock.

"Meteorites wouldn't be very interesting looking unless they were cut and polished," said Rhian Jones, the museum's assistant curator.

"It's only when they are cut open that you see the textures and the structures."

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The Meteorite Museum is part of the University of New Mexico's Institute of Meteoritics, which was founded in 1944 to show off some of the institute's meteorite collection, the sixth-largest in the world.

Much of that collection was

"Meteorites wouldn't be very interesting looking unless they were cut and polished."

— Rhian Jones  
Assistant Curator

accumulated by the late Lincoln LaPaz, founder of the institute and its director until 1968. LaPaz was very much involved in the recovery of the Norton County meteorite and its fragments.

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They are stone, stone and iron and just iron. Most are 4.5 billion years old, but there are some young whippersnapper meteorites that are only 1.3 billion years old.

UNM's Meteorite Museum has exhibits of just about every type. They go from pebble size to hefty chunks you wouldn't want to drop on your foot to old Norton County. They also range from igneous rock meteorites found in Australia to an iron meteorite that plunged into eastern Siberia in 1947.

Thirty-five of the 200 or so meteorites that have been found in New Mexico are on display, too.

So it part of the Allende Carbonaceous Chondrite that ripped a blue-white slash across the night sky over Mexico on Feb. 6, 1969, before exploding noisily and falling to Earth near Chihuahua.

And then there's the museum's most recent acquisition — the Navajo iron meteorite found in Apache County, Ariz., in 1921. At least, that's when a fellow named R.K. Thomas found it and tipped off scientists. The Navajos in the area had known about it since about 1600.

Navajo is on indefinite loan to the Meteorite Museum from the Field Museum in Chicago. It originally weighed 3,306 pounds, but the UNM museum only received 1,600 pounds of it. The Field Museum kept the rest.

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Breeley and Jones are a pair of Ph.D.s from England who joined the Institute of Meteoritics about 10 years ago. Before that, neither was that big on meteorites. It was in Earth rock and she was interested in lava flows.

The Raton Range  
March 6, 1992

## Museum displays Colfax meteor

ALBUQUERQUE — Colfax County might be able to call itself the "meteor capital" of New Mexico, based on the number of meteorites on display here.

University of New Mexico Meteorite Museum. —

Six meteorites from the Colfax County are among the 34 from New Mexico, the most of any county.

The Meteorite Museum is part of the geology department's Institute of Meteoritics, founded in 1944, which was the first institute in the world devoted to research on meteorites. Some of the first lunar rocks retrieved by the Apollo 11 mission were studied at the institute and displayed months later for the public.

The Meteorite Museum opened in 1974. Today, it contains 120 specimens from around the world. The samples from 34 locations in New Mexico were largely donated by residents.

The Colfax County samples include:

- "Palo Blanco Creek," a pignolite-plagioclase achondrite;
- "Aurora," an H4 chondrite;
- "Point of Rocks," an iron IIIA;
- "Foley," an H3 chondrite;
- "Chico Hills," an H4 chondrite; and
- "Abbot," an H3 chondrite.



VISITOR EXAMINES NAVAJO METEORITE  
Local finds are on display at UNM museum

The museum is located in which just went on display, is on Northrop Hall, Museum hours are 9 a.m. to 4 p.m., Monday through Friday. Admission is free.

An iron meteorite called Navajo meteorite we have here," assistant curator Rhian Jones said, "because of its iron and polished surface. It is very spectacular. It really enhances the museum."

Scientists believe iron meteorites were formed when iron sank in the melting cores of asteroids soon after they formed.

The Navajo meteorite is an iron-nickel alloy formed at high temperature inside an asteroid, which then solidified as it cooled. It is a rare find, estimated to be a rate of a few dozen every 10 million years. In the cooling process, it took the form of an octahedron, which is a crystalline pattern of crystals. In Navajo, the crystals are large and look like metallic crossword-puzzle pieces.

To bring out the crystal pattern, experts at the Smithsonian Museum cut the meteorite, etched it with a dilute acid and polished it as the Smithsonian Museum before shipping it to Albuquerque.

This meteorite was found, along with Indian beads, north of Navajo in Apache County, Ariz., in 1921. Like every other meteorite ever found, it was named for the nearest post office or geographical feature and is catalogued that way in reference books.

As discoverer, R.K. Thomas, told scientists at the time that it had been known to Navajos since around 1600 and they had concealed it with rocks. In 1926, a smaller piece was discovered nearby. The Field Museum acquired both in 1927.



Gallup Independent

## 2nd-largest stone meteorite on loan in New Mexico

ALBUQUERQUE (AP) — To look at it, you'd think it was just another big, ugly rock, sort of grey and squat. If you came across it in the foothills, you might sit on it to take a breather, and munch on your granola bar.

How could you know it just happened to be the second largest stone meteorite in the world?

It's called the Norton County meteorite because it fell on that county in Kansas in 1948. It didn't hit anything important, it spread some fragments over into Nebraska, too, but those pieces didn't find anything significant to land on, either.

When the largest chunk, weighing in at 2,350 pounds, was found, it was sitting in a pit 7 feet wide and 10 feet deep. Now it's in display case No. 2 at the University of New Mexico's Meteorite Museum, on long-term loan from the University of Nebraska.

It's the heaviest meteorite among the 150 pieces or so in the museum. You can't help imagining how impressed you would have been with it if it had landed on your car.

But even after you know what it is, the Norton County meteorite still looks like a big rock.

"Meteorites wouldn't be very interesting looking unless they were

cut and polished," said Brian Jones, the museum's assistant curator.

"It's only when they are cut open that you see the textures and the structures."

But dull or shiny, the messengers from space displayed in the small, dimly lit but illuminating museum are fascinating for the hints they can drop about things such as the origins of the universe.

The Meteorite Museum is part of the University of New Mexico's Institute of Meteoritics, which was founded in 1941 to do research in meteoritics and planetary sciences. The museum was opened in 1974 to show off some of the institute's meteorite collection, the sixth-largest in the world.

Much of that collection was accumulated by the late Lincoln LaPaz, founder of the institute and its director until 1968. LaPaz was very much involved in the recovery of the Norton County meteorite and its fragments.

Most meteorites are solid pieces of material that fell to Earth from the asteroid belt between Mars and Jupiter, although a few come from the moon and some may come from Mars itself.

"They are stone, stone and iron and

just iron. Most are 4.5 billion years old, but there are some young whippersnapper meteorites that are only a billion years old.

UNM's Meteorite Museum has exhibits of just about every type. They go from pebble size to hefty chunks you wouldn't want to drop on your foot to old Norton County. The exhibits range from igneous rock meteorites found in Australia to an iron meteorite that plunged into eastern Siberia in 1917.

Thirty-five of the 200 or so meteorites that have been found in New Mexico are on display, too.

So it part of the Allende Carbonaceous Chondrite that ripped a blue-white slash across the night sky over Mexico on Feb. 8, 1969, before exploding noisily and falling to Earth near Chihuahua.

And then there's the museum's most recent acquisition — the Navajo Iron meteorite found in Apache County, Ariz. in 1921. At least, that's when a fellow named R.K. Thomas found it and tipped off scientists. The Navajos in the area had known about it since about 1800.

Navajo is on indefinite loan to the Meteorite Museum from the Field Museum in Chicago. It originally weighed 2,300 pounds, but the UNM

museum only received 1,600 pounds of it. The Field Museum kept the rest.

The Meteorite Museum's hall has been polished, which as far as assistant curator Jones is concerned makes it the display museum's most spectacular exhibit.

Experts at the Smithsonian Institution cut the meteorite, etched it with a dilute acid and polished it to highlight its crisscross pattern of crystals.

Neither Jones nor her husband, museum curator Adrian Brearley, has any scientific way of keeping track of the number of people who pass through the museum each year.

But they know visitors' favorite question about meteorites.

"Have they ever hit people?" is one, Brearley said. "And they have done."

Brearley and Jones cite the case of Mrs. E. Hulth Hodge who was reclining in a house in Sycamore, Talladega County, Ala., on Nov. 30, 1954, when a 10 pound stony meteorite burst through the roof of the house and hit her. She was under two quilts, but the meteorite still bruised her left hip and slightly injured her hand.

It is pretty certain a meteorite killed a dog in Nabkha, Egypt, in June 1911. A piece of that culprit meteor-

ite is in the collection of the British Institute of Meteoritics.

"That meteorite is a very important meteorite because we believe it may have come from 'Mars,'" Brearley said.

Brearley and Jones also can tell you the largest meteorite entries are the ones in Sudbury, Ontario, and Vredefort, South Africa. Both crashes are 15 miles across.

And they know the largest meteorite to slam into Earth is Hoba, an iron meteorite that landed in South Africa. Its biggest piece weighs 60 tons.

But UNM's Meteorite Museum is a great place to start learning.

# They came from outer space

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New Mexico Daily Lobo

March 30, 1992

## Meteorite pays visit to UNM museum

'Navajo' weighs in at 1,600 pounds

by D.M. McKinney  
Daily Lobo

A 1,600 pound meteorite called Navajo has been loaned to the UNM Meteorite Museum indefinitely by the Field Museum in Chicago.

The iron meteorite, which gets its name from the Navajo reservation where it was found, is the largest acquisition to date for UNM.

Prior to arriving here, Navajo was cut in half and polished, revealing a criss-cross pattern of iron and nickel alloy crystals similar to a large, metallic crossword puzzle.

Rhian Jones, senior research associate and assistant museum curator of the meteorite museum, said because of Navajo's cut and polished surface, it is spectacular and enhances the museum's collection. The collection consists of about 35 other meteorites, five of which are iron meteorites like Navajo.

Navajo has a relatively small amount of nickel, Jones said, which may be one of the reasons the crystals in it are so large.

However, the primary reason for large crystals, Jones said, is the rate at which the meteorite cooled. Navajo cooled at a rate of only a few degrees every 10 million years.



Robert Lyon

Navajo, a 1,600 pound meteorite, is on display at the UNM Meteorite Museum on loan from the Field Museum in Chicago.

Jones said meteorites are the "poor man's space probe."

"They give us samples of a lot of different planetary bodies from the asteroid belt," Jones said. "Meteorites preserve a record of the way the solar system was at

that time."

As far as meteorites go, Navajo is not very large. Weighing in at just over one ton, it pales against the world's largest meteorite which weighs more than 132,000 pounds.

# Meteorite museum comes from outer space to UNM

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College of Arts and Sciences  
 The Report of The Department of History  
 July 1, 1991 - June 30, 1992  
 Jonathan Porter, Chair

GENERAL DEPARTMENTAL INFORMATION

A. Significant Achievements

1. Graduates

	Summer 1991	Fall 1991	Spring 1992
B.A.'s	10	11	36
M.A.'s		3	4
Ph.D's	2	2	1

Sinclair, Shelley (Adv. Sullivan), Summer 1991

Truxillo, Charles Arthur (Adv. Kern), Summer 1991

Davis, Sonny B. (Adv. Conniff), Fall 1991

Vazquez, Maria (Adv. Maciel), Fall 1991

Stanfield, Michael (Adv. Hall), Spring 1992

2. Course Offerings

Summer 1991

Course No.	Course Name	No. of Sections	SCH
101	Western Civilization	2	248
102	Western Civilization	1	207
162	History of the U.S.	2	111
309	Historiography	1	66
320	St./Age of FDR-Afri	3	336

327	History of Technology	1	96
332	Eur-18C 1700-1788	1	66
360	Hist of New Mexico	1	177
438	Eur Diplomatic Hist	1	51
493	Rdg-Research in Honors	1	3
496	Undergrad Rdgs-Hist	3	9
510	St/Columbus Inst	2	99
551	Problems	5	19
599	Masters Thesis	3	9
699	Dissertation	3	30

Fall 1991

Course No.	Course Name	No. of Selections	SCH
101	Western Civilization	6	2391
102	Western Civilization	2	639
161	History of the U.S.	7	2052
162	History of the U.S.	2	177
251	Trad Eastern Civ	1	120
281	Hist-Colonial Lat Am	1	171
283	La Raza Hist Mex Am	1	117
309	Historiography	2	147
311	Ancient Near East	1	393
313	Greece	1	450
315	Hist-Womens-Anc-Mod	1	219
320	Studies in History	3	168
323	Renaiss Era 1300-1520	1	165
331	Europe in 17th Cent	1	60

334	Mod Europe 1815-1890	1	123
336	Europe since 1939	1	39
343	Hist of Engl to 1688	1	183
347	Old Russia 9th-17th C	1	108
349	Russ-1855 to Present	1	180
355	Revolutionary China	1	81
356	Islamic Middle East	1	123
360	Hist of New Mexico	2	825
363	The Old South	1	282
375	Military Hist of U.S.	1	238
395	Spain & ;Port to 1700	1	72
425	Hist Modern Medicine	1	84
453	Asian Studies Thesis	1	6
461	Amer Colon 1607-1763	1	81
467	Gilded Age 1865-1900	1	66
468	20th C. Amer 1898-1932	1	117
471	US Social Hist	1	81
493	Rdg-Resrch in Honors	3	9
494	Senior Thesis	1	3
495	Undergrad Hnrs. Coll.	1	27
496	Undergrad Rdgs-Hist	2	6
500	S/Hist Res Meth	1	39
521	Sem & Stu in Mod Hist	1	24
551	Problems	10	43
566	Sem & Stu Civil War Pd	1	27
573	Sem Amer Western Hist	1	36
579	Sem Southwest Hist	1	42

731

581	S/Econ Hist of Col Amer	1	33
599	Masters Thesis	10	51
699	Dissertation	8	160

Spring 1992

Course No.	Course Name	No. of Sections	SCH
101	Western Civilization	1	519
102	Western Civilization	7	2100
161	History of the U.S.	3	789
162	History of the U.S.	5	1704
204	Greece & Rome	1	192
230	USSR People-Pol-Cult	1	93
252	Mod Eastern Civilizations	1	114
282	Mod Latin Amer Hist	1	108
285	African Amer Hist II	1	27
309	Historiography	2	180
314	Rome	1	459
316	Women in Mod World	1	219
320	Studies in History	4	420
322	The High Middle Ages	1	207
335	Modern Eur 1890-1939	1	105
348	Romanov Russ to 1855	1	159
352	History of Japan	1	195
358	Mod Mid East Fr 1800	1	135
360	History of New Mexico	2	804
362	Am Urban Hist from 1870	1	117
371	American Diplomacy	1	147

373	Hist Amer Frontier	1	168
380	Hist of SW-Span Per	1	285
384	Inter Amer Relations	1	51
398	Mexico Since 1821	1	123
437	Hist of Holocaust	1	147
442	Germany 1871-1971	1	36
453	Asian Studies Thesis	1	6
466	The Civil War Era	1	174
469	20th C Amer 1932-PR	1	225
470	Philos of History	1	18
474	US Naval History	1	66
493	Rdg-Resrch in Honors	4	18
494	Senior Thesis	3	15
495	Col/Dem Ideas Russ	1	21
496	Undergrad Rdgs-Hist	6	18
532	Sem & Stu-Erly Mod Eur Hist	1	18
542	Sem & Stu Mod Eur Hist	1	18
552	Problems	13	58
562	Sem & Stu Erly Am Hist	1	21
568	Sem & Stu Recent Am Hist	1	36
573	Sem Amer Western Hist	1	21
579	Sem Southwest Hist	1	21
582	Sem Recent Latin Am Hist	1	36
584	Sem Prob Mod Latin Am	1	9
599	Masters Thesis	9	47
699	Dissertation	9	162



## 3. Personnel &amp; Administration

## a. Employees

Permanent:

Abeyta, Liz	Staff Assistant
	Graduate Secretary
Berthold, Richard M.	Associate Professor:
	Ancient History
Bokovoy, Melissa	Assistant Professor
	Modern Europe
Campbell, Patricia	Administrative Assistant:
	Western History Assoc.
Connell-Szasz, Margaret	Associate Professor:
	American Indian History
Devejian, Patsy E.	Clerical Specialist V:
	Center for the American West
Etulain, Richard W.	Professor: Western America,
	Literature of the American
	West
	Director: Center for the
	American West
Esquibel, Geneva	Clerical Specialist V;
	Receptionist, Secretary,
	Typist (appointment 9/91)
Feller, Daniel M.	Associate Professor:
	Jacksonian Era, Civil War,
	Reconstruction

Gonzalez, Deena	Visiting Associate Professor Chicana/Women's History
Hall, Linda B.	Professor: Modern Latin America, Modern Mexico
Himmerich y Valencia, Robert	Editor, New Mexico Historical Review
Hutton, Paul A.	Associate Professor: Military History, Western America
Jameson, Elizabeth	Associate Professor: Western America, U.S. Social
Kern, Robert W.	Professor: Iberian History, Modern Europe
Kessell, John L.	Associate Professor: Spanish Southwest, Borderlands
Maciel, David	Professor: Chicano History, Modern Southwest and Mexico
Martinez, Yolanda	Administrative Assistant: Department Executive Secretary and Manager
McClelland, Charles E.	Professor: Modern Germany, European Intellectual History
Nash, Gerald D.	Professor: 20th Century U.S., U.S. Economic History

Porter, Jonathan	Professor and Chairman: Modern China, East Asia
Pugach, Noel H.	Associate Professor: U.S. Diplomatic History
Rabinowitz, Howard N.	Professor: American Urban History, The South
Risso, Patricia	Associate Professor: Middle East Islam, South Asia
Robbins, Richard	Professor: Russian History
Roebuck, Janet	Professor: English History, Urban History
Scharff, Virginia	Assistant Professor: U.S. Social, Womens History
Semo, Enrique	Professor: Colonial Latin America, Mexico
Slaughter, M. Jane	Associate Professor: Women's History, Sexuality, Modern Europe
Spidle, Jake W.	Associate Professor: German History, Africa, History of Medicine
Steen, Charlie R.	Associate Professor: Early Modern Europe, France
Sullivan, Donald D.	Associate Professor: Medieval and Renaissance Europe

Szasz, Ferenc M.

Professor: American Social  
and Intellectual History

Yazawa, Melvin

Associate Professor and  
Assistant Chair: Colonial  
and Revolutionary America

Temporary:

Andrews, Stephen

Graduate Assistant

Bailey, James

Reader (Spring)

Barbour, Bart

Graduate Assistant

Beninato, Stefanie

Graduate Assistant

Brunk, Sam

Graduate Assistant

Bryan, Terri

Graduate Assistant

Butler, Jennifer

Reader (Fall & Spring)

Cocron, Fritz

Visiting Professor

Culhane, Jolane

Assistant Editor (NMHR)

Darcy, Yvonne

Graduate Assistant

Reader (Summer)

Denman, Michael

Reader (Spring)

Drolet, Raymond

Graduate Assistant

Dunagan, Marcia

Reader (Fall)

Evans, Daniel

G.A. (Fall & Spring)

Farr, George

Reader (Spring)

Gentry, Thomas

Reader (Fall & Spring)

Gonzalez, Irene

Graduate Assistant

Green, Shannon

Reader (Fall & Spring)

Guglielmo, Jennifer

Reader (Fall & Spring)

Hickok, James	Visiting Lecturer
Hughes, Scott	Graduate Assistant
Hunter, Carol	Reader (Fall)
Hyink, James	Visiting Lecturer
Jacobson, Mark	Graduate Assistant
Karmen, Abbe	Graduate Assistant
Key, Douglas	Reader (Fall & Spring)
Kemp, John	Reader (Spring)
Kowalsky, Daniel	Graduate Assistant
Lindenauer, Jennifer	Reader (Fall)
Loosebrock, Richard	Graduate Assistant
Lopez, Alfred	Reader (Fall & Spring)
Lovato, Carol	Visiting Lecturer
Martinez, Fred	Graduate Assistant
Matthews-Lamb, Sandra	Graduate Assistant
Morcillo, Aurora	Graduate Assistant
Oborotova, Marina	Visiting Lecturer
Olsen, Brett	Reader (Spring)
Ranson, Edward	Visiting Lecturer
Rector, William	Graduate Assistant
Rose, Jeffrey	Reader (Summer & Fall)
	Graduate Assistant
Scott, Jeffrey	Reader (Fall, Spring & Summer)
Stanfield, Michael	Lecturer
Tanner, Louis	Reader (Spring)
Truxillo, Charles	Visiting Lecturer

Watson, Stephen	Graduate Assistant
Ye, Lin	Graduate Assistant
Zhu, Li-ping	Reader (Fall)

b. Administration

The History Department administration is directed by the Chair and the Administrative Assistant. The Chair is assisted by the Assistant Chair, and the Administrative Assistant is assisted by two full time secretaries. The graduate program is supervised by the Graduate Coordinator, who advises the Chair, and the Administrative Assistant. The undergraduate program is administered by the Undergraduate Advisor. The Chair, Administrative Assistant, Assistant Chair, Graduate Coordinator, and Undergraduate Advisor constitute the Executive Committee, which advises the Chair on the formulation of policy and major administrative matters. Administration and formulation of policy in specific areas is delegated to six standing committees and five individual assignments. Two of the committees (Graduate Entrance Committee and Undergraduate Program Committee) are elected by the faculty: the other committees and the individual assignments are appointed by the Chair. A Salary Committee is appointed annually by the Chair, with an additional member elected. The faculty are divided into five Sections reflecting geographical divisions specializations: America, American West, Europe, Latin America, and Asia. The senior faculty member of each section is usually designated by the Chair as Section Head, and advises

the Chair on matters concerning the Section. The Sections meet to decide matters of curriculum planning, scheduling, and staffing priorities.

Persons serving in responsible administrative positions in the department in 1991-92 were:

Chair:	Jonathan Porter
Administrative Assistant:	Yolanda Martinez
Assistant Chair:	Melvin Yazawa
Graduate Coordinator:	Jane Slaughter
Undergraduate Advisor:	Charlie Steen
Affirmative Action Coordinator	Linda Hall
American Section:	Gerald Nash
America West:	Richard Etulain
Europe:	Janet Roebuck
Latin America:	Linda Hall
Asia:	Patricia Risso

#### 4. Activities Beyond the Formal Curriculum

- a. The Department held its semi-annual Open House for all students on August 22 (Fall) and January 16 (Spring), all day in the Common Room. Most of the faculty attended to advise, offer guidance or simply to socialize.
- b. The History Graduate Student Association & Phi Alpha Theta presented A Tandem Lecture Series on Current Turmoil in Europe. Dr. Richard Robbins, University of New Mexico delivered a lecture on "Reflections on the (Recent) Revolutions in Russia"; & Dr. Melissa Bokovoy, University of New Mexico

delivered a lecture on "Blood in the Balkans: A Historic Perspective in Yugoslavia".

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- c. Dr. Karen Offen, Stanford University Helmut Frick, from the Foreign Office, Federal Republic of delivered a lecture on "Women and the French Revolution - A Slide Show".
- d. The Seventh Annual Calvin Horn Lecture Series was held in November. This year's guest lecturer was Dr. Joan M. Jensen from the Department of Women's Studies, New Mexico State University. "Women and Creativity in the Modern American West".
- e. History Graduate Student Association & Phi Alpha Theta presented A Continuing Lecture Series on Communism in the 1990s. Dr. Jonathan Porter delivered a lecture on "Persistence of Communism in China: The Last Major Holdout".
- f. The History Graduate Student Association & Phi Alpha Theta presented A Continuing Lecture Series on Communism in the 1990s. Dr. Gerald Nash, University of New Mexico and George Bancroft, University of Gettingen delivered a lecture on "After the Wall Came Down: Recollections of a Year Spent in Germany During Reunification".
- g. Dr. John Coatsworth, University of Chicago delivered a lecture on "Latin America: The Challenge of Growth & Unequality 1700-2000".
- h. Dr. Dick Flack, University of California Santa Barbara delivered a lecture on "What Ever Happened to the New Left".
- i. Dr. Al Hurtado, University of Arizona "Herbert E. Bolton's World of Race and Ethnicity: Professional Life at Berkeley in



the Early Twentieth Century".

- j. A Conference on New Mexico, 1940-1990, presenters: Gerald Nash, Virginia Scharff, Ferenc Szasz, Michael Welsh, Rosalie Otero, and F. Chris Garcia. Topics: Historical Trends, Families, Ethnicity, Political Developments, Economic Trends and Cultural Currents.
- k. Dr. R. S. Sharma, Osmania University "Cost and Class in Modern India".
- l. Dr. Aryeh Kasher, Tel Aviv University lectured on "Jewish Zealstry in the Second Temple Period - The Marsada Complex".
- m. Dr. Thomas Davies, San Diego State University, lectured on "Autonomous Millenarian Communism: Sendero Luminoso of Peru".
- n. Dr. Norihito Tanaka, Kanagawa University, lectured on "An Assessment of United States-Japanese Economic Relations".
- o. Dr. Bonnie Smith, Rutgers University, lectured on "Gender & the Practice of Scientific History in the US & Europe, 1800-1940".
- p. Dr. Peggy Pascoe, University of Utah delivered a lecture on "Race, Gender, & Patriarchal Privilege: Miscegenation Law in the American West, 1870-1948".
- q. Dr. Swijendra Tripathi, Indian Institute of Management, delivered a lecture on "the Crisis of the Indian Policy: A Historical Perspective".
- r. Dr. Virginia Scharff, recipient of the Third Annual Snead-Wertheim Award, lectured on "Sex, Drugs and Rock-n-Roll: Re-collecting the Counter Culture".

## 5. Awards

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- a. David Key was the recipient of the Grunsfeld Award.
- b. Molly Hartmann received the Charles Coan Award.
- c. Stefanie Beninato and Chris Huggard received the Dorothy Woodward Memorial Fellowship
- d. Karen Schwehn received the John F. Kennedy Award.

## B. Significant Plans and Recommendations

Since the retirement of Donald Skabelund in the summer of 1991, the History Department's position in History of Science and Technology has remained open. This is an important field for any graduate degree granting program or undergraduate service program, and it is important that we fill this position as soon as practicable. We have refined the definition of the position to include possibly the history of American as well as European science, and to focus on the modern development of science in the twentieth century. Relationships with "big science" done in New Mexico laboratories would be particularly appropriate for our program. Also, interests in environmental history, related to science and technology, would be very welcome.

The department is presently engaged in two areas of program development which are apt to have an impact on its needs and directions in the future. The first is the development of a World History course. Planned during the 1991-92 academic year and inaugurated on a experimental basis in the fall semester 1992, this course will be evaluated and refined by the three instructors presenting the course

and a faculty evaluation committee, with a view to making a decision on its continuation by the end of the spring semester. Related issues are the appropriate level of the course (introductory, intermediate, or capstone), and its role in the required History curriculum.

The second area of development is Women's History. The department now boasts a strong cadre of faculty whose scholarly and teaching interests in part or in whole embrace Women's History. We find an increasing number of graduate student applicants seek to enter the program to study in the field, whether it be in European, American, Latin American, or Western American History. The faculty in this field will be drafting a proposal for a regular graduate field in Women's History to present to the department by the end of the academic year.

The number of students in the master's and doctoral programs has grown over the past few years by approximately 30 percent. This growth reflects the increasingly strong reputation of the department in several different fields. In spite of this growth, however, we are still not able to attract, admit, and retain a sufficient number of members of minority ethnic groups (women comprise approximately one half of the graduate students). We remain committed to increasing the proportions of these groups in the future.

Finally, we plan to adopt in the near future special uniforms, hair styles, and tatoos to identify all History faculty and staff. Purple will be the most likely favored color.

### C. Affirmative Action

The present ethnic and gender composition of the History Department regular faculty and graduate students is shown in the following tables:

Faculty (tenure stream): total = 28

Male: 21 (75.0%)

Female: 7 (25.0%)

Minority: 3 (10.7%)

Graduate Students: total = 82

Male: 46 (56.0%)

Female: 36 (43.9%)

Minority: 11 (13.4%)

Hispanic: 9 (10.9%)

American Indian: 2 ( 2.4%)

Black: 1 ( 1.2%)

#### D. Appointments to Staff

1. Visiting or Part-Time Appointments:

- a. James Hickok, Visiting Lecturer, Western Civilization, Fall 1991.
- b. James Hyink, Visiting Lecturer, History of the U.S., Spring 1992.

- c. Carol Lovato, Visiting Lecturer, History New Mexico, Fall 1991,  
Spring 1992.
  - d. Michael Stanfield, Teaching Associate, Latin American History,  
Spring 1992.
  - e. Charles Truxillo, Visiting Lecturer, Western Civilization,  
Spring 1992.
2. Faculty Appointment:
- a. Deena Gonzalez joined the Department as Visiting Associate  
Professor (8/91)

E. Separation From Staff

- a) Donald Skabelund retired from the department.
- b) Nancy Brown, Office Manager, New Mexico Historical Review

F. Sponsored Research

- 1. Six professors submitted 31 proposals (21% of current faculty).
- 2. Of these submitting proposals, 6 obtained awards (100%).

**DEPARTMENT OF JOURNALISM**  
Robert K. Tiemens, Acting Chair

Annual Report  
July 1, 1991 - June 30, 1992

**A. Significant Achievements**

The faculty worked throughout the fall semester on plans for a merger with the Department of Communication. On November 13, 1991 the faculty of both departments voted unanimously to become a single academic unit under the name, Department of Communication and Journalism. The merger document is included with the 1991-92 annual report for the Department of Communication.

The department was granted full accreditation in May by the Accrediting Council for Education in Journalism and Mass Communication.

The department hosted a summer workshop for 30 New Mexico high school students. The workshop was sponsored by the New Mexico Press Association, the Albuquerque Publishing Company, and UNM.

Professor Bob Gassaway conducted a program starting in May 1992 for 25 professional journalists from El Salvador. The Salvadorans are at the University of New Mexico until December 1992 under a grant from the USAID.

**B. Significant Plans and Recommendations for the Future**

The merger with the Department of Communication has set the agenda for future planning. The new department has made specific proposals to the university administration for remodeling and expansion of space in the Journalism Building and for extensive upgrades of computer and broadcast equipment.

### C. Appointments, Retirements and Resignations

Professor Robert Tiemens resigned his position as Acting Chair of the department. Professor Everett Rogers, Annenberg School of Communication at Southern California University, will become chair of the new Department of Communication and Journalism in January 1993. Professor Jean Civikly will assume the position of interim chair beginning July 1, 1992.

Terry Halpin retired on July 31, 1991. She had served as the department secretary for 20 years. Mary Alice Strain was hired to replace Ms. Halpin.

Miguel Gandert was appointed Assistant Professor of Journalism. His area of specialization is visual communication and broadcast journalism.

A roster of all faculty and staff for AY 1991-92 is presented in Appendix A.

### D. Sponsored Research

Two faculty members (33%) submitted proposals to outside agencies during the 1991-92 academic year. One of the proposals has been funded.

## APPENDIX A

### Roster of Faculty and Staff

#### Regular Faculty

Fred V. Bales, Associate Professor  
Charles K. Coates, Associate Professor  
Miguel Gandert, Assistant Professor  
Bob M. Gassaway, Assistant Professor  
Dianne M. Lamb, Associate Professor  
Henry L. Trewhitt, Associate Professor

#### Part-time and Temporary Faculty

William J. Buchanan, Lecturer I  
Patricia Kroken, Lecturer II  
Carol Cox Smith, Lecturer II  
Richard Silva, Lecturer II  
Hal F. Simmons, Lecturer II

#### Staff

Terry Halpin, Department Secretary, (resigned July 31, 1992)  
Mary Alice Strain, Clerical Specialist V



**Department of Linguistics****College of Arts and Sciences****July 1, 1991 - June 30, 1992****ANNUAL REPORT****Jean Newman, Department Chair****A. Significant Developments during the Academic Year, 1991-92**

**PhD Proposal.** The major plans of the Department of Linguistics for the 1991-92 academic year, like those of most Departments, were affected by the University's Reallocation process. The Linguistics Department had prepared, and planned to submit for approval (see Annual Report for 1990-91), a proposal to offer a PhD in Linguistics. Because of the campus-wide involvement in reallocation and the administration's "pause" on new programmes, the Department was instructed to wait until the Spring term of 1992 before submitting the proposal. The PhD proposal was submitted to the College of Arts and Sciences for approval in the Spring term and has been reviewed by the relevant College committees, the library, and computing services, and now awaits College faculty approval before submission to the Faculty Senate, administration, and Regents. We are committed to seeing that the PhD proposal receives final approval in this academic year in order that we may begin recruiting for doctoral students in the fall of 1993.

**Mood & Modality Symposium.** The major scholarly accomplishment of our Department for the past academic year was the Mood and Modality Symposium hosted by Professor Joan Bybee. Participation in this international conference was by invitation-only and included 37 leading scholars from universities in North America, Europe, Australia, and New Zealand. In addition, a large percentage of our own faculty participated either as presenters (Professors Bybee, S. Wilcox and P. Wilcox) or as audience members and

discussants. The three-day symposium was deemed a great success by all involved and contributed to the growing reputation of the Department of Linguistics.

**Institute for Study of Southwest Languages.** On March 2, 1992 the faculty of the Department of Linguistics approved the establishment of a Centre for the Study of Southwest Languages (the name was changed to "Institute" on April 21). The purpose of this Institute is "to generate research on the languages of the Southwest". The Institute will have four major functions: research, information management, policy and planning, and training (the Institute plans to train members of minority linguistic communities to conduct research on the languages of the Southwest, in addition to training graduate students). The primary participants in this endeavour are Garland Bills, Eduardo Hernandez-Chavez, Alan Hudson, and Mary Ann Willie. The Institute is hopeful of obtaining College support for start-up costs (verbally committed by Dean Wildenthal before his resignation) but anticipates that it will quickly become self-supporting through grant activity. The Department feels that the establishment of this Institute will fill a very real need in New Mexico in particular, and the Southwest generally, and sees its efforts in this regard as fulfilling the mission of the University as outlined in UNM 2000.

#### **B. Significant Plans and Recommendations for the Near Future**

The most significant plan for the near future is to obtain final approval of the proposal to offer a doctorate in Linguistics at the University of New Mexico (see A. above). Demand for our MA degree has risen sharply in the last year (largely as a result of active recruitment efforts) and we have had many enquiries from prospective PhD students about the possibility of pursuing a PhD in Linguistics at UNM. Many of our current MA students came to UNM with the hope of continuing their graduate careers in our Department. Our proposal does not currently require additional faculty but does propose an increase in graduate student support from the current two teaching assistantships to a minimum of four. We feel strongly that our emphasis on the study of languages of the Southwest, our strong faculty, and the natural

attractions of New Mexico will lead to a very successful PhD programme and we will work very hard to ensure its passage in this academic year.

A second immediate goal is to obtain College support for the Institute for the Study of Southwest Languages (see A. above) and we plan to actively pursue this topic this year.

As noted in the 1990-91 Annual Report, the Department of Linguistics has successfully received the endorsement of the LSA Executive Committee to host the 1995 LSA Institute. This institute runs for six weeks every other year and is attended by hundreds of students and scholars from across North America and from abroad. The Department has appointed a director for the Institute (Professor Joan Bybee), and a committee that is working actively on recruiting well-known scholars to serve as faculty during the Institute. The Dean of the College of Arts and Sciences and the Provost have both committed significant financial support in order to ensure that the Institute is a success.

### **C. Appointments to Staff**

**Dr. William Isham.** Following notification of Christine Monikowski's planned resignation (see D. below), the Department of Linguistics requested authorisation to fill her position. Because of the ever-increasing demand for Sign Language Interpreters, the Department strongly believes that the programme requires permanent tenure-track faculty and requested that the replacement position be made at the assistant professor level. This request was granted. Two finalists for the position were brought to UNM in June for interviews, Dr. Jenny Singleton (visiting assistant professor at the Department of Psychology, University of Illinois, Champaign-Urbana) and Dr. William Isham (postdoctoral fellow at the Laboratoire de Psychologie Experimentale, University of Paris). The Linguistics faculty voted to offer the position to Dr. Isham, who accepted the position. Due both to the late search and prior commitments to his post-doctoral fellowship, Bill Isham was unable to start his position in the Fall 1992 term. Dr. Isham will assume his position as assistant professor, starting in the Spring 1993 term (the effective start date is December 30, 1992).

**Promotion and Tenure: Hector Torres.** Professor Torres has a joint position with the Departments of English and Linguistics (.5 FTE in each). He was reviewed, and recommended, for tenure and promotion to associate professor by both departments in December of 1992. He was subsequently awarded tenure and promoted to Associate Professor (in both English and Linguistics) effective at the start of the Fall 1992 term.

#### **D. Separations from Staff**

Effective the end of the Spring 1992 term (May 16, 1992), Christine Monikowski resigned from her position as a lecturer in the Sign Language Interpreter Training programme in the Department of Linguistics. Ms. Monikowski cited her desire to finish her dissertation in Educational Linguistics as the major reason for her resignation. She had been a mainstay of the Sign Language programme at UNM and her contributions will be sorely missed. Her teaching responsibilities will be taken over by Bill Isham, upon his arrival in January (see C. above).

#### **E. Scholarly Presentations**

The Department of Linguistics hosts a colloquium series each year which includes presentations by faculty, students, and visiting scholars. This year's Department Colloquium series included the following talks:

Hans Jurgen Sasse, University of Cologne, "Lexical Semantics and Aspect", September 6, 1992.

George Papcun, Los Alamos National Laboratories, "Computerised Speech Recognition: The Practical Consequences of Linguistic Theories", October 4, 1992.

Douglas Biber, Northern Arizona University, "Dimensions of Register Variation in Somali", October 11, 1992.

Gary Dell, University of Illinois, Champaign-Urbana, "A Parallel-Distributed-Processing Model of the Phonological Encoding of Words", November 1, 1992. (Co-sponsored by the Department of Psychology and the College of Arts and Sciences.)

Jon Amastae, University of Texas--El Paso, "Spanish Spirantization: The Rule", November 22, 1992.

Hector Torres, UNM Depts. of Linguistics and English, "Supplementing the Binding Theory: The Question of Proper Binding", December 6, 1992.

Andrej Kibrik, Moscow Institute of Linguistics and the University of Arizona, "The Category of Propositional Derivation: Athabaskan 'classifiers' and Kartvelian 'character vowels'", January 31, 1992.

Bernard Spolsky, Bar-Ilan University, Israel, "Triumphing over Unavoidable Uncertainty: Some Notes from a History of Language Proficiency Testing", March 5, 1992. (Co-sponsored by the Colleges of Arts & Sciences and Education)

Paul Amrhein, UNM Dept. of Psychology, "Promise me...A Study of How we Understand Committing Speech Act Verbs", March 27, 1992.

Jack Damico, University of Southwestern Louisiana, "Conversing with Neurologically Impaired Adults: Addressing the Third Law of Gardening", April 6, 1992.

John Oller, UNM Dept. of Linguistics, "Cloze in Coherence: Some Recent Findings", April 10, 1992.

Edith Bavin, LaTrobe University, Melbourne, Australia, "Universal and Particular in the Acquisition of Warlpiri", May 1, 1992.

Jennifer Coates, Roehampton Institute, Southlands College, England, "Language, Gender, and Career", May 7, 1992. (Co-sponsored by the Departments of Linguistics, Anthropology, Communication & Journalism)

Jenny Singleton, University of Illinois, Champaign-Urbana, "When Learners Surpass their Models: The Restructuring of Language from Impoverished Input" June 4, 1992 (Sign Language Job Interview talk)

William Isham, University of Paris, "Psycholinguistic Evidence for Conceptual Mediation in Simultaneous Interpretation", June 15, 1992 (Sign Language Job Interview talk)

#### **E. Publications not Listed Elsewhere**

The following books were published after the submission of the 1990-91 Annual Supplement to the Biographical Record:

Wilcox, Sherman. *The Phonetics of Fingerspelling*. John Benjamins, Amsterdam, 1992.

Young, Robert W. and Morgan, William (with the assistance of Sally Midgette). *Analytical Lexicon of Navajo*. University of New Mexico Press, 1992. (Note: Robert Young is Professor Emeritus of Linguistics.)

#### **F. Outside Professional Activities of Staff Members**

The faculty of the Department of Linguistics are very active in their professional fields of specialisation, in addition to their UNM activities of teaching and conducting research. Their activities include presentations and attendance at national and international conferences and invitations to present colloquia at other institutions. In addition, faculty serve on editorial boards and the governing boards of national organisations. For example, Professor Bybee is a member of the Executive Committee of the Linguistic Society of America, and Professor S. Wilcox is the newly-appointed editor (as of September 1991) of the *Journal of Interpreting* (published by the Registry of Interpreters for the Deaf). Others are active in providing their professional expertise to groups in the community; for example, Professor Willie is a consultant on language and reading for the Pueblo Pintado Elementary School in Cuba New Mexico, as a direct result of her commitment to contributing to the development of literacy in Navajo in native speakers. Four members of the Department (Garland Bills, Alan Hudson, Eduardo Hernandez-Chavez, and Mary Ann Willie) have proposed to establish an Institute for the Study of Southwest Languages which will contain training of community members as one of its major goals (see A. above). In sum, in the past year the members of the faculty of the Department of Linguistics have been actively engaged in professional activities outside UNM.

**Outside Grant Proposals.** Professor S. Wilcox has, with William Stokoe (PI), submitted a grant proposal to develop a Multimedia Dictionary of ASL. This proposal (for

\$400,000) was made to the National Institutes of Health, Institute on Deafness and Other Communicative Disorders, Small Business Innovation Research Program in December 1991. It represents the second phase of the project; the first phase was funded from August 1990 to January 1991 for \$38,000. This grant is being listed as an "outside" activity as it was not submitted through the University of New Mexico although the focus is related to Professor Wilcox's research at UNM.

#### **G. Outside-sponsored Research**

**Continuing Grant Support.** There were two (continuing) research projects in the Department that were funded from outside sources. These are:

Garland Bills: Project director (with Neddy A. Vigil), \$225,000 grant from the National Endowment for the Humanities for "Linguistic Atlas and Archive of the Spanish of New Mexico and Southern Colorado", June 1991-May 1993.

John Oller: PNM Foundation Grant (\$4,100). "Improving Instruction through On-going Evaluation on Two Levels: The Classroom and the University at Large", May 1, 1991-April 30, 1992.

#### **H. Honours and Awards**

Two members of the voting faculty of the Department of Linguistics were appointed Faculty Scholars for the Spring 1992 term. Hector Torres, (English and Linguistics), "Narrative Syntax, Styles, and Authority in Chicano/a Literary Discourse" and Vera John-Steiner (Educational Foundations and Linguistics), "Collaborative Strategies in Intellectual Work".

Joan Bybee was awarded an RAC grant on March 25, 1992 for a project entitled "The Interaction of Phonological and Morphological Typology" (\$2,189).

### **I. Students Graduated**

The following students received degrees from the Department of Linguistics:

- BA** Elizabeth Garcia (Fall, 1991)
- BS** Mary Frances Klein, Ann-Margaret Trujillo, Tammy Sanders (Fall, 1991)  
David Gilbert Quinto, Charles Wilkinson, Jr., Sherri Dearing (Schripsema),  
Heather Ann Pratt (Spring 1992)
- MA** Denise Cordova, Teresa Marie Meehan, Atsushi Mishima (Fall, 1991)  
Ibrahim Al-Fallay, Kathy Luke, Joanne Scheibman (Spring 1992)

### **J. Other Significant Events**

**Signfest 1992.** On May 1 and 2, the Sign Language Interpreting programme presented its 14<sup>th</sup> annual Sign Fest at Del Norte High School. The three performances (two evening and one matinee) were, as always, very successful and brought in approximately \$2000 to the programme. The funds raised from Sign Fest are used to support workshops, speakers, equipment purchases, and student trips to interpreting conferences.

The Sign programme continued its tradition of making a cash (\$100) award to undergraduate students on the basis of excellence in research. In addition, the Albuquerque Sertoma Club contributed \$200 for two more awards to outstanding undergraduates in the Sign Language Interpreter Training programme. The three undergraduate recipients this year were: Janis Carbajal, Donna Clapper, and Joy Hammock. An additional \$100 award (donated by the Sign Language programme) is made annually by the Department of Linguistics to a graduate student for outstanding research. This year's recipient was Joanne Scheibman, a Spring 1992 MA graduate.



**College of Arts and Sciences**  
**Department of Mathematics and Statistics**  
**Annual Report 1991-92**

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**Alexander Stone, Chairman**

The Department of Mathematics and Statistics continues to gain in national stature through the accomplishments of its faculty. Our research and graduate education missions are shared by over 200 institutions throughout the United States. Recent national ranking now place our department in the upper third of these institutions. Our undergraduate mathematics and statistics instruction programs are also very strong. Moreover we provide many courses which are critical for study in fields such as engineering, physical and life sciences, and social sciences. The importance of our service mission to other fields is underscored by the fact that each semester approximately one third of all UNM students take a mathematics or statistics course to satisfy some requirement. We believe that mathematics should provide a gateway to a student's future and not a barrier to success. Thus we are deeply concerned with issues relating to precalculus and calculus reform. Each year in the U.S. over 500,000 students take a precalculus course and only a small fraction, roughly one tenth, go on to begin the study of calculus. Many of these students do not complete a calculus course. This situation tends to reinforce a widely held belief that "calculus is a filter, not a pump". Consequently we believe that the department should continue to cooperate with public schools in such matters as the promotion of scientific literacy, curriculum development and teacher training. The missions of our department, research, education, service, and outreach are of central importance in

providing our nation with a work force able to compete with those of other advanced industrial nations.

1. Significant Developments and Achievements.

- (a) The research productivity of the faculty is at an all-time high. In particular, the announcement last fall of the solution of the Atiyah-Jones conjecture by Charles Boyer and Benjamin Mann in collaboration with Jim Milgram (Stanford) and Jacques Hurtubise (McGill) resulted in much acclaim and national recognition. Professor Milgram was a visitor in our department last fall and is visiting again this fall. He is the leader of our geometry-topology group which is one of the strongest in the nation. Our research groups in operator algebra and applied mathematics are also very strong. More than half of our faculty have external grant support which amounted to approximately \$800,000 in AY 1991/92. The total number of publications in recognized journals was 65, and there were two textbooks published.
- (b) The Instructional Computing Laboratory will become a reality this semester. A \$61,000 NSF grant, administered by Frank Gilfeather, Julie Garrard, and Ronald Schrader, with matching funds from A&S will enable the department to purchase 50 PC's and 3 large SPARC 2 workstations and

auxiliary equipment to be housed temporarily in the Engineering Classroom Annex. Our precalculus instructional effort will be considerably enhanced by this facility, which will also be available for special projects.

- (c) Frank Gilfeather was a member of a statewide coalition which led an effort to obtain a five year NSF grant of \$10 million to UNM. This grant, to be administered by a statewide coalition which includes UNM faculty, will significantly impact mathematics education in grades K-12 in New Mexico.
- (d) The department acquired a significant amount of computing equipment in the last year. Included in our acquisitions were a SUN ELC to administer the department network, an HP III/D laser printer to serve the department, a FAX machine, two SUN I PC's purchased through our Statistics SCREMS grant, and an IBM RS 6000 and computer graphics equipment purchased through a DOE grant (which provides additional RA support). The department now has eleven SUN SPARC machines, six X-terms, eight SUN 3 machines, and over twenty PC's and five laser printers which are shared by networking. It is rather astounding that the responsibility for maintaining this huge array of computing equipment rests with one

systems administrator, a part-time systems programmer and a Research Associate. Their responsibilities will increase tremendously when the Instructional Computing Laboratory is fully operational. We believe that we are the largest public computer facility on campus.

- (e) Seminar activity continued at a high level throughout the year in a wide range of areas. These included Statistics, Operator Algebra, Geometry and Topology, Applied Math, Navier-Stokes Equations, Analysis, and Combinatorics and Graph Theory. The graduate students also conducted weekly seminars on a variety of topics. An excellent colloquium schedule was well received.
- (f) The graduate program now has approximately 90 students enrolled. Many of these students are part-time by virtue of full time employment in local laboratories or industry. We currently have 41 graduate teaching assistants. These students receive a stipend of \$8,000 for the academic year and they generally enroll for 6 to 9 hours of graduate courses. The selection process for TA's continues to be highly competitive, since only approximately 10% of our TA applicants are successful in obtaining appointments.
- (g) Our graduate examination procedures continue to be studied and revised. Our masters and qualifying exams

are now given at the start of fall and spring semesters.

- (h) Professor Richard Metzler has been selected as a co-director of a grant administered by the Albuquerque Public Schools, which has as its purpose the training of elementary school teachers in the teaching of mathematics. This project, now in its second year, is called FAME (Fellows for the Advancement of Mathematics Education). Richard Metzler replaces Richard Griego as co-director. Lois Folsom, a member of APS and the College of Education, continues as the other co-director.
- (i) The New Mexico Articulation Task Force met last October at NMSU. Our department was represented by Frank Gilfeather and Ralph DeMarr, who assisted in the development of an updated articulation (transfer) matrix among the colleges and universities of New Mexico.
- (j) The Annual Awards Banquet in April recognized the teaching, research, and service efforts of our department. A special Distinguished Service award was presented to Dr. Abraham Franck. Franck Scholarships were awarded to four of our outstanding undergraduates.
- (k) The winner of the High School Math Contest was Nadezhda Marinova, an 11th grade student at Armand Hammer United World College in New Mexico. She is

from Bulgaria and hopes to attend college in the U.S.

- (1) The Junior Mathematics Prognostic Program (JUMP) was directed by Phil Herlan and we had approximately 30 high schools as participants this past year. The purpose of this program is to enhance the mathematic preparation of New Mexico High School students.

## 2. Significant Plans for the Future

- (a) We should explore means of developing a Geometry and Topology Institute. We already have a very strong research group in this area of mathematics research, and if Jim Milgram joins our department in Fall 1993, we will have one of the premier groups in topology and geometry in this country.
- (b) The development of an instructional computational laboratory is a major goal. We seek to enhance instruction at all levels and utilize new technologies where appropriate.
- (c) Our graduate programs continue to respond to national needs and priorities. The recruitment and retention of students from underrepresented groups continues to receive special attention. Our Graduate Committee is very concerned with this issue as well as improving advisement and examination procedures. Written criteria for selection

and retention of TA's will also be developed and refined, as well as better methods of record keeping.

- (d) The undergraduate committee will continue to address a variety of concerns. Calculus reform, recruitment and retention of students from underrepresented groups, articulation of courses among New Mexico Schools, and mathematics education issues need to be addressed. Additional or alternative means of support and evaluation of undergraduate instruction need to be studied. We should also consider the possibility of introducing honors courses with an interdisciplinary flavor.
- (e) The High Performance Computing initiative, spearheaded by Frank Gilfeather and Brian Smith (Computer Science) will continue its efforts to obtain massive federal funding.
- (f) A crucial need in the department is more space for faculty and computing. The possibility of a merger with Computer Science would intensify this need.
- (g) A comprehensive plan for offering undergraduate and graduate courses on ITV should be developed, when UNM's Distance Learning Program is in place. We have a master's degree program in applied mathematics available at Los Alamos and should now consider expanding this program to include Albuquerque area students.

### 3. Appointments to Staff:

- (a) Ruth Goldman was appointed as Staff Assistant on November 12, 1991, and Mique Reisch was appointed as Computer Facilities Coordinator on the same date.
- (b) In AY 1991/92, we had three visiting faculty. Professor R. James Milgram was a visitor in the fall of 1991, and Professor Ruy Exel was a visitor during the entire academic year. Professor Nicholas Kazarinoff was a visitor in the fall until his death on November 18, 1991.
- (c) We made the following adjunct appointments: Adjunct Professor Burton Wendroff (Los Alamos National Laboratory), Adjunct Associate Professor Louis Romero (Sandia National Laboratories) and Adjunct Assistant Professor Patrick Knupp (Ecodynamics).

### 4. Separations from Staff

- (a) Linda Cicarella resigned on September 30, 1991 to accept a position outside the university.
- (b) In AY 1991/92, Professor Richard Grassl resigned in December, 1991. He is currently chairman of the Mathematics Department at Northern Colorado University. Professor Richard Griego retired in June 1992 and is currently chairman of the mathematics department at Northern Arizona University.



## 5. FACULTY PUBLICATIONS

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Bedrick, Edward J.

"Model Checking for Logistic Regression: A Conditional Approach," In Proceedings of the 23rd Interface between Computing Science and Statistics, (New York; Springer-Verlag), (1991) pp. 208-214.  
Coauthor: J. R. Hill.

"Approximate Confidence Intervals for the Correlation from Data in 2 x 2 Tables," British Journal of Mathematical and Statistical Psychology, Vol. 44 (1991) pp. 369-378.

Boyer, Charles P.

"Lie Supergroup Actions on Supermanifolds," Transactions of the American Mathematical Society, Vol. 323 (1991) pp. 151-175.  
Coauthor: O. A. Sanchez Valenzuela.

"On the Homology of  $SU(n)$  Instantons," Transactions of the American Mathematical Society, Vol. 323 (1991) pp. 529-562. Coauthors: B. Mann and D. Wagoner.

Christensen, Ronald

"Small Sample Characterizations of Near Replicate Lack of Fit Tests," Journal of the American Statistical Association, Vol. 86 (1991) pp. 752-756.

Cogburn, Robert F.

"On the Central Limit Theorem for Markov Chains in Random Environments," Annals of Probability, Vol. 19 (1991) pp. 587-604.

Coutsias, Evangelos A.

"A New Formulation for Dendritic Crystal Growth in Two Dimensions," In Asymptotics Beyond All Orders, Edited by H. Segur et al., (New York; Plenum Press), (1991) pp. 87-104. Coauthor: H. Segur.

"Fundamental Interactions of Vortical Structures with Boundary Layers in Two-dimensional Flows," Physica D, Vol. 51 (1991) pp. 482-497.  
Coauthor: J. P. Lynov.

DeMarr, Ralph

"Problem Solving Involving Systems of Linear Equations with Free Variables," School Science and Mathematics, Vol. 91 No. 4 (1991) pp. 169-171. Coauthor: N. Gonzales.

Ellison, James A.

"Effect of RF Phase Noise on the SSC Beam," In Proceedings of the 14th Biennial Particle Accelerator Conference, (San Francisco; IEEE),

(1991) pp. 216-218. Coauthor: H. -J. Shih.

"Nekhoroshev's Theorem, Ergodicity and the Motion of Energetic Charged Particles in Crystals," In *Essays on Classical and Quantum Dynamics*, Edited by J. A. Ellison and H. Uberall, (Philadelphia; Gordon and Breach Science Publishers), (1991) pp. 17-56. Coauthor: H. S. Dumas.

*Essays on Classical and Quantum Dynamics*, (Philadelphia; Gordon and Breach Science Publishers), (1991) 246 pp. Coeditor: H. Uberall.

"Axial Channeling, the Continuum Model and the Method of Averaging," *Annals of Physics*, Vol. 209 No. 1 (1991) pp. 97-123. Coauthors: H. S. Dumas and A. W. Saenz.

Embid, Pedro F.

"Deflagration to Detonation Transition in Reactive Granular Materials," *Progress in Astronautics Aeronautics*, Vol. 135 (1991) pp. 481-512. Coauthors: J. Nunziato and M. Baer.

Entringer, Roger C.

"Cycles of Length 0 Mod 3 in Graphs," In *Graph Theory, Combinatorics and Applications*, Edited by Y. Alavi et al., (New York; John Wiley), (1991) pp. 87-101. Coauthors: C. A. Barefoot, L. H. Clark, et al.

"Maximal Graphs Satisfying a Proper Subgraph Degree Constraint," In *Advances in Graph Theory*, Edited by V. R. Kulli, (Gulbarga, India; Vishwa International Publications), (1991) pp. 97-112. Coauthor: D. E. Jackson.

"Extremal Problems for Local Properties of Graphs," *Australian Journal of Combinatorics*, Vol. 4 (1991) pp. 25-31. Coauthors: L. H. Clark, J. E. McCanna, et al.

Fegan, Howard D.

"Introduction of Compact Lie Groups," *World Scientific Publishing*, Singapore, (1991) p. 148.

Galicki, Krzysztof

"Duality and Yang-Mills Fields on Quaternionic Kahler Manifolds," *Journal of Mathematical Physics*, Vol. 32 (1991) pp. 1263-1268. Coauthor: Y. S. Poon.

"Multicenter Metrics with Negative Cosmological Constant," *Classical and Quantum Gravity*, Vol. 8 (1991) pp. 1529-1543.

Gibson, Archie G.

"Three-Body Problem with Charged Particles," *Physical Review C*, Vol. 43 (1991) pp. 992-1000. Coauthors: Gy. Bencze, P. Doleschall, et al.

"A New K-Matrix Approach to N-Body Scattering," Journal of Mathematical Physics, Vol. 32 (1991) pp. 3117-3124. Coauthors: A. J. Waters, G. H. Berthold, et al.

"Solution of the Chandler-Gibson Equations for a Three-Body Test Problem," Physical Review C, Vol. 44 (1991) pp. 1796-1811. Coauthors: A. J. Waters, G. H. Berthold, et al.

Gilfeather, Frank

"Teacher Networking: A Corollary of Junior Mathematics Prognostic Testing," In Issues in Mathematics Education, (Philadelphia; American Mathematical Society), (1991) pp. 145-160. Coauthor: N. Gonzales.

Gilfeather, Frank L.

"Operators with Arbitrary Hochschild Cohomology," Contemporary Math, Vol. 120 (1991) pp. 33-40. Coauthor: R. Smith.

Gonzales, Nancy

"Teacher Networking: A Corollary of Junior Mathematics Prognostic Testing," In Issues in Mathematics Education, (Philadelphia; American Mathematical Society), (1991) pp. 145-160. Coauthor: F. Gilfeather.

"Problem Solving Involving Systems of Linear Equations with Free Variables," School Science and Mathematics, Vol. 91 No. 4 (1991) pp. 169-171.

Hagstrom, Thomas

"Asymptotic Analysis of Dissipative Waves with Applications to their Numerical Simulation," In Asymptotic Analysis and the Numerical Solutions of Partial Differential Equations, Edited by H. Kaper and M. Garbey, (New York; Pure and Applied Mathematics), (1991) pp. 99-112.

"Consistency and Consistency and Convergence for Numerical Radiation Conditions," In Mathematical and Numerical Aspects of Wave Propagation Phenomena, Edited by G. Cohen, L. Halpern and P. Joly, (Philadelphia; SIAM), (1991) pp. 283-292.

"Asymptotic Boundary Conditions for Dissipative Wave: General Theory," Mathematics of Computation, Vol. 56 (1991) pp. 589-606.

"Conditions at the Downstream Boundary for Simulations of Viscous Incompressible Flow," Journal of Scientific and Statistical Computing, Vol. 12 (1991) pp. 843-858.

Hersh, Reuben

Syntheses, (Boston; Kluwer Academic Publishers), (1991) 277 pp. Coeditor: J. Hintikka.

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Review of History and Philosophy of Modern Mathematics, by W. Aspray and P. Kitcher, In *Historia Mathematica*, Vol. 180 (1991) pp. 288-291.

Review of Alternate Realities, In *Mathematical Models of Nature and Man*, Vol. 11 No. 4 (1991) pp. 359-361.

"Mathematics has a Front and a Back," *Epistemology Methodology and Philosophy of Science*, Vol. 88 No. 2 (1991) pp. 127-133.

Kucharz, Wojciech

"Polynomial Mappings from Products of Algebraic Sets into Spheres," *Journal fur die Reine und Angewandte Mathematik*, Vol. 417 (1991) pp. 135-139. Coauthor: J. Bochnak.

"Simultaneous Diagonalization of an Algebraic Family of Matrices," *Linear Algebra and its Applications*, Vol. 157 (1991) pp. 49-53.

"Elliptic Curves and Real Algebraic Morphisms into the 2-Sphere," *Bulletin of the American Mathematical Society*, Vol. 25 (1991) pp. 81-87. Coauthor: J. Bochnak.

"Generating Ideals in Real Holomorphy Rings," *Journal of Algebra*, Vol. 144 (1991) pp. 1-7.

Kyner, Walter T.

"The Amplitude of Circadian Oscillations: Temperature Dependence, Latitudinal Clines, and the Photoperiodic Time Measurement," *Journal of Biological Rhythms*, Vol. 6 No. 4 (1991) pp. 299-313. Coauthors: C. S. Pittendrigh and T. Takamura.

Lorenz, Jens

"Applications of Adaptive Data Distributions," In *Proceedings of the Fifth Distributed Memory Computing Conference*, (Los Alamitos; IEEE Computer Society), (1991) pp. 249-253. Coauthor: E. Van de Velde.

"Convergence of the Solutions of the Compressible to the Solutions of the Incompressible Navier-Stokes Equations," *Advances in Applied Mathematics*, Vol. 12 (1991) pp. 187-214. Coauthors: H. O. Kreiss and M. Naughton.

"Numerical Calculation of Invariant Tori," *Journal of Scientific Computing SIAM*, Vol. 12 (1991) pp. 607-647. Coauthors: L. Dieci and R. Russell.

Mann, Benjamin M.

"On the Homology of  $SU(n)$  Instantons," *Transactions of the American Mathematical Society*, Vol. 323 No. 2 (1991) pp. 529-562. Coauthors: C. P. Boyer and D. Wagoner.

"Some Spaces of Holomorphic Maps to Complex Grassmann Manifolds,"

Journal of Differential Geometry, Vol. 33 No. 2 (1991) pp. 301-324.  
Coauthor: R. J. Milgram.

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"The Topology of Rational Functions and Divisors of Surfaces," Acta Mathematica, Vol. 166 No. 3 (1991) pp. 163-221. Coauthors: F. R. Cohen, R. L. Cohen, et al.

Onneweer, Cornelis W.

"Multipliers on Weighted Hardy Spaces Over Locally Compact Vilenkin Groups, II," Colloquium Mathematicum, Vol. LX No. LXI (1991) pp. 305-314. Coauthor: T. S. Quek.

Pathak, Pramod K.

"Quasi-likelihood Models in Sampling," In Proceedings of R. C. Symposium on Probability, Statistics and Design of Experiments, (New Delhi; Wiley Eastern), (1990) pp. 571-579. Coauthor: A. A. Tsiatis.

"Change Detection in Image Sequences using Walsh Functions and the Likelihood Test Method," In Proceedings of the International Conference on Signal Processing, (Beijing), (1990) pp. 995-998. Coauthor: M. Nieniewski.

"Bayes Estimation of Hazard and Acceleration in Accelerated Testing," IEEE Transactions on Reliability, Vol. 40 (1991) pp. 615-621. Coauthor: A. K. Singh.

"An Algorithm for Optimal Integration of two Surveys," Sanakhya, Vol. 52 No. B (1990) pp. 198-203. Coauthor: J. Aragon.

"Introduction to: Rao (1945) Information and the Accuracy Attainable in the Estimation of Statistical Parameters," Breakthroughs in Statistics, Vol. 1 (1991) pp. 227-247.

Qualls, Clifford

"Asymmetric Growth of the Lateral Cerebral Ventricle in Infants with Posthemorrhagic Ventricle Dilation," Journal of Pediatrics, Vol. 118 No. 1 (1991) pp. 108-112. Coauthors: B. S. Brann IV, et al.

"Evaluation of Fetal Sonographic Measurements in the First Trimester by Transvaginal Sonography," Gynecologic and Obstetric Investigation, Vol. 32 (1991) pp. 206-209. Coauthors: L. Izquierdo, et al.

"Sleep Deprivation Reduces LH Secretion in Men Independently of Melatonin," Acta Endocrinologica, Vol. 124 (1991) pp. 646-651. Coauthors: R. Strassman, et al.

Steinberg, Stanly

"Hybrid Adaptive Poisson Grid Generation and Grid Smoothness," Communications in Applied Numerical Methods, Vol. 7 (1991) pp. 345-354. Coauthors: P. J. Roache and K. Salari.

773  
"Identification of Lamé Coefficients from Boundary Observation,"  
Inverse Problems, Vol. 7 (1991) pp. 335-354. Coauthors: M. Akamatu  
and G. Nakamura.

Stone, Alexander P.

"Power Series Expansions for Trigonometric Functions via Solutions to  
Initial Value Problems," Mathematics Magazine, Vol. 64 No. 4 (1991)  
pp. 247-251.

Sulsky, Deborah

"Discretization on a General Staggered Grid," In Proceedings of the  
13th IMACS World Congress on Computation and Applied Mathematics,  
Edited by R. Vichnevetsky and J. H. H. Miller, (Dublind, Ireland;  
Criterion Press), (1991) pp. 441-442. Coauthor: J. U. Brackbill.

"A Numerical Method for Suspension Flow," Journal of Computational  
Physics, Vol. 96 (1991) pp. 339-368. Coauthor: J. U. Brackbill.

Wofsy, Carla

"The Relationship of IgE Receptor Topology to Secretion in RBL-2H3  
Mast Cells," Journal of Cell Physics, Vol. 148 (1991) pp. 139-151.  
Coauthor: J. M. Oliver, J. R. Wofsy, et. al.

Yang, Yisong

"On the Bardeen-Cooper-Schrieffer Integral Equations in the Theory of  
Superconductivity," Letters in Mathematical Physics, Vol. 22 (1991)  
pp. 27-37.

"Existence of the Massive  $SU(3)$  Vortices," Journal of Mathematical  
Physics, Vol. 32 (1991) pp. 1395-1399.

"On the Abelian Higgs Models with Sources," Journal de Mathématiques  
Pures et Appliquées, Vol. 70 (1991) pp. 325-344.

Zimmer, William J.

"Statistical Modeling for Particle Impact Noise Detection Testing," In  
Proceedings of the Annual Reliability and Maintainability Symposium,  
(Orlando; Institute of Electrical and Electronics Engineers, Inc.),  
(1991) pp. 536-540. Coauthor: R. R. Prairie.

"Bayes Estimation of Hazard and Acceleration in Accelerated Testing,"  
IEEE Transactions on Reliability, Vol. 40 No. 5 (1991) pp. 615-621.  
Coauthors: P. K. Pathak and A. K. Singh.

## 6. Outside Professional Activities of Faculty and Staff

During AY 1991-1992 most of our faculty attended professional society meetings and presented papers.

The departmental travel budget of \$14,000 supported in part, travel by 29 staff to regional, national and international meetings. Some travel was also supported by college funds, and external grants. A complete listing of these activities appears in the annual biographical supplements of each faculty member.

## 7. Outside Sponsored Research

P.I.	AGENCY	PURPOSE	AMOUNT	DATES
1. ACEVES, A.	AFOSR	Light Beam and Pulse propagation in Nonlinear Dielectrics	72,700	10/90-9/93
2. BOYER, C. (with MANN)	NSF	The Geometry and Topology of Moduli Spaces	200,000	6/92-5/95
3. COUTSIAS, E. (with HAGSTROM, LORENZ)	DOE	Numerical and Asymptotic Studies	50,000	6/92-7/93
4. EFROMOVICH, S.	NSF	Adaptive Estimation of Nonparametric Curves	35,000	6/92-7/93
5. ELLISON, J.	SSC	Superconductor Supercollider Lab	28,800	8/91-5/92
6. EMBID, P.	SNL	Mathematical Analysis of Reactive Multiphase Flows	15,000	5/91-5/92
	ARO	Mathematical Analysis of Reactive Multiphase Flows	30,000	5/91-5/92

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P.I.	AGENCY	PURPOSE	AMOUNT	DATES
6. EMBID (cont'd)	NSF	Mathematical Analysis of Reactive Multiphase Flows	20,000	6/91-11/93
7. ENTRINGER, R. (with CLARK, SZEKELY)	ONR	Efficient Communications in Networks	75,000	3/91-93
8. GALICKI, K.	NSF	The Geometry of Quaternionic Manifolds	38,700	6/92-11/93
9. GIBSON, A. (with CHANDLER)	NSF	Nonrelativistic Multichannel Quantum scattering	46,000	6/91-5/92
(with CHANDLER)	NSF	UNM-CRIP Cooperation on N-Body Scattering	45,000	9/88-8/92
10. GILFEATHER, F.	NSF	Cohomology of Operator Algebras	28,000	8/91-12/92
11. GONZALES, N.	NSF	Problem-posing instruction for teachers	34,000	6/92-6/93
12. HAGSTROM, T.	NSF	Computation Analysis of Fluid Flows	38,500	5/90-6/92
(with EMBID, ACEVES, LORENZ STEINBERG, SULSKY)	NSF	SCREMS (Graphics Lab)	30,000	7/91-7/92
	Ohio Super Computer Center	CRAY Research Units (100)	-	-
13. KUCHARZ, W.	NSF	The Topology and Arithmetic of Real Algebraic Varieties	56,900	12/91-5/94
14. LORENZ, J.	NSF	Numerical Analysis and Computation of Invariant Manifolds	49,480	12/91-5/94
15. LORING, T.	NSF	Presidential Young Investigator	33,000	7/90-7/93
	NSF	U.S. Brazil Cooperation	8,400	9/91-2/94



P.I.	AGENCY	PURPOSE	AMOUNT	DATES
16. MANN, B. (with BOYER)	NSF	The Geometry and Topology of Moduli Spaces	200,000	6/92-6/95
	NSF	Geometric Questions in Algebraic Topology	102,000	6/89-6/92
17. METZLER, R.	NSF	Calculator Workshops	41,800	1/91-12/92
	CHE	Discovering Calculus with calculators	39,000	12/91-12/92
18. QUALLS, C.	VA	Statistical Research	14,024	10/91-9/92
19. SCHRADER, R. (with GARRARD, GILFEATHER)	NSF	Instructional Computing Laboratory	61,417	7/91-12/93
20. STEINBERG, S.	WERC	Efficient Algorithms for modelling the WIPP site	30,000	2/91-2/93
21. STONE, A.	AFOSR	EM Lenses	56,000	1/91-1/92
	AFOSR	EM Lenses	61,368	1/92/1/93
22. SULSKY, D. (with SCHREYER, CHEN)	NSF	Numerical Simulations of Suspension Flow	40,000	6/91-6/93
	SNL	The application of new numerical techniques and constitutive equation to the analysis of penetration	50,000	5/91-8/91
23. WOFSY, C.	NSF	Mathematical Models in Cell Biology Responses to Molecular Signals	27,800	12/89-11/91
	NSF	Mathematical Analysis of receptor aggregation	60,000	9/91-6/93

In addition, awards totaling \$2,806 were made by the UNM Teaching Allocation Committee to N. Gonzales and C. Onneweer for special projects and also by the UNM Research Allocation Committee to C. Onneweer in the amount of \$2,043.

# DEPARTMENT OF MODERN AND CLASSICAL LANGUAGES

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Chair: Dick Gerdes  
Administrative Assistant: Rosario Johnson

## ANNUAL REPORT JULY 1, 1991-JUNE 30, 1992

### I. TEACHING FACULTY AND STAFF

#### A. Permanent Faculty

##### Spanish

Bergen, John	Professor
Bills, Garland	Professor
Cárdenas, Anthony	Professor
Fernández, Pelayo	Professor
Gerdes, Dick	Professor
González, Angel	Professor
Gonzales-Berry, Erlinda	Professor
Rodríguez, Alfred	Professor
Lamadrid, Enrique	Associate Professor
Rebolledo, Tey Diana	Associate Professor
Arias, Santa	Assistant Professor
Hegstrom-Oakey, Valerie	Assistant Professor
Fernández, Rosa	Lecturer III

##### French

Senninger, Claude	Professor
White, Julian	Professor
Putnam, Walter	Associate Professor

##### German

Hannemann, Bruno	Professor
Pabisch, Peter	Professor
Jespersen, Robert	Associate Professor

##### Portuguese

Tolman, Jon	Professor
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##### Russian

Kolchevska, Natasha	Associate Professor
Lindsey, Byron	Associate Professor

Greek/Latin

Smith, Warren	Professor
Robin, Diana	Professor

**B. Permanent Part-time Instructors**Chinese

Wu, Pearl	Lecturer II
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Japanese

Santistevan, Grace	Lecturer II
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French

Hanson, Suzanne	Lecturer II
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**C. Part-time Instructors**French

Simmons, Carolyn	Lecturer II
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Latin

Warren, Denise	Lecturer II
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Spanish

Martínez, Raquí	Lecturer II
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**D. Emeritus Professors**Spanish

Duncan, Robert  
 Holzapfel, Tamara  
 McCurdy, Raymond  
 Nason, Marshall  
 Ulibarri, Sabine

German

Holzapfel, Robert

**E. Visiting Scholars****Greek/Latin**

Cyrino, Monica  
Reeves, Robert

**Italian**

Duke, Rachele

**Russian**

Iundin, Boris

**Spanish**

Pazos, Julio

**F. Language Learning Center**

Vigil, Neddy, Director

**G. Teaching Assistants****French**

Coppex, Claudine  
Cully, Suzanne  
Goulesque, Florence  
Marshall, Quannah  
Prentice, Daria  
Schense, Mary  
Sharp-Spencer, Lynda  
Thomin, Laurent

**German**

Buchsenschuss, Antje  
Lee, Steven  
Williams, Wilhelmina

**Japanese**

Ueno, T.

**Russian**

Kasanova, Yana

Spanish

Abraham, James  
 Aleixandre, Eduardo  
 Archuleta, Walter  
 Baratta, Gloria  
 Boyer, Charles  
 Branche, Jerome  
 Cázares, Leonard  
 Clark, Susan  
 Dutta, Nandini  
 Gardner(Landin), E.  
 Gonzales-Velasquez, María  
 Goodnough, Robin  
 Grover, Lisa  
 Hershberger, Robert  
 Hokanson, Sonja  
 Huer, Kyung  
 Jaramillo, Yolanda  
 Jurewicz, Liliana  
 Lee, Jaehak  
 Lettieri, Monica  
 Linares, María  
 Linares, Oswaldo  
 López, María Cristina  
 Martínez, Elizabeth  
 Nyreen, Harry  
 Parks, Roger  
 Pernía, Jose  
 Peters, Kathryn  
 Reed, Suzanne  
 Romero, Yolanda  
 dos Santos, Vivaldo  
 Shaw, Carolyn  
 Silesky, Jean  
 Taylor, Kimberly  
 Torres, María Luisa  
 Watts, Keith  
 Wiltshire, Kyer  
 Wright, Paul

**H. Office Staff**

Johnson, Rosario  
 Cerna, Ivana  
 Pérez, Ana  
 Hicks, Artemisa  
 Nakas, Ausra  
 Williams, Wilhelmina  
 Newe, Bernie  
 Andrews, Stephen

Administrative Assistant  
 Staff Assistant  
 Department Secretary  
 Lower Division Spanish Secretary  
 French/Italian Secretary  
 German Summer School Office Manager  
 Department Secretary for German/Russian  
 Classics Secretary

**I. Work Study Help**

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Armijo, Andrew  
Baker, Tammy  
Kelly, Pablo  
Mishoe, James  
Palladino, Patrick  
Stewart, Michael  
To, Dung

**II. DEGREES AWARDED**

**A. B.A.**

Awarded 62 Bachelor of Arts

**B. M.A.**

***M.A. in French***

Blankenship, Terese  
Decker, Sandra  
Goulesque, Florence  
Lee, Lucille  
Sandoval, Donna  
Wallace, Sarah  
Wilson, Michele

***M.A. in German***

Buechseuschuss, Antje  
Levine, Glenn

***M.A. in Spanish***

Boyer, Charles  
Carstens, Thomas  
Chavez, Roberta  
Gallegos, Eva  
Grover, Lisa  
Lanning, Ron  
López, María Cristina  
Nyreen, Harry  
Pernía, José  
Seymour, John  
Ulibarrí, Rodney

**C. Ph.D.**

***Ph.D. in Spanish***

Chuquín, María Emilia

Cornejo-Patterson, Deanna  
 de la Puente-Schubeck, Elsa  
 Gonzales-Velásquez, María  
 Riker, Katharine  
 Sullivan, Brian

### III. COURSES OFFERED

#### A. Summer 1991

Language	Course No. & Name	Sections	Credit Hours
<u>Portuguese</u>	551, Graduate Prob	1	3
<u>Russian</u>	497, Undergrad Prob	1	3
<u>Spanish</u>	101, Elementary Span	7	351
	102, Elementary Span	5	225
	201, Intermediate Span	2	123
	202, Intermediate Span	2	126
	203, Span. Convers.	2	16
	301, Mexican Cult/New Expl.	3	33
	439, Cont. Mexic Poetry	1	15
	497, Undergrad Prob	1	10
	551, Graduate Prob	7	66
	639, Sem. Span. Am. Lit.	1	39
	699, Dissertation	1	12

#### B. Fall 1991

Language	Course No. & Name	Sections	Credit Hours
<u>Chinese</u>	101, Elementary Chin	2	78
	201, Intermediate Chin	1	27
<u>Classics</u>	107, Greek Mythology	1	18
<u>French</u>	101, Elementary French	8	543
	102, Elementary French	3	165
	103, Elementary Fr. Convers	1	21
	107, Elementary Fr. Reading	1	13
	201, Intermediate Fr. I	3	174
	202, Intermediate Fr. II	2	111
	203, Literature Fr. Convers	1	27
	275, Begin Fr.-Accel	1	110
	301, Adv. Comp. and Convers	1	78
	302, Beg. Styles & Translation	1	30
	305, French Phonology	1	57
	345, French Civilization	1	42
	351, Survey Lit	1	51
	442, Fr. Dr. Lit 19th Cen.	1	36

	501, History of Fr. Language	1	27
	570, Sem. French Lit.	1	39
	699, Dissertation	2	21
<u>German</u>	101, Basic German	6	432
	102, Basic German	2	123
	201, Intermediate German	2	135
	202, Intermediate German	1	39
	301, Advance German	1	42
	308, Intro. German Culture	1	18
	445, Teaching of German	2	3
	450, St. Revo. Lyric	1	27
	452, 19th Cent. Lit	1	18
	497, Undergrad Prob	1	3
	550, St./Revo./Lyric	1	12
	599, Master Thesis	1	7
<u>Greek</u>	101, Elementary Greek	1	57
	104, New Test. Greek	1	6
	107, Greek Mythology	1	48
	301, Classical Greek	1	15
<u>Italian</u>	275, Begin Ital-Acc.	1	114
	276, Begin Ital-Acc.	1	75
	497, Undergraduate Prob	1	3
	551, Graduate Prob	2	8
<u>Japan</u>	101, Basic Japanese	2	168
	103, Elem. Japanese Conver.	1	14
	201, Intermediate Japanese	1	63
<u>Latin</u>	101, Elementary Latin	3	237
	201, Intermediate Latin	1	36
	303, Readings in Latin Lit.	1	18
	351, Accelerated Latin	1	54
	497, Undergraduate Prob.	2	5
	551, Graduate Prob.	1	6
<u>Modern Lang</u>	101, Begin Yiddish	1	24
	106, Elem Arabic I	1	42
	457, T/Convers. Persian	1	42
	515, Medieval Paleography	1	36
<u>Portuguese</u>	101, Beginning Portuguese	2	78
	201, Intermediate Portuguese	1	30
	250, Intensive Accel Port.	1	78
	301, Adv. Comp./Convers.	1	54
	401, Nebrasilian Culture	1	42
	551, Graduate Prob.	1	3
	699, Dissertation	1	15
<u>Russian</u>	101, Elem. Russian	3	237



103, Elem. Russian Convers.	2	30
201, Intermediate Russian	2	78
203, Russian Convers.	2	8
301, Advance Russian	2	81
303, Advance Russian Convers.	1	8
490, Sem. in Russian Lit.	1	27
497, Undergraduate Prob.	2	17

<u>Spanish</u>	101, Elem. Spanish	29	1806
	102, Elem. Spanish	21	1224
	120, Workshop Convers.	1	17
	201, Intermediate Spanish	16	1053
	202, Intermediate Spanish	9	639
	207, Spanish Convers.	2	180
	275, Acc. Begin. Spanish	2	147
	277, Sp. for Prof. Business	2	90
	278, Sp. for Prof. Medical	1	39
	301, Span. Culture	8	519
	302, Adv. Comp. and Conv.	4	231
	307, Intro. Hisp. Lit.	1	75
	320, Survey Chicano Lit.	1	69
	342, Advanced Grammar	1	93
	357, Span. American Lit.	1	99
	365, Span. Rdg. for Grad.	1	81
	405, Sur. Span. Lit.	1	66
	429, Span. Myst./Sp. Nov. Avil	2	45
	431, Mod. Amer. Span. Poetry	1	63
	450, Spanish Mysticism	1	39
	497, Undergraduate Prob.	1	3
	502, Pro-Sem. Resch. Methods	1	54
	517, 19th Cen. Span. Lit.	1	21
	520, Picareque Novel	1	27
	525, Span. Drama Golden	1	48
	532, S/LA Women & Short Story	1	81
	540, Lat. Am. Dialectology	1	45
	541, Rsch. Methods-Teachers	1	63
	542, Hist. of Spanish Lang.	1	84
	551, Graduate Prob.	5	20
	629, S/An Entremes in Per	1	12
	699, Dissertation	8	144

### C. Spring 1992

Language	Course No. & Name	Sections	Credit Hours
<u>Chinese</u>	101, Elem. Chinese	1	57
	102, Elem. Chinese	1	48
	297, Intermediate Chinese	1	21
<u>Classics</u>	204, Greece and Rome	2	48
	345, Women/Theory/Lit.	1	48

<u>French</u>	101, Elem. French	5	408
	102, Elem. French	6	231
	103, Elem. French Convers.	1	20
	104, Elem. French Convers.	1	7
	108, Elem. French Reading	1	9
	201, Intermed. French I	3	180
	202, Intermed. French II	2	132
	203, Intermed. French Convers.	1	33
	275, Begin French-Accel.	1	100
	276, Accel. French	1	125
	301, Adv. Comp. and Convers.	1	81
	302, Beg. Stylistics and Trans.	1	51
	346, French Advanced	1	57
	352, Survey of French Lit.	1	48
	407, Translation	1	57
	452, 20th Century Theater	1	39
	461, 19th Century	1	18
	497, Undergraduate Prob.	1	2
	500, Teaching Pract.	1	7
	502, Rdgs. Medieval Fr.	1	18
	505, Intro. Research Methods	1	5
	552, 20th Century Theatre	1	24
	561, 19th Century	1	21
	699, Dissertation	2	9
<u>German</u>	101, Basic German	3	276
	102, Basic German	4	234
	201, Intermed. German	2	99
	202, Intermed. German	2	114
	302, Advanced German	1	60
	303, Adv. German Convers.	1	15
	307, Intro. German Lit.	1	12
	336, St/Super Power Germany	1	87
	445, Teaching of German	1	6
	446, Art of Translating	1	45
	551, Grad. Problems	2	15
	599, Master Thesis	1	3
<u>Greek</u>	102, Elem. Greek	1	27
	104, New Testament of Greek	1	10
	302, Classical Greek	1	12
	497, Undergrad. Prob.	1	3
<u>Italian</u>	275, Begin Italian	1	141
	276, Begin Italian	1	60
	307, Intro. Rdgs. in Prose	1	57
	497, Undergraduate Prob.	2	19
	551, Graduate Prob.	2	4
<u>Japanese</u>	102, Basic Japanese	2	99
	202, Intermed. Japanese	1	54

<u>Latin</u>	102, Elem. Latin	2	87
	202, Intermed. Latin	1	30
	304, Reading in Latin Lit.	1	24
	352, Accel. Latin Reading	1	27
<u>Modern Lang.</u>	102, Begin. Persian	1	66
	205, Elem. Arabic II	1	27
	497, Undergrad. Prob.	2	6
<u>Portuguese</u>	102, Begin. Port.	1	51
	251, Intensive Acc. Port.	1	60
	401, Braz. Pop Music	1	48
	461, Cont. Braz. Women	1	24
	497, Undergraduate Prob.	1	2
	551, Graduate Prob.	1	12
	601, Lit. Theory	1	9
	699, Dissertation	1	21
<u>Russian</u>	101, Elem. Russian	1	75
	102, Elem. Russian	2	96
	104, Elem. Russian Convers.	2	18
	202, Intermed. Russian	2	78
	203, Russian Convers.	1	10
	230, USSR People Pol. Culture	3	30
	302, Adv. Russian	2	60
	407, Intro. to Russian Lit.	1	30
<u>Spanish</u>	101, Elem. Spanish	27	1737
	102, Elem. Spanish	19	1269
	104, Elem. Spanish Convers.	1	16
	120, W/Convers. Spanish	1	39
	201, Intermed. Spanish	11	765
	202, Intermed. Spanish	13	900
	207, Convers. Spanish	1	87
	276, Accelerated Begin. Spanish	2	138
	277, Sp. for Prof. Business	1	36
	278, Sp. for Prof. Medical	1	30
	301, Sp. Culture	7	732
	302, Adv. Comp. and Convers.	2	123
	307, Intro. Hispanic Lit.	1	81
	340, Spanish Phono.	1	105
	341, Sp. Ling. for Teachers	1	48
	358, Span. Am. Lit. Survey II	1	108
	366, Span. Rdgs. for Grad.	1	66
	423, Cervantes	1	99
	497, Undergraduate Prob.	5	21
	499, Honors	1	3
	514, Major Figures 1898-1936	1	24
	519, Medieval Lit.	1	42
	532, Mod. Span. Am. Fiction	1	45
	537, Chicano Narrative	1	39
	547, Sem. SW Spanish	1	54

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548, Old Spanish	1.	72
551, Graduate Problems	6	27
599, Masters	1	3
601, Lit. Theory	1	21
629, 18th Cent. Peninsular Lit.	2	39
639, Sem. Span Am. Lit.	1	57
699, Dissertation	7	147

#### IV. DEPARTMENT DEVELOPMENTS

##### A. Department News

Associate Professors John Bergen and Diana Robin were promoted to Professors in Spring 1992 while assistant Professors Walter Putman and Byron Lindsey were promoted to Associate Professors. Professor of Spanish, Pelayo Fernández, retired at the end of the Spring Semester, May 16, 1992.

Professor of Spanish, Santa Arias, tendered her resignation in June. Two searches for professors of Latin American Literature and Linguistics were done during the Fall semester and three candidates for each position were interviewed on campus. Professor John Lipski, Professor at the University of Florida in Gainesville, was appointed Professor with tenure for the Linguistics position. Dr. Rosalía Cornejo-Parriego was appointed Assistant Professor in a tenure track line for the Latin American position. A native of Salamanca, Spain, Cornejo-Parriego received her Ph.D. at Penn State and taught at the Penn State Altoona Campus for two years prior to coming to UNM. Both professors will start at UNM on August 17, 1992.

The Spring Semester the department received Dr. Julio Pazos, director of the Humanities Department of the Catholic University of Quito as Fulbright Visiting Assistant Professor. While in the Department Dr. Pazos taught 2 courses and gave a lecture on Ecuadorian poetry for the graduate students of the Department.

#### **B. Department Highlights**

A lecture by mexican writer, Guillermo Samperio, in which he talked about the major literary trends of his country, and read from his own work was held at Ortega Hall Reading Room on Sept. 10, 1991. Mr. Samperio's visit was co-sponsored by the Mexican Consulate in Albuquerque.

Puerto Rican writer, Rosa Cabrera, lectured on "Mulatez y Africanidad en la poesía Caribeña" (10-2-91) Ortega Hall Reading Room.

Lecture: Claude Pichois, from Université De Paris III, "Colette Noir et Or" (10-3-91) at Ortega Hall Reading Room.

Lecture: Diamela Eltit, "Literatura y resistencia en Latinoamérica" (10-16-91) at Ortega Hall Reading Room.

M & CL hosted a visit by Ricardo Talesnik, Argentine playwright and actor, (10-22-91). He spoke with M & CL graduate students on

10-22-91 and performed "En Camiseta" a one man show at the Franklin Dickey Theatre, Humanities 108.

Hernan Lara Zavala, Literature Professor, Universidad autónoma de Mexico read from his work on 10-22-91 at Ortega Hall Reading Room. His visit was co-sponsored by the Mexican Consulate in Albuquerque.

A lecture by mexican antropologist, Mariana Murguia de Ferrer, "Celebrating Mexican Traditions, Día de los Muertos"; was held on 11-1-91 at Ortega Hall Reading Room.

Lecture: Dr. Luba Freedman, "Mikhail Vrubel and 19th Century Russian Literature" was held on 11-1-91 at Ortega Hall Room 113.

"Finding a Major Exposition", (11-6-91) at the Student Union Building Ballroom.

Larry Torres, a teacher from Taos, performed his NMEH Sponsored Chataqua on "Jean-Baptiste Lamy", on 11-18-91 at Ortega Hall Reading Room.

Meet Peter Pabish, (12-4-91) at Zimmerman Library.

Under the direction of Professor Valerie Hegstrom-Oakey, a group of students from Spanish 301 presented three plays, "El juez de

los divorcios", "Manolo", "La 'loa' a El divino narciso", all three on Sat. (12-7-91); "El juez" (12-9-91); "Manolo" (12-11-91); "La 'loa' a El Divino Narciso"; (12-13-91) at Ortega Hall Lounge.

The department co-sponsored a Medieval Lecture Series Spring 1992 - Travel In The Middle Ages (from 3-2-92 to 3-5-92) at Fine Arts Building 2018.

Lecture: Rosalía Cornejo-Parriego, "El Carnaval Deslegitimador del Otoño del Patriarca", (2-10-92), Ortega Hall Reading Room.

Lecture: John Lipski, "Reconstructing the African presence in Latin American Spanish" (2-11-92) Ortega Hall Reading Room.

Lecture: Alice Nelson "The body politic: disappearance and the claim to narrative power in Ariel Dorfman's Viudas" (2-17-92) Ortega Hall Reading Room.

Lecture: Lisa Grover, "Delmira Agustini: Poet and Vampire" (2-19-92), Ortega Hall Reading Room.

The following were part of the Spanish and Portuguese faculty/student colloquia:

Lecture: Jon Tolman, "The Patriarchal Paradigm in two short stories by Clarice Lispector" (3-25-92), Ortega Hall Reading Room.

Lecture: María Dolores Gonzales Velásquez, "The Role of Women in Linguistic Tradition and Innovation in a Chicano Community in New Mexico" (4-22-92), Ortega Hall Reading Room.

Graduate Student Association presented their first mini-conference which included presentations by Dick Gerdes, "La Aventura de Traducir Alfredo Bryce Echeñique"; Monica Lettieri, "Detectives, Máscaras, Marzistas y Marxistas en MARCHA"; Keith Watts, Musical interlude; Sirpa Freccia, The finns and the funny language"; Robert Hershberger, "Fuente egocéntrica de una defensa del honor colectivo en Fuenteovejuna; de Lope de Vega: un acercamiento Estructuralista", (2-20-92), Ortega Hall Reading Room.

Hector Dante Cincotta, Argentine Poet and Critic, spoke on "Contemporary Argentine Poetry" and read from his work, (2-27-92) at Ortega Hall Reading Room.

The First Annual UNM Conference on Hispanic Culture and Society: Revising the Encounter, with the generous assistance of the Program for Cultural Cooperation Between Spain's Ministry of Culture and United States' Universities took place on 13-14



February 1992 and proved most successful. Major scholars from both the United States and abroad, including the following plenary speakers--E. Michael Gerli of Georgetown U., Enrique Pupo-Walker of Vanderbilt, Joseph Sánchez of UNM, and Margarita Zamora of U. of Wisconsin made this endeavor an international enterprise and a major success. More than 50 presentations were offered to a public consisting of both University members, professors, student, and staff, and to the public in general. In all an estimated 400 people participated.

The Graduate Student Association presented its second mini-conference with presentations by Rosa Fernández, "La Paremiología como Instrumento Didáctico en la clase de Español"; Eduardo Aleixandre, "The Problem of the Problem of Love"; Keith Watts, Musical interlude; Nandini Dutta, "The Thousand Faces of India"; Rachele Duke, "Teaching Italian to Spanish Students". April 2, 1992, Ortega Hall Reading Room.

Lecture by Professor William Proweller of State University College, Fredonia, NY; "Cubism Revisited: An Essay on Deconstructionism"; April 17, 1992 at 11:00 a.m., Fine Arts Center 1019.

A Lunch was held followed by a chat with Venezuelan playwright Isaac Chocrón about his work and Latin American Theatre, April 21, 1992 at 1:30 p.m. Ortega Hall Lounge.

Graduate Student Association presented its third mini-conference with presentations by Sabine Ulibarrí, "La magia de Don Juan"; Elvira Desachy, "La fuerza de la tradición en la cultura hispana"; Keith Watts, Musical Interlude; José Rafael Pernía, "Marina como símbolo de identidad nacional en Todos los gatos son pardos" de Carlos Fuentes"; Roger L. Parks, "The transmission of clandestine cultural values in Crypto-Jewish Folklore"; April 23, 1992 at Ortega Hall Reading Room.

Iván Egúez, Ecuadorian author of several novels lectured on "Mestizaje y novela histórica", April 27, 1992, 4:00 p.m. at Ortega Hall Reading Room.

Professor Anthony Cárdenas lectured on "Impious brief narrative on stage in Spanish", May 7, 1992, Ortega Hall Reading Room.

The Departamental Commencement Ceremony was held on May 16, 1992; 12:00-2:00 p.m. Eighty nine students were awarded degrees. A reception followed at Ortega Hall Reading Room. Two hundred people attended.

### **C. Professional Public Activities**

#### **Papers read at Professional Meetings**

Arias, Santa: 1) "Autoescritura y ejemplaridad en la escritura de la historia de Bartolomé de las Casas" VI Simposio Internacional de Campos Semióticos, Universidad Veracruzana, México (July 17-

19, 1991) 2) "Narrating the Self in Latin American Discourse of History" Modern Language Association (December 27-30, 1991).

**Bills, Garland:** 1) "Immigration, integration, and Spanish language maintenance in five southwestern states" and "The data collection methodology of the New Mexico/Colorado Spanish Survey" 12th Español en EEUU Conference, Los Angeles, California (November 7-8, 1991); 2) "The NM/CO Spanish Survey: Some initial findings on dialect variation" Linguistic Association of Southwest annual meeting, Austin, Texas (October 20, 1991).

**Cárdenas, Anthony:** 1) "When the Virgin Speaks: What Alfonso X and Berceo Heard" 26th International Congress on Medieval Studies, Medieval Institute, Western Michigan University, Michigan (May 9, 1992); 2) "Interpretación de asno: signo de bestialidad humana en Celestina" Simposio Internacional de Campos Semióticos, Universidad Veracruzana, Xalapa, México (July 17-19, 1991); 3) "Hensley Woodbridge and Alfonso X" 73rd Annual Meeting AATSP, Chicago (August 7-11, 1991); 4) "Bestialidad y brujería en el Coloquio de los perros" El Erotismo y la Brujería en Cervantes, Montilla, España (November 29-December 1, 1991); 5) "Configuring clerecía: 'mester es con pecado" MLA Conference, San Francisco, California (December 28, 1991).

**Gerdes, Dick:** 1) "Literatura y sociologia en Los sangurimas" VI Simposio International de Campos Semioticos, Xalapa, Mexico (July 1991).

**Gonzales-Berry, Erlinda:** Paper: "Statutes Affecting the Status of Spanish in New Mexico." National Association of Bilingual Teachers Conference, Albuquerque, NM, January, 1992.

**Hegstrom-Oakey, Valerie:** "The Fallacy of False Dichotomy in María de Zayas's La traición en la amistad," Golden Age Spanish Drama Symposium (Chamizal), University of Texas at El Paso, March 18-21, 1992.

**Lamadrid, Enrique:** 1) "Folklore and Cultural Resistance" Hispanic Arts of the Southwest Symposium, Colorado College, Colorado Springs (July 1991).

**Lindsey, Byron:** 1) "The Post-August Prospects for Russian Literature" American Association for Advancement of Slavic Studies, National Convention, Miami, Florida (November 22-25, 1991).

**Putnam, Walter:** 1) "Listeners and Readers in Heart of Darkness and L'Immoralist" Rocky Mountain Modern Language Association, Tempe, Arizona (October 1991) 2) "Le Paratexte d'Isabelle" Modern Language Association, San Francisco, California (December 1991).

**Robin, Diana:** 1) "The Familiar Letters of Laura Cereta and Cassandra Fedele" Annual Meeting of the Sixteenth Century Studies Society, Philadelphia, Pennsylvania (October 17-19, 1991); 2) "Female Autobiography as Self-Effacement," Annual Meeting of the Sixteenth Century Studies Society, Philadelphia, Pennsylvania (October 1991); 3) "War and Waste: the Case of Francesco Filelfo," Annual Meeting of the Renaissance Society of America, Durham, North Carolina (April 1991).

**Smith, Warren:** 1) "Erasmus With Froben in Basel" Swiss Symposium, Taos, New Mexico (July 1991); 2) "Apuleius and the Satiric Tradition, Rocky Mountain Modern Language Association, Tempe, Arizona (October 1991); 3) "Interlocking of Theme and Meaning in 'The Golden Ass'" at the Rijksuniversiteit in Groninger in the Netherlands (April 24, 1992).

**Tolman, Jon:** 1) "The Patriarchal Paradigm in Two Short Stories by Clarice Lispector" Rocky Mountain Modern Language Association, Tempe, Arizona (October 17-19, 1991); 2) "Semantic and Mythical Inversions in Nélida Piñón's Sala de Armas," at a conference entitled "The World of Nélida Piñón" held at the University of Miami, April 3-4, 1992; 3) "O paradigma patriarchal em Lacos de Família de Clarice Lispector," at the Universidade Federal de Rio Grande do Sul, Porto Alegre, Brazil, May 20, 1992; 4) "Técnicas de usurpacao em Nélida Piñón," at the Universidade Federal de Rio de Janeiro, Brazil, May 21, 1992; 5) "Novas teorias feministas e

Nélica Piñon" at the Faculdade Veiga de Almeida, Rio de Janeiro, May 28, 1992; 6) "O paradigma patriarcal em Lacos de Família de Clarice Lispector," UNICAMP (Universidade de Campinas), June 9, 1992; Planning and introduction of "Brazilian Film Series" at the Museum of New Mexico in Santa Fe, July 29, August 5, 12, 19 and 26 of 1992.

*Contributions to Other Meetings, Workshop, Seminars, Readings, etc...*

**Bills, Garland:** 1) Evaluator, National Science Foundation (1991); 2) Outside Evaluator for tenure/promotion, Florida International University and University of Texas-Austin (1991).

**Cárdenas, Anthony:** 1) Invited Talk, "Medieval Miracles" Vida Llena (January 30, 1992), Bernalillo Rotary (February 13, 1992), Albuquerque Rotary (July 25, 1992), Old Town Optimist (July 31, 1992) and Encino House AARP 907 (October 17, 1991) 2) Volunteer Spanish, Taught basic Spanish for 8 weeks (once per week) to residents of Vida Llena 3) Editorial Board, Romance Quarterly (1991) 4) Editorial Board, Medievalia Exemplaria, (1991).

**Cyrino, Monica:** 1) Secretary, Panel on Greek Language and literature, Rocky Mountain Modern Language Association, Tempe, Arizona (October 18-20, 1991).

**Gonzales-Berry, Erlinda:** Panel: "Las Escritoras: Spanish Language Literature by Chicanas." National Chicano Studies Conference. San Antonio, TX., March, 1992; Lecture: "New Mexico Spanish" Forest Service Personnel Training Session, Glorieta, New Mexico (October 1991). Literary Reading, Salt of the Earth Bookstore, Albuquerque, New Mexico (December 1991); Lecture: "Seminar on Southwest Culture" for Latin American Scholars, UNM, Fall, 1991.

**Hannemann, Bruno:** 1) Reader, Modern Austrian Lit and Unterrichts-praxis (1991) 2) "The Image of Switzerland In Foreign literature" Santa Fe-Los Alamos German Club (October 20, 1991).

**Jespersen, Robert:** 1) Book Review Editor, Die Unterrichtspraxis.

**Kolchevskia, Natasha:** 1) "Emigree Writers: 1925-1940" Summer Research Laboratory Lecture Series I, University of Illinois at Champaign-Urbana, Illinois (July 1991); 2) "August and After: The Role of the Media" University of New Mexico, Albuquerque, New Mexico (September 1991); 3) Peer Reviewer, Slavic and East European Journal (1991).

**Lamadrid, Enrique:** 1) "La resistencia cultural en Nuevo México: un nuevo acercamiento a nuestra herencia multicultural," Universidad de los Andes, Bogotá, Colombia (October 1991); 2) "Entre cíbolos criado: salvajes nobles e ignobles en la

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literatura y folklor de Nuevo México Colonial," Universidad de los Andes, Bogotá, Colombia (October 1991); 3) "La identidad cultural en el medio multiétnico norteamericano" Centro Colombo-Americano, Bogotá, Colombia (October 1991); 4) "Folk Genealogy in New Mexico: A Performance Tradition" New Mexico Genealogical Society (November 1991); 5) "Las calles de México: Classical Aztec Esthetics and the Photography of Van Deren Coke" UNM Fine Arts Museum, Albuquerque, New Mexico (September 1991) and Harwood Foundation (November 1991); 6) Consultant and field worker, "1992 Festival of American Folklife" (1991); 7) Consulting curator, "E Pluribus Unum: Language in America" Modern Language Association exhibit (1991); 8) Narrator and Consultant, "World Folk Art: A Multicultural Approach" filmstrip/video series, Museum of International Folk Art (1991); 9) Consultant and Narrator, "Architectural Styles of New Mexico: A Visual Primer" 40 minute video, State of New Mexico Office of Cultural Affairs Historic Preservation Division (1991).

**Hegstrom-Oakey, Valerie:** 1) Director of 3 short Spanish student production plays--Cervantes, "El juez de los divorcios, "Sor Juana Inés de la Cruz's", "La 'Loa' a El divino narciso", and Ramón de la Cruz's "Manolo" (December 7-13, 1991).

**Pabisch, Peter:** 1) The German Weekend at Glorieta (April 25-26, 1992); 2) Visited University of Texas, Austin (October 30, 1991) to discuss support for German Summer School; 3) Board meeting of



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Taos German Studies Fund, Houston, Texas (November 21, 1991); 4) Exhibits of sketches, Los Angeles, Houston and Dallas also poetry readings, often in conjunction with the exhibits (1991); 5) Organized Swiss Studies Workshop, Taos Ski Valley, New Mexico (July 15-22, 1991); 6) Organized International Symposium on Swiss Studies "700 Years of Swiss Confederation: 1291-1991" Taos Ski Valley, New Mexico (July 25-August 2, 1991); 7) Invited and hosted, Professor Jurgen Klose, The Johns Hopkins University, talk on: "From Planned To Market Economy--Recent Developments in Former East Germany" UNM (April 1, 1992); 8) Hosted U. Janetzki, Director of Literarische Colloquium, Berlin, Germany (November 2, 1991).

**Putnam, Walter:** 1) Guest Editor, Gide Journal (1991) 2) Bibliographer, French XX (1991).

**Robin, Diana:** 1) Invited talk, "Early Modern Encyclopedias of Women and Women's Autobiographical Letters" Classical Department, University of Southern California, Los Angeles (November 1991).

**Tolman, Jon:** 1) Participant, SOPI (Simulated Oral Proficiency Interview) Workshop, AATSP Annual Meeting, Chicago, Illinois (August 7-11, 1991) 2) Associate Editor, Latin American Research Review (1991).

*Attendance and Officer at Professional Meetings and Workshops*

**Bergen, John:** 1) Attended, 12th Annual Conference on Spanish in the United States and the First International Conference on Spanish in Contact with Other Languages, University of Southern California, Los Angeles, California (November 14-16, 1991).

**Cárdenas, Anthony:** 1) Member, MLA Executive Committee, Spanish Medieval Language and Literature (1991-1995); 2) Secretary Treasurer, American Association of Research Historians of Medieval Spain (1991-1992); 3) Coordinator, AATSP Interest Sessions for University level (1991).

**Cyrino, Monica:** Secretary of the panel on Foreign Language: Classical Languages and Literatures: Greek. RMMLA Rocky Mountain Language Association, (10-17/19-1991) Tempe, AZ.

**Hannemann, Bruno:** 1) Attended, Annual Meeting of Modern Language Association, San Francisco, California (December 27-30, 1991).

**Kolchevska, Natasha:** 1) National Publication Board, American Association of Teachers of Slavic and East European Languages (1989-1991); 2) Member, New Mexico State Advisory Board on Modern and Classical Languages (1989-1991); 3) Vice-President: New Mexico-El Paso Chapter, AATSEEL (1986-present).

**Lamadrid, Enrique:** 1) Vice President/Treasurer, American Association of Teachers of Spanish and Portuguese, Cíbola Chapter (1991).

**Putnam, Walter:** 1) Vice-President, Rocky Mountain Modern Language Association; 2) Secretary, American Committee, Association des Amis d'André Gide.

**Robin, Diana:** 1) National Chair, American Philological Association, Committee on the Status of Women and Minorities (1991-1992); 2) Co-Chair Elect, American Philological Association, Steering Committee (1991-1994) of the Women's Caucus; 3) Coucillor and Discipline Representative, Byzantine Studies, 1991-93 of the Renaissance Society of America; 4) Member, American Philological Association, Committee on the Classical Tradition (1991); 5) Ex officio member, American Philological Association, Placement Committee (1991); 6) Chaired meeting of the Committee, Annual Meeting of the APA, Chicago, Illinois (December 27-30, 1991); 7) Attended, WC meetings at the Annual Meeting of the APA, Chicago, Illinois (December 27-30, 1991).

**Senninger, Claude:** 1) Outside Evaluator, Tenure and Promotion of Assistant Professor Lea Tama Engelking, Cleveland State University (1991).

**Smith, Warren:** Presenter for panel on Foreign Language: Classical Languages and Literatures: Latin "Apuleius and the Satiric Tradition". Rocky Mountain Language Association, Oct 17-19, 1991, Tempe, AZ.

#### **University and Community Service**

**Arias, Santa:** Member, LAI Grants and Awards Committee, UNM; Member, Interdisciplinary Committee on Latin American Studies, UNM; Co-Chair, Hispanic Culture and Society Conference Organizing Committee, UNM; Faculty Advisor, Director, LAI Summer Program at UNAM.

**Bergen, John:** Graduate Adviser, Spanish and Portuguese, UNM (1991); Member, Arts and Sciences Graduate Committee, UNM (1991); Chair, Arts and Sciences Faculty Subcommittee, UNM (1991); Chair, Arts and Sciences Graduate Committee, UNM (1991).

**Bills, Garland:** Member, Faculty/Staff Benefits Committee, UNM; Member, University Press Committee, UNM; Member, A&S Undergraduate Committee, UNM; Chair, A&S Interdisciplinary Committee for Latin American Studies, UNM; Member, Department of Linguistics PhD Planning Committee, UNM; Chair, Department of Linguistics Tenure/Promotion Committee, UNM; Undergraduate Advisor, Department of Linguistics Educational Linguistics Committee, UNM; Member, Department of Modern and Classical

Languages Search Committee, UNM; Associate Director, the Latin American Institute Academic Programs, UNM; Chair, Latin American Institute Grants/awards Committee, UNM; Member, Citizens Advisory Committee for City of Albuquerque High Capacity Corridor Study, Albuquerque, NM.

**Cárdenas, Anthony:** Spanish Division Head; Member, Search Committee for positions in Contemporary Latin American and Spanish Linguistics, UNM; Member, Department of Modern and Classical Languages, Graduate Committee, UNM; Member, A&S Senior Promotion Committee, UNM; Member, Graduate Achievement Awards Committee, UNM; Outside evaluator for promotion to full professor, University of Massachusetts; Outside evaluator for tenure and promotion, University of Texas-Austin, University of Vermont, and Hunter College.

**Cyrino, Monica:** Member, Department of Modern and Classical Languages Committee for New Faculty, UNM.

**Fernández, Pelayo:** Member, Department of Modern and Classical Languages Graduate Committee, UNM; Member, Sister Cities Gijón Committee, Albuquerque, NM; Member, Albuquerque Founder's Committee, Albuquerque, NM.

**Fernández, Rosa:** Chair, Students Standards and Grievances Committee, UNM; Member, M&CL Undergraduate Committee, UNM;

Member, M&CL Graduate Committee, UNM; Member, M&CL Linguistics Committee, UNM; Coordinator, "Fiesta de Otoño" in Glorieta, NM (October 19-20, 1991); Secretary, Cibola Chapter of AATSP, NM; Invited talk, "Lift Up 4" Conference of The New Mexico Organization of Language Educators, Highlands University, Las Vegas, NM (September 27-28, 1991); Member, Consolidating Initiatives for Tomorrow's Education (CITE) Task Force, State of New Mexico Department of Education; Participant, North Central Evaluation Team, Robertson High School, Las Vegas, NM (1991).

**Gerdes, Dick:** Chair, Department of Modern and Classical Languages, UNM; Volunteer, EXPLORA Exhibit, NM State Fair (September 1991).

**Gonzales-Berry, Erlinda:** Member, College of Arts and Sciences Committee on Promotion and Tenure, UNM; Associate Vice President for Research, Search Committee, UNM; Member, Department of Modern and Classical Languages Graduate Studies Committee, UNM; Member, Department of Modern and Classical Languages Salary Committee, UNM; Member, Center for Regional Studies, Committee on Research Awards, UNM; Co-director, *Pasó Por Aquí Series*, UNM Press, UNM; Manuscript Reviewer, UNM Press; Director, El Norte Publications, Member: A & S Women's caucus, UNM; WITCHE Committee on Multiculturalism at the University, Spring 1992. UNM Reallocation Committee on Department of Modern and Classical Languages, Spring 1992. Member: National Board, Restoring the

U.S. Hispanic Literary Tradition; Seminar West for Chairs of Departments of Foreign Languages; Berkeley, June 1992; Reader, Advanced placement in Spanish San Antonio, TX, June 1992.

**Jespersen, Robert:** Member, Selection Committee: Congress-Bundestag Exchange Program, UNM; Undergraduate Adviser, Department of German, UNM; Language and TA Supervisor, Department of German, UNM; MA Thesis Reader (Glen Levine), UNM; MA Exam (Steve Harris), UNM.

**Kolchevska, Natasha:** Chair, Russian and East European Studies Program, UNM; Assistant Head, German/Russian Division, UNM; Undergraduate Advisor, Russian Area Studies, UNM; Member, Department of Modern and Classical Languages Restructuring Committee, UNM; Reviewer and Commentary, Albuquerque Journal, Albuquerque, New Mexico (September -December 1991); Commentary for local news and radio stations on Soviet putsch, Albuquerque, New Mexico (August 1991).

**Lamadrid, Enrique:** Member, UNM Honors Council, UNM; Member, Arts & Sciences Undergraduate Committee, UNM; Undergraduate Advisor for Spanish Programs, Department of Modern and Classical Languages, UNM; Director of "Fiesta de Otoño," an Intensive Spanish Weekend for High School Spanish students held at Glorieta, NM (October 1991); Art for Elders, Writing and Folklore Workshop, North Valley Senior Center, Albuquerque, NM (Summer

1991); Translator for City of Albuquerque, Special Elections (October 1991); "Land or Death: Land Grants in New Mexico" New Mexico Bar Foundation Law-Related Education Summer Institute, Albuquerque, New Mexico (August 1991); "Música del Corazón: New Mexican Folk Music" New Mexico Endowment for the Humanities Community Lecture Series, White Sands, Grants, Las Cruces, Mora, New Mexico (1991); "Cultural Resistance in New Mexico: A New Appraisal of a Multi-Cultural Heritage" New Mexico Endowment for the Humanities Community Lecture Series, Taos, Los Alamos, Socorro, New Mexico (1990-1991).

**Lindsey, Byron:** Member, General Honors Council, UNM; Member, Russian Studies Committee, UNM.

**Hegstrom-Oakey, Valerie:** Member, Latin American Institute, Program Committee, UNM; Member, Dept. of Spanish, M.A. planning, UNM; Member, Dept. of Spanish, Honors, UNM; Member, Dept. of Spanish, Newsletter Committee.

**Pabisch, Peter:** Member, Faculty Senate, UNM; Member, Committee on Academic Freedom and Tenure, UNM; Member, Faculty Senate Task Force on Summer Programs, UNM; Member, Arts and Sciences Committee on Reallocation and Curriculum, UNM; Gave several lectures to Albuquerque Clubs on "Europe 1992" and "New Germany".



**Putnam, Walter:** Co-director, 1991 Session of Francophone Summer School, UNM; Chair, European Studies Committee, UNM; Assistant Chair, French Section, Department of Modern and Classical Languages, UNM; Undergraduate advisor for French, Department of Modern and Classical Languages, UNM; Member, French Faculty Search Committee, UNM; Member, French Weekend at Glorieta, UNM; Member, Faculty Senate, UNM; Member, Find a Major Day, UNM; Reader, ALTA Essay Contest, New Mexico.

**Robin, Diana:** Member, A&S College Tenure and Promotion Committee, UNM; Member, A&S Junior Committee, UNM; Chair, A&S Women's Faculty Caucus, UNM; Member, KUNM Radio Board, UNM; Coordinator, Faculty Women's Theory Colloquium Women Studies, UNM; Faculty Advisor, GSA (Graduate Student Association), UNM; Advisor, Program Coordinator, Classics Division, UNM.

**Rodríguez, Alfred:** Member, Research Allocations Committee, UNM; Director, La Zarzuela de Albuquerque, New Mexico.

**Senninger, Claude:** Head, French Division, UNM; Head, Dean's Senior Promotion Committee, UNM; Member, Selection Committee for Presidential Professors in Arts and Sciences and in Fine Arts, UNM; Consultant, Graduate Unit Review of the department of Music, UNM; Honorary Consul of France in Albuquerque, New Mexico; Vice-President, Alliance Francaise, Albuquerque, New Mexico; Board

member, Albuquerque committee of the Santa Fe Opera Guild,  
Albuquerque, New Mexico.

**Smith, Warren:** Member, Core Curriculum Committee, UNM; Advisor,  
Best Student Essays, UNM.

**Tolman, Jon:** Associate Director, Latin American Institute, Luso-  
Brazilian Programs, UNM; Member, Latin American Institute Policy  
Committee, UNM; Member, Latin American Institute Grants and  
Awards Subcommittee, UNM; Member, Latin American Institute,  
Budget Subcommittee, UNM; Coordinator, Department of Modern and  
Classical Languages, Portuguese Program, UNM; Member, Department  
of Modern and Classical Languages, Graduate Studies Committee,  
UNM; Member, Department of Modern and Classical Languages, Salary  
Committee, UNM.

#### **D. Honors to Faculty**

**Gerdes, Dick:** Received Columbia University Translator Center's  
Award for his translation of "A world for Julius" of Brice  
Echeñique, May 27, 1992 in New York.

**Lamadrid, Enrique:** 1) UNM Center for Regional Studies, Summer  
Research Fellowship, "La indita de San Luis Gonzaga": History,  
Faith, and Inter-Cultural Relations in the Evolution of a New

Mexican Ballad (Summer 1991) 2) US Information Agency Academic Specialist Grant, Bogotá, Colombia (October 1991).

**Pabisch, Peter:** 1) Book Reviewed in the German Studies Review, Modern austrian Literature, Schatzkammer, Yearbook of German-American Studies, Podium (Austria).

**Rebolledo, Tey Diana:** Received the UNM Faculty Scholar Award for the 1992 Spring Semester.

#### V. GRANTS AND CONTRACTS, EXTRAMURAL AND OTHERWISE

**Bills, Garland D. and Vigil, Neddy A.**

Title: "Linguistic Atlas and Archive of the Spanish of New Mexico and Southern Colorado."

Agency: National Endowment for the Humanities

Date: June 1, 1991

Amount: \$225,000

**Cárdenas, Anthony**

Title: "Verifying the Text of the Book of Falconry (El Escorial Codex V.II.19) and the Spanish Aesopic Fables (El Escorial Incunabulum 32-I-13)".

Agency: RAC

Date: 1-12 December 1991

Amount: \$1,294

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**Gonzales-Berry, Erlinda (Tey Diana Rebolledo)**

Title: "And Gladly Did We Teach: Oral Histories of Hispanas Pioneer Teacher in New Mexico".

Agency: Center for Regional Studies, UNM

Date: July 1991-July 1993.

**Kolchevska, Natasha**

Title: "A Video-Based Advanced Russian Language Course"

Agency: UNM Teaching Enhancement Awards Committee

Dates: November 1991

Funding: \$2,000

Title: Russian Women autobiographics

Agency: University of Illinois Summer Research Laboratory Grant  
& RAC

Dates: July 1991

Funding: \$1,400

**Lamadrid, Enrique**

Title: "La indita de San Luis Gonzaga".

Agency: RAC

Date: April 23-Sept. 30, 1992

Amount: \$2,500

**Rebolledo, Tey Diana (Erlinda Gonzales-Berry)**

**Title:** "And Gladly Did We Teach: Oral Histories of Hispanas Pioneer Teachers in New Mexico".  
**Agency:** Center for Regional Studies, UNM.  
**Date:** July 1991-July 1993.

**Robin, Diana**

**Title:** "The Life and Letters of Cassandra Fedele"  
**Agency:** Gladys Kriehle Delmas foundation Fellowship for Research in Venice  
**Dates:** June 1991  
**Funding:** \$3,000

**Title:** "The Life and Letters of Cassandra Fedele"  
**Agency:** Newberry Library Research Fellowship for Work in Residence, Chicago, Illinois.  
**Dates:** July-August 1991  
**Funding:** \$1,200

**Senninger, Claude**

**Title:** "Biography of Paul-Quintal Dubé"  
**Agency:** Gouvernement du Québec, Ministère des Affaires Internationales  
**Dates:** July 22-August 12, 1991  
**Funding:** \$1,650

**Smith, Warren**

Title: "Classical Civilization: Cradle of the West"

Agency: NEH

Dates: May 1, 1991-June 30, 1992

Funding: \$78,000

**Tolman, Jon**

Title: "Seminar on Contemporary Southwest Culture"

Agency: USIA-Phelps-Stokes Foundation

Dates: October 10-22, 1991

Funding: \$10,674.00

Title: "Fulbright-Hayes Higher Education Grants in Modern Foreign Languages and Area Studies, Faculty Research Abroad: Two grants secured, for Lee Fitzgerald (Biology) and Enrique Lamadrid (M&CL)"

Agency: US Department of Education

Dates: Vary

Funding: Fitzgerald (\$19,700.00); Lamadrid (\$24,370.00)

**VI. AFFIRMATIVE ACTION**

The department this year has set goals to comply with the rules and procedures of Equal Opportunity Program providing employment to qualified personnel making the effort to attract women and minorities groups. During this year the department gave contracts to 52 persons: Five visiting Professors and 4

Lecturers II of which 5 were women, 2 of them Hispanic; Forty-one Teaching Assistants, of which 18 were hispanic; 1 of which is Afro-American; and 3 of which are Asian. The department secretary hired in September 1991 is of hispanic origin. The work study team of 4 was composed of 1 White, 2 Hispanic, and 1 Asian student.

A. Significant Achievements During Academic Year

Our efforts to enforce the terms of the Gwendolyn J. Barrett trust were crowned with success in April, when an agreement was reached to settle legal action the University had instituted against the trustee, Mr. Ed. Jones. Ms. Barrett's home in Corrales has been transferred to the University and is being appraised for possible sale; the monetary assets (roughly \$100,000) are being transferred to the University of New Mexico Foundation for the use of the Philosophy Department. This is by far the largest gift in the Department's history, and we will spend considerable time this year deciding how best to use these resources.

The Department welcomed Professor Bill Hart, formerly of University College, London. Professor Hart has set to work strengthening our logic program, teaching our Ph. D. seminar in metaphysics, and developing our relations with other universities. He was invited to the Institute of Philosophy at UNAM to deliver a series of lectures on philosophy of mathematics in September, and we are in the process of arranging for a return visit from the Institute's director, Raúl Orayen, next year.

In the Spring term, the department conducted a faculty exchange with the UNM School of Law. John Taber taught a course for law students on "Comparative Legal Systems," covering Chinese and Indian, as well as Western materials, while Ann Scales taught a heavily enrolled course for us (120 students) on "Pornography and Feminism." These two demanding courses generated considerable enthusiasm among students in both colleges and in both instructors. We hope to continue such exchanges.

During this year of "reallocation" studies by the University administration the department was not able to advertise for a philosopher of science to replace Rosemary



Sargent. However, in December, together with the History Department, we were permitted to advertise for a visiting joint position in history and philosophy of science. Several outstanding candidates were identified, but unfortunately, budgetary constraints at year's end again prevented us from making an appointment. In May, the department and College were authorized to begin a search to fill a full-time tenure track position in philosophy of science.

The department again conducted a series of lectures, highlighted by our Brian O'Neil Memorial lecture, this year given on April 10 by Edwin Curley of the University of Illinois, Chicago, on the subject: "The Powers That Be: Politics and Religion in Hobbes' Leviathan." Other visitors to the department and their talks were as follows:

Wilhelm Halbfass, University of Pennsylvania, October 3. "Practical Vedanta: Ethics in the Encounter Between India and the West."

Laurie Whitt, Michigan Technological University, November 8. "Indices of Theory Promise."

Anne Klein, Rice University, January 24. "Are Wholes as Real as Parts?: A Philosophical Debate in Indo-Tibetan Buddhism."

Robert Solomon, University of Texas, April 8, 1992. "Love and Other Emotions: The Problem of 'Affect' in Cognitive Science."

K. Satchidananda Murty, Andhra University, April 13. "The Philosophy of the Gandhian Movement."

Glen Yokum, Whittier College, April 14. "The Coronation of a Guru: Ritual, Politics, and Philosophy in Contemporary India."

Dorothy Edgington, Birkbeck College, London, April 16. "Validity, Uncertainty, and Vagueness."

Significant achievements by individual department members this year include:

Anderson: Completion of final version of "Scylla and Charybdis," a book on Immanuel Kant to be submitted to publishers this Fall.

Burgess: Election to the vice-presidency of the Soren Kierkegaard Society; initiation of the Summer Seminars in Religious Studies program; book review in *Journal of the American Academy of Religion*.

Bussanich: Presented an invited paper in Dublin at the International Conference on Neoplatonism and the Irish Tradition, and a paper on "Are the Neoplatonists Idealists or Realists" at the American Philosophical Association, Pacific Division Meeting.

Continued service as Book Review Editor for *Ancient Philosophy*. Began service as Co-Editor of the same journal.

Goodman: Award of a Fulbright Senior Lectureship to teach American Literature and American Philosophy at the Central and Autonomous Universities of Barcelona from January-May, 1993. Invited talks on "What Wittgenstein Learned from William James" at Universities of London, St. Andrews, and Venice; "William and Henry James" at the University of Siena; "American Literature and American Philosophy" at the University of Rome, "Reappraising American Philosophy: Cavell, Emerson, and Thoreau," at a conference on the philosophy of Stanley Cavell at the University of Warwick; "Emerson as Philosopher: Reevaluations by Cavell, Poirier, West and Others," at the Modern Languages Association meetings in San Francisco.

Hart: Publication of "Clarity," in Bell and Cooper, ed., *The Analytical Tradition* (Blackwell); "Benacerraf's Dilemma" and "Natural Numbers," in *Crítica*; "Variation" and "The Propositional Bond" in the *Handbook of Metaphysics and Ontology*; and a critical notice of Etchemendy's *The Concept of Logical Consequence* in *Philosophical Quarterly*. Publication of 6 shorter reviews; several articles accepted for publication in *Crítica* and *Blackwell Companion to Metaphysics*.

Schueler: Invited talk on "Desires and Internal Reasons" at Moral Sciences Club, Cambridge University. Completed a book-length manuscript entitled "Desire: An Examination of its Role in Practical Reason and in the Explanation of Action."

Sturm: Publication of "Ontological Categories Implicit in the Mbya-Guarani Creation Myth," in *Past, Present, and Future: Selected Papers on Latin American Indian Literatures*, Mary H. Preuss, ed. Invited paper "A Critical Appraisal of Fr. Andre Thevet's mid-16th Century Accounts of Tupinambá Beliefs and Practices" at Tenth International Symposium on Latin American Indian Literatures, University of Puerto Rico; Direction of 37th annual Aesthetics Institute Workshop, Lawrence Ranch, New Mexico; Direction of 15th Summer Seminar on Buddhism at Bodhi Mandala Zen Center, New Mexico, Elected to second term as Trustee of SOPHIA.

Taber: Publication of "What did Kumarilabhatta Mean by 'Svatah Pramana'?" in *Journal of the American Oriental Society* and "Further Observations on Kumarila's Brhattika," *Journal of Oriental Research*; paper on "Is Language a Form of Inference?" at Fourth International Vedanta Congress, Miami University, Ohio.

Tuttle: Completion and submission of book manuscript, entitled "The Dawn of Historical Reason: The Historicity of Human Existence in the Thought of Dilthey, Heidegger, and Ortega y Gasset."

#### B. Plans and Recommendations for the near future.

Our major concern is to fill our long vacant position in philosophy of science.

We are increasingly hard pressed to teach even a part of the courses in ethics for which there is demand, which include Moral Problems, Professional Ethics, Environmental Ethics, Ethical Theory, Introduction to Moral Philosophy, Moral Problems in Great Literature, and Philosophy of Law and Morals. We recommend that as part of its reallocation effort, the university commit resources to hiring a full time professor in ethics.

#### C. Outside-sponsored research.

Russell Goodman received a teaching and research grant from the Fulbright Commission. As a Senior Lecturer he will receive approximately \$12,000 to lecture for four months on

American literature and philosophy at the Central and Autonomous Universities of Barcelona. Ted Sturm was the author of a grant proposal to the National Endowment for the Humanities on behalf of SOPHIA (Society of Philosophers in America).

**THE REPORT OF**  
**THE DEPARTMENT OF PHYSICS AND ASTRONOMY**

July 1, 1991 -- June 30, 1992

David M. Wolfe, Chairman

**A. Significant Achievements during the Academic Year 1991-92**

We start this report with the least significant development in the Department, viz. the change of the Chairman. Daniel Finley, after a long and productive period as Chair, has returned to the much more pleasurable and rewarding position of professor. He is now able to pursue the dual pleasures of teaching and research that go with that position. David Wolfe has assumed the position of Chairman for a term of four (or fewer) years.

International affairs, which have a direct impact on the economy of New Mexico, provide the University and certainly the Department of Physics and Astronomy with a rapidly changing and very challenging problem. The end of the Cold War represents a significant change in the role for the defense establishment and especially for the national laboratories. In New Mexico this change has a profound impact on Sandia National Laboratory, the Los Alamos National Laboratory, and the Phillips Laboratory. The future role of all of the national labs, and in particular for the ones in New Mexico, is undecided and uncertain. "If you have any good ideas, let me know" Dr. William Happer, Head of the Energy Division at the Department of Energy, said recently referring to exactly this problem.

It would be ludicrous to suggest that a solution to such problems can be found in any one place. But the University, as a State funded institution, has a responsibility to help improve the economy of the State whenever and in any way possible. Our department can play some role,

albeit small. This represents a tremendous opportunity and a tremendous challenge to us.

Our Department has many branches of research represented among the faculty. Yet, at the size of approximately 30 FTE, we are half the size of an MIT or UC Berkeley. Thus, we cannot have every branch of our science represented. We have chosen to concentrate our efforts in a few fields. In particular, it makes a great deal of sense for us to put these efforts into fields in which we can make the maximal use of local resources. New Mexico is the last of the 48 continental states to have both high mountains and clear winter skies. Astronomy, therefore, is an obvious area of research. Here is a clean, high-tech research industry capable of bringing a million dollars or more into the State every year. Similarly, the enormous amount of research interest in lasers, non-linear phenomena, etc. at all of the State's National Labs, makes the study of optics and opto-electronics a natural field for us. Material science research fits well with both optics and other interests at Sandia Labs. High Energy Particle physics is done at LANL and will, eventually, be done at the SSC lab in Texas. Our proximity to this facility, and the strong growth of this field of research throughout the Rocky Mountain West, makes this also an area worth investment. It is primarily in these four fields that we have aimed our research and recruitment efforts over the past few years. This last year has seen the culmination of some of this work and represents the start of a potentially rich and rewarding future.

The Institute for Astrophysics has been in existence for eight years. Following the departure of Jack Burns in 1988, we have not had a permanent Director for the Institute. With nine members, each with somewhat different research orientations, there was a great need for strong leadership, for a new Director with a consistent vision of the future and a unifying theme for all of the Institute members. We have been extremely fortunate this year in attracting Dr. John McGraw, previously at the Steward Observatory of the University of Arizona, to serve as

Dírector. To attract someone from Arizona, probably the most prestigious astronomy research locale in the country, is a powerful indication of the potential for astrophysics in New Mexico. John is the inventor and developer of an extremely clever instrument, the CTI or CCD transit instrument. This telescope is very different from the normal massive and expensive telescopes one sees at most observatories. This telescope, with its nearly two meter diameter mirror, is rigidly fastened to the earth. Thus, one avoids the very expensive and massive support structure of the standard polar mounting. The CTI, rather than pointing at a particular object in the sky, uses the earth as its platform and sweeps the entire sky each night. This makes it an ideal instrument for certain types of astronomy. By looking at the same piece of sky every night, CTI is very sensitive to rapid changes, such as super novae, variable stars, quasars, etc. It is a unique and valuable instrument. Dr. McGraw is presently reviewing several mountains in New Mexico for a site to relocate his telescope.

NASA has officially announced its intention to return to the moon this decade. It has requested proposals for unmanned lunar projects and a version of the CTI, submitted by Prof. McGraw, has been accepted as the first astronomy, and second overall, lunar landing project. This new instrument, LUTE for lunar ultraviolet telescope, will provide a huge amount of new astrophysical information about our universe. It will also help bring UNM into the forefront of astrophysical research in the world.

One of the major unifying forces in the IfA is the use of high resolution technology by all of its members. This fits remarkably well with some of the most exciting work at the Phillips Laboratory. The development of adaptive optics, which can correct for atmospheric distortion, has been a result of several years of Air Force research. It is a technology which has now been declassified and which promises earth-based astronomy at a resolution previously thought possible

only in space-based instruments. The Phillips Laboratory has been a leader in this work and is constructing a 3.5 meter telescope on the base site. It has an additional larger telescope planned for construction in Hawaii. Both instruments will be equipped with the latest in adaptive optics technology. The IfA is in the process of contracting with the Phillips Lab for use of these instruments. The Albuquerque telescope, which will be ready soon, is an accessible and exciting instrument for us. While our area is fairly bright at night and not very suitable for astronomy in the visual part of the spectrum, it is quite dark in the infrared. We will be constructing a new IR CCD array for installation in the near future. The prospects for excellent collaborative work are enormous. The future of astronomy and astrophysics at UNM is very promising. We all look to the IfA for great things in the coming years.

The Center for Advanced Studies (CAS) , under the leadership of Prof. Marlan Scully, is one of the results of the original Institute for Modern Optics formed when Prof. Scully came here about twelve years ago. The IMO split into a more applied branch, the Center for High Technology Materials (CHTM) and the CAS. Dr. Steven Brueck, also a faculty member, has made the CHTM a collaborative partner in SEMATECH and has brought the Center to an internationally famous optoelectronics research organization. The CAS has also achieved world renown, but in more theoretical areas. Through Dr. Scully's efforts, we have enjoyed visits by some of the most well known and respected physicists in the world. We have welcomed Nobel Laureates, members of the National Academy of Science, Fellows of the American Physical Society, and many distinguished scientists from abroad. The list of countries represented by our visits makes us a veritable UN of science.

The Center has focused much of its work on quantum optics, free electron lasers, lasing without inversion, etc., as well as investigating some of the most fundamental questions in



quantum mechanics. The Center has organized several widely respected and well attended seminars and schools. In the summer of 1991, a summer school on the Foundations of Quantum Mechanics was held in Santa Fe. This past year has seen schools in optics held in Utah in January and one held just this past September in Crested Butte, Colorado. These schools draw speakers and "students" from the entire world and have helped make UNM one of the premier institutions in optics research.

This past Spring we succeeded in attracting Dr. Carlton Caves to our faculty from his position at the University of Southern California. Prof. Caves has, at a young age, achieved international stature as a theorist in quantum optics, chaos, information theory, and quantum mechanics. Our ability to attract a scientist of this caliber is a great coup for us and is indicative of the growing fame and repute of Physics and Astronomy at UNM. As with the addition of John McGraw, we are certain that Carl Caves will make extraordinary contributions to many fields of our science. We are delighted to have him, his research associates, and his students as members of our department.

The New Mexico Center for Particle Physics was started with the arrival of Prof. John Matthews in January 1991. The founding of the Center was greatly aided by a grant from the Texas Accelerator Commission and a Personnel Loan Agreement with Los Alamos National Laboratory. As part of the University's commitment to this effort, we were able to add two Assistant Professors, Michael Gold and Sally Seidel, during the Fall 1991 semester. Two Research Associates, several graduate students, and a close collaboration with LANL physicists have made this group very powerful. As a sign of their growing strength and prestige, they have been accepted as full members of the CDF collaboration at Fermilab, the most prestigious experiment in their field. They have accepted major responsibility for the construction of a new

inner detector, a large array of silicon strip detectors, designed to identify the vertex location of the proton antiproton collisions at the Tevatron. This experience will lead directly into their work on the construction of the inner detector of the CDF, Collider Detector Facility, at the new SSC lab in Texas. This UNM-LANL collaboration will play a leading part in the most profound investigation of the fundamental constituents of matter ever undertaken.

This discussion is meant to focus only on some of the very newest and exciting work in our Department. We have many exciting and first rate work proceeding in several fields of both theoretical and experimental physics. Not all of this work can be listed here, but the amount of research funding received in the Department is indicative of the growing strength of our faculty. We cannot close this brief discussion, however, without listing some of the newest developments in Material and Surface physics. The use of scanning tunneling microscopy is a rapidly developing new method for investigating the surfaces of materials, atomic layer by atomic layer. The ability to visualize molecules of biological size and interest is a serious research question at present. We have such investigations underway, the goal of which is to scan and "see" strands of DNA. If this is possible, then the technique will be adopted as part of the Human Genome project in collaboration with LANL.

Finally, and again as evidence of closer relations with the local laboratories, we are participating in a microgravity sensor development project for NASA in collaboration with Dr. Rob Duncan of Sandia, an Adjunct Professor in our department. This project, which will eventually be funded at \$40,000,000, has a scientific component involving the use of sensors operating at liquid helium temperatures. This delicate work will all be performed at UNM and already involves other faculty members and several students.

Profs. Dieterle, Prasad, and Zeilik were on Sabbatical leave during the 1991/92 academic

year. Prof. Dieterle spent most of his time at the LAMPF accelerator at LANL working on the Liquid Scintillator Neutrino Detector (LSND) collaborative experiment. This experiment, in which UNM is playing a major role, involves the creation of a massive, multi-ton detector for making delicate measurements on neutrino interactions, one of the most exciting areas of particle physics.

Prof. Prasad is a distinguished theorist in the field of non-linear and quantum optics. He spent one-half of his sabbatical at Harvard University, working with Dr. Roy Glauber. As Dr. Glauber is one of the founders of the field of quantum optics, this represented a marvelous chance for Prof. Prasad to work with one of the brightest lights in his field. The second half of the year he was at the University of Rochester. There are only three universities in the United States that offer degree programs in Optical Sciences: Rochester, Arizona, and UNM. Rochester has long played the leading role in the field and Prof. Prasad was able to collaborate on several papers with distinguished people in his field. The amount of new theoretical work coming from this year away is the type of thing that justifies sabbatical leave.

Prof. Zeilik continued his deep interest in pedagogy and education and has been preparing a large NSF Innovative Teaching Proposal. As part of the development he is teaching a special section of Astronomy 101 this Fall.

**Awards and Recognitions:** At our Departmental Commencement on 16 May we increased the number of awards to various talented department members. Our very newest award is named in honor of the late Colonel Durward Young, Jr. Throughout his life Col. Young had a serious interest in physics, partly due to his training as a geologist and partly from his innate intellectual curiosity. Before his death he asked his daughter, Daphne Orner (a UNM Engineering graduate who pursued our 160 undergraduate physics sequence), to solicit contributions to our

department at UNM in lieu of flowers at his funeral. We had the great good fortune to collect over \$500 and created the Durward Young, Jr. Award for the Best Ph.D. Dissertation for the 1991/92 (and future) years. We had the honor of having Mrs. Young and Mrs. Orner at our Commencement ceremony and Mrs. Orner presented the first award of a certificate and \$100 to Dr. Melynda Brooks. The title of Dr. Brooks Dissertation was *Neutron Induced Pion Production on C, Al, Cu, and W at (200,600) MeV*.

Prof. Panitz tried an experiment in his Physics 152 class. He arranged special coordinated and monitored recitation sections to be taught primarily by graduate students. With faculty monitoring, these were excellent training grounds in pedagogy for our graduate students as well as serving as extra, and much appreciated, help for the undergraduates. Prof. Panitz presented awards to the graduate students involved: Joe Deitche, Jack Glassman, Shannon Hall, Christina Lacey, Crawford MacCallum, Christian Schindelin, and Stephanie Sonleitner. Drs. MacCallum and Sonleitner are not students but participated in the program through love of teaching.

The Award for Excellence in Teaching was presented to Prof. Belva Campbell. This award is granted following voting by all students, graduate and undergraduate, enrolled in physics and/or astronomy courses throughout the year.

Once again we presented an award to the best Graduate Teaching Assistants for 1991/92. Once again it was not possible to choose only one person and so two separate awards of \$100 were given. They went to Joe Deitche and Mark Gulley.

We have been extremely fortunate for some years now to have the Eoin Gray Fellowship Award, created by the Tetra Corporation in honor of Dr. Gray, who was killed in a tragic accident. We have always had the honor of having George Friberg, President and Chief Executive Officer of Tetra, present this award. It goes to the outstanding graduating senior for

the year and this year it was awarded to Mr. Arman Sabet.

The Institute for Astrophysics has begun an award in recognition of the outstanding astrophysics student for the year. It was given to Mr. Jason Glenn for 1991/92.

Last, but not least, there is the Feynman Award, originally instituted by Prof. Dieterle, which is given to the best student in the Contemporary Physics class (Physics 491 and 492). These courses are required for the BS degree in Physics and the award was presented to Mr. Brian Berman. Through the kindness of the Addison-Wesley Publishing Company, we were able to give the three volume set of the Feynman Lecture Series to the winner.

The addition of distinguished new faculty members and the number of awards and honors won by our faculty led us to hold a reception in March entitled *A Celebration of Physics in the 90's*. We invited all of our department, the Deans, Provost, the Assistant and Associate Provost, President Peck, and many distinguished people from LANL, SNL, Phillips Laboratory, and local industry. We had lovely hors d'oeuvres and music and entertained approximately 500 people. Every faculty member posted examples of their work, and the lobby, hallways, and reading room in our building were full of exciting demonstrations, pictures, slide shows, papers, etc. In addition, Provost Risser was kind enough to make several presentations during the ceremony. He introduced our new faculty members: Dr. John McGraw, Director of the Institute for Astrophysics, and Profs. Matthews, Gold, and Seidel of the New Mexico Center for Particle Physics. He also presented monetary awards to graduate students Christina Lacey and Cary Collett in recognition of extremely well written papers in Astrophysics.

The Center for Advanced Studies has become more and more distinguished and the Provost mentioned several new awards. Among these were the Cresson Medal of the Franklin Institute in Philadelphia and the E G & G Medal from the Society of Optical and Quantum

Electronics, both won by Prof. Scully. Prof. Leo Narducci of Drexel Institute of Technology and a member of the CAS, won the Einstein Award for work in optics while here and published under his CAS and UNM affiliation. Dr. Wolfgang Schleich, a student here of Prof. Scully's, was awarded the Physics Prize of the German Physical Society for the work he did on his dissertation topic while in Albuquerque.

We are extremely proud of all of the work done during the past year or so by our faculty, students, and staff and were all very pleased with the attendance and success of our reception.

Enrollment in undergraduate service courses, undergraduate major courses, and graduate courses remains relatively stable as it has for the past several years with two to three percent fluctuations. Student Credit Hours for the last six years (not including summers) are:

1991/92, 15036	1990/91, 14606
1989/90, 14972	1988/89, 14634
1987/88, 14959	1986/87, 13818

During the academic year 1991/92 ... 33 students earned degrees in Physics, Astrophysics or Optical Sciences. Eleven of these received B.S. degrees in Physics or Astrophysics (\*), two of the students accomplished this with a double major, while five additional students minored in Physics for their bachelor's degree with another major. Thirteen students received M.S. degrees in Physics and nine received the Ph.D. degree. Of the Ph.D.'s awarded, three were in Optical Sciences (\*). The following table lists the names of the students involved:

Physics and Astrophysics (\*) Major

Peter Balter  
Sydney Blocher, Jr.  
Helly Diaz  
Larry Lopez  
Arman Sabet  
Gregory Whiteside

Brian Berman  
Lowell A. Cummings  
Jason Glenn  
Peter McCabe \*  
William K. Schum

Double Majors:

Peter Balter, B.S. in Physics and Math  
Larry Lopez, B.S. in Physics and B.A. in History

Physics Minors:

Gregory E. Britelle  
J. Kevin Simmons  
Andrew Whitter

Francis R. Malizzo  
Stephen Subero

Students receiving the M.S. degree in 1991/92 ...

Thomas Andrew Bida  
Robert Anthony Giannelli  
Shawn Mark Gordon  
Michael James Ledlow  
Christian F.W. Schindelin  
Andreas Stintz  
Steven Ray Wilkinson

James Robert Blakely  
Jack Glassman  
Shannon Marie Hall  
Glenn Evan Morrison  
Edward Dennis Seeberger, Jr.  
Aaron Bradley Wegner

Students receiving the Ph.D. degree in 1991/92 in Physics or Optical Sciences (\*)  
(dissertation advisor) ...

Bartram Shewell Abbott  
(Sudhakar Prasad)  
Michael Leon Dennis  
(Jean-Claude Diels)  
Michael Gehmeyer  
(Nebojsa Duric)  
Chen-Yau Tang  
(Howard Bryant)  
Malcomb Wallis Wright  
(John McIver)

Melynda Louise Brooks  
(Bernd Bassalleck)  
Ilias Fernini  
(Nebojsa Duric)  
Yung-Sheng Kuo  
(John McIver)  
Feiling Wang  
(Jean-Claude Diels)

**B. Significant Plans and Recommendations for the Near Future****Space and Building Needs:**

The primary need of the department is for more space. This need, which has been emphasized in reports for years, is now rapidly becoming the limiting factor in our work. We have absolutely no more laboratory space and have increased the office space density of Research Associates and graduate students to explosive proportions. We simply must have more room. It has been pointed out innumerable times that our present building was originally constructed so that a wing could be added on the north side. We have lobbied, unsuccessfully, for this addition for years.

Our space problems are exacerbated by the plans of the Medical School Complex for expansion. Part of said expansion includes a parking structure that fills the dirt lot to the east of our building. What is even worse than the loss of the ground is the fact that this structure actually overlaps with the present East Wing modular building which we so happily, proudly, and expensively added last year. These are fully occupied with offices, labs, and a conference room. They have a large electrical transformer attached to them, their own air conditioning units, underground plumbing and, significantly, underground computer network connections. To move or remove these structures is a disastrous occurrence. We have been working with the architects and the Medical School people to prevent this travesty, with no success at present. We have tested the vibrations caused by excavation in this east lot and find that delicate optics research is completely impossible. The vibrations are so large that we cannot even stabilize our instruments well enough to measure them.

One suggestion we have made is for cooperation with the Medical School in the design of a new north wing. This could be jointly designed so that, in five to ten years, when a new



building becomes a possibility, the present structures would be directly useful to the Medical School for laboratories and for ambulatory patient care. These negotiations are proceeding. We plan to take every possible step to prevent the destruction of our ability to perform our basic education and research functions. The replacement of a hard working research and education academic department by a parking structure is a travesty which no serious University can permit.

Our other problems pale beside the space problem, but they are by no means insignificant. Our machine shop lags farther and farther behind modern technology. We have only one NC machine and are therefore unable to meet many of the requirements of our experimental groups. The other machines, most acquired already at surplus, become less and less accurate as their parts become worn. This situation is critical and the solution is quite expensive. A bond issue for equipment is desperately needed.

We have begun an electronics shop this year, a facility that has long been necessary for experimental groups to properly function. The shop was made possible by the addition of a new electronics technician. But people without equipment are not very useful. Our electronics shop must have some modern test equipment. Our highest priority is a digital oscilloscope. There are so many needs for equipment that we cannot list them all.

Finally, we continue to service our far flung experimental facilities, Capilla Peak Observatory, Embudo and Socorro caves, etc., with archaic vehicles. Trucks from 1964 are old, slow, and dangerous. They are so old that we can no longer acquire parts for them but are reduced to manufacturing our own parts in the machine shop! In addition to replacing at least two of these decrepit vehicles, we want to institute a public outreach program. This means a van that we could equip with astronomical exhibits and physics demonstration projects. We have discovered that LANL has similar interests and we are pursuing a joint solution.

**Staff Needs:**

Our personnel needs are growing but the ability to fund positions is not. We continue to support one-half of an office staff position and one full technical position from overhead return funds. We have found the shortage of State money to be so painful as to require the use of the overhead research funds to maintain our daily operational functions. This is a travesty as these funds are meant to seed research projects, invite colloquium and seminar speakers, support graduate student research projects, etc. The diversion of funds to ordinary operations makes the more important tasks impossible.

We have found inadequacies in several services that should be provided by the administrative side of the University. The Graduate Studies Office continues to be more impediment than help. The accounting services have been so slow and have lagged so far behind that they have cost the department over \$5,000 this year. To prevent the recurrence of such losses, we have instituted our own accounting system. With this we can have real time checks on expenditures, prevent over-expenditures, and plan budgets in a rational manner. There have never been any financial services available that would allow budgeting and planning until we began our own.

**C. Appointments to Staff**

Larry Reisch has joined the department as the Instrumentation Technician to service the observatory on Capilla Peak and to provide maintenance of the remote cosmic ray and astronomical sites. In addition, Larry repairs electronic equipment and other electric and mechanical devises.

Tom Hess has been added to the department staff as an Analyst Programmer for the Institute for Astrophysics. Tom programs, maintains, and operates the array of computers used

to digest and analyze the large volume of data produced by the CTI and other telescopes.

The IfA hired Randy Grashuis as the new Laboratory Technician IV to manage the operations at Capilla Peak Observatory. He is a recent Astrophysics graduate from UNM.

### **Research Personnel at Physics and Astronomy During the Year**

<u>FACULTY SPONSOR</u>	<u>NAME</u>	<u>TITLE</u>
Harjit Ahluwalia	Shumsheng Xue	Research Associate I
Charles Beckel	Mohammed Yousaf	Visiting Asst. Professor
Howard Bryant	Jonathan Friedman	Research Associate I
Jean-Claude Deils	Matthias Lenzner	Research Associate I
Byron Deiterle	Randolph Reeder	Senior Research Assoc. II
Nebojsa Duric	Robert Stellingwerf	Research Professor
V.M. Kenkre	Marek Kus	Research Associate I
John Matthews	Nicola Bacchetta	Research Associate III
	Mark Frautschi	Research Associate III
Jack McIver	Michael Kelly	Research Associate III
	Yung-Sheng Kuo	Research Associate II
John Panitz	Paul Schwoebel	Post-doctoral Fellow
	Jonathan Wolfe	Research Associate I
Sudhakar Prasad	Paul M. Sharma	Research Associate II
Marcus Price	Daniel Weeks	Visiting Asst. Professor
Marlan Scully	Erik Bochove	Research Associate III
	Luiz Davidovich	Visiting Assoc. Professor
	Steven DiMarco	Research Associate I
	Ahmet Elci	Research Assoc. Professor
	Michael Fleischhauer	Research Associate I
	Christoph Keitel	Research Associate I
	Gerald Moore	Research Assoc. Professor
	Chi-Yao Zhu	Research Associate II
	Suhail Zubairy	Senior Research Assoc. III
Derek Swinson	Shinichi Yasue	Visiting Research Professor
David Wolfe	Jerry Hall	Senior Research Assoc. III
	James Lowe	Visiting Research Professor

### **D. Separations from Staff**

Instrumentation Technician Carl Meissner left the university during the year to return to the construction trades. He was a capable employee in a very diverse position.

David Summers, Lab Assistant II for the IfA, left the university to continue his education and work at another observatory out of the state.

**E. Sponsored Research or Other Projects**

a. During the year, there were 46 new proposals submitted to outside funding agencies by 24 regular faculty members (80%) and three research faculty.

b. Altogether 28 faculty members (93%) and four research faculty were actively involved in outside-sponsored research on 51 separately funded grants or contracts. These research projects are performed out of the Department of Physics and Astronomy and come either directly under our jurisdiction or under the aegis of several other organizations such as the Center for Advanced Studies, the Center for High Technology Materials, the Center for Micro-Engineered Ceramics, or the Institute for Astrophysics.

c. Approximately \$2,832,000 were expended on research projects supported by external grants and contracts that were filed through the College of Arts and Sciences or the other centers mentioned above.

Department of Physics and Astronomy  
Schedule of Classes and Seminars

Fall 1991

COURSE#	COURSE NAME	ENROLL	SCH
101-001	Intro to Astronomy	324	972
101-002	Intro to Astronomy	211	633
101-003	Intro to Astronomy	113	339
111L-ALL	Astronomy Lab	121	121
270-001	General Astronomy	42	126
272L-001	General Astronomy Lab	15	15
426-001	Observation & Comput T	12	36
455-ALL	Problems	4	10
102-001	Intro to Physics	46	138
102-002	Intro to Physics	152	456
106-001	Light and Color	80	240
112-ALL	Physics Laboratory	43	43
116-ALL	Light and Color Lab	36	36
151-001	General Physics	284	852
152-001	General Physics	106	318
153-ALL	General Physics Lab	120	120
154-ALL	General Physics Lab	38	38
157-ALL	Problems in General Phys	14	30
158-001	Problems in General Phys	45	47
160-001	General Physics	228	684
160-002	General Physics	38	114
161-001	General Physics	135	405
163-ALL	General Physics Lab	31	31
167-001	Problems in General Phys	55	115
168-001	Problems in General Phys	48	48
262-001	General Physics	54	162
262-002	General Physics	102	306
264-ALL	General Physics Lab	21	21
267-ALL	Problems in General Phys	50	50
301-001	Heat and Thermodynamic	30	90
303-001	Analytical Mechanics	25	75
307-001	Junior Laboratory	9	27
400-ALL	Seminar	35	35
405-001	Electricity/Magnetism	18	54
451-ALL	Problems	1	1
452-ALL	Research Methods	1	1
466-001	Methods/Theoretical Phy	29	87
471-001	Advanced Optics I	12	36
472-001	Laser Physics I	11	33
476L-001	Exper. Techniques/Optics	6	18
476L-002	Exper. Techniques/Optics	5	15
491-001	Contemporary Physics	16	48
493L-001	Cont.Physics Lab	8	24
496-001	Contemporary Physics H	3	9
498L-001	Cont.Physics Honors Lab	3	9
500-ALL	Advanced Seminar	7	7
503-001	Mechanics	19	57
511-001	Electrodynamics I	15	45
522-001	Quantum Mechanics II	14	42
530-002	Solid State Physics	10	30
534-001	Plasma Physics I	5	15
537-001	Topics in Astro and Spac	13	39
551-ALL	Problems	3	4
552-ALL	Problems	2	5
573-001	Classical Mechanics II	11	33
576-001	Stat Mech II	5	15
599-ALL	Thesis	2	4
650-ALL	Research	11	37
699-ALL	Dissertation	49	391

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Department of Physics and Astronomy  
Schedule of Classes and Seminars

Spring 1992

COURSE#	COURSE NAME	ENROLL	SCH
101-001	Intro to Astronomy	328	984
101-002	Intro to Astronomy	161	483
101-003	Intro to Astronomy	90	270
111L-ALL	Astronomy Lab	137	137
271-001	General Astronomy	38	114
273L-001	General Astronomy Lab	8	8
421-001	Concepts of Astrophysics	8	24
437-001	Solar/Terrestrial Physics	6	18
455-ALL	Problems	4	10
102-001	Intro to Physics	55	165
102-002	Intro to Physics	160	480
105-001	Physics and Society	25	75
108-001	Musical Acoustics	88	264
112-001	Physics Laboratory	33	33
118-ALL	Musical Acoustics Lab	39	39
151-001	General Physics	141	423
152-001	General Physics	203	609
153-ALL	General Physics Lab	50	50
154-ALL	General Physics Lab	80	80
157-ALL	Problems in General Phys	73	73
158-ALL	Problems in General Phys	10	10
160-001	General Physics	159	477
160-002	General Physics	50	150
161-001	General Physics	122	366
161-002	General Physics	50	150
163-ALL	General Physics Lab	36	36
167-ALL	Problems in General Phys	81	81
168-ALL	Problems in General Phys	44	44
262-001	General Physics	112	336
264-ALL	General Physics Lab	14	14
267-ALL	Problems in General Phys	24	24
302-001	Optics	21	63
304-001	Analytical Mechanics	12	36
308L-001	Junior Laboratory	3	9
330-002	Atomic-Nuclear Physics	21	63
400-ALL	Seminar	32	32
406-001	Electricity -Magnetism	9	27
430-001	Intro to Solid State	6	18
451-ALL	Problems	5	13
467-001	Methods/Theoretical Phy	10	30
477L-001	Exper. Techniques/Optics	5	15
477L-002	Exper. Techniques/Optics	6	18
492-001	Contemporary Physics	12	36
497-001	Cont.Physics Honors	1	3
500-ALL	Advanced Seminar	11	11
505-001	Statistical Mechanics	10	30
512-001	Electrodynamics II	18	54
521-001	Quantum Mechanics I	23	68
531-001	Atomic Structure	7	21
551-ALL	Problems	8	15
552-ALL	Problems	14	40
554-001	Advanced Optics II	26	78
564-001	Laser Physics II	6	18
568-001	Quantum Optics	4	12
569-001	Selected Topics Ex/Optic	11	33
570-001	Theory of Relativity	9	27
580-001	Advanced Plasma Physic	1	3
599-ALL	Thesis	2	4
650-ALL	Research	9	33
699-ALL	Dissertation	50	407

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**Date**

- 08/21/90    **Presenter:** J. M. Irvine  
            **Title:** Primordial Nucleosynthesis Revisited  
            **Institution:** University of Manchester
- 08/24/90    **Presenter:** Gary Sanders  
            **Title:** Rare Kaon Decays  
            **Institution:** Los Alamos National Laboratory
- 08/31/90    **Presenter:** Paul Schwobbel  
            **Title:** Ion Generation for Particle Beam Fusion  
            **Institution:** Sandia National Laboratory
- 09/07/90    **Presenter:** David Emin  
            **Title:** Formation, Motion, and Superconductivity of Large Bipolarons  
            **Institution:** Sandia National Laboratory and University of New Mexico
- 09/14/90    **Presenter:** John Matthews  
            **Title:** Review of Z Physics from the SLAC Linear Collider and LEP  
            **Institution:** Johns Hopkins University
- 09/20/90    **Presenter:** Peter Kalman  
            **Title:** Laser Assisted Nuclear Processes  
            **Institution:** Technical University of Budapest
- 09/21/90    **Presenter:** W. Sandhas  
            **Title:** Recent Results in the Nuclear Atomic Few-Body Problem  
            **Institution:** Bonn University
- 09/28/90    **Presenter:** Robert Stellingwerf  
            **Title:** Hydrodynamic Instabilities in Stars and Nebulae  
            **Institution:** Mission Research Corporation
- 10/02/90    **Presenter:** Kat-Fu Chan  
            **Title:** Calibration Services Available From The Hong Kong Government Standards Laboratory  
            **Institution:** Hong Kong Government
- 10/04/90    **Presenter:** Mike Norman  
            **Title:** Computational Astronomy and Astrophysics in the 1990's  
            **Institution:** NCSA, Univ. of Illinois at Urbana Champaign
- 10/05/90    **Presenter:** L. Schein  
            **Title:** Fundamental Problems in Photoconductivity Physics  
            **Institution:** IBM, San Jose

**Date**

10/09/90      **Presenter:** John Panitz  
**Title:** The "Life" Detector  
**Institution:** UNM

10/16/90      **Presenter:** Dan McGraw  
**Title:** Parametric Processes, Magic Mirrors and Energy Transfer  
**Institution:** UNM

10/19/90      **Presenter:** Manfred Kleber  
**Title:** New Grapes From An Old Vineyard: Resonant Tunneling and Tunneling in Three Dimensions  
**Institution:** Technical University of Munich

10/23/90      **Presenter:** Sudhakar Prasad  
**Title:** Interferometric Imaging at The Single-Photon Level  
**Institution:** UNM

10/26/90      **Presenter:** K. R. Anantharamaiah  
**Title:** The ARC, Threads, and Other Unique Features Near The Galactic Centre as Seen at  $\sim 90\text{cm}$   
**Institution:** Raman Research Institute

10/30/90      **Presenter:** Bel Campbell  
**Title:** The Hubble Telescope: Dream or Disaster?  
**Institution:** UNM

11/02/90      **Presenter:** Dave Westpfahl  
**Title:** Recent Observations of Comets Austin and Levy  
**Institution:** New Mexico Tech

11/09/90      **Presenter:** Carlo Trugenberger  
**Title:** An Introduction to Anyons and Chern-Simons Theories  
**Institution:** LANL

11/16/90      **Presenter:** Kevin Cahill  
**Title:** Why There is Mass  
**Institution:** University of New Mexico

11/29/90      **Presenter:** J. T. McGraw  
**Title:** A Strip Search of the Universe  
**Institution:** Steward Observatory, University of Arizona

11/30/90      **Presenter:** Steven Elliott  
**Title:** The Soviet-American Gallium Experiment  
**Institution:** Los Alamos National Laboratory

## Date

- 12/07/90      **Presenter:** Howard C. Bryant  
**Title:** Relativistic Atomic Physics  
**Institution:** University of New Mexico
- 12/14/90      **Presenter:** Charles L. Hyder  
**Title:** The Physics of Wipp: Help!  
**Institution:**
- 01/18/91      **Presenter:** Morton Bradbury  
**Title:** Packaging of the Human Genome  
**Institution:** Los Alamos National Laboratory
- 01/25/91      **Presenter:** Elias Brinks  
**Title:** Dwarf Galaxies as Probes of Dark Matter  
**Institution:** National Radio Astronomy Observatory, Socorro
- 01/30/91      **Presenter:** Philip Phillips  
**Title:** Absence of Localization in 1-Dimension  
Applications to Conducting Polymers  
**Institution:** Massachusetts Institute of Technology
- 02/01/91      **Presenter:** Geoffrey West  
**Title:** A Theorist's View of the SSC: Its Politics, Sociology and  
Physics  
**Institution:** Los Alamos National Laboratory
- 02/08/91      **Presenter:** Nick Matwiyoff  
**Title:** The Search for Diagnostic Specificity in Medical Nuclear  
Magnetic Resonance Methods  
**Institution:** University of New Mexico
- 02/14/91      **Presenter:** Joachim Dirks  
**Title:** Structure Investigation of Water Absorbed on Metal Surfaces  
Under The Influence of High Electric Fields  
**Institution:** Fritz-Haber-Institut der Max-Planck-Gesellschaft
- 02/15/91      **Presenter:** Marc Price  
**Title:** The Near Environs of Radio Galaxies  
**Institution:** University of New Mexico
- 02/19/91      **Presenter:** Sheila Tobias  
**Title:** What Makes Science Hard  
**Institution:**
- 02/22/91      **Presenter:** Russ Taylor  
**Title:** Recent Discoveries From The 327 MHz Galactic Plane Survey  
**Institution:** University of Calgary



Date	
03/01/91	<p><b>Presenter:</b> Mark Stockman  <b>Title:</b> <u>Laser Modification of DNA</u>  <b>Institution:</b> State University of New York at Buffalo</p>
03/05/91	<p><b>Presenter:</b> Stephanie Forrest  <b>Title:</b> <u>Genetic Algorithms and Function Optimization</u>  <b>Institution:</b> UNM, Department of Computer Science</p>
03/07/91	<p><b>Presenter:</b> Wolfgang Rudolph  <b>Title:</b> <u>Physics of and with Femtosecond Light Pulses</u>  <b>Institution:</b> FSU, Jena, Germany</p>
03/08/91	<p><b>Presenter:</b> Gertrude Rempfer  <b>Title:</b> <u>Magic Mirrors: Windows on Electron Beam Optics</u>  <b>Institution:</b> University of Portland</p>
03/14/91	<p><b>Presenter:</b> Doreen A. Weinberger  <b>Title:</b> <u>Second Harmonic Generation in Optical Fibers: A Mystery</u>  <b>Institution:</b> University of Michigan</p>
03/22/91	<p><b>Presenter:</b> Alan Perelson  <b>Title:</b> <u>Modeling of the Immune System</u>  <b>Institution:</b> Los Alamos National Laboratory</p>
03/25/91	<p><b>Presenter:</b> Khalid Shahzad  <b>Title:</b> <u>Opt. &amp; Vib. Prop. of Wide-Band-Gap II-VI Epitaxial Layers &amp; Strained Layer Superlattices for Short WL Elec. Dev</u>  <b>Institution:</b> Philips Laboratory</p>
03/27/91	<p><b>Presenter:</b> John A. Yeazell  <b>Title:</b> <u>Classical Atoms and Rydberg Atomic Wave Packets</u>  <b>Institution:</b> University of Rochester</p>
03/29/91	<p><b>Presenter:</b> Walter Fontana  <b>Title:</b> <u>Molecular Evolution</u>  <b>Institution:</b> Los Alamos National Laboratory</p>
04/01/91	<p><b>Presenter:</b> Roger Dorsinville  <b>Title:</b> <u>Determination of the Magnitude, Response Time, and Sign of the Third Order Opt. Nonlinear Coefficient in Poly.</u>  <b>Institution:</b> City College of New CUNY</p>
04/08/91	<p><b>Presenter:</b> Alan Sill  <b>Title:</b> <u>E+E Physics from the Amy Detector at Tristan</u>  <b>Institution:</b> University of Rochester</p>

## Date

- 04/09/91      **Presenter:** Yakir Aharonov  
                 **Title:** New Quantum Effects  
                 **Institution:** University of South Carolina
- 04/11/91      **Presenter:** Fernando Quevedo  
                 **Title:** Can Heterotic-String Theories be the Fundamental Theories of Matter?  
                 **Institution:** Los Alamos National Laboratory
- 04/12/91      **Presenter:** Robert L. Golden  
                 **Title:** Observations of Antiparticles in Cosmic Rays  
                 **Institution:** New Mexico State University
- 04/16/91      **Presenter:** Daniel Weeks  
                 **Title:** Gamma-Ray Astrophysics/Cosmic Ray Physics at the Highest Energies  
                 **Institution:** University of New Mexico
- 04/17/91      **Presenter:** Alain Gauthier  
                 **Title:** Doing Physics with Muons at 2 TEV  
                 **Institution:** University of Illinois
- 04/18/91      **Presenter:** Randolph Reeder  
                 **Title:** A Liquid-Scintillator Neutrino Detector at LAMPF  
                 **Institution:** University of New Mexico and Los Alamos National Labs.
- 04/19/91      **Presenter:** Paul Parris  
                 **Title:** Multiple-Trapping and Percolation in the Hopping Conductivity of High-Temperature Ceramic Oxides  
                 **Institution:** University of Missouri-Rolla
- 04/22/91      **Presenter:** Sally Siedel  
                 **Title:** Searching for the Source of CP Violation and a Hint of the Top Quark  
                 **Institution:** University of Toronto
- 04/23/91      **Presenter:** Jim Lowe  
                 **Title:** Chiral Symmetry and Pion Production at Threshold  
                 **Institution:** University of New Mexico
- 04/25/91      **Presenter:** Nils J. Nilsson  
                 **Title:** Toward Agent Programs With Circuit Semantics  
                 **Institution:** Stanford University
- 04/26/91      **Presenter:** Arnold Arons  
                 **Title:** Physics Teaching: Order out of Chaos?  
                 **Institution:** University of Washington

## Date

- 05/03/91    **Presenter:** Seymour Alpert  
            **Title:** Physics, Metabolism, and Allometry  
            **Institution:** University of New Mexico
- 05/07/91    **Presenter:** John McGraw  
            **Title:** A Strip Search of the Universe  
            **Institution:** The University of Arizona, Steward Observatory
- 05/16/91    **Presenter:** Thomas P. Beebe, Jr.  
            **Title:** Probing the Structure of Biological Molecules with the STM:  
                    Getting Started  
            **Institution:** University of Utah

Department of Physics and Astronomy  
Seminar Presentations  
July 1990 - June 1991

## Date

- 09/20/90      **Presenter:** M.A.K. Lodhi  
**Title:** Quark Degrees of Freedom in Form Factors of Light Nuclei  
**Institution:** Texas Tech University
- 09/21/90      **Presenter:** Dirk Walliser  
**Title:** Yet Another Way to Save Traditional Big-Bang Cosmology  
**Institution:** University of Hanover
- 10/04/90      **Presenter:** Sudhakar Prasad  
**Title:** Quantum Theory of Radiation in Cavities: General Formalism  
**Institution:** Univ. of New Mexico
- 10/11/90      **Presenter:** Sudhakar Prasad  
**Title:** Quantum Theory of Radiation in Cavities: Applications  
**Institution:** Univ. of New Mexico
- 10/11/90      **Presenter:** Semen Baru  
**Title:** the Data Acquisition System of New Detectors for Colliding Beam Physics in INP  
**Institution:** Institut of Nuclear Physics, Novosibirsk, USSR
- 11/20/90      **Presenter:** LLOYD Bobb  
**Title:** Fiber Optic Sensors  
**Institution:** Naval Air Development Center
- 11/20/90      **Presenter:** Bruce M. Kemmell  
**Title:** Spherically Symmetric Stellar Collapse Using Regge Calculus  
**Institution:** University of New Mexico
- 11/24/90      **Presenter:** Nicolaas Bloembergen  
**Title:** Nonlinear Optics--Past, Present, and Future  
**Institution:** Gerhard Gade University Professor, Division of Applied Sciences, Harvard University
- 11/27/90      **Presenter:** David Statman  
**Title:** Light Scattering from Photorefractive Gratings  
**Institution:** AFWL
- 12/06/90      **Presenter:** Gershon Kurizki  
**Title:** New Schemes of Photo Detection  
**Institution:** Weizmann Institute of Science, Israel

Date	
01/07/91	<p>Presenter: Matt Visser            Title: <u>(2 + 1) Quantum Gravity</u>            Institution: Washington University</p>
01/17/91	<p>Presenter: Richard L. Liboff            Title: <u>Exact Energy-Dispersion Relations for N-Well Superlattice Configurations</u>            Institution: Cornell University</p>
01/18/91	<p>Presenter: Michael Lubell            Title: <u>Probing the Hydrogen Atom with Spin</u>            Institution: CCNY</p>
01/22/91	<p>Presenter: Chun-Fei Li            Title: <u>Optical Bistability and Its Applications</u>            Institution: Harbin Institute of Technology, Harbin, China</p>
01/23/91	<p>Presenter: Steve Gregory            Title: <u>Introduction to Windows 3</u>            Institution: University of New Mexico</p>
01/30/91	<p>Presenter: Philip Phillips            Title: <u>Absence of Localization in 1-dim Conducting Polymers</u>            Institution: Massachusetts Institute of Technology</p>
02/06/91	<p>Presenter: Wilhelm Becker            Title: <u>Multiphoton Ionization of the H- ion</u>            Institution: University of New Mexico</p>
02/13/91	<p>Presenter: Arvind Caprihan            Title: <u>Biological Physics: Flow Measurement by NMR</u>            Institution: Lovelace</p>
02/15/91	<p>Presenter: Alfred Stadler            Title: <u>Triton Calculations with Explicit Delta Degrees of Freedom</u>            Institution: Institut fur Theoretische Physik Universitat Hannover, Germany</p>
02/20/91	<p>Presenter: X. Wang            Title: <u>Davydov Soliton: Quantum Monte Carlo Studies</u>            Institution: Los Alamos National Laboratory</p>
02/21/91	<p>Presenter: Peter Sauer            Title: <u>Inelastic Electron Scattering From the three-Nucleon Boundstate</u>            Institution: University of Hannover, Germany</p>

## Date

- 02/22/91    **Presenter:** Alfred Stadler  
**Title:** The Effect of Three-Nucleon Forces on the Triton Binding Energy  
**Institution:** Institut fur Theoretische Physik Universitat Hannover, Germany
- 02/27/91    **Presenter:** William A. Gross  
**Title:** Air Bearing Technology  
the Breakthrough that Made Computer Disk Memories Possible  
**Institution:** University of New Mexico
- 03/01/91    **Presenter:** Dr. Kobayashi  
**Title:** Nonlinear Optical Phenomena in Organic Materials  
**Institution:** N. Electrochemical Labs
- 03/06/91    **Presenter:** David Dunlap  
**Title:** Transport in Molecularly Doped Solids: Variable Range Hopping  
**Institution:** University of New Mexico
- 03/27/91    **Presenter:** Thomas Bein  
**Title:** Towards Molecular Wires: Intrazeolite Conjugated Polymers  
**Institution:** University of New Mexico
- 04/01/91    **Presenter:** Marvin Mittleman  
**Title:** Bound State of Simple Atoms in the Presences of Intense Laser Radiation  
**Institution:** CCNY
- 04/03/91    **Presenter:** David Bear  
**Title:** The Physics of the Genetic Apparatus  
**Institution:** University of New Mexico, Cell Biology
- 04/10/91    **Presenter:** Horst Meyer  
**Title:** Transport Properties of Very Dilute  $^3\text{He}$  -  $^4\text{He}$  Mixtures  
**Institution:** Duke University
- 04/17/91    **Presenter:** Daniel McGraw  
**Title:** Time and Space Resolved Studies of Transport of Photocarriers in GaAs<sub>2</sub>  
**Institution:** University of New Mexico
- 04/17/91    **Presenter:** Paul Parris  
**Title:** Dynamics of Low Temperature Trapping  
**Institution:** University of Missouri-Rolla

Date

04/19/91      Presenter: Paul Parris  
Title: Hopping Conduction and Percolation in High-Temperature Ceramics  
Institution: University of Missouri-Rolla

04/19/91      Presenter: V. Efimov  
Title: Qualitative Approach to the Three-Body Problem: Basic Ideas and Applications  
Institution: University of Washington

04/26/91      Presenter: Gy. Bencze  
Title: Introduction to Group Theory in Quantum Mechanics I  
Institution: CRIP, Budapest, Hungary

05/06/91      Presenter: Vladimir I. Man'ko  
Title: Berry's Phase in Quantum Mechanics  
Institution: Lebedev Institute - Moscow

05/09/91      Presenter: Erik Uggerhoj  
Title: QED Processes in Strong Crystalline Fields: Results From NA 43CERN  
Institution: Aarhus University, Denmark

05/10/91      Presenter: Gy. Bencze  
Title: Introduction to Group Theory in Quantum Mechanics II  
Institution: CRIP, Budapest, Hungary

05/10/91      Presenter: Gy. Bencze  
Title: Introduction to Group Theory in Quantum Mechanics I  
Institution: CRIP, Budapest

05/13/91      Presenter: Margarita Man'ko  
Title: Opto-Electronic Effect in Semiconductor Lasers and Amplifiers and Its Applications  
Institution: Lebedev Institute - Moscow

05/21/91      Presenter: Gershon Kurizki  
Title: Quantum Optics of Molecules and Condensed Media  
Institution: Weizmann Institute of Science

05/22/91      Presenter: Ken Lassila  
Title: When Should the Neutron-Proton System be Looked Upon as Six Quarks?  
Institution: Ames Laboratory

847

Date

05/24/91

Presenter: Gy. Bencze

Title: Effects of the Atomic Environment on Nuclear Reaction Rates  
at Low Energy

Institution: CRIP, Budapest



## THE REPORT OF THE DEPARTMENT OF POLITICAL SCIENCE

July 1, 1991 - June 30, 1992

Karen L. Remmer, Chairperson

A. Significant Achievements1. Undergraduate program development.

- a. Student enrollments continued to grow during the 1991-92 academic year, as did the number of undergraduate majors.
- b. The Senior Political Science Program Evaluation, which is designed to enhance the department's ability to evaluate and improve undergraduate teaching, was revised on the basis of the 1990-91 pilot effort and institutionalized as a regular part of the graduate degree check for department majors.
- c. The department received a new undergraduate scholarship award, the Francis M. Lee Memorial Scholarship, to support an undergraduate major pursuing a degree in political science. The department also awarded two undergraduates Incentives for Excellence Scholarship Prizes on the basis of a special award from the National Science Foundation Minority Graduate Fellowship Program.

2. Graduate program development.

- a. Under the leadership of Peter Lupsha, the department systemized the rules and procedures governing the allocation of graduate assistantships.
- b. The department introduced a mentoring program designed to bolster the classroom effectiveness of graduate students who have

been assigned to teach one or more sections of the introductory courses.

c. The department initiated a self-study of its graduate programs.

3. Faculty recruitment. The department recruited four new full-time faculty to fill the vacancies accumulated over the past several years by the resignations of Paul Hain, Martin Needler, Jay Sorenson, and Alison Brysk.

4. Institute for Public Policy.

a. Under the leadership of Hank Jenkins-Smith, the Institute for Public Policy completed its fourth year of quarterly state-wide surveys. The surveys collect general behavioral and-demographic information and explore the opinions of New Mexicans special sets of issues. This year the surveys focused on police performance, the judicial system, economics, the environment, campaigns and elections. The results are published as the Quarterly Profile of New Mexican Citizens.

b. Funded research secured by the IPP during the year totalled \$296,388 and helped sponsor two state-wide surveys of the perceived risks of nuclear waste management policies in Colorado and New Mexico, measuring variations in public opinion over time; household surveys in three U.S. cities to assess both the status of race relations and differences in perceptions about race relations across major ethnic and racial groups; two national surveys of Americans' perceptions of the risks of nuclear waste management; a state-wide telephone survey of citizen perceptions of the

U.S. National Laboratories; a survey of citizen attitudes regarding open space in Bernalillo County; and a study of the incidence and prevalence of alcohol and drug use in Bernalillo County based on a survey of the population stratified by geographical area, gender, and other variables.

- c. Student support and employment: the IPP supported 75 undergraduate students as interviewers and 10 graduate students as research analysts through research projects undertaken in 1990-91.
- d. To promote academic achievement, the IPP also sponsored seven trips by graduate students to present papers based on IPP data at meetings of the American Political Science Association in Washington, D.C., the American Association for the Advancement of Science in Chicago, and the Western Political Science Association in San Francisco.
- e. In May the Institute sponsored a talk by Professor Paul Slovic of the University of Oregon on "The Perceptions of Risk: Reflections on the Psychometric Paradigm."
- f. Efforts to institutionalize the IPP were moved forward on the basis of the transition of the directorship from Hank Jenkins-Smith to Gilbert St. Clair.

5. Internship programs.

- a. The department continued to expand its internship programs both in terms of the number and variety of available opportunities. During the Fall and Spring semesters, departmental majors and minors were involved in the offices of both U.S. Senators as well

as of Representative Schiff, in Albuquerque and in Washington, D.C. Internships were also offered at two divisions of the Albuquerque City Planning Department, the Mora School District, and the New Mexico Court of Appeals.

- b. With the support of the central administration, the department placed twelve advanced undergraduate students in internship positions at the New Mexico State Legislature. Each intern spent one week at the legislative session working under the supervision of Gilbert St. Clair. The department also secured a commitment of ongoing support for the program that will make it possible to expand and institutionalize the program for the 1992-93 legislative session.
- c. The internship program was also broadened to include students participating in cooperative education programs related to public affairs organizations and activities.

6. Curriculum development.

- a. The following courses were taught for the first time in the department:

Political Science 340: Spain and Latin America (Fred Harris)

Political Science 400: U.S. Intervention in the Third World (Mark Peceny)

Political Science 340: Social Movements in Latin America (Alison Brysk)

Political Science 400: National Security Policy (Roger Morris)

Political Science 400: Nationalism and Security (Gregory Gleason)

7. Student recruitment and advisement. The department continued its advisement process for students participating in the College Enrichment Program who are interested in attending law school and sponsored a series of informational meetings for students interested in pursuing a graduate degree in political science.
8. Outreach. Through a grant from the Foreign Policy Association, the department continued its outreach program involving undergraduates in the presentation and discussion of foreign policy issues at four local high schools.
9. Noteworthy service.
  - a. F. Chris Garcia, National Advisory Committee, Programs in Public Policy and International Affairs, Woodrow Wilson National Fellowship Foundation.
  - b. Fred Harris, Director, Summer Program, Granada, Spain; Chair, New Mexico State Judicial Standards Committee.
  - c. Hank Jenkins-Smith, Director, Institute for Public Policy.
  - d. Peter Lupsha, Chair, Political Science Graduate Committee.
  - e. Neil Mitchell, College of A&S Tenure and Promotion Committee.
  - f. Karen L. Remmer, Associate Editor, Latin American Research Review.
  - g. Robert J. Sickels, Chair, Academic Freedom and Tenure Committee.
  - h. Christine M. Sierra, Advisor, Political Science Honors Program.
  - i. Harry Stumpf, Chair, Political Science Undergraduate Committee.

B. Significant Plans and Recommendations for the Near Future.

1. Pursuant to the schedule established by the Senate Graduate Commit-

tee, the department will participate in an external review of its graduate programs during the 1992-93 academic year.

2. The department will continue efforts to expand its internship programs at both the graduate and undergraduate levels. During 1992-93 the State Legislative Internship program will be doubled in size, and a multi-semester program involving both the local and Washington, D.C. offices of the state's national legislators will be developed. Plans for the coming year also include the expansion of internship opportunities in political campaign offices and in public agencies involved in policy implementation and administration.
3. The department will develop a formal proposal for an M.A. degree in public policy that will apply social science knowledge and training to policy problems and prepare students for careers in policy analysis. Although centered in the Department of Political Science, the program will be interdisciplinary and build upon expertise in other departments as well as the national scientific laboratories. The degree will focus on two main areas: environmental, science and technology policy and Southwest and border issues.

C. Staff Changes

1. Appointments

- a. Kenneth Roberts, appointed Assistant Professor, effective August 15, 1992.
- b. William Stanley, Visiting Assistant Professor and Gallegos Lecturer for the 1991-92 academic year, appointed Assistant Professor, effective August 15, 1992.

- c. Mark Peceny, appointed Assistant Professor, effective August 15, 1992.
- d. David Hadwiger, appointed Assistant Professor, effective August 15, 1992.
- e. Ellen Grigsby, appointed Lecturer II, effective August 15, 1992.
- f. Richard Bank, appointed Visiting Assistant Professor, Spring semester, 1992.
- g. Gilbert St. Clair, appointed Director, Institute for Public Policy, effective May 1, 1992.
- h. Harry Otway, appointed joint LANL/UNM Professor, effective May 1, 1992.

2. Separations.

- a. Professor Jay Sorenson, effective August 1991.
- b. Professor Alison Brysk, effective August 1992.

3. Leaves

- a. Robert Sickels, Professor, Autumn.
- b. Hank Jenkins-Smith, Associate Professor, Autumn.

4. Promotions. Gregory Gleason to Associate Professor, effective August 1992,

D. Sponsored research and other projects.

- 1. Members of the department applied for a record amount of outside funding and received grants totalling nearly \$400,000, excluding continuing grants. Significant new projects include:

855

- a. "Transnational Implications of Legal and Institutional Change in Soviet Central Asia." \$31,000 grant from the National Science Foundation. Co-principal investigator: Gregory Gleason.
  - b. Demilitarization in Central America: \$20,000 from the U.S. Institute for Peace. Principal Investigator: William Stanley.
  - c. Race relations in three U.S. communities. \$77,172 from the Levi Strauss Foundation. Co-principal investigator: Christine Sierra.
  - d. State-wide surveys of perceived risks of nuclear waste management policies in New Mexico and Colorado. \$60,000 grant from the Department of Energy/Westinghouse Corporation. Principal investigator: Hank Jenkins-Smith.
  - e. Perceptions of nuclear waste management. \$59,958 from the Department of Energy/Waste Management Education and Research Consortium. Principal Investigator: Hank Jenkins-Smith.
  - f. Citizen perceptions of the role of the national laboratories. \$56,560 from Los Alamos National Laboratory. Principal investigator: Hank Jenkins-Smith.
2. Number of faculty submitting proposals to outside agencies: 7 (53.8 percent).
  3. Number and percent of faculty obtaining awards from outside agencies: 5 (38 percent).



## APPENDIX C: Affirmative Action

A. Faculty. With the resignation of Professor Brysk and the appointment of new faculty members for the 1992-93 academic year, 17.6 percent of the full-time faculty in the department are women (as compared to the national figure of 16.9 percent). The percentage of Hispanic faculty is 11.4 percent, as compared to the national figure of 2 percent. For faculty holding tenure at the Full Professor and Associate Professor rank, the percentage for women and Hispanic faculty, respectively, is 18.2 and 18.2 percent, as compared to the national averages of 12.8 and 1.6 percent for the discipline.

B. Recruitment. In its attempts to recruit new faculty during the 1991-92 academic year, the department advertised in the APSA Personnel Newsletter, La Red/The Net, Women's Caucus for Political Science Quarterly, and the LASA FORUM. To create as broad and diverse a pool as possible, the department also mailed 615 announcements to chairpersons of political science departments and members of the Latin American Studies Association with a special interest in the field of political science. All search committees were appointed with a view towards maximizing the representation of women and minority faculty. The department interviewed three minority and women candidates. It also extended an offer at the full professor rank to a woman, although that effort was not successful. The chief obstacle to more effective recruitment during the year were bureaucratic delays that precluded the department from interviewing during the autumn semester, thereby limiting its capacity to compete for talented women and minority candidates in the 1991-92 job market.

C. Graduate students. Of the twenty-five graduate students active in the department during the Spring semester, five were Hispanic students and five were women. Budgetary constraints continue to hamper the department's efforts to compete for qualified minority graduate students.

D. Minority student recruitment.

1. The department continued its participation in the American Political Science Association's Minority Identification Project, which is designed to recruit talented minority students into the teaching profession. It held meetings for interested undergraduates in the autumn semester and forwarded nominations to the APSA.

2. The department also participated in an undergraduate mentoring program developed by Graduate Studies that is designed to involve minority students in professional research projects.

3. The department was awarded an Incentives for Excellence Scholarship Prize from the National Science Foundation Minority Graduate Fellowship Program in recognition of its efforts to promote the education of minority students.

## APPENDIX A

## Political Science Department Organization

Department Chair: Professor Karen L. Remmer

Administrative Assistant: Mrs. Mary Boughton - Assists the  
Chair in performing administrative responsibilities and  
supervises department office.

Department Secretary: Ms. Beverly Edwards

## Faculty:

## Professors:

F. Chris Garcia  
Fred R. Harris  
Peter A. Lupsha  
Karen L. Remmer  
Robert J. Sickels  
Harry P. Stumpf

## Associate Professors

Hank C. Jenkins-Smith (Director, Institute for  
Public Policy)  
Neil J. Mitchell  
Christine M. Sierra  
Gregory W. Gleason

## Assistant Professors

Alison Brysk  
Shane Phelan  
Richard W. Waterman

## APPENDIX B

COURSE OFFERINGS

Course Number	Course Title	Semester	Number of Sections	Number of SCR
PS 200	American Politics	Summer 91	1	78
PS 215	Law/Political Comm	"	1	81
PS 220	Comparative Politics	"	1	78
PS 240	Internatl Politics	"	1	78
PS 291	Internship	"	1	11
PS 312	American Presidency	"	1	78
PS 315	Const Law-Powers	"	1	60
PS 345	Inter-Amer Relations	"	1	102
PS 499	Independent Study	"	5	47
PS 500	Contemp Public Admin	"	1	6
PS 551	Problems	"	2	15
PS 699	Dissertation	"	3	12

TOTAL STUDENT CREDIT HOURS

SUMMER 1991

640

Course Number	Course Title	Semester	Number of Sections	Number of SCR
PS 110	The Political World	Fall 91	2	483
PS 200	American Politics	"	8	1767
PS 215	Law/Political Comm	"	1	153
PS 220	Comparative Politics	"	3	474
PS 240	Internatl Politics	"	3	345
PS 260	Political Ideas	"	3	351
PS 270	Public Policy & Admin	"	3	540
PS 280	Intro to Polit Anal	"	1	81
PS 291	Internship	"	1	9
PS 300	T/Women & Law I	"	1	15
PS 301	The Government of NM	"	3	396
PS 307	Pol of Ethnic Groups	"	1	147
PS 311	Legislative Process	"	1	120
PS 315	Const Law-Powers	"	1	87
PS 316	Const Law-Rights	"	1	114
PS 319	Pol Socialization	"	1	147
PS 320	Topics	"	2	264
PS 329	Intro Afric Politics	"	1	60
PS 340	Topics	"	1	120
PS 342	American Foreign Pol	"	1	138
PS 350	Public Finance	"	1	15
PS 375	Intro to Public Mana	"	1	174
PS 377	Org Crim&Pol Corruptn	"	1	240
PS 400	Topics	"	3	219
PS 419	Seminar Legal Issues	"	1	42
PS 440	Internatl Conflict	"	1	69
PS 463	Contemp Polit Theory	"	1	30
PS 495	Jr Honors Seminar	"	1	42
PS 496	S/Intl Relations	"	1	6
PS 496	S/Comp Govt	"	1	3
PS 499	Independent Study	"	7	33
PS 512	T/Amer Gov & Politic	"	1	12
PS 520	ProSem/Compar Govt	"	1	24
PS 525	ProSem/Lat Amer Pol	"	1	27
PS 530	ProSem/Internat Rel	"	1	36
PS 535	Compar Public Admin	"	1	3

Course Number	Course Title	Semester	Number of Sections	Number of SCR
PS 551	Problems	Fall 1991	3	12
PS 580	Intr Empirical Rsrch	"	1	18
PS 599	Masters Thesis	"	2	9
PS 699	Dissertation	"	4	66

TOTAL STUDENT CREDIT HOURS	FALL 1991	6,891
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Course Number	Course Title	Semester	Number of Sections	Number of SCR
PS 110	The Political World	Spring 1992	2	336
PS 200	American Politics	"	8	1731
PS 215	Law/Political Comm	"	1	177
PS 220	Comparative Politics	"	3	462
PS 230	USSR People-Pol-Cult	"	1	105
PS 240	Internatl Politics	"	3	498
PS 260	Political Ideas	"	2	273
PS 270	Public Policy & Admin	"	2	429
PS 280	Intro to Polit Anal	"	1	93
PS 291	Internship	"	2	39
PS 300	Topics	"	2	159
PS 301	The Government of NM	"	3	420
PS 304	Group Politics	"	1	111
PS 305	Pub Opin/Elect Behav	"	1	141
PS 308	Hispanics in US Pol	"	1	132
PS 311	Legislative Process	"	1	141
PS 312	American Presidency	"	1	285
PS 315	Const Law-Powers	"	1	93
PS 316	Const Law-Rights	"	1	141
PS 320	T/Soc Mvmts Lat Amer	"	1	72
PS 340	T/Int'l War	"	1	129
PS 345	Inter-Amer Relations	"	1	93
PS 350	Public Finance	"	1	39
PS 351	Western European Pol	"	1	102
PS 356	Pol Developmt Lat Amr	"	1	138
PS 357	Gov&Pol Soviet Union	"	1	102
PS 361	Class Political Theory	"	1	63
PS 375	Intro to Public Mana	"	1	132
PS 415	Judicial Politics	"	1	12
PS 443	Internat Law and Org	"	1	90
PS 444	Intel & Int'l Security	"	1	108
PS 449	Sovt Forgn Policies	"	1	36
PS 453	Asian Studies Thesis	"	1	3
PS 478	Sem Intnatl Studies	"	1	9
PS 496	Undergraduate Sem	"	2	27
PS 497	Senior Thesis	"	3	9
PS 499	Independent Study	"	8	51
PS 510	ProSem/Am Gov & Pol	"	1	39
PS 511	RchSem/Am Govt	"	1	12
PS 535	Compar Public Admin	"	1	3
PS 552	Problems	"	8	39
PS 581	Statistics Socl Rsch	"	1	36
PS 584	Sem/Modern Latin Am	"	1	12
PS 699	Dissertation	"	5	81

TOTAL STUDENT CREDIT HOURS	7,203
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ANNUAL REPORT

1991 - 1992

DEPARTMENT OF PSYCHOLOGY

William C. Gordon, Chair

## DEPARTMENT OF PSYCHOLOGY

## STATEMENT OF MISSION

The Department of Psychology shares with other academic departments at the University its raison d'etre: the discovery and dissemination of knowledge. It shares with other science departments a commitment to empirical research as the means of validating that knowledge. The distinguishing feature of this purpose for a psychology department is that the knowledge being sought concerns the individual organism, and most typically the behavior of the individual person.

Because of its particular historical development, composition, and geographical location, the UNM Psychology Department embraces a number of goals which serve to give the program a distinctive flavor. These are reflected in the mission of the department which is so:

- Create an environment in which those faculty and students associated with the Department are encouraged to achieve their maximum potential as scholars.
- Promote active research programs within the department.
- Maintain a distinctive emphasis on the psychology of learning, broadly defined, in our programs. (That is, those areas of psychology concerned with the scientific study of changes in behavior as a result of experience will be emphasized, which includes, among others, the areas of human and animal learning, memory, cognition and information processing.)
- Place particular emphasis on teaching and cultivate a reputation as a department consisting of unusually effective teachers, both in communicating psychology to undergraduates as a critical part of a liberal arts education and in training graduate students at a professional level.

- Train all graduate students in general experimental psychology in such a way that they will be well prepared for professional positions in academic or applied settings.
- Ensure graduate students in all areas are well trained in methodology appropriate for their effective functioning as researchers and professionals.
- Make available educational opportunities which enable students to understand the development and operation of psychology in the context of the larger culture and its application in the culture of the Southwest in particular.
- Be actively involved in service to the University, the community and the profession.
- Evaluate, in an on-going fashion, our performance as a department with respect to our mission, and the potential need to revise this Statement of Mission to accommodate to changing situations.

Adopted: October 18, 1985



## ANNUAL REPORT

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## DEPARTMENT OF PSYCHOLOGY

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## DEPARTMENT OF PSYCHOLOGY

William C. Gordon, Chair

I. DEPARTMENTAL INFORMATION AND ACHIEVEMENTS

A. DEPARTMENTAL ADMINISTRATION AND STRUCTURE. The current academic year marked the second year of William Gordon's term as Chair of the department. During this past year, the department continued to operate with an administrative structure first adopted in the Fall of 1989. This structure was designed to lessen the administrative load of the Chair and to empower more members of the faculty with decision making authority. An organizational chart for this administrative structure is presented on the following page.

As this chart indicates, the department is conceptualized as having four overlapping areas of educational responsibility, each of which is administered by an Associate Chair. Aside from forming ad hoc and standing committees within their areas of responsibility, the Associate Chairs also participate in formulating policy and planning proposals that are submitted to the faculty for consideration. This year the four Associate Chairs

were as follows: Undergraduate Education, John Gluck; Graduate Education, Michael Dougher; Experimental Training, Peder Johnson; Clinical Training, Samuel Roll. In addition to these individuals, the Chair of the department was very ably assisted in administrative matters by Robyn Santillanes, Department Budget Director, and Candace Blashak, Administrative Assistant.

It should be noted that this administrative structure will be retained for the coming year. In this regard, John P. Gluck the Acting Chair has appointed the following faculty to serve as Associate Chairs for 1992-1993: Undergraduate Education, Harold Delaney; Graduate Education, Michael Dougher; Experimental Training, Peder Johnson; Clinical Training, Samuel Roll. Professor Jane Smith has agreed to take over the Clinical Training responsibilities as of the 1993-1994 academic year. Therefore she will aid Professor Roll during the 1992 Fall semester.

As in past years, the governance of the department has relied heavily on a number of faculty who have served effectively on departmental committees. A listing of the committee memberships for the 1990-1991 academic year is given in Appendix A.

FACULTY

Chair

Council of Associate Chairs

Associate Chair for  
Undergraduate  
Education\*

Associate Chair for  
Graduate Education\*

Associate Chair for  
Experimental Training\*

Associate Chair for  
Clinical Training\*

\*Undergrad Curriculum

Undergrad Honors

Undergrad Advisement

Undergrad Minorities

Psi Chi

etc.

Core Curriculum

\*Admissions

Graduate Minorities

Graduate Honors

etc.

\*Experimental Committee

Experimental Curriculum

Methodology/Computer Use

Human/Animal Subjects

Experimental Colloquium

etc.

\*Clinical Committee

Clinic

Clinical Curriculum

Clinical Colloquium

etc.

\*Committees chaired by the responsible Associate Chair in each area

As will be described in a later section of this report, the Psychology Clinic had another successful year. Under the current administrative structure, the Staff Director of the Clinic reports directly to the Associate Chair for Clinical Training in our department. This administrative arrangement serves to better integrate the Clinic's training operations with the academic curriculum for Clinical graduate students.

The department continues to be concerned by the nationwide trend for animal rights activist groups to oppose scientific animal research. Our animal facility continues to comply with all animal welfare regulations and to operate within the main campus HEW animal assurance under the competent guidance of our Department Veterinarian, Michael Richard. We have been given the continued financial support of the administration in order to assure that we remain in compliance with all animal welfare regulations. Indeed, in 1991 we received approval to remodel our rooftop primate facility and this project was completed in the Summer 1992. We would like to acknowledge the academic support of the administration, in the face of potentially increasing opposition, in retaining the freedom to do scientific research, where merited, with animal subjects.

With the recognition that the maintenance of excellence in our department requires considerable additional financial support, the department undertook one major fund-raising activity this year.

The "Phonathon" fund drive executed with the cooperation of the UNM Development and Alumni Offices. In this context, the Chair wishes to thank all of those who have been willing to give of their time and money in order to support the educational mission of the Psychology Department.

The department again benefited this year from the Quad-L Trust, which was endowed through the UNM Foundation by University Professor Emeritus Frank Logan. The Quad-L Library supported by this Trust served not only in support of the study of the general area of learning, but also constituted a meeting place for students' defenses of their graduate degrees. This year the Quad-L Trust, joined by the College of Arts and Sciences, supported the fifth annual Quad-L Lecture which was delivered by William Estes, Professor of Psychology of Harvard University.

The endowed trust established by the New Mexico Psychological Association and the department to honor the memory of Professor Sidney Rosenblum sponsored the fourth annual Sidney Rosenblum Award. This year's scholarship support went to Monica Leccese for her master's work and for her work with children.

A third endowed trust at the UNM Foundation was established by the parents of Barbara Goldman Garland in her memory. The third annual Barbara Goldman Garland Award, which is to be awarded to a Psychology graduate student who is interested in working clinically with teenaged children, was presented to John Harlow.

The New Mexico Psychological Association (NMPA) also established the Eugene Mariani Memorial Award three years ago which is to benefit graduate students in Psychology by awarding them membership in NMPA. This year's recipient was Janet Brody.

B. UNDERGRADUATE EDUCATION. The Department of Psychology excels in terms of the quantity and quality of its undergraduate educational effort at the University of New Mexico. It leads the College in terms of number of elective (nonrequired) undergraduate student credit hours (SCH), number of undergraduate intended majors, number of undergraduate majors, and number of undergraduate degrees awarded. Stated succinctly, the undergraduate education productivity of the department's faculty and staff is enormous and unsurpassed. Consider as one example that the 13,417 SCH generated by our department in Spring 1992 represents almost 10% of all SCH generated by the College as a whole during that semester. Only the Math and English Departments surpassed Psychology in SCH generated. This measure of teaching productivity is particularly impressive when one considers that Psychology ranks but eighth among the departments in the College in terms of number of budgeted faculty and teaching assistants.

Over the past few years Psychology courses have continued to grow in popularity with students on our campus. For example, the five-year percentage gain in Psychology's SCH for the Spring of

1992 was 9.0%. This percentage increase is higher than that experienced by the College as a whole over this same five-year period.

Although the long-term growth in the popularity of Psychology courses has remained steady over the last decade, our department's enrollment patterns have shifted rather dramatically in the past five years. In effect, we have experienced a perceptible decrease in our lower division SCH since the Spring of 1986, while the SCH we generate in upper division courses has risen by an impressive 62.5% during that same period. Appendix B presents summary statistics for the department for the 1991-1992 academic year along with the same statistics for the preceding four years. Actual enrollment counts per course for each AY 1991-1992 semester are enumerated in Appendix C.

The decrease we have experienced in lower division SCH can be understood in terms of both external and internal factors. The first factor that has worked to decrease our Introductory and lower division enrollments is Senate Bill 106, which was passed by the State Legislature in the Spring of 1986. This bill stipulates that Psychology courses are not acceptable for credit per se in the training of College of Education students desiring to obtain teaching certificates from the State. In the past, Psychology offered about 7% of its lower division SCH to the College of Education. A second external factor is that lower division



Psychology courses are now the most often taught college courses at TVI and this clearly has an adverse impact on our lower division enrollments. Finally, this year was the third consecutive year that Psychology 100, basic skills, was not offered. This course accounted for approximately 16% of our Introductory Laboratory enrollments in the past.

One factor that has helped to offset these lower division enrollment decreases has been the increased financial support available to our department from the Evening and Weekend College and from Continuing Education. These units have been willing to pay for part-time instructors to teach lower division courses during evening and week-end time slots. This financial support has enabled us to expand our lower division course offerings and to attract non-traditional students who would otherwise be unable to enroll in our daytime courses. An actual listing of part-time faculty hired for the 1991-1992 academic year appears herein as Appendix D.

One internal factor that has influenced our enrollment patterns has been our goal in recent years to reduce the number of service-oriented courses offered by our regular faculty in favor of increasing the course offerings for Psychology majors. Particular emphasis has been placed on increasing the number of upper division undergraduate research laboratory courses offered. Appendix B shows that both advanced laboratory enrollments and the number of

graduating majors have approximately doubled over the past five years.

It would appear, indeed, that our department will be kept quite busy educating Psychology majors over the next few years. Data for the Fall 1991 semester show that there were 698 undergraduate Psychology majors in the College of Arts and Sciences. This makes Psychology by far the most popular major in the College. Indeed, the number of declared Psychology majors is nearly 20% greater than the number of majors in the second ranked department (Biology).

In this context it should not be surprising that Psychology again ranked first in the number of bachelor's degrees, 173, awarded in the College this year. This number of bachelor's degrees represents over a 60% increase in such degrees in the past five years. Clearly this dramatic increase in the number of graduating majors shown in Appendix B reflects the department's growing emphasis on the training Psychology majors. We have every reason to anticipate that Psychology will continue to attract and graduate impressive numbers of majors in the coming years.

Another measure of Psychology's impact on undergraduate education at UNM is its centrality, i.e. the extent to which it serves students other than Psychology majors. The fact that approximately 75% of our undergraduate educational effort goes to other than Psychology majors attests to the importance of

Psychology in the broader educational mission of the University. On a per department basis, Psychology's greatest extra-College teaching is directed to students in the College of Engineering.

Psychology's teaching effort has reached the saturation level. Although Psychology leads the College in elective SCH, undergraduate majors, and bachelor's degrees granted, its permanent faculty at 22.0 FTE is only the sixth largest in the College, the five larger departments averaging nine faculty members more. Considering all budgeted teaching personnel, Psychology slips to the eighth largest in the College. In terms of the teaching productivity index, which is the ratio of full-time equivalent students to full-time equivalent faculty (FTE student/FTE faculty), Psychology obviously ranks first.

In attempting to deal with this imbalance between numbers of students and budgeted teaching personnel, two trends have developed over the past few years. First, our department has maximized its class sizes at the 100 and 200 levels. Appendix C clearly shows that class sizes in excess of 100 students are now commonplace in lower division courses in our department with many class sizes exceeding 200 students. Second, we have begun to rely more heavily on the participation of part-time visiting professors and teaching associates to staff some of our lower division courses. As Appendix D shows, part-time visiting professors currently account for approximately 12 of our course offerings each semester. These

important contributors to our department have not received the status nor the compensation that their efforts warrant and the department wishes to acknowledge publicly their many contributions.

Finally, our department recognizes that the undergraduate population in the College is extremely varied in terms of background, culture and life experiences. We remain committed to providing a quality educational experience for as broad a range of students as is possible. This year we continued to reschedule a number of our weekday course offerings to evenings and to Saturdays. This was done to better accommodate the working student and to foster the University's priority of establishing an Evening/Weekend College. It is now possible to obtain a B.A. in Psychology through this college. We also recognize that an ever increasing proportion of the students in our undergraduate classes are women and minority students. We have continued to review our curriculum regularly in an effort to better serve these students in an affirmative and sensitive manner.

While much of the focus in this section has been on the quantity of our undergraduate education, it needs to be emphasized that we have accomplished our goals without sacrificing quality. Past reviews of the department have taken specific note of the department's emphasis on quality instruction. The flagship for quality education in Psychology remains our Psychology Honors Program, which has been in existence for over 25 years. This

program, which culminates in the student completing a year-long research project, has been especially attractive to Psychology majors who go on to pursue graduate work in Psychology. Appendix E lists our 1991-1992 honors students along with the titles of their research theses and the names of their faculty supervisors.

C. GRADUATE EDUCATION. The department continued its excellent tradition of graduate training this year. New training programs in the Experimental areas were implemented, new courses were introduced, a number of students completed their degree work, and another excellent class of incoming students was successfully recruited. Of particular importance was the fact that our clinical psychology program was accredited for a full five years by the American Psychological Association. A summary of the process is provided by Professor Samuel Roll in Appendix P.

In addition, the department completed its evaluation of the core curriculum which began in Fall of 1990. Basically, the faculty decided to reduce the number of courses required of first year graduate students and expand opportunities for research. The details of the modifications are found in a memorandum to the faculty from Professor Michael Dougher in Appendix O.

During this 1991-1992 academic year, the department awarded 5 additional Ph.D. degrees. The names of these degree recipients, along with the titles of their dissertations and the names of their

faculty advisors can be found in Appendix F. This brings the total of Ph.D. degrees awarded by this department to 198.

In addition to Ph.D. degrees, the department awarded 11 Master of Science degrees this year. Inasmuch as the department offers no terminal master's degrees, it can be anticipated that these latter students (listed specifically in Appendix G, along with the titles of their theses and faculty advisors) will achieve their Ph.D.'s in the next two to three years. It speaks well of the broad involvement of our faculty in the graduate education program that 8 different faculty members served as major professors to graduate degree recipients this year.

As a further indicant of the department's emphasis on graduate training, the faculty offered 1,138 graduate SCH this Spring, which was the second largest number of any College of Arts and Sciences department, and represented over a nearly 17% gain from the previous Spring.

Fifteen graduate students have accepted offers of admission to our Ph.D. program for Fall 1992 (see Appendix H for a listing of these students and their advisors). As has been true the past two years, and in contrast to the national trends of declining enrollments in nonclinical areas, approximately one third of our incoming class will be Experimental students (6 out of 15). To help ensure this kind of balance in our graduate student population, we have, in the past few years, accepted a higher

percentage of Experimental applicants than Clinical applicants. This year, for example, offers of admission were made to 12 of 99 (12.0%) Experimental applicants, but to only 12 of 287 (4.0%) Clinical applicants. Overall, 24 of 386 applicants were offered admission (for a 6.0% acceptance rate of the applicants by the department) and 15 of our 24 offers were accepted (for a 63% acceptance rate of the department by those offered admission). The department continues to receive nearly one-third of all graduate applicants to the College and to have an acceptance rate which is markedly below the average acceptance rate for the College. The result is that admission to the Department of Psychology Doctoral Program is highly competitive and results in our being able to select students who are not only highly qualified but who represent good matches to the research interests of our faculty.

One indicator of the quality of our applicants is the mean GRE scores they achieved. In the past, the national average GRE score for graduate applicants to all fields of study was 505, while the national average for applicants to all graduate Psychology departments was 520. By comparison, the overall average GRE score for students accepting offers of admission was 628.

The department has continued its concerted and successful effort of the past several years to increase the representation of women and minorities among our graduate students. This year 13.5% of the applicants were minority applicants, and 3 of 15 (20.0%)

students in our incoming class are minorities. Thus, the proportion of minority students in our incoming class slightly exceeds their proportion of representation in our applicant pool. Women students make up 53% (8 of 15) of our incoming class.

D. FACULTY. At the beginning of the academic year the department had 24 voting faculty (please see Appendix B for other faculty statistics and Appendix I for a summary of faculty research interests).

We will need the continuing support of the College next year as we strive to hire a new Assistant Professor in the Developmental area to fill the vacancy left as a result of Dr. Hayes' resignation of two years ago.

It should be pointed out that, demographically, the number of women faculty and the number of minority faculty in the department this year were above the average numbers of women and minority faculty in other U.S. doctoral departments of Psychology in public institutions. Nevertheless, as it has been for the past six years, the department is committed to making exceptional faculty recruitment efforts so as to attract and support competent women and minority faculty.

It should also be noted that the percentage of tenured faculty in our department is below the national average. This has occurred because, until recently, we have not had the financial support of



the University to hire senior professors. Instead, we have been replacing senior faculty with junior faculty. It is of critical importance to the future quality of the department that we have the support to hire senior replacements for senior lines that are vacated.

Appendix B shows that the absolute size of our faculty has not grown over the past five years. The Department of Psychology's continuing need to add faculty has been documented by the data presented in previous sections of this report pertaining to the department's excellence, to the high student demand for our courses, and to the heavy workload of the faculty. Based on workload calculations alone, the department should most likely have a full-time equivalent faculty of 32.

It is the strong preference of the department to hire permanent full-time graduate faculty whenever possible. We have become somewhat concerned with our increasing reliance on part-time faculty in order simply to execute our curriculum. While such individuals are valuable teaching resources, a department such as ours that strives for excellence, can only achieve this status by establishing a first-rate, full-time research faculty.

In addition to the part-time faculty who served the department this year (previously listed in Appendix D), there were a number of other people within UNM and the professional community of Albuquerque who made major contributions to our teaching, training

and research missions. Based on their service to the department, these individuals were awarded Professional Titles in Psychology. The 1991-1992 list of professional appointments is included as Appendix J. The department is grateful to these individuals for their unselfish support and productive assistance.

A number of psychologists from other universities and the private sector further enriched our educational programs by presenting research colloquia to our faculty and students. Appendix K presents a record of this colloquium series.

The research activities of the faculty are summarized in Appendix B. No detailed commentary regarding faculty research will be presented here since these data have been given in detail in each faculty member's Annual Biographical Supplement. It should be pointed out, however, that our faculty continue to excel in their research activities and to be productive in terms of publishing and presenting their work.

There is one aspect of the faculty's productivity this year which does, however, merit special mention. For the past few years our department has placed increased emphasis on securing extramural funding to support graduate students and to facilitate research programs.

This emphasis has resulted in a perceptible increase in the number of extramural proposals our faculty have submitted and in the extramural support these faculty have received. The extramural

grant funds in our department that were budgeted for expenditure during the 1991-1992 academic year amounted to \$1,399,908.

Clearly, these awards speak very favorably about the quality of the research our faculty is conducting and they signal a bright future for the scientific endeavors in our department.

Indeed, by whatever metric one might wish to apply, the faculty of the Department of Psychology is an excellent one. A persistent threat to this excellence is the salary structure in the department, which for some faculty falls as much as 20% below national and regional norms. While this problem is fully acknowledged by the College and while the Dean has made several recent efforts to enhance the salary of our faculty, much more remains to be done in order to insure the stability of the current faculty.

There should be no doubt that a high priority of the Chair is to see Psychology faculty salaries increased in the immediate future to the level of regional norms and in the near future to the level of national norms. Only by doing this in conjunction with hiring senior professors will the excellence of our department be preserved.

E. DEPARTMENT CLINIC. A separate Annual Report for the Department of Psychology Clinic is presented in Appendix L. Once

again this year the Clinic met its primary goals of providing quality training to our Clinical graduate students and affordable, high quality psychological services to the community.

For the fourth consecutive year, the Clinic was able to operate in the black. This financial stability was made possible by the hard money support given to the Clinic by the Dean as described previously (cf. Section A). The Chair again acknowledges Dean Wildenthal for embracing the Clinic as an educational component of the College. It is anticipated that the Clinic will be able to function within its operational budget for years to come, although the Clinic will soon enter a phase where additional major equipment and capital improvements will be needed. When this phase is realized fully, the Clinic will again need the financial support of the University.

The accomplishments of the Clinic this academic year have been outstanding. The reader is urged to give Appendix L a complete reading so as fully to appreciate the contribution that the Clinic makes to the education of Psychology graduate students and to the larger community which it serves.

F. STAFF. The Department of Psychology continues to benefit from an extremely competent support staff. This staff numbered eleven during the 1991-1992 academic year. So as better to inform those who may not be familiar with the important duties of the

staff in our department, Appendix M presents a brief job description of each administrative, instructional, research, and clinical support staff member.

The department was fortunate this year in that it experienced no changes in its staff personnel. Robyn Santillanes remained as our senior Administrative Assistant and Candace Blashak continued as the Chair's Administrative Assistant and as Office Manager. Mary Hungate once again served as the department's Chief Editorial Assistant, Lois Kennedy completed her second year as our Student Advisor, and Wanda Sharts remained as the Department Secretary. These individuals form what must surely be one of the most efficient and effective administrative staffs on our campus.

The recent successes of the Psychology Clinic are due in large measure to the administrative skills of Dan Matthews, who completed his third year as Clinic Staff Director this Spring. Dan was ably assisted in his duties by Wanda Sharts, the Clinic Staff Assistant.

Our research support staff again included Patrick Sharp, Shop Supervisor; Ector Estrada and Gilbert Borunda, Laboratory Animal Technicians; and our Veterinarian Michael Richard, DVM. The outstanding efforts of these individuals clearly facilitated a wide range of research activities in our department.

The Chair continues to be proud of the work carried out by the department staff. Not only are each of these individuals extremely competent in their own positions, but just as importantly they work

together well as a team to achieve the goals of the department. It is impossible to overestimate the contributions made by the staff. For this reason, the entire department continues to deplore the low salaries paid to our staff personnel. Once again next year, the improvement of staff compensation will be a top priority item for the Chair.

G. SPACE. As has been highlighted in the department's Annual Report for the past nine years, our department is not accommodated by its current space allocation. We need a new building. Currently, we have insufficient staff space in order to function optimally and are unable to house all of our faculty in faculty offices. Furthermore, during the past few years we have had to continue to convert graduate student offices into faculty research space. Even at this, we do not have sufficient, suitable research space in the building to accommodate the high level of faculty research activity that has been attained in recent years. Although our need for additional faculty is well documented and while our extramural funding and research output is rising dramatically, the size of our current building places severe limitations on our ability to grow and to reach our full potential as a department.

The department's request for a new building is now acknowledged on the University's Capital Projects list. However, there is little indication that funds will become available to initiate this project in the foreseeable future.

The department continues to need financial support in order to initiate a furniture replacement program that would replace 20% of its classroom and laboratory furniture per year over the next five years. The majority of our current furniture was issued as part of the original building's furnishings more than 18 years ago and it has become increasingly worn and has fallen into disrepair. Clearly there is a need for the systematic replacement of this original furniture in our building.

## II. FUTURE PLANS AND COMMENT

In the past few years, our department has experienced a number of changes in its faculty, staff and educational programs. Throughout this period of change the department has continued to excel in its training of undergraduate and graduate students, in its scholarly endeavors and in its service to the University and to the community.

What has remained unchanged, for the past 28 years, has been the department's dedication to the science of Psychology and to its mission as stated in the preface to this report. This mission should transcend internal demographic, curricula and administrative changes. However, for this to happen it will be necessary to have the broader understanding of the higher administration of the University and the support of all as the department faces the challenges of the future.

## APPENDIX A

## COMMITTEE ASSIGNMENTS AY 1990 - 1991

Undergraduate Studies

- |               |   |
|---------------|---|
| 1. Curriculum | <u>Faculty (CHAIR in caps)</u><br>GLUCK, Delaney, Johnson, Roll |
| 2. Honors     | DELANEY, Gluck, Logan   |
| 3. Psi Chi    | AGOSTINELLI   |

Graduate Affairs

- |                  |  |
|------------------|--|
| 4. Admissions    | YEO, Amrhein, Arroyo, Feeney, Gangestad,<br>Gluck, Harris, Hayes |
| 5. Financial Aid | DOUGHER, Agostinelli, Gangestad,<br>Hodge, Smith, Waldron        |
| 6. Curriculum    | DELANEY, Gluck, Johnson, Roll                                    |

Departmental Affairs

- |                              |  |
|------------------------------|--|
| 7. Human Subjects            | JOHNSON, Agostinelli, Gangestad, Smith,<br>Yeo   |
| 8. Animal Facilities & Use   | RICHARD, Feeney, Gluck, Gordon,<br>Hodge         |
| 9. Salary                    | GORDON, Cofer, Dougher, Gluck, Hodge,<br>Waldron |
| 10. Methodology/Computer Use | HARRIS, Amrhein, Gangestad                       |
| 11. Commencement             | Agostinelli, Arroyo, Gluck<br>Miller, Roll       |

Area Committees

- |                               |  |
|-------------------------------|--|
| 12. Clinical                  | ROLL, Arroyo, Ciesielski, Dougher,<br>Gangestad, Gluck, Miller, Padilla,<br>Ruebush, Smith, Waldron, Yeo |
| 13. Cognitive/Learning        | ELLIS, Amrhein, Delaney, Goldsmith,<br>Gordon, Hayes, Johnson  |
| 14. Developmental/Pers/Social | COFER, Agostinelli, Gluck, Harris,<br>Hayes, Roll, Ruebush   |
| 15. Psychobiology             | HODGE, Ciesielski, Feeney, George,<br>Gordon, Sutherland, Yeo  |
| 16. Quantitative/Methodology  | DELANEY, Amrhein, Gangestad, Goldsmith,<br>Harris  |



## APPENDIX B

## DEPARTMENT OF PSYCHOLOGY SUMMARY STATISTICS

	AY 1987-88	AY 1988-89	AY 1989-90	AY 1990-91	AY 1991-92
<u>Faculty Information</u>					
Voting faculty (total)	25	24.5	25	23.5	25
Professors	12	11	11	10	10
Associate Professors	6	4.5	4	4	7
Assistant Professors	7	8	10	9.5	8
Lecturers		1			
Budgeted FTE Faculty	24.34	24.6	23.52	22	24
<u>Undergraduate Education</u>					
Introductory Psychology	3,369	3,550	3,110	3,148	2,400
Introductory Labs	1,261	*1,004	845	686	387
Advanced Psychology	4,850	4,869	5,109	4,606	4,693
Advanced Labs	127	117	161	134	109
Graduating Majors	121	125	119	139	173
Number of Faculty Involved	25	25	25	24	25
<u>Graduate Education</u>					
Graduate Enrollment	530	636	705	663	
Graduate Assistants	22	31	41	30	32
Research Assistants	17	20	13	22	26
Fellows and Trainees	7	12	5	8	6
Master's Degrees	12	8	6	6	11
Doctoral Degrees	7	11	6	11	5
Applications Received	330	294	295	293	386
Offered Admission	56	49	41	31	24
Accepted Admission	25	16	17	15	15
Graduate Students	81	99	100	98	101
Number of Faculty Involved	25	25	25	24	25
<u>Research Activities</u>					
Books and Articles	71	** 51	66	60	84
Lectures and Reports	79	** 93	62	69	71
***Extramural Support (000)	866	960	439	857	1,399,908
<u>General Information</u>					
FTE Staff	7.75	8.25	10.25	10.25	10.25
Department Budget (000)	1,073	1,166	1,349	1,437	1,554

\* Does not include Psychology 100 which was discontinued.

\*\* Figures follow guidelines of 1987 Research and Scholarship Report

\*\*\*Extramural funds budgeted for expenditure during a single AY.

## APPENDIX C

## DEPARTMENT OF PSYCHOLOGY COURSE OFFERINGS

AY 1991 - 1992

## SUMMER 1991

COURSE	TITLE	# OF SECTS	SCH
102	General Psychology II	1	213
200	Statistical Principles	2	144
220	Child Psychology	1	129
230	Adj. & Interpersonal	1	54
232	Clinical Psychology	1	27
240	Brain and Behavior	1	117
260	Psychology of Learning & Memory	1	132
265	Cognitive Psychology	1	123
271	Social Psychology	1	75
331	Psychology of Personality	1	237
332	Abnormal Behavior	2	249
432	Child Psychopathology	1	117
499	Undergraduate Problems	12	75
551	Graduate Problems	10	30
599	Masters Thesis	5	30
699	Dissertation	5	30
Total SCH			1782

## FALL 1991

COURSE	TITLE	# OF SECTS	SCH
105	General Psychology	6	3936
106L	General Psychology Lab	26	306
200	Statistical Principles	3	435
220	Child Psychology	2	732
230	Adj. & Interpersonal Relationships	1	375
231	Psych. Human Sexuality	1	774
232	Clinical Psychology	1	276
240	Brain & Behavior	1	183
260	Psychology of Learning & Memory	1	384
265	Cognitive Psychology	1	126
271	Social Psychology	1	396

## FALL 1991 continued

COURSE	TITLE	# OF SECTS	SCH
300	Intermediate Statistics	1	21
302	Psychological Research Techniques	1	111
321	Introduction to Child Research	1	111
322L	Child Research Lab	1	42
331	Psychology of Personality	1	411
332	Abnormal Behavior	2	840
333L	Abnormal Behavior Lab	1	42
337	Family Psychology	1	342
361	Human Learning & Memory	1	93
362L	Human Learning & Memory Lab	1	26
363	Psychology of Perception	1	75
367	Psychology of Language	1	15
373	Cross Cultural Psychology	1	69
375	Psychology of Women	1	339
391	Junior Honors Seminar	1	42
413	Industrial & Organizational Psychology	1	228
415	Environmental Psychology	1	108
420	Advanced Developmental Psychology	1	21
440	Advanced Physiological Psychology	1	33
441L	Advanced Physiological Psychology Lab	1	8
450	Special Topics: Evolutionary Psychology	1	18
450	Special Topics: Ethics Psychological Research	1	3
450	Special Topics: Adolescent Psychology	1	15
450	Special Topics: Neural Bases Addiction	1	3
472	Social Cognition	1	54
491	Senior Honors Seminar	1	36
499	Undergraduate Problems	22	279
501	Advanced Statistics	1	54
503L	Advanced Statistics Lab	1	17
532	Seminar in Psychopathology	1	42
533	Psychological Evaluation: Cognitive and Neuropsychology Functions	1	24
535	Psychological Evaluation: Personality Functions	1	18
538	Seminar in Ego Psychology	1	30

## FALL 1991 continued

COURSE	TITLE	# OF SECTS	SCH
551	Graduate Problems	24	156
561	Systematic Issues	1	45
569S	Seminar in Psychology Linguistics	1	9
571	Seminar on Social Interaction	1	24
599	Masters Thesis	16	96
600	Clinical Practicum	2	45
601	Multiple Measures	1	51
631L	Practicum in Psychotherapy with Adults	1	96
637	Family Pathology	1	39
650	Special Topics: Learning	1	45
650	Special Topics: Neurological Basis of Cognitive Development	1	42
650	Special Topics: Evolutionary Psychology	1	15
650	Special Topics: Teaching Psychology Lab	1	36
650	Special Topics: Ethics Psychological Research	1	21
650	Special Topics: Adolescent Psychology	1	9
650	Special Topics: Existential Psychology	1	45
650	Special Topics: Neural Bases Addiction	1	18
699	Dissertation	13	204
Total SCH			12489

## SPRING 1992

COURSE	TITLE	# OF SECTS	SCH
105	General Psychology	6	3051
106L	General Psychology Lab	25	855
200	Statistical Principles	2	516
220	Child Psychology	3	1098
230	Adjustment & Interpersonal Relations	2	693
231	Human Sexuality	1	603
232	Clinical Psychology	1	387
240	Brain & Behavior	1	255
260	Psychology of Learning & Memory	1	402
265	Cognitive Psychology	1	225
271	Social Psychology	1	414
302	Psych. Research Tech.	1	84

## SPRING 1992 continued

COURSE	TITLE	# OF SECTS	SCH
310	Psychological Testing	1	87
331	Psychology of Personality	1	489
332	Abnormal Behavior	2	990
334L	Abnormal Behavior Lab	1	44
337	Family Psychology	1	351
338L	Family Psychology Lab	1	120
361	Human Learning & Memory	1	129
362L	Human Learning & Memory Lab	1	22
373	Cross Cultural Psychology	1	75
392	Junior Honors Seminar	1	36
413	Industrial & Organizational Psychology	1	291
414	Human Factors Psychology	1	57
415	Environmental Psychology	1	378
420	Advanced Developmental Psychology	1	60
430	Alcoholism	1	531
432	Child Psychopathology	1	186
433L	Child Psychopathology Lab	1	26
434	Behavior Therapies	1	48
435L	Behavior Therapies Lab	1	26
444	Human Neuropsychology	1	57
447	Psychopharm. Drug Abuse	1	51
450	Special Topics: Child/Adolescent Media Studies	1	9
471	Attitude Processes	1	57
492	Senior Honors Seminar	1	33
499	Undergraduate Problems	23	315
502	Design & Analysis of Experiments	1	48
504L	Design & Analysis of Experiments Lab	1	48
521	Levels of Psychological Analysis	1	48
531	Professional & Cultural Issues	1	15
536L	Practicum in Psychological Evaluations	1	21
551	Graduate Problems	22	180
569	Seminar in Psycholinguistics	1	6

## SPRING 1992 continued

COURSE	TITLE	# OF SECTS	SCH
599	Masters Thesis	16	180
600L	Clinical Practicum	3	28
632L	Practicum in Psychotherapy	1	96
633	Systems of Psychotherapy	1	27
634	Seminar in Treatment of Children, Adolescents and Families	1	18
650	Special Topics: Issues in Cognition	1	60
650	Special Topics: Child/Adolescent/ Media Studies	1	6
650	Special Topics: Psychology & Law	1	6
650	Special Topics: Teaching Psychology Lab	1	45
650	Special Topics: Adolescent Psychology	1	3
650	Special Topics: Psychology of Aging	1	9
650	Special Topics: Cognitive Neuro- psychology	1	27
650	Special Topics: Aspects of Human Sexuality	1	15
699	Dissertation	13	252
			-----
	Total SCH		13417

## APPENDIX D

## PART-TIME FACULTY HIRED DURING AY 1991 - 1992

<u>Name</u>	<u>Course Number &amp; Title</u>		
<u>Fall, 1991</u>			
Michael Hillard, Ph.D.	Psychology	105-002	General Psychology
Jay Myers, Ph.D.	"	200-001	Statistical Principles
Jay Myers, Ph.D.	"	200-002	Statistical Principles
Shelly Metz, Ph.D.	"	200-400	Statistical Principles
Beverly Smith, Ph.D.	"	200-400	Statistical Principles
Robin Jacobvitz, Ph.D.	"	220-001	Child Psychology
Robin Jacobvitz, Ph.D.	"	321-001	Introduction to Child Research
Robin Jacobvitz, Ph.D.	"	322L	Child Research Laboratory
Carolina Yahne, Ph.D.	"	375-001	Psychology of Women
Stephen Rokicki, Ph.D.	"	413-400	Industrial & Organizational Psychology
Therese Goetz, Ph.D.	"	415-001	Environmental Psychology
Frank Logan, Ph.D.	"	491-001	Senior Honors Seminar
Piyadasa Kodituwakku, Ph.D.	"	533-001	Psychological Evaluation: Cognitive & Neuropsychological Functions
<u>Spring, 1992</u>			
Michael Hillard, Ph.D.	Psychology	105-002	General Psychology
Nancy Upchurch, Ph.D.	"	220-001	Child Psychology
Kermit Parker, Ph.D.	"	220-400	Child Psychology
Beverly Smith, Ph.D.	"	230-001	Adjustment & Interpersonal Relationships
Carolina Yahne, Ph.D.	"	230-400	Adjustment & Interpersonal Relationships
Jeanne Knight, M.S.	"	302-001	Psychology Research Techniques
Connie Callahan, Ed.D	"	331-001	Psychology of Personality
Therese Goetz, Ph.D.	"	413-001	Industrial & Organizational Psychology
Stephen Rokicki, Ph.D.	"	415-001	Environmental Psychology
Frank Logan, Ph.D.	"	492-001	Senior Honors Seminar
Robert Zussman, Ph.D.	"	536L	Practicum in Psychology Evaluation

## APPENDIX E

## SENIOR HONORS THESES

## Department of Psychology

AY 1991 - 1992

<u>Student</u>	<u>Thesis</u>	<u>Faculty Sponsor</u>
Baca, Kahjarime	The Relationship Between Ethanol Self-Administration and Differential Withdrawal Severity Phenotypes	Frank George
Bradshaw, Shelley	Investigation of an Amodal Model of Picture-Word Processing	Paul Amrhein
C de Baca, Janet	Quantum Changes in Human Behavior	Bill Miller
Cooper, Brent	Learning Deficits in Methamphetamine-Treated Rats	Gordon Hodge
Mance, Nancy	Emotional Mood States: Modality-Specific Effects on Prose Passage Recall	Henry Ellis
McClelland, Gabrielle	Familial Attributions as a Function of Gender and Ethnicity	Holly Waldron
Palmer, Michael	Memory as a Reactive Store: A Study of Trivial Memory	Frank Logan
Schmaltz, Keri	Product Evaluation and Information Processing in Self-Monitors as a function of Source Variables and Argument Strength	Dick Harris
Schwartz, Kim	Simultaneous Emergence of Contextual Control and Discriminative Functions through Sequencing Training	Mike Dougher
Stewart, Sheri	Declarative vs. Procedural Training: Are There Differences in What is Learned?	Tim Goldsmith



## APPENDIX F

## DOCTORAL DEGREES AWARDED

Department of Psychology

AY 1991 - 92

<u>NAME</u>	<u>TITLE OF DISSERTATION</u>	<u>ADVISOR</u>
Ruth Anne Bookstaber-Smith	Group Support, Attributional Style and Community Involvement As Predictors of Success in a Long Distance Running Health Improvement Training Program for Non-athletes	Harris
Harold Lamar Burke	Associations Among Cerebral Hemispheric Asymmetries, Corpus Callosum Morphology, and Handedness in the Elderly: A Study Utilizing Magnetic Resonance Imaging	Yeo
Randall Joseph Garland	Voluntary Control of Male Sexual Arousal: The Relationship Between Absorption and Sexual Arousal in Incarcerated Male Sex Offenders	Dougher
Jody Alan Rubenstein	Neuropsychological and Personality Differences Between Controls and Pedophiles	Dougher
Debra Saslawsky	The Effect of Victim-Offender Relationship On Children's Perceptions of Child Sexual Abuse	Dougher

## APPENDIX G

## MASTERS DEGREES AWARDED

## Department of Psychology

AY 1991 - 1992

<u>NAME</u>	<u>TITLE OF THESIS</u>	<u>ADVISOR</u>
Lauren Lawendowski Aubrey	Hemispheric Asymmetry in Subjective Time Estimation	Yeo
Erik Augustson	The Transfer of Conditioned Emotional Responses Via Stimulus Equivalence	Dougher
Karen Griffiee Augustson	The Development of Stimulus Equivalence in Young Children: Some Methodological Successes and Failures	Dougher
Peter Brian Barela	Beam-Walking Deficits and Primary Cortical Necrosis Following Sensorimotor Cortex Ablation in the Rat Are Reduced By Post-Lesion Experience	Feeney
Carmenne Anne Chiasson	Contextual Control Over the Transfer of Function Through Stimulus Equivalence Classes	Dougher
Monica Leccese	The Label of Intoxication: The Effects of Gender and Context on the Perception of Ambiguous "Flirtatious" Behavior	Waldron
Michael R. Markham	Compound Stimuli in Equivalence Relations: Demonstration of Associative Stimulus Relations	Dougher
Beth Ellen Melka	Lateralization of a Mental Rotation Task in a Free Field	Yeo
Tanya L. Payne	The Effect of Advanced Organizers on Knowledge Structures and Task Performance	Goldsmith

- |                  |   |           |
|------------------|---|-----------|
| Pauline Sawyers  | Optimal Matching of Clients to<br>Alcoholism Treatments: Post Hoc<br>Analyses of the Community<br>Reinforcement Approach Replication<br>Study | Delaney   |
| David A. Willman | Similarity as a Predictor of<br>Classifications Behavior Over a<br>Graph-Theoretical Stimulus Domain  | Goldsmith |

APPENDIX H  
GRADUATE STUDENTS ACCEPTED FOR

AY 1992-93

<u>NAME</u>	<u>AREA</u>	<u>ADVISOR</u>
Janet C'de Baca New Mexico	Clinical	Miller
Lucianne Hackbert Maryland	Clinical	Dougher
Janice Hoelsing Canada	Psychobiology	Ciesielski
Denise Laframboise California	Clinical	Smith
Brent Moore Washington	Cognitive/Learning	Ellis
Shannon O'Brien California	Clinical	Haaland
Sandra Page Pennsylvania	Psychobiology	George
Michael Palmer Wyoming	Psychobiology	Sutherland
Kerri Repa Missouri	Clinical	Ciesielski
Francisco Sanchez New Mexico	Clinical	George
Patricia Shaw Illinois	Clinical	Yeo
Kathleen Teague New Mexico	Cognitive/Learning	Johnson
Robert Thoma New Mexico	Clinical	Gangestad
Lorraine Torres New Mexico	Clinical	Arroyo
Douglas Warner New Mexico	Cognitive/Learning	Goldsmith

## APPENDIX I

## PSYCHOLOGY FACULTY INTERESTS

## AGOSTINELLI, GINA

Assistant Professor. Ph.D. Indiana University, 1988.

Social psychology, social cognition, and social influence processes.

Interested in understanding the causes and consequences of confusion (mental perplexity), focusing on how confusion limits the processing of information, individual differences in responding to confusion, facial expressions associated with confusion, and implications for social influence processes (e.g., persuasion). Also interested in biases present in social perception (e.g., false consensus effect) and how they relate to depressive realism.

## AMRHEIN, PAUL C.

Assistant Professor. Ph.D. University of Wisconsin-Madison, 1987.

Cognitive psychology: psycholinguistics; picture-word processing; aging, cognition and motor control. Current language research concerns the representation and function of pragmatic, semantic and syntactic information in discourse. Ongoing picture-word processing research concerns the development of 'hybrid' models that account for cognitive processes involved in episodic and semantic memory tasks. Current aging research concerns age-based changes in cognitive processes that pertain to the preparation and execution of simple movements.

## ARROYO, JUDITH A.

Assistant Professor. Ph.D. University of California, Los Angeles, 1989.

Clinical Psychology. Primary interests are in minority mental health, community and health psychology. Current research is on the influence of physical and linguistic variables on diagnostic bias in psychological treatment of Mexican American clients in psychotherapy and/or medical practice. Future plans are to extend the videotaped analogue methodology to investigation of diagnostic bias with women and other ethnic groups. Secondary interests include measurement of acculturation among New Mexican Hispanics, alcoholism among Hispanics and women, and how qualitative and quantitative factors predict minority students performance in post-secondary education.

## CIESIELSKI, KRISTINA T.

Associate Professor. Ph.D. Polish Science Academy (Nencki Institute), 1978.

Cognitive/clinical neuropsychology; brain event-related potentials; developmental brain disorders. Research is aimed at elucidating brain mechanisms of cognitive processes in normal and abnormal populations and currently focuses on attentional and visual deficits in autistic and dyslexic children, and in survivors of childhood leukemia. My approach is based on information processing models and neuropsychological models of cognition and integrates neurobehavioral, electrophysiological and neuro-imaging techniques. A major clinical goal of this research is to differentiate disorders according to cognitive and neurophysiological subsystems.

COFER, LYNETTE FRIEDRICH

Professor. Ph.D. Cornell University, 1965.

Developmental psychology, mediation of television effects, social development and gender differences, analyses of theoretical and empirical approaches to applied developmental research and child and family public policy. Current interests include media portrayals of youth and families, and adolescents' processing of TV news content, children's understanding of environmental issues, and the formation of affective and cognitive schemata of social participation.

DELANEY, HAROLD D.

Associate Professor and Associate Chair for Graduate Education. Ph.D. University of North Carolina, 1975.

Methodology, quantitative, human learning and cognition. Current research is in statistical methods, particularly those that are useful in investigations involving individual difference variables. Issues in experimental design and philosophy of science are also of interest. Interests include substantive issues in the areas of aviation psychology, and individual differences in human learning, including learning from prose materials and vocabulary learning.

DOUGHER, MICHAEL J.

Associate Professor, Ph.D. University of Illinois at Chicago, 1980.

Behavior analysis and behavior therapy. Primary research is focused on complex human operant behavior including stimulus equivalence and rule governed behavior. Also conducting research on the assessment of sex offenders, and contextualistic methods of psychotherapy and psychotherapy research.

ELLIS, HENRY C.

Distinguished Professor. Ph.D. Washington University, 1958.

Human memory and learning, cognitive psychology, emotional factors in performance. Primary interest is in the analysis of encoding, storage, and retrieval processes in memory. Current research work focuses on emotional mood states in memory and cognition, depression and memory, long-term recognition and recall, organizational and elaborative processes in memory, constructive processes in memory, context and attention in memory, imagery, text processing and comprehension, and individual differences in learning, memory, and problem solving. Other interests include memory for visual information, eyewitness testimony and identification, psychology and law, and applications of cognitive psychology to educational and clinical issues.

FEENEY, DENNIS M.

Professor (and Professor of Physiology). Ph.D. University of California, Los Angeles, 1968.

Physiological psychology, brain injury, recovery of function and epilepsy. In my laboratory we are conducting interdisciplinary studies of experimental brain injury in animals using a variety of methods, including electrophysiology, liquid chromatography, pharmacology, autoradiography and behavior. Our goal is to understand and enhance recovery of behavioral functions after brain damage in humans, and determine what commonly prescribed drugs may slow behavioral recovery.

## GANGESTAD, STEVEN W.

Assistant Professor. Ph.D. University of Minnesota, 1986.  
 Personality psychology; social psychology; behavior genetics; evolutionary psychology. Most generally interested in personality and its links to interpersonal behavior. Current research aims at understanding individual differences in behavior in close relationships, the links between these individual differences and more general interpersonal styles, the biological-social-developmental roots of these differences, and their possible relevance to evolutionary adaptations. Other interests include issues concerning the basic conceptualization of personality, psychometric theory, and philosophy of science.

## GEORGE, FRANK R.

Assistant Professor. Ph.D. University of Colorado at Boulder, 1981.  
 Psychopharmacology, behavior genetics, neuroscience. My laboratory focuses on behavioral, biochemical and genetic questions pertaining to neuroscience and substance abuse. I use behavioral, pharmacological and genetic research designs: 1) To understand the degree to which specific genetic factors influence the rewarding effects of drugs and mechanisms of drug action; and 2) As research tools valuable in determining the biological substrates of behavior, especially behaviors related to reinforcement and addiction. My laboratory is currently focused on four primary project areas: 1) Central mechanisms of action of cocaine and related stimulant compounds in producing rewarding and toxic effects; 2) Genetic factors in drug self-administration; 3) Central mechanisms of action of alcohol; and 4) The development of new drugs for use in the treatment of substance abuse disorders.

## GLUCK, JOHN P.

Professor and Associate Chair of Undergraduate Education. Ph.D. University of Wisconsin, 1971.  
 Clinical psychology, developmental psychology, comparative psychology. My general interest in the interface of biological, conditioning and existential models of human activity led to research programs in animal models of psychopathology, the effects of early experience on social and intellectual development, and the philosophy of clinical intervention. Within the clinical framework I have a particular interest in process issues in long-term psychotherapy.

## GOLDSMITH, TIMOTHY E.

Assistant Professor. Ph.D. New Mexico State University, 1984.  
 Applied cognitive psychology, human factors, artificial intelligence. The general theme of my research centers on assessing and representing knowledge and skill. Some specific areas of my current work include: psychological scaling, structural models of knowledge, and decision making.

## GORDON, WILLIAM C.

Professor and Chair. Ph.D. Rutgers University, 1973.  
 Animal learning and memory, cognitive processes in animals. Current research focus is an analysis of associative structures in Pavlovian conditioning situations. Additional research interests involve the role of context in learning and retrieval, the rules governing pretest cueing or reminder effects, and memory construction in animals.

## HARRIS, RICHARD

Professor. Ph.D. Stanford University, 1968.

Experimental social psychology, game theory, equity theory. Primarily interested in relatively formal (mathematical and computer simulation) models of social psychological phenomena, with emphasis so far on post-decision dissonance reduction, experimental games, and equity theory. A secondary interest is in the development of multivariate statistical techniques.

## HODGE, GORDON K.

Associate Professor and Associate Dean of the College of Arts and Sciences. Ph.D. University of California, Los Angeles, 1977.

Physiological psychology, psychopharmacology. Research is directed toward revealing underlying neural mechanisms responsible for impairments in learning, memory, and cognitive function as seen in dysfunctions such as attention deficit disorder, Alzheimer's disease, and prolonged drug abuse. By carefully observing and recording complex behaviors prior to and following lesions or sustained drug administration in rats, our goals are to better understand how these disorders originate and develop, to identify the systems involved, and to develop possible ways of attenuating functional impairments pharmacologically.

## JOHNSON, PEDER J.

Professor and Associate Chair of Experimental Training. Ph.D. University of Colorado, 1965.

Cognitive processes, knowledge representation, human performance, attention, and encoding processes. Current research includes knowledge elicitation and representation, implicit learning, units of visual encoding, sensitivity to contextual information and mechanisms of priming.

## MILLER, WILLIAM R.

Professor (and Professor of Psychiatry), Ph.D. University of Oregon, 1976. Cognitive-behavior therapies, treatment outcome research, motivation, self-control, pastoral psychology. Current work focuses on the assessment and treatment of addictive behaviors, particularly alcoholism. Other interests include neuropsychology, prevention research, psychology of religion, and cognition/behavior interfaces (e.g., attribution theory, expectancies, faith).

## PADILLA, ELIGIO R.

Associate Professor (and Associate Professor of Psychiatry). Ph.D. University of Washington, 1974.

Clinical, cross-cultural and community. Current work focuses on the validity of traditional instruments for the assessment of psychopathology and intelligence among minority populations, differences and similarities between Chicanos and American Indians and the majority along various attitudinal, informational and behavioral dimensions, sexual function and dysfunction in a cross-cultural context and the evolution of health and mental health programs.



## ROLL, SAMUEL

Professor (and Professor of Psychiatry) and Associate Chair of Clinical Training. Ph.D., ABPP, ABFP. Pennsylvania State University, 1968. Clinical psychology, developmental psychology, forensic psychology. Using a psychoanalytic framework as a base, I am exploring cultural influences on the development of personality and cognition. This involves work in the area of dreams, early memories, cognitive assessment, personality assessment and psychotherapy. My research involves Anglo, Chicano, American Indian and South American subjects. Projects underway also relate to attachment of children and the psychological reaction of "birth mothers".

## RUEBUSH, BRITTON (Primary appointment is outside the Psychology Department.)

Professor (and Professor of Psychiatry). Ph.D. Yale University, 1960. Clinical, child development, family therapy. Research interests include evaluation of clinical programs and services; the effects of child rearing methods and other family variables on child and family behavior; and the relationship between personality variables such as anxiety and defensiveness, and cognitive, learning and physical functions.

## SMITH, JANE E.

Assistant Professor. Ph.D. State University of New York at Binghamton, 1985. Clinical psychology. Research interests: improving methods of psychophysiological assessment, assessment and treatment of eating disorders (bulimia and anorexia), 3 response-mode evaluations of phobias, implosive (flooding) therapy, and diagnosis and assessment of schizophrenia.

## SUTHERLAND, ROBERT J.

Associate Professor. Ph.D. Dalhousie University, 1980. Behavioral neuroscience, neuropsychology, learning and memory. Primarily interested in the neuroanatomical and functional organization of memory and related cognitive processes in the mammalian brain. The research includes combinations of behavioral analyses, electrophysiological recording, neurotoxin lesion, and neuropharmacological techniques. Secondary goals are to understand in detail the function of the hippocampal formation, the nature of amnesic symptoms in human disorders and to explore potential treatments capable of enhancing memory performance or promoting cognitive recovery after brain damage.

## WALDRON, HOLLY B.

Assistant Professor. Ph.D. University of Utah, 1987. Clinical Psychology. Research interests focus on family interaction patterns, child and adolescent psychopathology and treatment, and family therapy process and outcome. Specific research topics include juvenile delinquency and adolescent substance abuse.

## YEO, RONALD A.

Associate Professor. Ph.D. University of Texas, Austin, 1983. Clinical and experimental neuropsychology. Research interests include individual differences in brain organization, neuroimaging, neuropsychological research methodology, the neuropsychology of brain systems governing visuo-spatial and emotional processing. Also strongly interested in the biological bases of affective disorders and schizophrenia.

## PROFESSORS EMERITI

## GRICE, G. ROBERT

Distinguished Professor. Ph.D. University of Iowa, 1947.

Information processing, reaction time, classical conditioning, quantitative theory. Current research is directed toward the development of theory that will provide quantitative descriptions of the associative, perceptual and sensory processes leading to response evocation. The analytic procedures are derived from variable criterion theory. Experimental procedures include the various forms of human reaction time.

## LOGAN, FRANK A.

Professor. Ph.D. University of Iowa, 1951.

Animal learning and motivation, behavior theory. Operant and instrumental conditioning and discrimination learning and stimulus control in animals. Primary focus is on the effects of reward and punishment on the acquisition, maintenance and persistence of behavior. Research is guided by an incentive theory and includes problems related to feedback control of behavior.

## APPENDIX J

## PERSONS HOLDING PROFESSIONAL TITLES IN PSYCHOLOGY 1991 - 1992

Name and Address	Phone	Professional Title
Julia C. Barker, M.A. 4600-A Montgomery, NE Suite 102 Albuquerque, NM 87109	883-0100	Clinical Associate
Patricia Boham, Ph.D. 1502 Harvard Ct. NE Albuquerque, NM 87106	848-5122	Clinical Associate
Samuel G. Charlton, Ph.D. 1215 Fruit Ave NW Albuquerque, NM 87102	848-5122	Adjunct Assistant Professor
Charles Cofer, Ph.D. 3600 Vista Grande NW Albuquerque, NM 87120		Professor (PT)
Lee Davis, Ph.D. Psychotherapist Student Health Center University of New Mexico Albuquerque, NM 87131	277-4537	Assistant Professor (PT)
Phillip W. Day, D.V.M. Director, Animal Resource Facility University of New Mexico School of Medicine Basic Med. Sci. Bldg. G32 Albuquerque, NM 87131	277-3936	Assistant Professor (PT)
Peter DiVasto, Ph.D. Family Practice/ Psychiatry 307 Albuquerque, NM 87131	277-4257 277-2165	Clinical Associate
Susan Eissele, Ph.D. 4300 Carlisle NE, Suite 1 Albuquerque, NM 87107-4811		Clinical Associate
Charles H. Elliott 403 Dartmouth SE Albuquerque, NM 87106	843-2190	Clinical Associate Professor

Name and Address	Phone	Professional Title
Roger Enfield, Ph.D. 4300 Carlisle NE, Suite 1 Albuquerque, NM 87107-4811	884-2302	Clinical Associate
Clara Farah, Ph.D. 715 Grande NE Albuquerque, NM 87102	881-8666	Clinical Associate
Al Fedoravicius, Ph.D. Behavioral Medicine Veterans Administration Medical Center 2100 Ridgecrest Drive SE Albuquerque, NM 87108	265-1771 ext. 2425	Adjunct Assistant Professor
Gail Feldman, Ph.D. 2920 Vista Grande NW Albuquerque, NM 87120	266-8488	Clinical Associate
Joe Flipppo, Ph.D. 8100 Constitution Pl. NE Suite 2500 Albuquerque, NM 87110	292-3776	Adjunct Associate Professor
William E. Foote, Ph.D. 4308 Carlisle NE Suite 208 Albuquerque, NM 87107-4849	255-9494	Clinical Assistant Professor
James Franklin, Ph.D. 4733 Southern SE Albuquerque, NM 87108	881-3232	Clinical Associate
Thelma Giomi, Ph.D. 713 Manzano NE Albuquerque, NM 87110	255-9293	Clinical Associate
Therese Goetz 1925 Juan Tabo NE Suite B Albuquerque, NM 87112		Associate
Kathleen Haaland, Ph.D. Psychology Services Veterans Administration Medical Center 2100 Ridgecrest Drive SE Albuquerque, NM 87108	265-1711 ext. 2440	Adjunct Associate Professor

Name and Address	Phone	Professional Title
Deborah Harrington, Ph.D. Veterans Administration Medical Center 2100 Ridgcrest Drive SE Albuquerque, NM 87108	265-1711	Associate
Mary Harris, Ph.D. Educational Foundations University of New Mexico Albuquerque, NM 87131	277-2925	Associate
Reid Hester, Ph.D. 4300 San Mateo NE Albuquerque, NM 87110	884-3002	Clinical Associate
Bobby Holstead, Ph.D. 4300 San Mateo NE Albuquerque, NM 87110	884-3002	Clinical Associate
Ben Klein, Ph.D. Psychology Program Director St. Joseph Rehabilitation Ctr. 500 Walter NE Albuquerque, NM 87102		Clinical Associate
Frances Koenig, Ph.D. 121 Wellsley SE Albuquerque, NM 87106	242-0439	Clinical Associate
Marcia Landau, Ph.D. Suite 805 300 San Mateo Blvd. NE Albuquerque, NM 87108	266-8488	Clinical Associate
Milton Iasoski, Ph.D. 1817 Morningside Dr. NE Albuquerque, NM 87110	266-3070	Clinical Associate
A. Lane Leckman, M.D. 11000 Candelaria NE Suite 110 West Albuquerque, NM 87112	841-1031	Clinical Associate

Name and Address	Phone	Professional Title
Mark Lewis, Ph.D. Department of Psychiatry University of Medicine & Dentistry of New Jersey School of Osteopathic Medicine 401 Haddon Avenue Camden, NJ 08103	(609) 757-7736	Senior Research Associate
George Luger, Ph.D. Professor Dept. of Computer Science University of New Mexico Albuquerque, NM 87131	277-3204	Professor (PT)
Ron McGowan, Ph.D. 801 Encino Pl. NE Albuquerque, NM 87102	842-1995	Associate
Charlene McIver, Ph.D. 4600 A Montgomery NE 102 Albuquerque, NM 87109	265-8800	Clinical Associate
Ruth Shore Mondlick, Ph.D. 1605-C2 Carlisle Blvd. NE Albuquerque, NM 87110	881-0618	Clinical Associate
Jean Newman, Ph.D. Associate Professor of Linguistics Humanities 526 University of New Mexico Albuquerque, NM 87131	277-7414	Associate Professor (PT)
Stephen R. Perls, D.Ed. Department of Psychiatry University of New Mexico School of Medicine 2400 Tucker NE Albuquerque, NM 87131	256-0500	Associate Professor (PT)
Richard Reed, Ph.D. 7520 Montgomery NE Albuquerque, NM 87109	881-6665	Clinical Associate
Michael Richard, D.V.M. Department of Psychology University of New Mexico Albuquerque, NM 87131	277-5009	Adjunct Assistant Professor

Name and Address	Phone	Professional Title
Steve Rokicki, Ph.D. P.O. Box 345 Corrales, NM 87048		Associate
Elizabeth Roll, Ph.D. 120 Vassar Dr. SE Albuquerque, NM 87106	266-2631	Clinical Associate
Doris Sahd, Ph.D. 9804 Aztec NE Albuquerque, NM 87111	298-7551	Clinical Associate
Joseph Schenkel, Ph.D. Chief Psychology Service (116B) Veterans Administration Medical Center 2100 Ridgecrest Drive SE Albuquerque, NM 87108	265-1711 ext. 2270	Clinical Associate Professor
Will Scofield, Ph.D. 1502 Harvard Ct. NE Albuquerque, NM 87110	265-8455	Clinical Associate
Rene Silleroy, Ph.D. 8100 Constitution Pl. NE Albuquerque, NM 87110	292-3776	Clinical Associate
Edward W. Snyder, Ph.D. Psychology Service Veterans Administration Medical Center 2100 Ridgecrest Drive SE Albuquerque, NM 87108	265-1711 ext. 2270	Clinical Associate
Frank Spring, Ph.D. 708 Marquette Ave. NW Albuquerque, NM 87102	243-3751	Clinical Associate
Jerry Sue Thompson, Ph.D. 1301 Manzano NE Albuquerque, NM 87110		Associate
Maryann Thompson, Ph.D. 8100 Constitution Pl. NE Albuquerque, NM 87110	292-3776	Clinical Associate

Name and Address	Phone	Professional Title
Albert V. Vogel, M.D. Department of Psychiatry University of New Mexico School of Medicine 2400 Tucker NE Albuquerque, NM 87131	277-4763	Associate Professor (PT)
Lisa Vosburg, M.D. 4263 Montgomery NE Suite 230 Albuquerque, NM 87109	881-9230	Clinical Associate
Walter Winslow, M.D. Chair Department of Psychiatry University of New Mexico School of Medicine 2400 Tucker NE Albuquerque, NM 87131	277-2223	Professor (PT)
Carolina Yahne, Ph.D. 791 Encino Pl. NE B-10 Albuquerque, NM 87102	242-6705	Clinical Associate



## APPENDIX K

## DEPARTMENT OF PSYCHOLOGY COLLOQUIA

AY 1991 - 1992

Colloquium Presented By

Dr. William K. Estes  
Department of Psychology  
Harvard University

Colloquium Title

Information Processing and  
Adaptive Learning

## APPENDIX L

## ANNUAL REPORT

1991 - 1992

## DEPARTMENT OF PSYCHOLOGY CLINIC

Daniel Matthews, Ph.D., Clinic Director

The Department of Psychology Clinic continues to be a valuable and challenging part of the Psychology Department's educational environment. On the one hand, it is a fully functioning outpatient mental health clinic, providing quality therapeutic and assessment services to the Albuquerque community. At the same time, it is a training facility where graduate students in clinical psychology receive practical experience in this area. The challenge is to keep both missions functioning at a high level of excellence; neither training nor services can be seen as secondary if the Clinic is to fulfill its function.

The nature of the challenge may be seen in the fact that the Clinic's approximately 1700 student-clinicians' therapy hours plus intakes and assessment are the equivalent of a reasonable work load for a clinic with three full-time staff. Here, however, these services are provided by 45 clinicians (with different responsibilities, depending on their place in the program). All of them must follow normal standards of practice. The reason this is possible is the academic preparation provided by the Department's faculty, especially the clinical faculty, and the on-going supervision donated by supervisors from the professional community. Each student-clinician, carrying a caseload of two or more cases, receives at least one hour of face-to-face supervision per week, usually individually and sometimes in small groups. Because of bright and responsible graduate students, educational preparation and dedicated faculty and outside supervisors, the Clinic is a place where both of its missions can be carried out without contradiction.

Services

Individual adult therapy remains the primary service of the Clinic, with a client population that is varied in terms of age, ethnicity, employment status, education and presenting problems. Generally the severity of referral issues is from mild to moderate. There is a frequent misperception that we serve primarily a University population, but our referrals from other agencies and practitioners, the Court, and self-referrals provide a cross-section of the community. Because of a sliding fee scale (\$10 to \$60 per hour), we do have a selection factor toward low-income individuals, but

even this factor is not universal. Increasingly over the past four years, the Clinic has increased its involvement in family, child and couples therapy. This has been due to the training influences of Jane Smith and Holly Waldron, who have increased the number of students who are knowledgeable in family dynamics and treatment; of Britton Ruebush as more students have been involved in classwork and practica at the Albuquerque Family and Child Guidance Center; and of Dan Matthews with his background in child and family practice particularly in the area of divorce.

The closing of outpatient therapy services by the New Mexico Hospital Mental Health Center in 1990 has produced an apparently permanent waiting list of referrals, changing our intake procedures and, to some extent, affecting our services. Since we cannot serve all those desiring therapy with us (and it is not our specific mission to do so) we have tried to maintain our previous commitment to long-term therapy as a valuable service and training modality. Larger numbers can be served with group treatment, and group experience is likewise valuable to our student-clinicians. This year, the group supervised by Mike Dougher has been a process therapy group serving both men and women. Karen Auguston has served as co-therapist. In addition, Birgitta Gabel and Tracy Simpson have conducted a women's therapy group under the supervision of Jane Einhorn, M.S.W. Beth Melka and Dan Matthews will begin a second mixed group in July.

The contract with the Metropolitan Court Probation Department for dispositional assessments was carried out this year by John Harlow under Dan Matthews' supervision.

Four of our student-clinicians, Karen Auguston, Tom Dominguez, John Harlow and Sheryl Kern-Jones have participated in the assessment and group treatment of couples who have been involved in domestic violence incidents. A project of the Family Court Clinic, this effort has been supervised by Lou Kodituwakku, Ph.D. (a UNM psychology department graduate), Jeananne Snow, Ph.D. (who worked at the clinic while completing her degree in education foundations) and Dan Matthews.

### Personnel

The staff of the Clinic consists of Dan Matthews, Director (since fall 1988); Wanda Sharts, Office Manager (who moved from the Department in June 1991); Deborah Palmer, work-study student; and John Harlow, evaluator for the Metropolitan Court Probation Division.

Upon joining the staff last year, Wanda set about organizing, reorganizing and training herself in the administrative aspects of

the University and the Clinic. She has provided not only an increase in the efficient operation of the Clinic, but also a calm and quieting presence that facilitates all our work in a sometimes stressful work environment.

Debbie is a first-year clinical student whose funding was provided through the Clinic for an existing position that had previously been filled by undergraduates, not necessarily in psychology. Having a clinical student in this position has been mutually beneficial, in that Debbie has dealt with administrative and client issues in an outpatient setting prior to the usual time she would have done so in her program, and from a different angle. The Clinic has benefited from having such an energetic, interested and personable member of our staff.

John readily took to the demands of the dispositional evaluations provided to Metro Court Probation. He seemed never to be flustered by the variety of clients presented to him, and performed the work with optimal independence and use of supervision.

I (Dan Matthews) am close to completing my fourth year as Clinic Director. I am increasingly enjoying running the Interviewing and Case Formulation practica, a one-semester therapy discussion group for new practicum students added this year, and group as well as individual supervision of students.

This is the time each year that we experience the loss of our "senior staff" - those who have graduated or are leaving for internship. Russ Walsh, Jonathan Krecji and David Greenway are in the process of terminating or transferring their Clinic cases in preparation for internship. Their work in the Clinic and contact in supervision will be missed.

Finally, the quality of our services depends critically on the efforts of our clinical faculty and adjunct faculty who supervise cases and support the knowledge, professional development and personal growth of the student therapists. These individuals deserve special thanks (they are listed elsewhere in this report, and need not be individually named here).

### Finances

Although our contracts have been fewer this year and our fees per hour lower, we have maintained a positive balance financially, even after expenditures for a more adequate computer, new phones, some professional reference works, and some testing materials (the Department has also funded a substantial increase in our testing library, necessitating fewer costs by the Clinic for replacement and update).

Physical Setting

Owing to the remodelling when the Clinic moved to its present location ten years ago plus the furniture and fittings provided by American Furniture, the Clinic is a comfortable and pleasing environment for clinicians, clients and staff. Five pleasant therapy rooms are available, and there is office/work space for the students, the Staff Assistant, and the Clinic Staff Director. We find times that all therapy rooms are in use, but expansion is not in the works at the present time.

Due to the efforts and grant support of Judith Arroyo, we have full videotape equipment in two rooms and third movable unit. The system allows observation of sessions by supervisors who prefer this mode, increased compatibility of equipment through use of VHS format, and greater taping capability when work is complete. By decision of the clinical committee, one room has been left free of equipment for those therapists and supervisors who adhere to the notion that recording is an intrusion on the therapeutic space.

We have plans of Clinic improvements through grant support by Holly Waldron. A family therapy research project would require more videotape support, utilization of dual cameras and split screen taping and observation capability at the Clinic. An observation room for Room 107 has been in the design stage for two years and can now be implemented. These improvements will facilitate supervision and training for all students.

Research

Almost continuously over the past two years, students are using the Clinic facilities for their research. Russ Walsh analyzed videotapes of therapy from client, clinician and outside therapist's perspective as his dissertation research. Janet C de Baca's senior honors thesis on sudden but profound life changes used interviewing and testing that took place at the Clinic using our students and supervisors as interviewers. Megan Meineke, research assistant for Nancy Handmaker, continues follow-up interviews for research on motivational interviewing with expectant mothers at risk because of alcohol use.

In the planning stages are family therapy research under Holly Waldron and a grant submission for better training of supervisors in the area of alcohol treatment by Bill Miller and Holly Waldron. The former has been funded and will increase utilization of the Clinic in normally vacant evening hours as well as improve our physical facilities. The latter, if funded, will improve our treatment of alcohol-related cases.

These current and projected research efforts add to the contribution of the Clinic to the community and to the body of clinical research. Continuation of such work in this setting is greatly encouraged and appreciated.

#### Summary

The Department of Psychology Clinic continues to be a pleasant and supportive environment for the provision of important psychological services to the Albuquerque community. It is a congenial learning setting for developing the experience and skill involved in being a therapist and psychological evaluator. Through the efforts of faculty, student-clinicians, supervisors and staff, an atmosphere is maintained that is supportive of this sometimes stressful work. It is a good place to work, learn and grow.

Prepared by

Dan Matthews, Ph.D. Clinic Director  
and his assistant  
Wanda Sharts

## APPENDIX M

## SUPPORT STAFF

## DEPARTMENT OF PSYCHOLOGY

1991 - 1992

ADMINISTRATIVE AND INSTRUCTIONAL SUPPORT STAFF:**Administrative Assistant:** Robyn Santillanes

Assists the Department Chair; administers all personnel and budgetary decisions necessary to execute University policies and policies set by the Department Chair. Has fiscal responsibility for all budgetary activities in the Department and related matters. Assists in hiring and supervision of all staff, student, and technical personnel. Coordinates with various administrators on a variety of complex matters, including faculty contracts, student financial aid, staff compensation, and related matters. Drafts policies, procedures, correspondence, etc. for the Chair.

**Administrative Assistant:** Candace Blashak

Works in support of Department Chair and top level administrators. Assists in the formulation of departmental policies and procedures, particularly in the areas of graduate and undergraduate instructional programs. Has a broad range of responsibilities in a variety of areas, including office management; supervises office clerical and student employees. Responsible for preparation of a variety of administrative and instructional documents.

**Editorial Assistant:** Mary Hungate

Edits and word processes complex manuscripts for publication in professional journals and textbooks, according to scientific format, and grant proposals primarily to extramural funding agencies, as well as related materials. Provides word processing backup for department office staff during times of peak workloads.

**Student Advisor II:** Lois Kennedy

Serves as department's graduate student and graduate admissions advisor; primary liaison with public and prospective graduate and undergraduate students. Responsible for administering student degree checks, counsels and advises graduate and undergraduate students in Psychology programs regarding policies, requirements, academic standing, and related matters. Maintains all graduate student files and records, coordinates and schedules various comprehensive exams and defenses.

**SUPPORT STAFF**  
Continued

Interfaces with Graduate Studies Office in policy areas. Coordinates with Scheduling Office, Continuing Education Office and Evening and Weekend Degree Program Office regarding department class schedules. Assists top administration with hiring part-time faculty; is official liaison between department and visiting faculty. Coordinates with Graduate Studies Office, College of Arts and Sciences and Curriculum Change Committee regarding revisions for University catalogs.

**Department Secretary: Margaret Wolf**

Represents the department as first point of public contact. Directs telephone callers and foot traffic as appropriate. Has responsibility for maintaining supplies inventory, security of classroom equipment inventory, maintenance of office copier and building key security. Backup to Editorial Assistant for typing of syllabi, exams and correspondence.

**RESEARCH SUPPORT STAFF:**

**Shop Supervisor II: Patrick Sharp**

Supports faculty, staff and graduate students with computer needs. Responsible for electronic design, fabrication, troubleshooting, installation, computer upgrades, consulting and repair, and preventive maintenance for mainframe computer and a multitude of microcomputers; also designs experimental and peripheral research equipment. Fabricates wood and metal products using a variety of equipment. Responsible for annual department equipment inventory. Supervises a Work Study Assistant. Works under general supervision of Department Chair and Administrative Assistant.

**Laboratory Animal Technician IV: Ector Estrada**

Supervises the daily operations of the Psychology Department's animal colony, including animal husbandry and environmental control. Functional supervisory responsibility for the other Animal Technician IV and two Work Study Assistants. Works with department's Veterinarian in treatment of laboratory animals and in monitoring compliance with the Animal Welfare Act. Works under general supervision of Department Chair, Veterinarian and Chair of Animal Care and Use Committee.

**Laboratory Animal Technician IV: Gilbert Borunda**

Under limited supervision, maintains and breeds laboratory animals and functions as a section leader of student assistants. Primarily responsible for daily care and preparation for surgery of laboratory animals. Assists department Veterinarian in all animal treatment. Backup for senior Laboratory Animal Technician IV.



## SUPPORT STAFF

Continued

**Veterinarian:** Michael Richard, DVM (and Adjunct Assistant Professor of Psychology and Biology)

Provides preventive, acute and on-call medical treatment to a variety of departmental laboratory animals. Provides professional management of animal research facility and monitors compliance with the Animal Welfare Act. Provides relevant instruction to faculty, graduate and undergraduate students concerning care and treatment of laboratory animals. Reports to Department Chair and Chair of Animal Use and Care Committee.

CLINIC SUPPORT STAFF:

**Clinic Director (Psychology Clinic):** Daniel Matthews, Ph.D.

Has overall administrative and fiscal responsibility for the Clinic and executes Clinic policies as set by the Department faculty. Reports to the Department Chair through the Associate Chair for Clinical Training. Duties include triage of referrals to the Clinic, supervision of doctoral students, report writing, community relations, and some direct clinical services including assessment.

**Staff Assistant (Psychology Clinic):** Wanda Sharts

Works under general supervision and in support of Psychology Clinic Director, Psychology Department Chair, and Administrative Assistant. Assists in the formulation of Clinic policies and procedures. Performs a wide variety of duties in the areas of budget, personnel, payroll, and related matters, and performs administrative work at para-professional level. Supervises Work Study Office Assistant.

## APPENDIX N

NEW REQUIREMENTS FOR  
UNDERGRADUATE PSYCHOLOGY MAJORSI. Requirements for a B.A. Degree

- 1) All majors must complete a one-semester Introductory Psychology course (Psych 105) along with the associated Introductory Lab (Psych 106L). This course and lab will replace the two-semester course and lab sequence currently offered (Psych 101, 102, 103L and 104L).
- 2) All majors must complete the Undergraduate Statistics course (Psych 200).
- 3) Additionally at the 200 level all majors must complete two courses from each of the two course categories listed below:  
Category I: Psych 240; 260; 265  
Category II: Psych 220; 232; 271
- 4) All majors must complete three Psychology courses (9 hrs.) at the 300 level or above, as well as one, 2 hour advanced laboratory.
- 5) All majors must complete an additional 3 hour elective course in Psychology, so that a total of 34 credit hours in Psychology are completed.

II. Requirements for a B.S. Degree

The requirements for a B.S. Degree will be the same as those for the B.A. with the two following exceptions:

- 1) All B.S. Degree majors must complete the Undergraduate Experimental Methods Course (Psych 302) as one of their 300 level or above courses. This course will replace Psych 202 which is currently offered.
- 2) All B.S. Degree majors must complete their minor requirements in one of the Science departments.

## APPENDIX O

## CHANGES TO GRADUATE TRAINING PROGRAM

To: Faculty

From: Mike Dougher, Associate Chair for Graduate Training

Subject: Revised Graduate Training Program

Below is a summary of the changes we have made in our graduate training program. The specific objectives of the changes in the program are as follows: 1) To emphasize from the outset that the primary goal of our program is to train independent researchers and scholars: 2) To remove the obstacles to research involvement and facilitate research productivity: 3) To create an environment that takes students' intelligence, motivation and creativity as a given unless proven otherwise: 4) To give students more flexibility and freedom in creating a course of studies that is suited to their individual interests and needs: 5) To maintain our goal of giving students both a depth and breadth of knowledge: and 6) To modify our existing major requirements by emphasizing the development of professional academic repertoires.

**Goals** The committee felt a clear articulation of the goals of our training program was critical because they would help shape the specifics of the program and provide a context within which to evaluate it. After considerable discussion, we agreed to the following: The goals of the graduate training program are to facilitate the development of independent and productive researchers and scholars who have a depth of knowledge in their fields of specialization, a breadth of knowledge in the general field of psychology and its historical developments, and who carry out their work within the highest ethical and professional standards.

**Required Courses of all Students** No issue received more discussion than the issue of a core curriculum and what it should include. After extended discussion, we decided to require students to take only three courses: History and Systems, Statistics, and Design (and, of course, the associated labs). We agreed that History and Systems should be taken during the Spring semester of the first year and that the Statistics and Design course should be taken as they are now.

With respect to the methodology sequence, we agreed to eliminate Multivariate Statistics as a requirement. We do, however, want to strongly encourage all students to take the course as part of their breadth requirement (see below).

We also agreed that students would be required to enroll in a research seminar for both semesters of their first year. The seminar would be for one credit, scheduled for two hours each week, and taken on CR/NC basis. The purpose of the seminar would be to facilitate research involvement, introduce students to the kinds of research efforts going on in the department, and give them practice in presenting and discussing research ideas. The seminar would consist of research presentations by both faculty and students. We thought a reasonable way to proceed would be to start the seminar by having willing faculty describe their research efforts. It would be ideal if these presentations could include some discussion of the historical, philosophical and theoretical context for the work. Faculty presentations would be followed by students presentations. First year students would be required to present the rationale and design for their master's theses and second year students would be required to present their thesis data.

Students would begin taking courses in their major during their first semester. They would satisfy the requirements for their major as course offerings and schedules permit, but they would be expected to do so before the Spring semester of their third year.

**Minor, Collateral, and Breadth Requirements** We agreed to eliminate the minor and collateral requirements as they now stand and to substitute a minor, consisting of three courses in an area within the department ( a reduction of 1 course from the current requirement) and a breadth requirement, consisting of four courses (an increase of 2 courses over the present collateral requirement). Levels of analysis would not count toward a minor (partly because it is relatively content free), but it could be counted toward the breadth requirement. History and Systems would count toward the breadth requirement, and students would be strongly encouraged to take multivariate statistics as one of the three remaining courses to satisfy the requirement. The other courses could be taken inside or outside the department, but they would have to be outside of the major and minor areas. The only other restriction is that the courses must be scholarly in nature. That is, specific skills courses or more professionally oriented courses would not be allowed. Clinical students, of course, would still have to satisfy the APA distribution requirements.

To satisfy the Graduate College's requirement of a foreign language or comparable alternative requirement (the reason why we have our current collateral requirement) we agreed to use the computer labs associated with the Statistics and Design classes. Thus, all students would fulfill the collateral requirement with these labs.

**The Thesis** The reduction in number of required courses in combination with the research seminars should facilitate completion of the thesis in a more reasonable amount of time than is now typical. To facilitate this process even more, we agreed to eliminate the comprehensive literature review.

To maintain satisfactory progress within the department, students must complete their theses by the end of the Spring semester of their second year, unless the department approves a written petition for and extension. The petition must be endorsed by the faculty advisor and all members of the thesis committee. Delayed completion of the thesis is likely to delay taking the preliminary examination, which would also jeopardize the student's good standing. To avoid a chain of delays and petitions, students should be encouraged to tackle "do-able" projects for their theses and to get going as early as possible. Failure to maintain good standing in the department seriously jeopardizes the student's chances of receiving financial aid. Moreover, if the problem is not rectified within one semester, the student would come up for review by the faculty to decide upon further action.

**The Preliminary Examination (Do not call this a comprehensive exam)**  
We agreed to the following procedure for the preliminary exam. Upon completion of the thesis and 12 hours of course work in residence, a student can request to take the preliminary examination. To do so, he or she, in consultation with the academic advisor, would select a committee consisting of three faculty to compose and grade the exam. It is recommended that the committee include two faculty from the major area and one from the minor area, although this is not required. Once selected, the student would have a brief meeting with the committee to describe his or her specific areas of interest and to generate a list of readings which are considered by the committee to be critical to the identified areas of interest. This list is not considered to be exhaustive, and students are encouraged and expected to consult any literature relevant to the areas examined. The committee would have 30 days to compose the exam, which must be approved by the area head in the student's major.

The exam will consist of four questions that require integration across a broad range of the student's major and minor areas of study. The questions will be based both on fundamental knowledge in the field and the student's specific interests. There will be a limit of 50 total pages (typed, double spaced, APA margins), which may be allocated to the four questions as the student chooses. The student would have until March 15 of the third year to complete the written exam.

The entire written exam will be read and graded by each member of the committee within 30 days of its completion. The exam will be graded on a 100 pt. scale (25 pts, per question or pts. distributed across the questions as the committee decides) as follows:

90+ = distinction

89 to 70 = pass

69 to 50 = pass with remediation

49 and below = fail with no option to remediate

Remediation would always involve retaking part of the exam. The retake would be specifically designed to assess the weaknesses as revealed in the written and oral exams. We need to decide whether there would be an oral exam on the retake or leave it to the committee to decide.

After the committee has graded the exam, they would meet and decide upon the focus of the oral exam. Regardless of the specific focus, the oral exam would always be restricted to the questions contained in the written exam. The purpose of the oral exam is twofold: First, it would serve to validate the written exam. (i.e., does the student really understand what he or she wrote?). Second, it would provide an opportunity for the readers to clarify any possible misunderstandings or misinterpretations of the written exam. Thus, the student's score on the written exam could either be raised or lowered based on the oral exam. However, most of the weight of the final decision should be based on the written exam.

The length of the oral exam will depend on the quality of the written exam. For example, if a student obtains a 90+ on the written exam and demonstrates clear mastery of the material in the oral exam, the exam is likely to be brief. On the other hand, if a student performs marginally on the written exam, the purpose of the oral exam would be to clarify the nature of the problems that exist, and the exam would take longer.

The student would not receive any feedback on the exam until after the oral. However, feedback should then be as specific and detailed as possible. If retake is required, the student should be given the retake questions as soon as possible and would have until the following fall semester to complete them.

Students who do not complete the preliminary exam by March 15 of their third year would not be considered to be making satisfactory progress unless the department approves the student's written petition for an extension.

**To whom do these new requirements apply?** We decided that the requirements would apply to all incoming students in Fall 1992, and any currently enrolled students who opt for the new requirements. Currently enrolled students who do opt for the new requirements would have a one year grace period within which to complete whatever requirements are necessary for them to achieve good standing in the department. For example, a current third year student who has not completed his or her thesis would have one year to complete both the thesis and the preliminary examination. We also decided that all students would have a period of one year from the time the new preliminary exam format is put in place to opt for the old style exam. After that first year, all students will be required to take the new exam.

**Financial Support** Finally, we agreed that all students in good standing would be eligible for financial aid through their fifth year. Good standing would be defined as grades of B or better in all courses and evidence of research productivity in each year of residence. Even with the reduction in course work we have adopted, the requirements of the department are such that most students, especially clinical students, will likely take five years to complete their degrees. Moreover, the committee would like to see students who want to tackle a more difficult or risky project for their dissertations have the ability to do so without the financial pressures of only four years of eligibility.

## APPENDIX P

SUMMARY OF APA ACCREDITATION SITE VISIT  
PROFESSOR SAMUEL ROLL

During this academic year the clinical training program was scheduled for an accreditation site visit by the American Psychological Association. The site team, which made its visit on April 30 and May 1, found the program to be in substantial compliance with the American Psychological Association criteria for accreditation. It recommended that the program be fully accredited for five years. "Full" accreditation for five years is the most positive recommendation that the committee can make. The site team found not only that the program has strengths which far outweigh its weakness but, also, that considerable improvement had been made since the last site visit.

The significant improvement over the findings of the last site visit included increased financial support for graduate students, continued success in obtaining external grant support. The site visitors also found a most notable improvement in the "attitudinal climate regarding the recruitment and retention of women faculty" and a generally more democratic atmosphere overall. The morale of both faculty and students was reported to be much higher than it had been at the time of the previous site visit.

The site visit report also made positive evaluations of other components of the program. Included in the positive evaluations was the strong commitment of the Department to the scientist-practitioner model which maintains a focus on strong training in psychology as both a scientific discipline and as an arena of professional clinical practice. According to the site visitors "The curriculum is well designed to implement the scientist-practitioner model."

The site visitors noted the commitment of the program and the faculty to the scientific endeavor and to high quality teaching. In terms of the site visit report, the faculty as a group "are very competent and productive psychologists as judged by a variety of criteria." The site visitors were also laudatory about the quality of the graduate students and cited their commitment to the scholarly endeavors and their close working relationships with faculty members. The accreditation report also reported that diversity and respect for individual and cultural differences are well evidenced in both faculty and students.

In addition to spelling out the aspects of the program which support their recommendation of full accreditation for five years, the site visitors pointed to areas to which attention should be directed. The visitors recommended that while the clinical program it lacks a programmatic vision of what it wants to be like in the future. Also, the site visitors recommended that while the students receive



good educational experiences, that there needs to be a greater integration of the clinical activities into the total educational endeavor. The one content area marked for needed improvement was training in the area of psychological assessment.

The site visitors underscored the fact that while the Department's space problems have been alleviated by planning and reorganization, shortage of space remains acute and, unless addressed, promises to become more troublesome.

In its formal response to the site visit report the Department offered its appreciation for the professional and thorough visit and for the positive recommendation of the site visitors. The Department's response also noted some "points of context" to help understand and perhaps shed a different light on some of the site visitor's less favorable observations.

Overall the clinical training program was very pleased with the site visit, the observations of the site visitors, and especially with their recommendation for full accreditation for five years. Also, while we are not in total agreement with the less favorable observations of the site visitors we see them as valid points around which to continue our ongoing attempts to evaluate and improve the training of our graduate students.

## ANNUAL REPORT OF THE DEPARTMENT OF SOCIOLOGY 1991-92

Gary LaFree, Chair

I am pleased to submit this report covering the first year of my term as Department Chair.

A. Significant Achievements

An important meeting opening the Sociology Fall semester was the Department retreat held at the Albuquerque Hyatt Regency Hotel on Friday, August 30, 1991. The main focus of this meeting was detailing departmental accomplishments and setting departmental goals. Dean Hobson Wildenthal spoke to faculty during the first part of the afternoon on the University's reallocation plan, and faculty were encouraged and stimulated by his talk. As evidenced by this Annual Report, the Sociology faculty were able to accomplish many of the goals developed at the retreat.

During the academic year the Sociology faculty developed an extensive policy on departmental expectations for faculty research, teaching and service. This proposal identifies expected core and elective contributions of all Sociology faculty members. Briefly, the purpose of this document is to develop departmental consensus about the elements that constitute good departmental citizenship. The document is already being used for committee

and teaching assignments and promotion, salary and tenure decisions. Perhaps the most remarkable aspect of the document is that it was passed unanimously.

The Institute for Criminal Justice Studies merged with the Sociology Department this academic year to create a new Institute for Social Research (ISR). The ISR fulfills two important objectives: it provides a permanent administrative structure to support research in sociology and creates synergy by encouraging collaboration and feedback between research groups. The ISR now encompasses the Institute for Criminal Justice Studies and its three research groups (Statistical Analysis Center, Youth Resource and Analysis Center, and Psychological Screening). Since its inception five years ago, the Institute for Criminal Justice Studies has generated 1.7 million in extra-mural funding. Most of these projects have been written by Sociology faculty. The ISR received \$10,000 from the Provost's Office this year to use as "seed money" for generating additional research projects.

In order to explore the feasibility of creating a Spanish language graduate program, the Sociology Department formed a task force this year to develop a proposal and work plan. Our current strategy is to begin a pilot project in summer 1993. Four courses will be offered during the regular summer session, staffed by members of the Sociology Department and a guest scholar from Latin America or Spain. This innovative program will offer substantive and methodological courses in Sociology and fits within the University's emerging emphasis on "hemispheric initiatives." The graduate program will also increase the visibility of the Department and of the University among the academic community in Latin America and the United States.

One of the significant achievements of the Sociology faculty this year was its especially high rate of research productivity. During the 1991-92 academic year, our faculty completed or published six major books. These include new works by Professors Burris, Coughlin, Gonzales, McNamara, Ross and Tiano. In addition, the Department contributed research articles to some of the top journals in Sociology as well as a large number of book chapters.

During the past academic year, the front office of the Department has developed an extensive data base on departmental curriculum, faculty and graduate students. The data base includes data for an eleven-year period on issues as diverse as enrollments for specific substantive specialty areas to total number of applicants to our graduate program. The information has been entered into a computer program and will be updated annually. We plan to use it for departmental planning purposes in the future.

Spring 1992 was the birth of the Sociology newsletter, NEWS & NOTES. Contents included academic happenings and work interests of various contributing faculty plus university news. The newsletter was mailed out to alumni and was read with great interest, judging by the calls received and the financial pledges sent to the Department. The Department plans to have names of contributors printed on a "Friends of Sociology" plaque for display in the front office.

The Sociology Department continued its fine tradition of excellence in teaching. Two faculty members received major awards for teaching this year.

Professor Jane Hood won an award for her essay on teaching quality. The contest was sponsored by the Teaching Quality and Effectiveness Subcommittee of UNM Teaching Enhancement Committee. Professor Patrick McNamara was recognized as an outstanding teacher through receipt of a Burlington Teaching Award.

The past year was a collegial one for the Sociology Department. On December 13, 1991, we kicked off the Sociology First Annual Chili Cookoff which was a steaming success! First prize ribbon was awarded to Staff Assistant Emily Griffith; second and third prizes were awarded to Professor Beverly Burris and graduate student Adam Aguirre, respectively. January 27, 1992, will go down in the annals of Sociology because it was the Department's First Annual FREE LUNCH! Hosted by the Sociology Graduate Student Association for all Sociology graduate students, faculty and staff, it was a splendid beginning for the new semester!

#### B. Graduate Program

The graduate program in Sociology continued to make progress this past year with a record number of 70 applicants and 23 new admissions. Our chief specializations include criminology, comparative sociology, sociology of Latin America, political sociology, organizations and work, and gender.

The department awarded Ph.D.'s to the following students:

Tessie Naranjo completed her dissertation for the Ph.D. and will be continuing her work on the Jemez Reservation. She is the second Native American to receive the Ph.D. from Sociology at UNM.

Karen Bracken completed her dissertation for the Ph.D. and is teaching at Tulane University.

Jeremy Brown will have completed all requirements for the Ph.D. by summer 1992.

The Master's Degree was awarded to Paul Guerin, Cheryl Temple, Paul Stein, Heidi Ballard, and Patricia Kanavy.

The department continues to emphasize its obligations to both quality enhancement and quantity production in hiring experienced graduate teaching assistants who have completed the Master's Degree. The department will award a total of 13 graduate assistantship positions for Fall 1992.

#### C. Appointments, Resignations

Emily Griffith joined the Department at the beginning of this year as a Staff Assistant. Emily's duties include clerical support for the graduate program, undergraduate advisement, development of departmental data bases, and general assistance to the Chair.

Dr. Keiko Nakao was hired as a full-time Associate Professor beginning fall 1992. She is from the University of Southern California, Los Angeles, and her hiring filled the line vacated by Professor Peter Evans. Professor Nakao will be teaching primarily in the areas of methods and statistics.

Dr. Beverly Burris accepted the position of Associate Chair in Sociology for fall 1991 and spring and summer 1992. The faculty nominated her as Acting Chair for next academic year. She will begin service in August 1992.

Dr. Robert Fiala accepted the position of Associate Chair in Sociology for Fall 1992.

Dr. Susan Tiano will be the Acting Director of the UNM Women Studies Program during the 1992-93 academic year.

Dr. Chris Birkbeck accepted the position of Director of the Institute for Social Research for the next academic year.

The Department regrets the resignation of Professor Birkbeck. He will be with Sociology for one final year before he and his family move permanently back to Venezuela.

#### D. Leaves of Absence, Sabbaticals

Dr. Philip A. May, Director of CASAA (Center for Alcohol, Substance Abuse, and Addiction) on south campus will begin his third year of leave from the Department. The Sociology MARC training grant continues under Professor May's directorship.

Professor Nelson Valdes was granted a sabbatical in spring 1992 to focus on the completion of a monograph on Cuban popular culture and the revolution to

work on his research and lectures on New Mexico in order to prepare a manuscript that will serve as a text on The Sociology of New Mexico, and to work with the Center for Regional Studies at UNM in the development, expansion, and future funding of a text, statistical, and bibliographic data base on New Mexico.

Professor H. Laurence Ross was on leave of absence from August 1, 1991 to May 30, 1992 in Washington, D.C. to work on his funded research on drinking and driving which included a study of driver referrals of police requests for breath tests and roadside sobriety checkpoints in the eastern United States and Hawaii. Professor Ross completed his book Drunk Driving while on leave.

Professor Robert Fiala was granted a sabbatical for Spring 1992 semester to complete a special issue of Sociological Perspectives on studies of the modern world system; to complete current research on the effects of higher education on the expansion of professional employment; to complete a revision of a paper reporting research on the reciprocal effects of employment and fertility among women in Mexicali, Mexico; and to complete a study of child homicide in the United States. He proposed using a portion of his leave to work on a book regarding the dynamics of labor force structure in the contemporary international system.

#### E. Promotions

Associate Professor Nelson Valdes was promoted to full professor.



## F. Distinguished Department Visitors

In October 1991 Professor Luis Gerardo Gabaldon joined the Department for an eight month period as Visiting Fulbright Professor. Dr. Gabaldon is Professor of Criminal Law at the Universidad de Los Andes, Venezuela. After graduating in Law from the Universidad de Los Andes in 1970, he completed the Graduate Program in Criminal Law and Criminology at the University of Rome in 1973. He also spent a year doing graduate work at the University of Cambridge in 1981-1982. His research focuses on the sociology of law in Venezuela, with a recent emphasis on the police. He has published more than thirty articles and six books, including "The Social Perception of Criminal Law" (1978), "Criminology and Social Control" (1987) and "Police in the Neighborhood" (1990). In 1989, the International Division of the American Society of Criminology designated him Distinguished Professor for the Annual Meetings at Reno, Nevada.

## G. Other Lectures and Presentations

Professor Tomas Atencio, Lecturer III, presented a paper on "Crypto-Judaism: Towards Understanding the Manitos of New Mexico" at the University of Arizona at the conference of The Inquisition and Hidden Jews of the Southwest, Bloom Archives of Jewish History.

Dr. Atencio was speaker for the Taos Public Lecture series on "Tourism and Culture in Taos, New Mexico" sponsored by New Mexico Endowment in August 1991.

Dr. Atencio was keynote speaker at the Presbyterian Latino Conference in San Antonio, Texas in October of 1991.

Professor Chris Birkbeck presented a paper, "Violence as a Situational Tactic: Parental Use of Corporal Punishment in Venezuela" at the annual meetings of the Society for the Study of Criminology in San Francisco, CA, November 21-23, 1991.

Dr. Birkbeck was presider and organizer at a session on "Theory in Criminology" at the Annual Meeting of the Pacific Sociological Association, Irvine. Paper presented on "Studying Crime without Studying Criminals: A Critique of Routine Activity and Lifestyle Theories of Victimization" (with Gary LaFree).

Dr. Birkbeck presented a paper "The Structure of Social Problems: The Image of Corruption in Contemporary Venezuela" at a Conference on "The Image of Crime" at Colorado Springs.

Professor Richard Coughlin was organizer and section moderator, Summer Workshop on Socio-Economics, Snowmass Village, CO, July 31-August 4, 1991. Dr. Coughlin presented a paper at the Western Political Science Association meetings in San Francisco, CA, March 18-21, 1992.

Dr. Coughlin was session organizer, discussant and Executive Council attendant at the Fourth Annual International meeting of the Society for the Advancement of Socio-Economics, Irvine, CA, March 27-29, 1992.

Professor Robert Fiala attended and presented a paper entitled "Higher Education and the Expansion of Professional Employment: A Study of the Institutional Effects of Education" at the American Sociological Association annual meetings at Cincinnati, Ohio, in August, 1991.

Dr. Fiala reviewed his own current research and also presented a paper on the Institutional Effects of Education at UC Santa Barbara, May 28, 1992.

Professor Edward Gilliland presented a research paper at Pacific Sociological Association meetings at Oakland, CA, April 9-12, 1992.

Professor Phillip Gonzales delivered a report on current research to members of the 63rd Annual Meeting of Pacific Sociological Association, Oakland, CA, April 9-12, 1992.

Professor Jane Hood lectured to the Philosophy Department Colloquium "The Individualist Fallacy" on October 11, 1991.

Dr. Hood was an invited lecturer to the Department of Psychology November 22, 1991, and to an all-campus group January 6, 1992.

Professor Korzeniewicz presented a paper "Emerging Forms of Economic Organization in the Postmodern World" at the August 1991 annual meeting of the American Sociological Association in Cincinnati, Ohio.

Dr. Korzeniewicz presented a paper "The Political Economy of Exports and Economic Organization in Argentina and Brazil" at the July 1991 47th Annual Americanists Meeting in New Orleans, LA.

Dr. Korzeniewicz presented a paper entitled "Argentine Inputs, Mexican Manufacturing, and Brazilian Marketing: The Global Footwear Industry in the Context of the U.S.-Mexico FTA" at a special roundtable on U.S.-Mexico trade organized by the Anderson School of Management.

Dr. Korzeniewicz was the co-organizer of the XVI Annual Conference of the Political Economy of the World System Section of the American Sociological Association, entitled "Commodity Chains and Global Capitalism." Duke University, Durham, NC, April 15-17, 1992.

Dr. Korzeniewicz gave a presentation in the session "Future Partnerships: The Southern Hemisphere" of the conference entitled "The Americas: New Business, Political and Social Alliances" organized by the University of New Mexico and The Anderson School of Management, Albuquerque, NM, April 30-May 1, 1992.

Dr. Korzeniewicz was a participant in the annual "Seminar on Economic Culture," organized by Boston University's Institute for the Study of Economic Culture, Boston, MA, June 22-July 10, 1992.

Professor LaFree presented a paper "Race and Crime in Postwar America:

Determinants of African-American and White Rates, 1958-1988" (with Kriss Drass and Patrick O'Day) at the American Sociological Association meeting, Cincinnati, Ohio, August, 1991.

Dr. Gary LaFree presented a paper titled "Race and Crime in Postwar America" at the annual meeting of the American Association for the Advancement of Science in Chicago, IL, February 7-10, 1992.

Professor Philip May made presentations to the following:

The Crow Tribe in Montana, June 1991.

The Flathead Tribe in Montana, June 1991.

The Great Falls Urban Indian Center in Montana, June 1991.

Indian Health Service, Rapid City South Dakota, June 1991.

Oglala Sioux Reservation, South Dakota, June 1991.

Phoenix, AZ Indian Health Service, July 1991.

Wind River Wyoming, August 1991.

Del Norte High School Assemblies, October 1991.

Professor Patrick McNamara presented "Building a Course to Promote Critical Thinking" at a Workshop on Teaching Sociology meeting of the Society for the Scientific Study of Religion at Pittsburgh, PA, November 8-9, 1991. At the same meeting, convener of session "Religion among the Young: from Adolescence through early Adulthood."

Dr. McNamara delivered a paper at a meeting of the Family and Religion Conference, Provo, Utah, March 11-12, 1992.

Professor H. Laurence Ross addressed an Australian winery owners' group and interviewed Australian police and safety authorities regarding his drinking and driving research.

Dr. Ross traveled to Los Angeles, Irvine, Santa Barbara, West Sacramento, and Redding, CA; Honolulu; Charleston, SC; Wilmington, DE; Chester, Schuylkill and Cumberland Counties, PA; New York City, Charlottesville, VA, and other sites in connection with his Department of Transportation grant to evaluate police sobriety checkpoints.

Dr. Ross attended a Life-Savers Convention in Denver and presented a paper on police sobriety checkpoints, April 10-15, 1992. He also attended the meeting of the International Association of Chiefs of Police, October 1991.

Dr. Ross lectured to the American Wine Alliance for a Research and Education meeting in New York and attended a meeting of their Medical Scientific Advisory Board in San Francisco. He lectured on his research at the University of Oklahoma and at the Presentation Center in Boulder, CO.

Professor Paul Steele presented "From Good Ideas to Implementation: The Process of Translating New Approaches to Child Abuse into Widespread Practice" at the Ninth National Conference on Child Abuse and Neglect annual meeting of the American Association for Protecting Children, a division of the American Humane Association, Denver, September 17, 1991.

Dr. Steele presented a paper "Factors in the Development and Implementation of Children's Advocacy Centers: Results of a National Survey" at the First Annual Conference on Child Abuse, Amarillo, TX, October 18, 1991.

Dr. Steele presented a paper "Foundation and Development of ALMACA/EAPA: Twenty Years Later" at the Twentieth annual meeting of the Employee Assistance Professionals Association, St. Louis, November 9, 1991.

Professor Susan Tiano presented a paper "Wages, Benefits, and Employment Alternatives for Women: The 'maquila-grade' Labor Shortage in Northern Mexico," at the 47th International Congress of Americanists, New Orleans, LA, July 1991.

Dr. Tiano presented a paper entitled "Satisfaction, Commitment and Pride: Job-Related Attitudes of Women Maquila Workers," at Middlebury College's Fourteenth Annual Conference on Economic Issues, Middlebury, Vermont, April 1992.

#### Sociology Colloquia

Professor Dodd Bogart hosted a most successful Colloquia Series during the academic year. The meetings were held in the Sociology Commons and presented the following speakers:

Professor Paul Steele launched the Fall 1992 series on October 25 with his presentation "From Good Ideas to Implementation: Reflections on the Process of Change."

Friday, November 22, 1991, marked the November colloquium. Visiting Professor Gene Levine's topic was "Selected Features of Border Studies." Professor Levine is recently retired from UCLA and taught a section of Rich and Poor Nations for the Department this spring term.

The December colloquium was December 12, 1991, from 3:30 to 5:00. Professor Neil Smelser spoke on "Rational Choice Models: A Theoretical Assessment." He is a Professor in Sociology at University of California, Berkeley, and a prominent sociologist in the areas of specialization of Theory, Economics, Education, Collective Behavior/Social Movements, and Social Change.

Professor Jane Hood initiated and hosted a visit by Richard Flacks on January 31, 1992, as part of our colloquia series.

On February 3, 1992, 3:30-5:00 p.m., Professor Keiko Nakao of the University of Southern California, Los Angeles, spoke on "Occupational Prestige in the United States Revisited: Twenty-five Years of Stability and Change."

Professor Mark Chaves of Loyola University, Chicago, spoke on "The Declining Significance of Religion: Internal Secularization and Intraorganizational Power Within Protestant Denomination" to Sociology faculty, graduate students and guests on February 11, 1992.

Dr. Alan Lewis of the University of Bath, UK, spoke on "Rhetoric, Non-verbal Behavior, and Applause: Some Social Psychological Aspects of Political Party



Conferences in the United Kingdom" on March 24, 1992, noon. His visit was co-sponsored by the U.N.M. Board of European Studies and the College of Arts and Sciences.

Professor Fernando Parra of California State Polytechnic, Pomona, California, spoke on "Gang Studies" (or "Locating the Old Gang 20 Years later") on March 25, 1992, noon.

Professor Horst Helle of Ludwig-Maximilian University (Munich) spoke on "The European Family Between Culture and Economy" on Tuesday, April 7, 1992, during a brown bag luncheon.

Professor Wayne Plasek, Sociology Department, California State, Northridge, spoke on Wednesday, April 15, 1992, at the Speakers Series during a brown bag lunch. His topic was "Rich and Poor Nations."

Speakers hosted by the Institute of Criminal Justice:

Gary T. Carson, Special Investigator for organized crime and Ray Dennison, Deputy Chief of criminal investigations spoke at the Criminal Justice Institute's October 2, 1991, meeting at 7:00 p.m. in Social Science 1111.

Professor Gary LaFree spoke on "Race and Crime in Postwar America" at the Criminology Research in Progress Seminar on March 27, 1992, at 4:00 p.m. at the Institute for Criminal Justice in Onate Hall.

Professor Luis Gerardo Gabaldon, Visiting Fulbright Scholar, spoke on "Observations on Police Detective Work in Albuquerque" on Friday, April 10, 1992, at 3:00 p.m., Institute for Criminal Justice Studies, Onate Hall.

Professor Robert Fiala spoke on "Child Homicide in the United States" on Friday, April 24, 1992, at 3:00 p.m., Institute for Criminal Justice Studies, Onate Hall.

#### H. Invited Lectures Outside of the Continental United States

Professor Miguel Korzeniewicz conducted research on "Export Trends in the Footwear Industry" in Buenos Aires, Argentina and Porto Alegre, Brazil, July/August 1991.

Professor Laurence Ross presented the following lectures:

National Institute for Research on Traffic Safety in Paris;  
Belgian Government Committee on Traffic Safety in Brussels;  
New South Wales Road Traffic Authority, Sydney;  
National Roads and Motorists Association, Sydney;  
Rutherglenn Vintners, Australia.

#### I. Funded Research

Professor Chris Birkbeck: Co-Principal Investigator, "Establishment of New Mexico Offender Based Transaction Statistics" (Grant No. 890BJ-CX-K026, Bureau of Justice Statistics, 8/1/89-6/30/92, \$79,830).

Professor Birkbeck (and Professor LaFree): Associate Director, New Mexico Statistical Analysis Center, (Grant No. 91-BJ-CX-K022, Bureau of Justice Statistics, 8/1/91-7/31/92). Research projects: 1. "Family Composition and Juvenile Delinquency in Valencia County"; "A Comparative Analysis of Newspaper Coverage of DWI in Arizona and New Mexico, 1979-1985." \$50,000.

Professor Hood: "Growing Up Red: The Political Experiences of Children in Leftist Families (1945-65), proposal submitted and accepted to the American Council of Learned Societies (November 1, 1991) \$3,000, and a proposal submitted and accepted to UNM RAC, \$2330.

Professor Gary LaFree: "Community Attitudes Toward Police, (with Professor Christopher Birkbeck). City of Albuquerque (1991-92) \$12,000.

"Criminal Justice Statistics Analysis Center" Bureau of Justice Statistics, Department of Justice (1990-91) \$100,000.

Professor Philip May: "A Research Career Program for New Mexico Minorities" (ADAMHA-MARC), U.S. Department of Health and Human Services, National Institute of Mental Health, July 1, 1991-June 30, 1992. Grant SRCM(M) 1-T34-MH19101-03. (3rd yr. award). \$112,703.

Fetal Alcohol Syndrome Training and Technical Assistance" U.S. Public Health Service, Health Resources and Services Administration, Indian Health Service, HRSA #90IF472 605 OLD. PI is Jon M. Aase, M.D. September 30, 1990-September 29, 1991. \$24,960.

"Supplemental Grant for Non-minority Students, New Mexico Access to Research Careers" UNM, Office of Associate Provost for Research. University Account #3-63619. July 1, 1991-June 30, 1992. \$22,000.

Alcohol Use/Abuse Among Indian Boarding School Students"; subcontracted grant money from the University of Colorado Health Services Center and the National Institute on Alcohol Abuse and Alcoholism (NIAAA). University account number pending. First year award: \$43,000. October 1991-September 1995. \$226,000.

"Assessing the Feasibility of a major Epidemiologic Study on FAS/FAE Among American Indians of the Southwestern U.S." U.S. Centers for Disease Control (CDC): Contract #9185817. October 1, 1991-September 30, 1992. \$24,952.

"The Epidemiology of Navajo Motor Vehicle Fatalities" State of New Mexico, Traffic Safety Bureau: Contract #02-AL-92-11-11-02. October 1, 1991-September 30, 1992. \$14,573.

"Model Suicide Prevention Center Evaluation" Indian Health Service, Jicarilla Apache Tribe. June 1991-March 1992. \$1050.

Professor Patrick McNamara: awarded a salary grant and is PI of an E. Y. Lilly Foundation Study of Church Giving January 1, 1993-July 1, 1993.

Professor Gilbert Merks: Director, "El Camino Real: Un Sendero Historico," funded by the National Endowment for the Humanities: Project Duration, October 1989-January 1992. \$161,038.

Professor H. Laurence Ross: Grant from NHTSA, USDOT, Roadside Sobriety Checkpoint: 08/15/91-05/14/92. \$83,831.00.

Grant from Alcoholic Beverage Medical Research Foundation, Causes, Consequences of Breath Test: Refusals Under Implied Consent Legislature: 01/01/92-12/31/92. \$39,000.00.

Grant from Century Council-ABMRF, The Evolution of Scandinavian Drunk-Driving Policy: 04/01/91-04/30/91. \$28,598.00.

Professor Paul Steele: New Mexico Youth Authority, "Development of Safehouse Services for Abused Children in Rural Communities" Subcontract for technical assistance: October 1991-October 1992. \$14,560.

New Mexico Youth Authority, "Youth in Detention: A Comprehensive Drug and Alcohol Treatment Program," prepared with the New Mexico Youth Diagnostic and Development Center, with YRAC Subcontract for Program Evaluation: January 1991-June, 1992. \$35,000.

Office of Human Development Services, "Multi-agency Case Management Project for Enhancing Family Permanency for Families with Drug Exposed Infants," prepared with the Department of Pediatrics, University of New Mexico School of Medicine, with YRAC Subcontract for Social Research and Program Evaluation, continuation contract: October 1991-October 1992 \$51,630.

Albuquerque Indian Health Center, "Mental Health Needs Assessment for Urban Indians": September 1991-September 1992. \$26,000.

## K. Joint Appointments

David L. Bachelor (Professor, Ph.D., University of Chicago) Education.

Peter B. Evans (Professor, Ph.D., Harvard University) Comparative, Latin America.

## L. Other

In the spirit of progress and continued efficiency, the Department purchased a FAX machine and a new Gestetner copy machine. To enable graduate students to continue their work on theses and dissertations, the Department is gradually acquiring personal computers for the department computer lab as funds become available.

# COLLEGE OF EDUCATION

## ANNUAL REPORT

1991-1992

Peggy J. Blackwell  
Interim Dean

The past year was tumultuous and difficult for the College of Education. The year began with a failed search for a dean for the second time, when both candidates offered the position declined to accept. At a meeting with the Faculty Policy Committee and department chairs, the Provost asked why the College had been unable to secure a new dean; one faculty member suggested that the past dean candidates be interviewed to ascertain their perceptions of the College and proposed that a review be conducted of the College. A few days before July 1, 1991, the Provost asked then Associate Dean Blackwell to fill the position for three months while the University Administration considered other options.

About three weeks later, the Provost unveiled the University's *Reallocation Plan* to the deans. The draft the deans received called for reallocation of funds to the largest colleges in the University, which were deemed to be receiving less funding than they earned. However, the College of Education, the second largest college in the University, was not included in the group targeted to receive new funds. Instead, it was singled out, with University College, for a thorough review by a team of experts. The deadline for completion of the review was set for December 1, 1991.

In the same time period, the Provost asked the Interim Dean to discuss with the chairs and obtain their reactions to an offer from the Sandia National Laboratories that one of their staff be loaned to the College to serve as dean for two years. The chairs discussed this possibility at length, but ultimately decided that, despite the generous and attractive offer by Sandia, the College should have one of its own in the interim position. The Provost then asked Professor Blackwell to continue for the year.

The College spent the majority of the academic year responding to the *Reallocation Plan* and planning for its future. In the midst of these activities, the business of the College progressed in somewhat routine fashion. This first part of this Report summarizes the normal business of the College, with the remainder of the Report devoted to Reallocation and Planning.

## STUDENTS

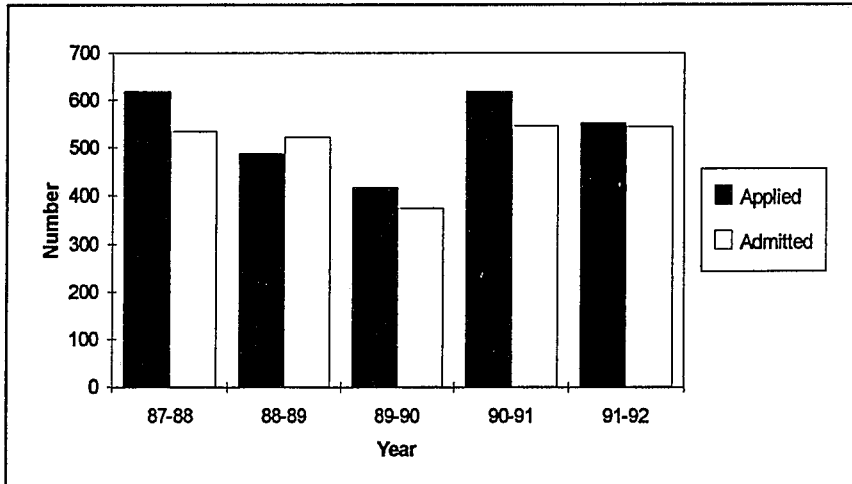
### Undergraduate Students

Significant changes in undergraduate student enrollment in the College included:

- ☐ A 7% increase in minority undergraduate students admitted
- ☐ A 10% increase in Hispanic students who passed the Pre-Professional Skills Test
- ☐ An 8% increase in enrollment in 300 and 400 level courses
- ☐ A 21% increase in number of undergraduate degrees awarded.

Of the 552 undergraduate students who applied to the College in 1991-1992, 544 were admitted. This number was just two students below the five-year high of 546 admitted in 1990-1991, as shown in Figure 1.

Figure 1. Undergraduate Admissions and Applications to the College of Education



Of the students who were admitted to the College, 70% were in elementary (47%) and secondary (23%) education licensure programs. In secondary education, the largest number of students enrolled in mathematics (35) and in English/Language Arts (35), with the smallest number (12) in Teaching English to Speakers of Other Languages. HPPELP accounted for 12% of the undergraduates, while Special Education enrolled 7% of the new undergraduates. In non-licensure programs, the highest number of admissions was in Child Development and Family Relations (20) and Exercise Physiology (15).

As shown in Figure 2, the number of students classified as Hispanic and Native American rose in 1991-1992. Hispanic enrollment increased by 22%, while Native American enrollment increased by 5%. No Native American students were denied admission, and two Hispanic students (2%) were denied admission. In comparison, 6% of the students classified as "Other" were denied admission. Of the applicants to the College programs, 76% were female, and the average age was 27. Of those who applied, 28% had received a degree previously.

Of the students who applied for admission, 21% were in Arts and Sciences at the time of their application; 32% were in University College. Non-degree students accounted for 21% of the applications and 21% of the students had received provisional admittance to the College.



The GPA for College applicants has shown a steady increase in the past ten years, as shown in Figure 3. The average GPA in 1982-1983 was 2.72. In 1991-1992, the average GPA was 3.04.

Figure 2. College of Education Admissions by Ethnicity

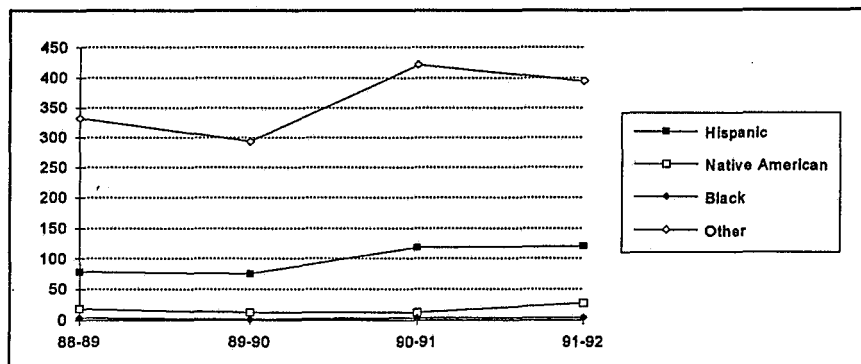
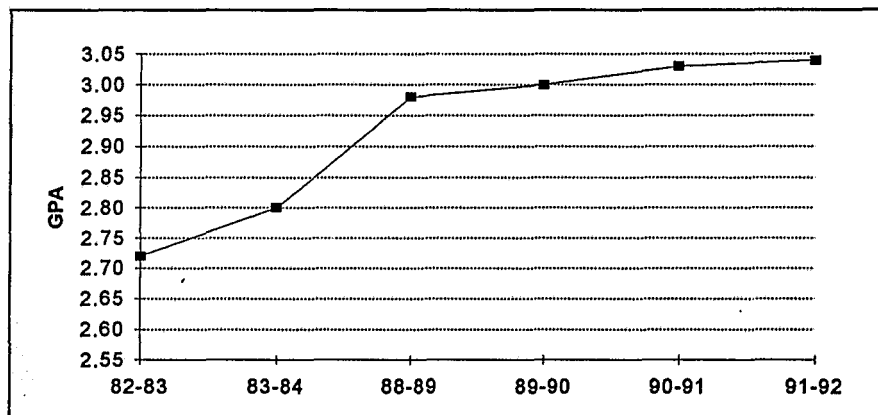


Figure 3. GPA at Time of Application, Over Ten Years



The number of undergraduate/non-degree students enrolling in upper division courses continued to increase, from 2,457 in 1989-90 to 2,693 (+10%) in 1991-1992. There were 7,480 total enrollments in these courses. The percentage of students enrolled in an Arts and Sciences program taking education courses also increased from 13% in 1989-90 to 16% in 1991-1992. Similarly, the percentage of students enrolled for a major in education declined in the same time period, from 35% to 32%. This reflects the state and national trend for students to take a major (primarily for secondary education students) in their content area in Arts and Sciences. The College continues to have high enrollments from students classified

by the University as "Non-Degree," with 19% of students taking courses in the College in that category. Again, this most likely reflects the national trend for professional educators to seek out continuing professional development that is not a traditional degree program.

### Graduate Students

The College enrolled 1,961 graduate students in 1991-1992, with 1,363 of them in a master's degree program. Because of the artifice of the Office of Graduate Studies data collection, 326 students are classified "intermediate" because they have not yet been admitted to doctoral candidacy. The College had 108 students who were admitted to doctoral candidacy, for a total of 434 doctoral students. There were 127 students enrolled in the Education Specialist program.

Approximately one-third of the graduate students were enrolled in a secondary or elementary education program; 15% were enrolled in Special Education, 17% in the HPPELP programs, 11% in Counseling and Family Studies and 10% in Educational Administration.

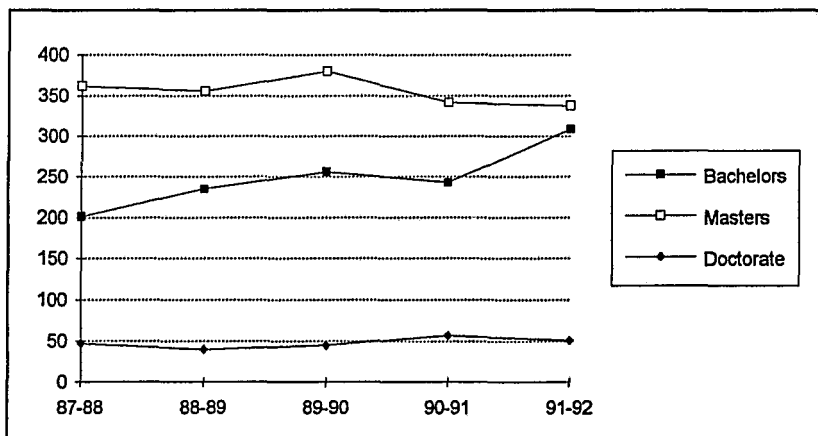
Enrollment in graduate courses increased by 7% in 1991-1992.

### Program Completions

Undergraduate degrees were awarded to 309 students in the College, with 230 of those in a teaching field. The single largest number was in Elementary Education.

The total number of graduates from the College increased 8% from 1990-1991, but the number of bachelors degrees received from a licensure program increased 48% in five years and the total number of bachelors degrees in all programs increased by 54%. There were 67 persons who completed licensure programs but who did not receive degrees. The College awarded 413 graduate degrees in 1991-1992, with 338 masters, 24 specialists, and 51 doctoral degrees. Degrees awarded over five years are shown in Figure 4.

Figure 4. All Degrees For a Five-Year Period



## DEPARTMENTS AND CENTERS

The annual report for each department and center is attached. Most of the reports reflect the difficulty experienced by programs with various aspects of strategic planning and reallocation. They also reflect the hard work and accomplishments of each department and of the faculty of the College. Two departments had successful graduate reviews, **Special Education and Training and Learning Technologies**. The **Counselor Education** program received a favorable report from the CACREP accreditation team. The **Athletic Training** program was accredited by the National Association for Athletic Trainers. The **CIMTE** department recommended a program for returning Peace Corps volunteers, to be a field-based program on Native American reservations. In **Art Education**, Professor Jim Srubek's Japanese teacher, Sensei Manji Inoue of Arita, Japan, was on campus for three weeks as a visiting artist in porcelain. Sensei Inoue is a "living cultural treasure" of Japan, an official designation of the Japanese government. The state legislature approved an upper division teacher education program in Gallup. The **Educational Administration** department approved a re-configured Master's degree program around the University Council for Educational Administration "knowledge domains." The department also began planning an experimental Doctor of Education degree program. A program for Israeli physical education students was approved and implemented during the summer, 1992. The **Academy for School Leaders** continued through the Bureau of Educational Planning and Development. **BOEPAD** also facilitated the Carnegie-funded middle school project and assisted Sandia Laboratories in evaluating its "Education Outreach" programs. Under the direction of the Governor's Office, **BOEPAD** provided leadership and support for the state's effort to win funding for a statewide mathematics and science education systemic change grant from the National Science Foundation. The proposal emphasized school-based staff development to be led by teams of teachers. An NSF site visit in February was followed in May with an announcement that New Mexico, with UNM as the host institution, was one of eleven states to be selected for an award, from 35 applications. In addition to the \$10,000,000 award, the state legislature committed funding for the project to begin in October, 1992. The **Family Studies** doctoral program was implemented in the fall, 1991. The **Multicultural Education Center** developed a resource library of substance abuse prevention materials and workshops. The **Multicultural and Equity Resources Center** circulated 1,095 print materials and 229 films within the University and an additional 478 books and 75 films to school districts and other organizations in the state. The **Multicultural Education Center** co-sponsored a colloquium series with Arts and Sciences that featured Bernard Spolsky of Bar Ilan University, Tel Aviv, Israel. The **Latin American Programs in Education** co-sponsored the USIA Seminar on Contemporary Southwestern Culture with the Latin American Institute and sponsored the third annual Inter-American Symposium on Ethnography and the Classroom.

## FACULTY AND STAFF HIGHLIGHTS

**Ruth A. Luckasson** was selected for the 1991-1992 Burlington Resources Faculty Achievement Award.

**Joseph Suina** was invited to visit Spain to attend a meeting of Native American leaders and scholars with Spanish leaders and scholars on the 500th anniversary of the voyage of Columbus to the Americas.

**Deborah Smith**, with Ignacio Cordova, was named as Principal Investigator for *Alliance 2000*, a major grant from the U.S. Department of Education to work with faculty from minority institutions on critical issues in Special Education.

**Ruth A. Luckasson** received the Service Award from the American Association on Mental Retardation.

**Eli Duryea** was selected by the Association for the Advancement of Health Education to coordinate the BEST Foundation for a Drug-Free Tomorrow's prevention training program.

The Rio Grande Writing Project, directed by **Don Zancanella**, was honored for its outstanding contributions to literacy in the middle Rio Grande area.

**Joe Gonzales** received the University's Student Service Award.

**Vonda Long** was elected state president for the New Mexico Association for Counselor Education and Supervision.

**Ginger Blalock** served as president for the Council for Learning Disabilities.

**Virginia Cavalluzzo** served as president for the New Mexico Council for Exceptional Children.

**Deborah Smith** served as president for the Higher Education Consortium for Special Education.

**Candace Schau** and **Vera John-Steiner** were honored as Faculty Scholars for 1991-1992.

**Samuel Hicken** received the Robert M. Gagne Award for Graduate Study Research in Instructional Development.

**Leroy Ortiz**, **Laura Smolkin**, **Lynette Oshima**, and **Joseph Suina** participated in an 18-month project to internationalize teacher education curricula. Their work included a 16-day seminar in Japan.

The College of Education had 110 FTE faculty during 1991-1992, with 17 vacant faculty positions by May, 1992. The faculty offered 531 sections of courses during the regular academic year, as well as 47 sections of courses taught by teaching assistants and 176 by part-time faculty. Thus, about 70% of College courses were taught by regular, full-time faculty. The average teaching load for faculty teaching both undergraduate and graduate courses was nine hours, or three courses per semester. Faculty milestones are given in Section A.

## COLLEGE HIGHLIGHTS

- ◆ **Student Credit Hour Production** continued to increase, especially at the upper division and graduate levels. Total data for credit hour production, faculty load, and productivity measures are shown in table form in Section B.
- ◆ **Contracts and grants** to the College totalled more than \$9,000,000 during the 1991-1992 year, an increase of 71%.
- ◆ **Two Professional Development Schools**, Emerson and Chaparral, participated in the 1990 Rockefeller Academy.
- ◆ The Popejoy Award for Outstanding Dissertation was won by **Charlotte Abbink**, a graduate of Educational Foundations.
- ◆ Several faculty participated in the **Governor's Summit on Education**, in October, 1991.

The College's state budget was \$7,389,468, with an additional \$10,156,272 from grants and foundation support. Other funds from institutional sources (not I&G) totalled \$983,370, for a total budget of \$18,529,110. Travel budgeted from state funds for faculty professional development and presentations was \$302.12 per faculty member. A total of \$848.62 per FTE was budgeted for supplies, xerox, and telephone expenses.

## PLANNING AND CHANGE

Colleges of Education have the opportunity to respond to challenges facing American education in the 1990s and beyond. In recent years, education has expanded beyond the boundaries of the school to encompass other influences that affect children, youth, and adults throughout a lifetime of learning. The American Association of Higher Education delineates the issues facing American education: "how to prepare disadvantaged and at-risk youth for higher education; how to challenge and foster the most precocious and talented of our youth; how to keep teachers intellectually invigorated and enthusiastic about teaching; how to best train new teachers for the profession; and how to effectively manage resources for education ... [are] fundamental questions [that] bridge the mysterious chasm that separates K-12 from higher education."

The College of Education at the University of New Mexico has spent the past year in planning for its future. It is our intent that the College will assume a leading role in the efforts to create a paradigm for learning and teaching, which is responsive to a multicultural and diverse population, to profound changes in demographics and society, and to challenges of global change and interdependence. The College of Education at UNM aims to improve the quality of learning and teaching through research and development related to education and through the preparation of career professional educators. The purpose of the College of Education is to advance the quality of education by creating and implementing interdisciplinary and multidisciplinary programs in education that exemplify and are based on efficacious practice and scholarly inquiry regarding effective learning and teaching.

### Reallocation Plan

The University's *Reallocation Plan* called for a "thorough review" of the structure and functions of the College of Education and University College. The impression of the majority of faculty in the College was that the future of the College of Education was in serious jeopardy and that a distinct possibility existed that the College was to be downsized and programs eliminated. The text from the document concerning the College of Education was as follows:

#### REVIEW AND RESTRUCTURING OF ACADEMIC UNITS

##### 1. The College of Education

The College of Education will receive a thorough review during the next year. The College will be reviewed by a team whose membership will be determined by the College and the Provost. The review team will include experts from other institutions which are nationally recognized to have innovative and excellent programs. Any changes in resource allocation to or from this unit will await the results of this review.

**Rationale:** Colleges of education nationwide are engaging in profound self-scrutiny and restructuring to ensure that their structure and functions meet the current and future educational needs of students and teachers. The College of Education at the University of New Mexico will also engage the issues of national debate including, but not limited to, its interface with its various constituencies, the need for its current broad array of services, its

research agenda, the design of teacher education programs and the relative emphasis on graduate and undergraduate programs.

**TIMETABLE:** The review team will visit campus in Fall of this year and comprehensive recommendations from the College will be presented by the Dean to the Provost no later than December, 1991.

Other sections of the documents questioned the need for eight departments and the configuration of Art Education and Counseling Psychology.

### **The Process**

The Faculty Policy Committee, working with the Dean, decided to address the *Reallocation Plan*, which had been issued in draft form. The intent was to provide a serious and considered response to a document that appeared to present significant issues to the faculty of the University as well as to the faculty of the College.

Chaired by Ann Nihlen in the fall and Breda Bova in the spring, the Faculty Policy Committee assumed a leadership role as the voice of the faculty. The FPC joined the College's Administrative Council to form a Planning Team. Two faculty joined the dean's office as assistant deans. Richard van Dongen, professor of CIMTE, coordinated the Professional Development Schools and Holmes Group activities and worked on issues related to teacher preparation. James DePaepe, associate professor of HPPELP, assumed responsibility for research and sponsored activities. The Planning Team met several times during the fall to discuss issues and strategy, first related to the College's response to the *Reallocation Plan* and then to plan for future directions of the College. The members spent their first meeting discussing tactics and expressing their hostility toward the central administration. For example, someone said, "We believe the administration is unresponsive to the College; this is an exercise in futility. Our faculty believe the decision has been made." By mid-September, the group had agreed that members had to work together to devise a strategy to get the Provost and others to listen and to get it across to the faculty that the process was important. On September 18 standing committees were asked to report to the FPC in the response to the draft document. The FPC requested that standing committees stop regular committee work to focus on reallocation. The chair of FPC met with committee chairs to discuss each committee's work schedule. Chairs and departments were also asked to make responses to the *Plan*.

Two FPC committee members synthesized the various reports into the response from the Planning Team, and the chair of the FPC added additional commentary. The majority of comments from committees, chairs, and faculty were included in the College's response. The Provost reacted favorably to the response, saying he enjoyed it. However, little of the College response was incorporated into the final document, nor was the College response acknowledged in the final document.

The University imposed a freeze on faculty hiring, which the College honored. The decision was made by the dean to implement a moratorium on new course proposals for the 1991-1992 academic year, particularly in view of the questions raised by the *Reallocation Plan* about duplication and overlap in College courses. The Counseling Psychology faculty voted to impose a moratorium on new admissions to their program, again partly in response to issues raised in the *Reallocation Plan*, and partly because of the lack of full-time permanent faculty.

In September, 1991, the dean met with Virginia Trujillo, president of the State School Board and director of the Academy for Education Leadership, to talk about finding sponsors to bring Willard Daggett to Albuquerque. The discussion included the challenges faced by the College. Ms. Trujillo suggested that Michael Fullan, dean of the College of Education at the University of Toronto, speak with the Planning Team about change, his area of expertise. In a briefing to the Provost on the College's actions to respond to the *Reallocation Plan*, the dean informed the Provost of the planned visit of Daggett and the impending

visit by Fullan. The Provost indicated that these individuals were of the caliber he had intended for a review team. The dean then proposed shifting the emphasis from a review of the past of the College to planning for the future. The Provost agreed to consider a request from the College to have the timeline extended until the Spring, with a focus on strategic planning. This new timeline was approved, based on a planning strategy proposed by the dean, in consultation with Planning Team. The Plan consisted of the following steps.

Phase One:

- I. Establishing a broad view of the future of colleges of education through a series of speakers to examine trends, issues, and possibilities for colleges of the future. The basic question would be: If you were going to devise a College of Education today, with what you know about UNM and New Mexico, how would you do it? These talks were synthesized in February and ideas/data/examples used as a base for planning. A list of speakers is given in Section C.
- II. Environmental Scan to include an analysis of the results and implications for program development/restructuring. A summary of the results of the Scan is given in Section D.
- III. Self-study by task forces, faculty, and committees to address the issues posed in the *Reallocation Plan* and gather data from accreditation visits and reports from the four task forces.
- IV. Information from the literature about what colleges of education must consider while undergoing change or during strategic planning.

Phase Two:

- I. A Preliminary Plan or a blueprint to be drafted by a team of faculty, using a facilitator.
- II. Review Team to be recommended by the dean to the Provost. This group was to review the plan, suggest revisions, and assess the general feasibility for implementation.
- III. Final Plan to incorporate results of the review team visit.

The Faculty Policy Committee, in November, recommended that the same process be used for the blueprint as was used for the response to the Reallocation document, where committees would recommend ideas to the FPC, "town meetings" with straw votes would be held, departments would discuss issues and make recommendations to chairs, who would write their recommendations. Under the FPC scenario, the dean then would make the final revisions to submit to the Provost.

The Planning Team agreed to employ an outside consulting firm to conduct an environmental scan and to interview members of focus groups from the community, corporate sector, state and local government, and educational leaders. The firm also sent questionnaires to all current students in the College, to all graduates of the College within the past ten years, to a sample of principals and teachers in the state, to a sample of staff in the State Department of Education, to all members of schools boards in the state, and to all superintendents in the state. A summary of results of the Scan is given in Section D.

The dean appointed four task forces to work on issues of significance to the future of the College. One was on Admissions and Advisement, chaired by Richard Pesqueira, a visiting professor from the College Board. (Complete membership of Task Forces is given in Section E.) A second was on cross-department teacher preparation programs, chaired by Richard van Dongen. A third task force was devoted to meeting the needs of year-round schools and was chaired by Keith Auger. A fourth task force, chaired by Pauline Turner, was centered on issues of non-licensure programs.

## Issues

The information obtained in Phase One, which included the Environmental Scan, the Speakers' Series, self-study, task force reports, and the literature, was synthesized into the critical issues to be considered in the development of a strategic plan for the College.

### 1. Changing Demographics

There is an increasing poverty among children, increasing diversity of language and culture, increasing changes in family structure, and more emphasis on life-long learning. Two million children are being reared by neither parent. New Mexico ranks third in the nation in teen pregnancy rates and fifth in the nation in the number of children born to unwed mothers. Over 20% of the children in New Mexico under the age of 18 are classified as living in poverty. New Mexico is sixth in the nation in number of persons receiving food stamps, 46th in the nation in per capita income, and 4th in the nation in number of children under the age of 18. Over 25% of fourth grade students in New Mexico have tried alcohol one or more times. The corporate sector invests huge sums in retraining. Education programs must incorporate these issues into the curriculum. Colleges of education must improve their understanding of learning and teaching in order to be able to address the problems society is confronting in education. A focus on the learner and learner outcomes means that faculty of the College should seek to respond to different learning styles for different racial, ethnic, and age groups; to different demographic groups; and to individual differences. Colleges of education must address the issues of comprehensive services, such as separate training and delivery systems, pre-school and early childhood, non-school experiences, adult education, and relationships between the teacher and the family.

### 2. School Change

Schools are engaged in systematic restructuring. This involves student experiences, curriculum, the professional life of teachers, governance, and coordination of community resources. Professional associations have called for the complete overhaul of curricula into an integrated system where rigid disciplinary boundaries are eliminated or weakened. They call for effective teaching based on sound learning principles derived from research and from well-tested experience. Curriculum must actively engage students in the learning process and promote understanding and application of knowledge. Students should go beyond passive learning to be challenged to create their own projects, delineate and defend their point of view, read books and materials of substance, and write analytical papers. Expectations of teachers and their roles are changing, requiring more intense career development. Many schools are adopting site-based management and are involving teachers more actively in decision making. Health and welfare services for children and families, programs for youth employment, and mentoring of students for higher education are integrated with the school as a part of restructuring.

Among the reform activities begun at a local level are Re:Learning, in which New Mexico is a charter member state; Comer's School Development Program, on which the UNM College of Education's Rockefeller Leadership Academy is modeled; Project 30, in which UNM is a charter member; The Holmes Group, in which UNM is a charter member. Other activities nationally are the RJR Nabisco Schools; Levin's Accelerated Schools Project; Goodlad's National Network for Educational Reform; and the Renaissance Group.



### 3. Diversity and Multicultural Education

If there is a clarion call in all educational arenas today, it is the necessity to recognize the role of sociocultural variables in learning, while holding high expectations for all students. In New Mexico, as in other states, the majority of educators being prepared do not reflect the full range of possible role models. Anne Lewis, writing in *Phi Delta Kappan*, states that most national (and state) policy is based "on a vision of classrooms that do not exist anymore." She observes that most of what has been proposed is so far removed from the reality of "who is teaching and who is being taught as to be virtually irrelevant." In her view, current recommendations evade the fact that teachers do not know how to deal with the diversity they even now confront in their classrooms. Yet, tomorrow's teachers and tomorrow's students are projected to be even more different from one another than they are now. Classrooms will include children with a variety of language backgrounds and varied cultural and economic backgrounds. By the year 2010, these culturally diverse students will represent about 75% of New Mexico's school population. These changes will impact educational programs, teacher preparation, and teaching strategies. Serious attempts must be made to recruit, prepare, and retain educators from traditionally underrepresented groups and to train teachers to deal with issues of diversity and multicultural education.

### 4. The Information Age

Ten years ago, the first personal computers were in their infancy. Now, they are commonplace throughout the workplace, throughout government, throughout the world. Yet schools lag behind, and many educators are still debating whether technology in education is just another passing fad. In *Winning the Brain Race*, Denis Doyle states that schools cannot afford *not* to use technology. Educational technology has the potential to change learning dispositions. It offers access to global information. It is a powerful tool to help professionals to solve problems collectively and to deal with logistics in such a vast, sparsely populated geographical area as New Mexico.

### 5. Collaboration and Articulation

Partnership arrangements with school systems are becoming more commonplace in recent years. Many of the collaborative efforts are between colleges of education and schools. New types of partnerships include The Holmes Group and the Coalition of Essential Schools, both of which are aimed at reforming the educational system through changes in teacher education, curriculum development, and school restructuring. Professional Development Schools are a major focus of The Holmes Group. In Albuquerque, the College of Education, the Albuquerque Public Schools and the Albuquerque Teachers' Federation collaborated to create Professional Development Schools. In 1991-1992, the two schools originally selected, Emerson and Chaparral Elementary Schools, expanded to include Van Buren Middle School, Los Lunas Middle School, and A. Montoya Elementary.

Many recent partnerships have been formed at the grassroots level, placing college of education and university faculty into new relationships with their counterparts in the schools. The relationships, according to the American Association for Higher Education, are characterized by collegiality and respect and by an awareness that the partners are acting out of mutual, enlightened self-interest. The partnerships are not one-way, but are a true collaborative where all parties stand to gain from participation. Types of programs include:

- a. Programs and Services for Students. Programs for underrepresented and at-risk students are concerned with early intervention, sometimes extending into the elementary grades. Support mechanisms involve parents and provide enrichment activities. The College of Education provides this type of program through I-Teach, a summer program focusing on students from low income families in Northern New Mexico, who are introduced to the possibility of teaching as a career option.

b. Programs and Services for Educators. These programs are the foundation of educational improvement if the goal is to improve student learning. Programs targeted to the inservice training and development of experienced teachers are essential, given the rapid change occurring in many fields, especially in science and technology. The quality of school students will depend, in large measure, on the continuing education of the current classroom teachers. In New Mexico, no public school teacher is required to return to a university for continuing education. However, districts and teachers have expressed an urgent need for the College of Education to provide planned career development opportunities.

## 6. Curriculum, Research and Assessment

a. Programs to Update Curriculum. Teachers must have a thorough understanding of the content in which they are licensed to teach. There is general acknowledgment, however, that the traditional college courses in the traditional university major are not sufficient preparation for pre-school through twelfth grade classroom teaching. There are several projects designed to develop alternative curriculum models in universities and schools, such as Project 2061 in mathematics, natural science, social sciences, and technology. The academic major is not considered, by itself, an adequate preparation in the subject matter the student will teach, in that it does "not induce in students the kind of penetrating understanding necessary to be effective teachers." (Project 30)

b. Programs for Instructional Research and Evaluation. Educational research and evaluation are critical in areas such as teacher education and career development, curriculum design, student assessment, the process and content of instruction, parenting skills, the special needs of at-risk populations, and the relationship of schools to their communities. A college can pool its talent to create research agendas, set priorities, disseminate results, and improve communication.

c. Assessment. Assessment is not limited to colleges of education or to public schools. It is a national issue, with significant influences from interest groups such as the testing industry, which has much at stake. It is also almost impossible to separate the issue of assessment from that of curriculum. Traditional testing encourages passive responses from students, as they deal with multiple-choice tests and recognition or recall of answers. Testing often determines the curriculum and what and how the teacher will teach. Testing has profound impact, positive or negative, on the future aspirations of students. Testing is also related to the issue of standards, now under debate in the national sector. Assessment must accommodate curriculum changes such as those proposed by Project 2061, which go far beyond the traditional expectations of students. The proposed curriculum requires that students engage in critical thinking, that they initiate tasks, and that they solve problems. The danger is that the focus will be on traditional testing methods to determine "success" of programs and that the worst type of self-fulfilling prophecy will occur: Change will not occur because assessment won't be flexible enough to permit it to occur.

The faculty determined that the College of Education has a critical and key role to play in addressing these issues. What must occur in the preparation of educators to meet the needs of the future has dramatically changed.

## Strategic Planning

In February, two teams of volunteer faculty were asked to participate in the creation of a strategic plan for the College. The first team of 30 faculty met before and after the meeting of the second team. The first team provided input and suggestions for the focus and goals of the College. The second team then went on a retreat, with a facilitator, to develop the focus statement for the College and the goals to be included in the strategic plan. That information was shared with the first team, who reviewed it and provided feedback to the second team. The plan was then revised and shared with all faculty for their input.

The Faculty Policy Committee facilitated three Town Hall Meetings. The first was devoted to comments from faculty about the focus of the College, the process of planning, and general issues. The second focused on the goals of the plan with a presentation by the Provost (his 25 questions are given in Section F), while the third was limited to discussion of reorganization and implementation. In addition, each department, individual faculty, and College standing committees were invited to respond to the plan and reorganization options. Following the third Town Hall meeting, the Provost agreed with the dean that review by an external team was not necessary, given that the faculty continued to proceed with the planning proposed.

Several faculty then requested that a formal faculty meeting be held. Because those who requested the faculty meeting did not provide agenda items for decision, the faculty were asked whether they wished to suspend Standing Rule One of the College, which requires that decision items be to faculty five working days prior to the faculty meeting. Faculty decided not to suspend the rules but to take straw votes on issues of concern. At the first faculty meeting, a vote of approval was taken for the focus and goals of the strategic plan. In the period between the first and second faculty meetings, the Provost issued the budget allocations to academic units. The College of Education allocation did not include funding for vacancies that had occurred during the 1991-1992 academic year. At the second meeting, faculty voted to reorganize the College into three divisions. The dean reported the outcome of the faculty meetings to the Provost, who then returned the funding for all positions, to be filled under the plan guidelines for 1993. The new structure went into effect on July 1, 1992. The essential element of reorganization is to permit faculty committed to restructuring of College programs and curricula to work together regardless of program affiliation or administrative location, while maintaining the integrity of existing programs for current students.

### **The Plan of Action**

The *Plan of Action* is the primary avenue by which change will be realized. The *Plan* is dynamic, self-renewing, and changing. It will be reviewed annually to determine the progress of the College in the previous year and to make any changes in goals, strategies, or outcomes that are deemed necessary to enable the College to meet the needs of its constituent groups. The *Plan* is designed to establish the College as a model of quality of performance and accountability.

The College's *Plan of Action* adopts five goals, with implementation strategies and priorities that will need to be assessed each year and modified to respond to the changing needs of the state.

### **GOAL ONE**

*To develop, study, practice, and disseminate innovative approaches to learning and teaching.*

The challenge for a college of education is to prepare prospective and continuing educators to take the knowledge from traditional content courses and translate it to challenge and engage the diverse children or adults in their classrooms. Willard Daggett told a group of educators, "It's not what we teach, but how we teach it." Lee Shulman of Stanford University states the essence of the goal in other words: *Those who can, do. Those who understand, teach.*"

Priority areas for restructuring of College programs during 1992-1993:

- ☐ mathematics, science, and technology education;
- ☐ early childhood/elementary education;
- ☐ health education.

In addition, faculty collaboratives were created to discuss initiatives in areas of interest and the possibility of modification, combining, or creation of programs. They are:

- ☐ policy and leadership;
- ☐ language, literacy, culture, and the arts.

A critical aspect of the restructuring strategy is that no individual program is independent of any other program in the College and that all faculty have the opportunity to contribute expertise to restructuring and implementation, thus bringing all the resources of the College to bear on major issues in education.

Key aspirations for the College to achieve this goal include:

- ◆ A balance between pre-service, graduate, and professional development programs;
- ◆ A coherence among programs in the College;
- ◆ A faculty that provides models of effective learning conditions;
- ◆ Instruction that is based on sound learning principles;
- ◆ The use of technology in classes;
- ◆ A curricula that provides connections across the disciplines through synthesis, interpretation and reflection.

## **GOAL TWO**

*To strengthen research in the College of Education and to establish a research agenda that contributes to the purpose of the College.*

The College of Education not only prepares educators, it creates new knowledge to inform and stimulate systemic change throughout the education system. Of the approximately 1,500 colleges and universities that prepare professional educators, only about 150 are charged to conduct research to improve the future of education (Derek Bok, Harvard University). Many of those research universities belong to the Holmes Group; UNM was a charter member.

The College of Education must be a center for research and scholarship related to schooling, learning, and teaching. The success of a strong educational system is dependent on the process and products of educational research. Fundamental components of this goal include the process of constructing knowledge in the context of practice, as well as research that is interwoven with practice and emerges from teaching and service. The diversity of New Mexico represents an opportunity for the study, implementation, and assessment of education for individuals with varied language, ethnic, and cultural backgrounds. A profile of scholarship tied to a centrality of focus can only be manifested by a clearly defined and well conceived research agenda.

Key aspirations for the College to achieve this goal include:

- ◆ Socialization of students into the research process;
- ◆ Acquisition of external research funding;

- ◆ Dissemination and practice of research and scholarship findings;
- ◆ Collaboration with constituents on research and scholarship;
- ◆ The ability of new faculty to contribute to a research agenda of the College.

### **GOAL THREE**

*To enlist and facilitate the ability of constituents to be interactive partners in the process of learning and teaching and to address the needs of at-risk students.*

The College will strengthen its partnerships with schools, colleges and universities, communities, and the private and public sectors. Program and curricular development are no longer the private domain of the College of Education. Strong affiliations with public school personnel, national laboratories, the private sector, families, and state government agencies are central to restructuring the College of Education. Reform will continue to be assisted by cooperative relationships with all constituencies that have vested interests in the educational process.

Key aspirations for the College to achieve this goal include:

- ◆ Collaborative research and teaching;
- ◆ Comprehensive interdisciplinary programs;
- ◆ Development of a home - community - school model;
- ◆ Collaboration on interagency policy development and decision-making, as well as policy-oriented research;
- ◆ Increasing the number of licensed special education teachers.

### **GOAL FOUR**

*To prepare a greater number of educational personnel from traditionally underrepresented populations.*

Diversity is one strength upon which the future of our state and nation is dependent. Educators must develop knowledge, capacities, and dispositions to respond wisely and sensitively to the needs of a diverse population. The youth of the country have traditionally achieved their visions through the power of education. Today, however, that avenue is threatened unless the educational system finds ways to advance the educational opportunities of students from underrepresented populations.

Key aspirations for the College to achieve this goal include:

- ◆ Preparation of educators to teach students who have different learning styles, abilities, and backgrounds.

- ◆ Recruiting and retaining students and faculty from underrepresented populations:
  - ◆ Increase by a factor of four the number of minority college students who are qualified to teach, with particular emphasis on mathematics, science, and early childhood
  - ◆ Triple the number of licensed bilingual teachers
  - ◆ Triple the number of minority tenure track professors in the College
- ◆ Incorporation of cultural pluralism, diversity, and equity into all College curricula.
- ◆ Understand and apply cross-cultural perspectives in a way that displays and fosters professional commitment and ethical responsibility and values the traditions of New Mexico cultures.

### **GOAL FIVE**

*To create and sustain helpful attitudes and structures to enhance the professional environment of the College of Education.*

The College seeks to create an environment that fosters intellectual curiosity and continuing educational development and that challenges students, faculty, and staff to commit to life-long learning. The plan of the College is to create model programs that exemplify effective practice and scholarly inquiry. The College aspires to create an environment that respects and adapts to individual, linguistic, and cultural differences and maintains a professional commitment to the educational community and its leaders. The College seeks to create an educational environment that is progressive, creative, dynamic, and challenging through its programs, its services, and its commitment to serve the state of New Mexico. The College aims to create an ongoing dialogue around professional issues with faculty, students, and staff.

Key aspirations for the College to achieve this goal include:

- ◆ Continuing evolution of planning for the College;
- ◆ Participation by faculty and staff in professional development activities;
- ◆ Creation of electronic mail systems to link faculty, staff, and students with one another and with educators in the state;
- ◆ Modification of the funding formula to acknowledge the clinical nature of training in the College and the demand for College courses off-campus;
- ◆ Reduction of the administrative and committee burden on faculty to that necessary to responsible faculty governance;
- ◆ One building to house all programs, faculty, and staff of the College.

### **IMPLEMENTATION**

When it began the 1991-1992 academic year, the College of Education had eight departments and seven center-type units. Approximately 33% of the faculty had some type of administrative appointment within a department or center.

The reorganization into three divisions was designed to narrow the administrative profile of the College, to reduce the bureaucracy, to give faculty increased responsibility for academic programs, and to focus more faculty attention on issues of quality, research, and change.

For a period of time, programs will remain as they were at the beginning of 1991-1992, until an evaluation and/or restructuring has been completed. Faculty currently within a program generally will continue teaching in that program. Faculty will be encouraged to work together across and within divisions and to explore opportunities for future restructuring. Initiatives and collaborations may be proposed each year as an ongoing process as faculty seek to improve existing programs or have a new program considered, but initiatives primarily will reflect real change in existing programs. This will be a continuous process of improvement and change. As needs and strategies change, priorities and planning will need to accommodate them. The *Plan* is the beginning of change, not the end of change.

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As we begin the effort of forging the future for the College of Education, we know that the tasks and years ahead will be both challenging and exciting. This is a time of great promise for the College and the University. We do not seek superficial change, nor do we seek change for the sake of change. Instead, we aspire to engage the issues facing the educational communities of this state and the nation. We aspire to make the changes necessary to enable the Faculty of Education at the University of New Mexico to meet the challenges of the 21st century.

**SECTION A****FACULTY MILESTONES****New Faculty**

**David Nateman**, Art Education

**William Kane**, Health Education

**Teresa Kokoski**, Curriculum and Instruction in Multicultural Teacher Education

**Mary Patton**, Curriculum and Instruction in Multicultural Teacher Education

**Sam Hicken**, Training and Learning Technologies

**Joseph Stevens**, Educational Foundations

**Visiting Faculty**

**Patricia Kelliher**, Curriculum and Instruction in Multicultural Teacher Education

**Charlotte Jensen**, Curriculum and Instruction in Multicultural Teacher Education

**Donna Lockner**, Health Promotion, Physical Education, and Leisure Programs

**Dean Rudoy**, Counseling and Family Studies

**George Jaramillo-Leone**, Counseling and Family Studies

**Shellene Campbell**, Curriculum and Instruction in Multicultural Teacher Education

**Retirements**

**Darrell Anderson**, Counseling and Family Studies

**David Darling**, Curriculum and Instruction in Multicultural Teacher Education

**James Everett**, Special Education

**Marion Heisey**, Counseling and Family Studies

**Paul Resta**, Training and Learning Technologies

**Ernest Stapleton**, Educational Administration

**Elizabeth Tweeken**, Training and Learning Technologies

**Paul Tweeken**, Training and Learning Technologies

**Guy Watson**, Training and Learning Technologies

**Resignations**

**Josephine DeLeon**, Special Education

**Tony Lam**, Educational Foundations

**Neal Thueson**, Health Promotion, Physical Education, and Leisure Programs

**Death**

**Nicolaas Moolenijzer**, Health Promotion, Physical Education, and Leisure Programs



## **Sabbaticals**

**Mike Milstein**, Educational Administration, Academic Year

**Ron Blood**, Educational Administration, Fall, 1991

**Richard McDowell**, Special Education, Fall, 1991

**Candace Schau**, Educational Foundations, Fall, 1991

**Dean Brodkey**, Curriculum and Instruction in Multicultural Teacher Education, Spring, 1992

**Roger Kroth**, Special Education, Spring 1992

**Elizabeth Nielsen**, Special Education, Spring, 1992

## **Positive Code 3**

**Isaura Barrera**, Special Education

**Mary Bentley**, Health Promotion, Physical Education, and Leisure Programs

**Patricia Boverie**, Training and Learning Technologies

**Jan Gamradt**, Educational Foundations

**Joy Griffin**, Health Promotion, Physical Education, and Leisure Programs

**Charlotte Gunawardena**, Training and Learning Technologies

**Karen Heller**, Health Promotion, Physical Education, and Leisure Programs

**Joseph Stevens**, Educational Foundations

## **Awarded Tenure**

**Ginger Blalock**, Special Education

**Craig Kelsey**, Health Promotion, Physical Education, and Leisure Programs

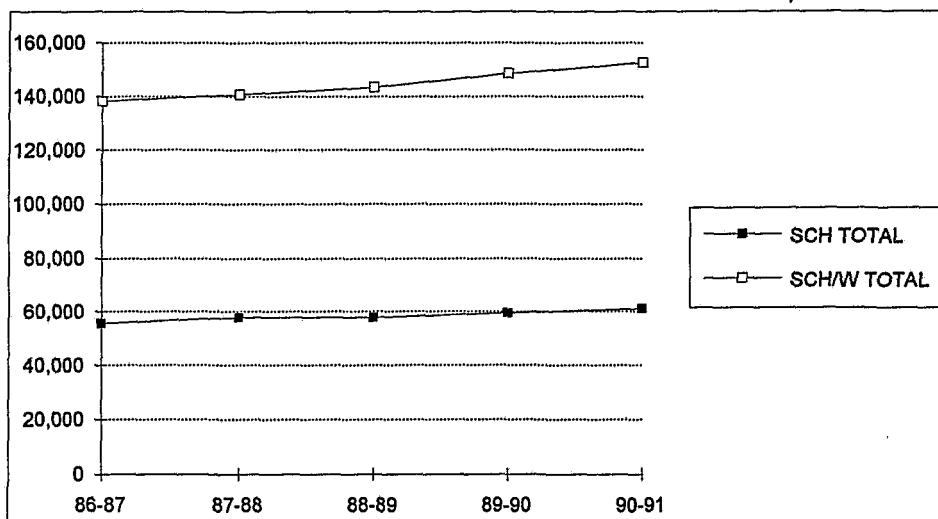
**Estella Martinez**, Counseling and Family Studies

## **Promotion to Full Professor**

**Eli Duryea**, Health Promotion, Physical Education, and Leisure Programs

**Vonda Long**, Counseling and Family Studies

## College of Education Credit Hour Production



### College of Education Workload Measures

	86-87	87-88	88-89	89-90	90-91	CHANGE
SCH TOTAL	55,748	57,742	57,782	59,580	61,143	9.68%
SCH/W TOTAL	138,240	140,681	143,366	148,447	152,633	10.41%
FTE TOTAL*	120.95	128.65	125.10	119.15	120.25	-0.58%
FTE FACULTY*	88.10	93.40	89.80	92.35	89.30	1.36%
FACULTY HEADCT	117.00	118.00	113.00	114.00	115.00	-1.71%
SECTIONS PER FTE*	5.95	6.90	7.15	7.10	7.40	24.37%
CONTACT PER FTE*	20.40	20.05	23.45	23.90	24.35	19.36%
STUDENTS PER FTE*	86.90	88.45	94.55	90.90	97.80	12.54%
SCH PER FTE*	191.00	201.35	210.20	230.20	244.50	28.01%
LD SCH PER FTE*	214.60	315.45	322.00	401.60	440.25	105.15%
UD SCH PER FTE*	198.10	227.10	229.20	270.55	301.85	52.37%
GD SCH PER FTE*	141.60	133.85	147.80	151.70	151.15	6.74%
UNM9 PER FTE*	18.30	21.05	22.60	23.55	24.05	31.42%

\*= AVE PER SEMESTER

**Section C****SPEAKERS**

**JEFF BINGAMAN.** United States Senator, New Mexico. "Standards for Education."

**WILLARD DAGGETT.** New York State Division of Occupational Education Instruction.  
"Preparing for Employment in the 1990s and Beyond."

**MICHAEL FULLAN.** University of Toronto. "Planning for Change."

**HAROLD HODGKINSON.** "Education's Future is Here Today."

**JAMES HORGAN.** University of Illinois, Chicago. "Structural Planning for Reallocation:  
Harbinger of Doom or Golden Opportunity?"

**MICHAEL KIRST.** Stanford University. "Implications of the National Education Reform  
Agenda for New Mexico."

**STEPHEN LILLY.** California State University, San Marcos. "Exploring the Future."

**ARTURO MADRID.** Tomás Rivera Center. "The Tensions of Diversity: The Coming  
Decade in Education."

**VITO PERRONE.** Harvard Graduate School of Education. "If we could start a college of  
education over ..."

**RICHARD PESQUEIRA.** The College Board. "Academic Synergy and Excellence: An  
Empowerment Model."

**VIRGINIA RICHARDSON.** University of Arizona. "Research in Teacher Education."

## Section D

### ENVIRONMENTAL SCAN SUMMARY

Several themes persisted throughout the surveys of students and alumni, as well as through the focus groups. The following is a list of observations that emerged as a result of the environmental scan.

- Participant groups expect high future demand for educational technology and special education in New Mexico.
- Both admissions and advisement procedures should be reviewed to insure that all students receive accurate and appropriate information.
- While some indications show that diversity is being acknowledged, increased emphasis should be placed on recruiting and retaining greater numbers of minority faculty and students.
- Retraining and upgrading of educator's skills will be increasingly important. As the age of the modal teacher increases, and as more educators take breaks from their jobs, retraining will be a more critical need.
- Since non-traditional preparation programs are attracting more prospective teachers, attention should be given to increasing flexibility and reducing barriers.
- National trends support the need for instruction in innovative approaches such as site-based management and decision making, Re:Learning, alternative assessment, cooperative and collaborative learning, teacher empowerment and responsible participation, and other methodologies.
- Current faculty must model facilitation of problem solving and learning, rather than imparting knowledge in specific content areas.
- Recognizing and incorporating current innovative trends in education as well as the realities of the public school environment will assure continuing viability for the College.
- An ongoing collaborative dialogue should include all relevant stakeholders with an interest in education.
- Modeling best practices in meeting established educational needs will assure a leadership role for the COE.
- Utilizing public school teachers in COE faculty positions and utilizing COE faculty in public schools assures awareness of current educational needs and jointly developed solutions.

- Educators should be trained to meet the needs of all students. Blending strengths of all departments will create optimal conditions for this comprehensive training to occur.
- Findings of the Scan indicate a need for COE services throughout the state. Exploring creative approaches to outreach may yield opportunities for expanding the delivery of services including field experiences and student teaching.
- Creation of interdisciplinary, integrated programs that focus on the learner and problem solving; communication skills; group dynamics; balance between theory, application, and research; the teacher as facilitator of learning; classroom management; stages of human development; and balance between the issues of content and process will assure a comprehensive, relevant curriculum.
- Modeling best practices in meeting established educational needs will assure a leadership role for the COE.
- Utilizing public school teachers in COE faculty positions and utilizing COE faculty in public schools assures awareness of current educational needs and jointly developed solutions.
- COE students should be introduced to public school classrooms on entering the College, with continued opportunity to assist in the classroom long before student teaching.
- COE faculty should model building relationships with parents and the community so that students understand and can use this important resource.
- Prevalent attitudes that knowledge comes only from the university level blocks progress toward comprehensive, collaborative solutions regarding problems facing education.
- The cycle of understanding theory, conducting research, translating finds into practical application, evaluating and improving practice, and then refining theory should be taught and reinforced by frequent field experience.
- Restructuring is not change for the sake of change. It means the difference between success and failure; without it any institution will die in a competitive, rapidly changing environment. Competitors will take on this role if the COE does not.

## **Section E**

### **TASK FORCE ON TEACHER PREPARATION PROGRAMS FOR NEW MEXICO 2000**

Richard van Dongen, Chair

Ginger Blalock, Special Education

Breda Bova, Educational Administration

David Colton, Educational Administration

John Gustafson, Health Promotion, Physical Education & Leisure Programs

Samuel Hicken, Training and Learning Technologies

Leroy Ortiz, Curriculum & Instruction in Multicultural Teacher Education

Henry Pepe, Special Education

Deborah Rifenburg, Counseling & Family Studies

Laura Smolkin, Curriculum & Instruction in Multicultural Teacher Education

Don Zancanella, Curriculum & Instruction in Multicultural Teacher Education

### **TASK FORCE ON EDUCATIONAL PROGRAMS FOR NEW MEXICO 2000**

Pauline Turner, Chair

Jozi Abbenante, Art Education

Darrell Anderson, Counseling & Family Studies

Patricia Boverie, Training & Learning Technologies

Eli Duryea, Health Promotion, Physical Education & Leisure Programs

Vivian Heyward, Health Promotion, Physical Education & Leisure Programs

Kathy Koehler, Health Promotion, Physical Education & Leisure Programs

Paul Miko, Health Promotion, Physical Education, & Leisure Programs

**TASK FORCE ON YEAR ROUND SCHOOLS**

Keith Auger, Chair  
Marilyn Davis, Curriculum & Instruction in Multicultural Teacher Education  
Donna Dionne, Director of Faculty Contracts  
Jan Gamradt, Educational Foundations  
Geraldine Harge, Assistant Superintendent, Albuquerque Public Schools  
Craig Kelsey, Health Promotion, Physical Education & Leisure Programs  
Patricia Kelliher, Curriculum & Instruction in Multicultural Teacher Education  
Bill Kline, Curriculum & Instruction in Multicultural Teacher Education  
Vonda Long, Counseling & Family Studies  
Dale Melada, Principal, Albuquerque Public Schools  
Elsie Moses-Hoeg, Teacher Enhancement Program  
Elizabeth Reid, Principal, Albuquerque Public Schools  
Kathleen Sena, Assistant Registrar  
Nora Scherzinger, Principal, Albuquerque Public Schools  
Deborah Smith, Special Education  
Carolyn Wood, Educational Administration

**TASK FORCE ON ADMISSIONS**

Richard Pesqueira, Chair  
Mary Jo Campbell, Health Promotion, Physical Education & Leisure Programs  
Joanne Krueger, Educational Administration  
David Nateman, Art Education  
Pamela Olson, Counseling & Family Studies  
Sara Dawn Smith, Curriculum & Instruction in Multicultural Teacher Education  
Joseph Stevens, Educational Foundations  
Joseph Suina, Curriculum & Instruction in Multicultural Teacher Education



## Section F

### TWENTY-FIVE QUESTIONS FOR THE COLLEGE OF EDUCATION

**Provost Paul G. Risser**

The approach used by the College of Education for strategic planning has been exemplary. The speakers were excellent and the environmental scan, focus groups, and faculty discussions completed the process. There is delight in the community outside the University regarding the College's process of reassessment. Questions are an attempt to provide a useful outside view.

1. Can the College support the number of programs it is currently supporting and still assure excellence?
2. The University administration has received more complaints about teaching in the College than in any other college. How should this be addressed?
3. Is it possible to provide inspiration for the learning process across the campus as a whole? Is this a reasonable expectation? Can the College be a role model for teaching and learning?
4. There is a mathematics and science emphasis nationally. Will this impetus work for education faculty?
5. Are there opportunities for collaborative efforts with the New Mexico federal laboratories?
6. Are there concrete ways to anticipate the changing demography? New Mexico and the College of Education may be regarded as a crucible for information needed for teaching and learning.
7. The available technology for learning is fascinating. How serious is the College's contribution and leadership? Is the College on the cutting edge? A quality program should be a priority, which would include software plus the learning environment.
8. Are the College faculty addressing the new ideas of learning environments, the whole context?
9. How do the faculty relate the learning experience to social needs and experience?
10. The College of Education has a remarkable service record. But isn't a stronger conceptual and theoretical base needed in the area on contribution to research and scholarly activity?
11. Shouldn't the faculty look outside classroom experience for new ideas on the way students learn, such as in museums?
12. The College will be asked to provide leadership in the area of outcomes assessment, a difficult issue. The question is how it will be answered, now if it will be asked.
13. New Mexico provides special opportunities in cultural learning differences. What is the College's role and leadership?
14. Can the College find a balance between graduate and undergraduate programs and a balance of method with content and involvement of other entities on campus?
15. Can the College formulate defensible admission programs that are clear and understandable to students?

16. Does the College have the right administrative structure to achieve its goals? Is there too much rigidity? Should the College approach structure first or last?
17. Does the College take advantage of the synergisms within departments and programs?
18. Does the College need all the departments it has now? The natural progression is to proliferate, but good investment is necessary.
19. Can the College agree on areas of emphasis? No college of education can meet all the needs of its wide array of clients. How does the College decide which will be priorities?
20. Can the College achieve a clear distinction between the Ph.D. and the Ed.D.?
21. How good can the College expect to be? Will it be in the top ten nationally? best in the region? How do you expect to get there?
22. Does the College have too many graduate students? Should the College be more selective?
23. The news reports state that education in colleges of education is not successful. Is this true?
24. Can the College of Education serve as a model for the University in the development of interdisciplinary programs? with Honors Programs? the Core Curriculum?
25. Are these the right questions?

**COE ANNUAL REPORT 1991-1992**  
**James L. DePaepe, Ph.D.**  
**Associate Dean for Research and Administration**

Contract and Grant Awards

During FY 1991-1992 the College of Education increased external funding by 71%. Seven academic departments and five ancillary units received 76 grant and contract awards totalling \$9,466,644.00. These new awards amounted to an increase of \$2,762,519.00 in comparison to the 59 awards totalling \$6,704,125 received during FY 1990-1991. The amount of \$9,466,644.00 represents one fiscal year of funding for new and continuing projects only (Tables 4-7 provide data on all new and continuing projects between July 1, 1991 and June 30, 1992). This method, traditionally used by COE, has the advantage of "spreading" the accounting of awards so that only the actual funding for the fiscal year of operation is reported. This means multi-year awards are only reported in part, which is a disadvantage of this method.

Proposals

Faculty and staff submitted 104 proposals in 1991-1992, a decrease of 18 from FY 1990-1991. However, of the 104 proposals submitted, 76 were funded. This actually indicates an 11% increase in the success rate of the College from the previous annual report. Total amount of funds requested during FY 91-92 was \$13,715,130.87.

For the first time in seven years, the faculty of CIMTE submitted the most proposals (27), and received the greatest amount totalling \$3,070,208. A compendium of proposal and award amounts for 1991-1992 is given in Table 1. Table 2 illustrates funding by amount and type of proposal (research, instruction, service). A summary of the number of proposals by type and by department is given in Table 3.

**Table 1. Awards for College Units, 1989-1990; 1990-1991; 1991-1992  
Funding for Current or Only Year of Contract**

<u>Unit</u>	<u>1989 -1990</u>	<u>1990 -1991</u>	<u>1991-1992</u>
C/FS	\$351,516.00	\$457,599.00	\$88,390.00
CIMTE	\$1,669,962.00	\$2,225,562.00	\$3,070,208.00
ED AD	\$961,631.00	\$897,158.00	\$990,725.00
ED FNDS	\$103,283.00	\$100,794.00	\$414,4210.00
HPPELP	\$364,078.00	\$94,600.00	\$122,738.00
SPED	\$1,012,479.00	\$802,120.00	\$2,518,651.00
TLT	\$183,011.00	\$199,414.00	\$116,012.00
Subtotal	\$4,645,960.00	\$4,777,247.00	\$7,321,145.00
COE			\$402,181.00
CTE	\$413,033.00	\$310,645.00	\$153,000.00
MEC	\$1,302,645.00	\$1,111,250.00	\$537,087.00
LAPE	\$110,559.00	\$173,773.00	\$179,888.00
BOEPAD	\$315,000.00	\$331,210.00	\$873,343.00
TOTAL	\$6,787,197.00	\$6,704,125.00	\$9,466,644.00

**Table 2. External Funds Requested by Department/  
Unit and by Type of Proposal**

<u>Unit</u>	<u>Research</u>	<u>Service</u>	<u>Instruction</u>	<u>Total</u>
C/FS	00.00	\$40,320.00	\$48,070.00	\$88,390.00
CIMTE	\$18,900.00	\$82,7336.00	\$2,623297.00	\$3,469,533.00
ED AD	\$50,000.00	\$655,714.00	\$828,357.00	\$1,534,071.00
ED FNDS	\$340,775.75.00	00.00	\$651,032.98	\$991,808.73
HPPELP	\$45,904.30	\$70,020.20	00.00	\$115,924.50
SPED	\$2,483,376.00	\$906,052.00	\$1,817,279.00	\$5,206,707.00
TLT	00.00	\$116,012.00	00.00	\$116,012.00
SUBTOTAL	\$2,938,956.05	\$2,615,454.20	\$5,968,035.98	\$11,522,446.23
CTE	00.00	\$24,904.64	\$128,000.00	\$152,904.64
MEC	\$82,275.00	00.00	\$748,173.00	\$830,448.00
LAFE	00.00	00.00	\$179,888.00	\$179,888.00
BOEPAD	\$108,243.00	\$119,947.00	\$399,073.00	\$627,263.00
COE	00.00	\$87,658.00	\$314,523.00	\$402,181.00
TOTAL	\$3,129,474.05	\$2,847,963.84	\$7,737,692.98	\$13,715,130.87

**Table 3. Proposals Submitted by Department/Unit by Type  
(1991-1992 Number in Parentheses)**

<u>Unit</u>	<u>Research</u>	<u>Service</u>	<u>Instruction</u>	<u>Total</u>
C/FS	1 (0)	2 (1)	7 (1)	10 (2)
CIMTE	2 (4)	2 (4)	9 (19)	13 (27)
ED AD	1 (1)	8 (6)	6 (9)	16 (16)
ED FNDS	4 (6)	2 (0)	2 (3)	8 (9)
HPPELP	1 (7)	4 (2)	2 (0)	7 (9)
SPED	2 (4)	0 (3)	34 (14)	36 (21)
TLT	0 (0)	8 (2)	0 (0)	8 (2)
CTE	0 (0)	10 (1)	0 (1)	10 (2)
MEC	1 (1)	7 (0)	0 (5)	8 (6)
LAPE	0 (0)	0 (0)	1 (1)	1 (1)
BOEPAD	0 (2)	2 (1)	0 (2)	2 (5)
COE	1 (0)	0 (2)	3 (2)	4 (4)
<b>TOTAL:</b>	<b>14 (25)</b>	<b>45 (22)</b>	<b>64 (57)</b>	<b>123 (104)</b>

**Table 4: Grants and Contracts submitted for FY 91-92 funding**

<u>C/FS</u>	<u>CIMTE</u>	<u>CIMTE</u>	<u>ED/AD</u>	<u>EDFND</u>	<u>HPELP</u>	<u>SPED</u>	<u>SPED</u>	<u>TLT</u>
48070.00	66126.00	3500.00	99200.00	387926.00	2500.00	95184.00	15000.00	104011.00
<u>40320.00</u>	10616.00	158631.00	438693.00	35074.00	0000.00	98821.00	1099932.00	<u>12001.00</u>
88,390.00	3900.00	8278.00	32000.00	151148.00	2000.00	68444.00	21720.00	116,012.00
	318557.00	418500.00	69234.00	4000.00	30000.00	147413.00	97212.00	
	615900.00	177965.00	50000.00	2803.50	3034.00	313469.00	76343.00	
	112172.00	13900.00	20000.00	82068.00	4335.00	249996.00	39493.00	
	395019.00	21801.00	10000.00	65682.25	4035.30	76232.00	116559.00	
	74700.00	18200.00	24480.00	238000.00	67600.20	94138.00	97212.00	
	172589.00	5000.00	32000.00	<u>25106.98</u>	<u>2420.00</u>	74747.00	369792.00	
	171502.00	5000.00	40000.00	991,808.73	115924.50	750000.00	1300000.00	
	5000.00	10500.00	26581.00			continue	<u>5000.00</u>	
	3000.00	1800.00	26581.00				5,206,707.	
	7742.00	16950.00	26581.00					
	continue	<u>652685.00</u>	69487.00					
	3,469,533.	398715.00						
		<u>170519.60</u>						
		1,534,071.						
							TOTAL \$11,522,446.	

**Table 5: Grants and Contracts funded during FY 1991–1992.**

<u>C/FS</u>	<u>CIMTE</u>	<u>ED/AD</u>	<u>EDFND</u>	<u>HPELP</u>	<u>SPED</u>	<u>TLT</u>
48070.00	7742.00	99200.00	72200.00	0000.00	97212.00	104011
<u>40320.00</u>	418550.00	32000.00	00000.00	3044.00	5000.00	12001.00
88,390.00	16950.00	50000.00	238000.00	22174.00	95184.00	<u>0000.00</u>
	652685.00	40000.00	<u>104,221.00</u>	2500.00	98821.00	116,012.00
	66126.00	26581.00	<b>414,421.00</b>	67600.00	1099932.00	
	18200.00	69487.00		2420.00	21720.00	
	5000.00	26581.00		<u>25000.00</u>	76343.00	
	5000.00	398715.00		122,738.00	68444.00	
	5000.00	24480.00			147413.00	
	10616.00	170519.00			313469.00	
	3900.00	26581.00			249996.00	
	318557.00	<u>26581.00</u>			94138.00	
	615900.00	990,725.00			76232.00	
	112172.00				<u>74747.00</u>	
	395019.00				2,518,651.00	
	74700.00					
	172589.00					
	<u>171502.00</u>					
3,070,208.00				TOTAL \$	7,232,845	



Table 6: Grants and Contracts submitted for FY 91-92 by centers

<u>BOEPAD</u>	<u>MEC</u>	<u>CTE</u>	<u>COE</u>	<u>LAPE</u>
84597.00	92654.00	24902.64	7958.00	<u>\$179,888.00</u>
106923.00	265245.00	<u>128002.00</u>	79700.00	179,888.00
119947.00	208022.00	152,904.64	75023.00	
314476.00	92726.00		<u>239500.00</u>	
<u>1320.00</u>	89526.00		402,181.00	
627,263.00	<u>82275.00</u>			
	830,448.00			
			TOTAL	\$2,192,684.60

Table 7: Grants funded during fiscal year 1991-1992 by centers

<u>BOEPAD</u>	<u>MEC</u>	<u>CTE</u>	<u>COE</u>	<u>LAPE</u>
84597.00	92726.00	25000.00	7958.00	<u>179,888.00</u>
106923.00	85325.00	<u>128000.00</u>	79700.00	179,888.00
60000.00	<u>359,036.00</u>	153,000.00	75023.00	
306027.00	537,087.00		<u>239500.00</u>	
314476.00			402,181.00	
<u>1320.00</u>				
873,343.00			TOTAL	\$2,145,499.00

Assistant Dean for Research

Jim DePaepe, professor of Special Physical Education and Exercise Science, was appointed assistant dean during August 1991. He worked with the faculty and the administration on proposal development, research projects, facilitation of research activities, reallocation and restructuring. This was a part-time appointment, which meant that in addition to his research conducted in the therapeutic and human performance laboratories he taught nine hours in the Fall and four hours in the Spring semesters.

Indirect Cost

The University has a policy of returning 50% of indirect costs actually earned on grants and contracts to the College. The policy in the College of Education is to return at least one-half of that amount to the department or unit. When two or more administrative units cooperate in resource allocations, the overhead is distributed equally to each unit. Indirect cost funds are administered by the associate dean in consultation with the College's Overhead Fund Allocations Committee (OFAC). This is an advisory faculty group elected by the faculty of the College.

Overhead Fund Allocations Committee

Jim DePaepe and Laura Smolkin were co-chairs of the OFAC committee during the 1991-1992 year. The Committee conducted the following business during the year: consideration of overhead policies; budget recommendations; and awards for faculty research. Out of 20 applications, 13 awards were sponsored at \$18,373.70. The Committee granted small research awards to the following faculty:

**Figure 1: Overhead Fund Awards**

1.	Vonda Long	\$900.00
2.	Pauline Turner	\$1500.00
3.	Vivian Heyward	\$1943.50
4.	Charlotte Gunawardena	\$2000.00
5.	Joe Suina & Laura Smolkin	\$500.00
6.	Laura Smolkin	\$1640.00
7.	Joe Suina & Laura Smolkin	\$255.20
8.	Joe Martinez	\$2000.00
9.	Mary Harris	\$1766.00
10.	Jan Gamradt	\$1749.00
11.	Vonda long	\$1400.00
12.	Laura Smolkin & Joe Suina	\$2020.00
13.	Ann Nihlen	\$700.00

College Administration

Facilities. The remodeling was completed for the elementary education room in the education classroom wing. A computer assistive technology laboratory was completed in the same building. The renovation of the Industrial Arts Building to become a Learning Technologies Center was again requested from the University and was not assigned a priority ranking by the Regents.

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**COLLEGE OF EDUCATION  
STUDENT DATA SUMMARY**

**FISCAL YEAR 1991-1992**

**prepared by  
COE Advisement Center  
July 7, 1992**

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NOTE: All information is for Fiscal Year 1991-92, unless it is indicated that the breakdown is for other periods. The period corresponds with academic semesters Summer 1991, Fall 1991, and Spring 1992.

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\* Enrollment data is for upper division courses only (300-400 level)

## PART I

\*\*\*\*\*  
 APPLICATION & ADMISSION  
 \*\*\*\*\*

The number of applicants to COE programs in fiscal year 1991-92 decreased slightly from 1990-91, however, the number of students admitted to programs is close to the highest ever. Also, the percentage of student applicants admitted to COE programs was the highest since data has been collected by the college with 99% of all applicants admitted to programs.

APPLICATION & ADMISSION : FY 1987-88 THROUGH FY 1991-92

YEAR	1987-88	1988-89	1989-90	1990-91	1991-92
Applied	618	487	417	618	552
Admit	534 86%	422 87%	374 91%	546 87%	544 99%
Not Admit	84 14%	65 13%	43 9%	82 13%	8 1%

Of the 8 applicants who were not admitted in 1990-91, 4 (50%) were CIMTE applicants.

ADMITTED BY DEPARTMENT AS PERCENT OF COE TOTAL : 88-89 THRU 91-92

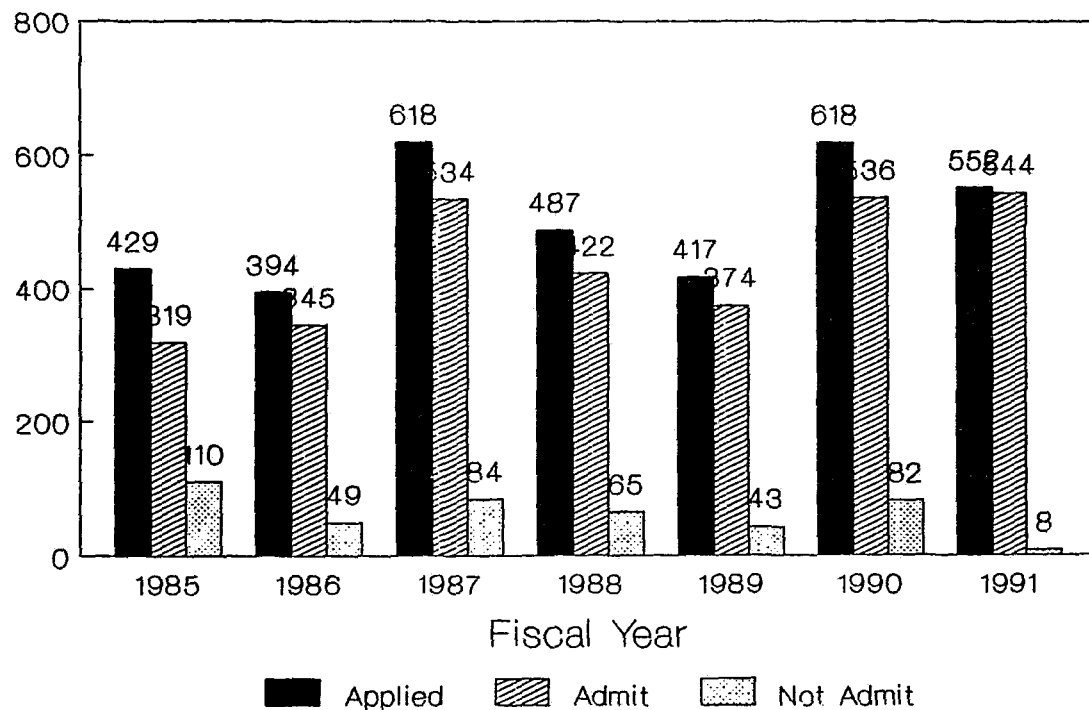
DEPARTMENT	88-89	89-90	90-91	91-92
CIMTE:				
Elementary	153 36%	145 39%	158 30%	260 47%
Secondary	119 28%	96 26%	210 39%	126 23%
CIMTE SUBTOTAL	272 64%	241 65%	368 69%	386 70%
HPER	78 19%	57 15%	79 15%	66 12%
TLT	8 2%	9 2%	0 0%	5 1%
Family Studies	10 2%	17 5%	21 4%	32 6%
Art Ed	16 4%	12 3%	6 1%	15 3%
Special Ed*	25 6%	33 9%	55 10%	37 7%
Music Ed**	13 3%	5 1%	7 1%	3 1%
TOTAL ADMITTED	422 100%	374 100%	536 100%	544 100%

\* Special Ed began admitting undergrad students in 1987-88.

\*\* Music Ed is not a COE program, but is a program in the College of Fine Arts leading to teacher licensure.

# COE ADMISSIONS

## 85-86 thru 91-92



**ADMISSION BY PROGRAM : FY 1991-92**  
**(By Teaching & Non-Teaching)**

**TEACHING PROGRAMS**

PROGRAM	ADMIT		NOT ADMIT		APPLIED AS % OF TOTAL	
Secondary Ed.*	126	99%	2	1%	262	55%
Elementary Ed.	260	98%	2	2%	128	27%
Family Studies Ed.	1	100%	0	0%	1	1%
Health Ed.	6	100%	0	0%	6	1%
Physical Ed.	15	94%	1	6%	16	4%
Music Ed.	3	100%	0	0%	3	1%
Special Ed.	37	93%	3	7%	40	8%
Art Ed.	<u>15</u>	100%	<u>0</u>	0%	<u>15</u>	<u>3%</u>
TEACHING TOTAL	463	98%	8	2%	471	100%

**NON-TEACHING PROGRAMS**

PROGRAM	ADMIT		NOT ADMIT		APPLIED AS % OF TOTAL	
Ath Training	8	100%	0	0%	8	10%
Ex Technology	15	100%	0	0%	15	19%
Nut/Dietetics	9	100%	0	0%	9	12%
Comm Health	7	100%	0	0%	7	9%
Recreation	6	100%	0	0%	6	8%
Family Studies	11	100%	0	0%	11	10%
Technology & Training	5	100%	0	0%	5	7%
Child Dev & Fam Rel	<u>20</u>	100%	<u>0</u>	0%	<u>20</u>	<u>25%</u>
NON-TEACHING TOTAL	81	100%	0	0%	81	100%

\* See listing of Secondary Ed Majors below

**INTENDED MAJORS OF SECONDARY EDUCATION ADMISSIONS**

Science	Math	English & Lang Arts	Soc Sci	TESOL & Languages	Total
13	35	35	31	12	126



**ETHNIC GROUPS : NUMBER AND PERCENT OF TOTAL APPLICANTS**  
**by Admission Status & Ethnicity : 88-89 Through 91-92**

YEAR	1988-89		1989-90		1990-91		1991-92	
APPLIED								
Other	384	79%	329	79%	481	78%	401	72%
Hispanic	78	16%	75	18%	118	19%	120	22%
Native American	20	4%	12	3%	15	2%	27	5%
Black	5	1%	1	0%	4	1%	4	1%
ADMIT								
Other	332	79%	293	79%	422	79%	395	72%
Hispanic	68	16%	68	18%	98	18%	118	22%
Native American	18	4%	12	3%	12	2%	27	5%
Black	4	1%	1	0%	4	1%	4	1%
NOT ADMIT								
Other	52	80%	36	84%	59	72%	6	75%
Hispanic	10	15%	7	16%	20	24%	2	25%
Native American	2	3%	0	0%	3	4%	0	0%
Black	1	2%	0	0%	0	0%	0	0%

**ETHNIC GROUPS : NUMBER AND PERCENT ADMITTED & DENIED ADMISSION**  
**Fiscal 1988-89 Through 1991-92**

YEAR	1988-89		1989-90		1990-91		1991-92	
OTHER								
Admit	332	87%	293	89%	422	88%	395	98%
Not Admit	52	13%	36	11%	59	12%	6	2%
HISPANIC								
Admit	68	87%	68	91%	98	83%	118	98%
Not Admit	10	13%	7	9%	20	17%	2	2%
NATIVE AMERICAN								
Admit	18	90%	12	100%	12	80%	27	100%
Not Admit	2	10%	0	0%	3	20%	0	00%
BLACK								
Admit	4	80%	1	100%	4	100%	4	100%
Not Admit	1	20%	0	0%	0	00%	0	0%
TOTAL	487		417		618		552	

903

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**ENROLLMENT STATUS AT TIME OF APPLICATION : FY 1991-92**


---

Enrollment Status	Number	Percent
Arts & Sciences	118	21%
University College	178	32%
Graduate (for licensure programs)	11	2%
Non Degree	116	21%
COE (provisional)*	115	21%
Other	14	3%
<b>TOTAL APPLICANTS</b>	<b>552</b>	<b>100%</b>

---

\* 80 Undergraduate & 35 Postbachelor applicants.

---

**AVERAGE GPA & CREDIT HRS AT TIME OF APPLICATION**  
**Fiscal 1982-83 through 1991-92**


---

FISCAL YEAR	N	GPA	CREDIT HRS
1982-83	351	2.72	62
1983-84	308	2.80	69
1984-85	313	2.76	74
1985-86	246	2.78	77
1986-87	212	2.87	76
1987-88	320	2.98	82
1988-89	301	2.98	88
1989-90	286	3.00	87
1990-91	396	3.03	81
1991-92	396	3.04	79

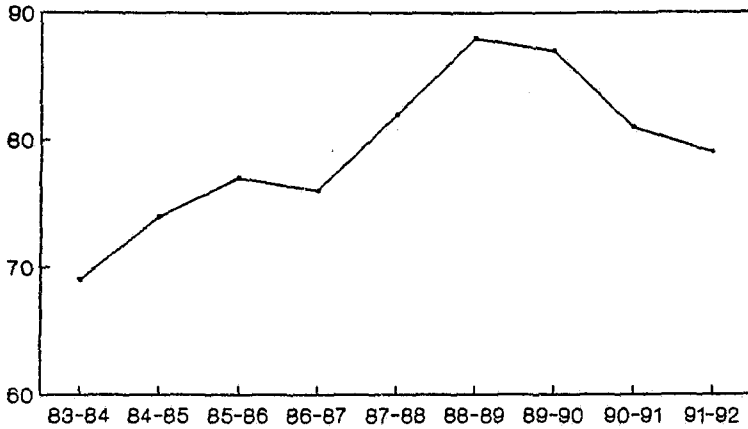
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**\*\* MISCELLANEOUS INFORMATION : FY 1991-92 \*\***

Of the applicants to COE programs, 418 (76%) were female, and 134 (24%) were male. The average age of COE applicants was 27. Of those who applied, 28% had received a prior degree (i.e. were Postbachelor).

There were 310 students who picked up an application packet who did not apply for admission and were not admitted.

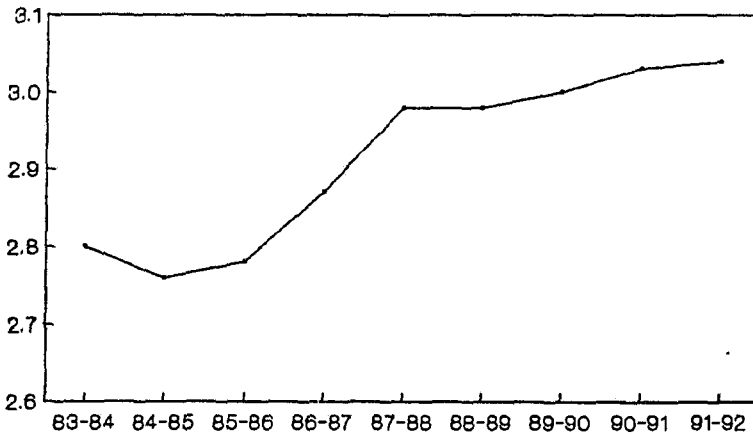
# **AVG CREDIT HRS AT ADMISSION TO COE 1983-84 Through 1991-92**



— AVG CREDIT HRS

Graph shows average hours for undergraduate applicants only.

# **AVG GPA AT ADMISSION TO COE 1983-84 Through 1991-92**



— AVG GPA

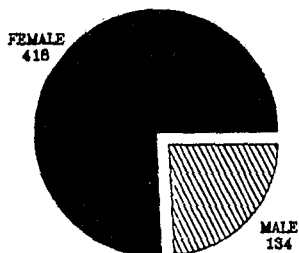
Graph shows average gpa for undergraduate applicants only.

### AVERAGE AGE OF COE APPLICANTS FY 1983-84 THROUGH FY 1991-92

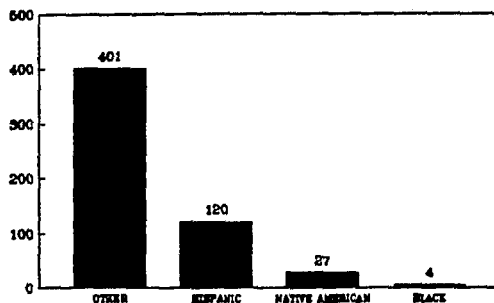


N is 90% of total applied or better for all fiscal years.

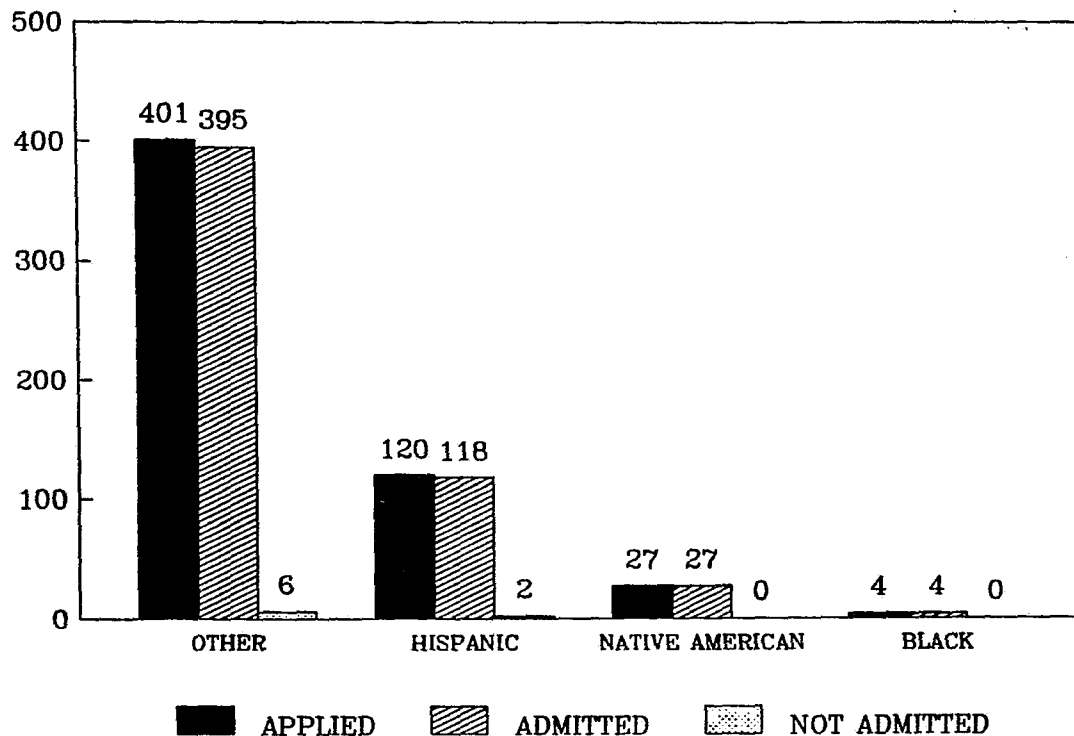
### COE APPLICANTS BY GENDER 1991-1992



### COE APPLICANTS BY ETHNICITY 1991-92

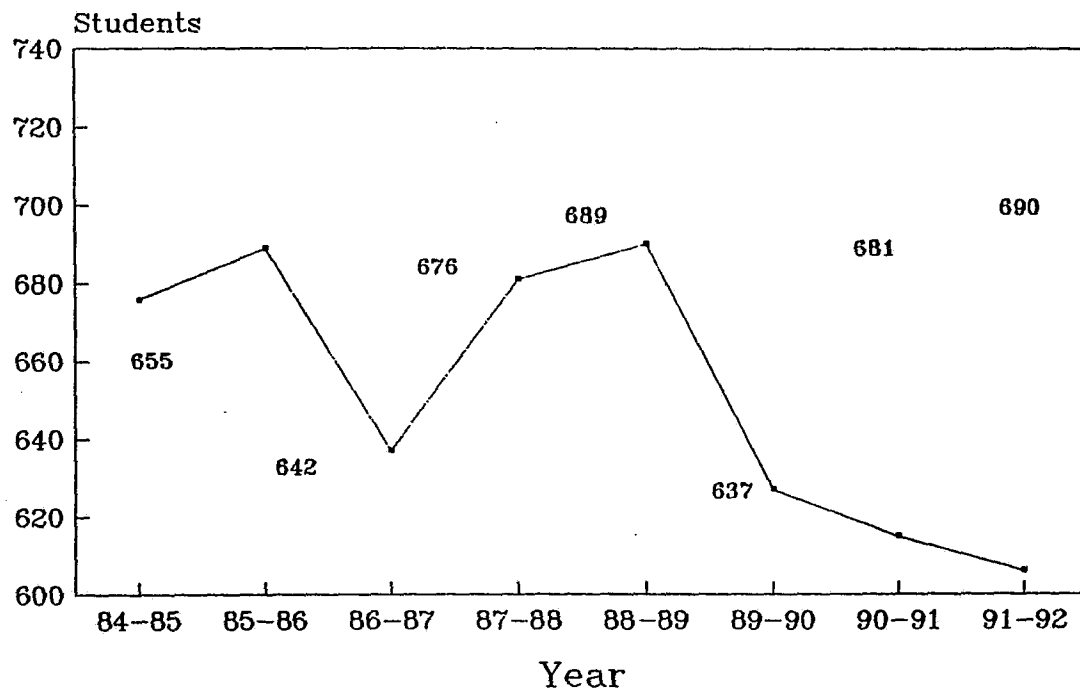


# COE APPLICANTS ADMITTED AND DENIED 1991-92 BY ETHNICITY



DEPT	TEACHER LICENSURE		OTHER EDUCATION				TOTAL
	Bach	PostBach	Bach	Mast	Spec	Doct	
1987-88							
Art	12	7	0	25	-	-	44
CIMTE	192	200	-	213	5	5	615
Couns & FS	3	0	7	52	2	1	65
Ed Admin	-	-	-	42	17	2	61
Ed Found	-	-	-	32	1	3	36
HPPELP	9	0	72	85	1	5	172
Special Ed	-	1	-	141	1	1	157
TOE	<u>8</u>	<u>2</u>	<u>0</u>	<u>46</u>	<u>-</u>	<u>1</u>	<u>57</u>
TOTAL	237	210	79	636	27	18	1207
1988-89							
Art	9	7	0	39	-	-	55
CIMTE	160	112	-	175	6	0	453
Couns & FS	2	0	8	75	2	1	88
Ed Admin	-	-	-	79	36	0	115
Ed Found	-	-	-	30	0	1	31
HPPELP	20	2	56	80	0	1	159
Special Ed	20	5	-	117	1	1	144
TOE	<u>3</u>	<u>2</u>	<u>3</u>	<u>46</u>	<u>-</u>	<u>0</u>	<u>54</u>
TOTAL	214	128	67	641	45	4	1099
1989-90							
Art	6	6	0	26	-	-	38
CIMTE	138	101	-	181	1	2	423
Couns & FS	1	0	16	56	2	1	76
Ed Admin	-	-	-	71	34	0	105
Ed Found	-	-	-	41	0	1	42
HPPELP	9	8	39	73	0	1	130
Special Ed	22	11	-	98	10	0	141
TOE	<u>3</u>	<u>3</u>	<u>3</u>	<u>39</u>	<u>-</u>	<u>1</u>	<u>49</u>
TOTAL	179	129	58	585	47	6	1003
1990-91							
Art	2	4	0	34	-	-	40
CIMTE	204	164	-	170	7	0	545
Couns & FS	0	0	21	61	2	0	84
Ed Admin	-	-	-	58	29	0	87
Ed Found	-	-	-	31	1	0	32
HPPELP	11	5	63	104	1	2	186
Special Ed	35	20	-	96	9	0	160
TLT	<u>0</u>	<u>0</u>	<u>0</u>	<u>10</u>	<u>0</u>	<u>0</u>	<u>10</u>
TOTAL	252	193	84	564	49	2	1144
1991-92							
Art	10	5	0	25	-	-	40
CIMTE	254	132	-	161	13	0	560
Couns & FS	1	0	31	72	0	0	104
Ed Admin	-	-	-	42	19	2	63
Ed Found	-	-	-	17	0	3	20
HPPELP	18	4	44	83	0	1	150
Special Ed	25	12	-	82	14	1	134
TLT	<u>0</u>	<u>0</u>	<u>5</u>	<u>69</u>	<u>2</u>	<u>0</u>	<u>76</u>
TOTAL	308	153	80	551	48	7	1147

# ADMISSION TO COE GRADUATE PROGRAMS 1984-85 thru 1991-92



\*\*\*\*\*  
 PART II : TESTING  
 \*\*\*\*\*

There were 471 students who attempted admission to COE teaching programs in fiscal year 1991-92. The 471 students qualified for admission by taking some entrance test.

It was found that 237 students (50%) had taken the PPST, and that 155 students (33%) had taken the NTE. It was determined that the remaining 79 people tested as follows: 48 submitted ACT scores for exemption purposes, 27 passed COE "Alternate Route" tests, and 4 were exempt because they already held a current teaching liscence in another area.

It is interesting to note that significant use is being made of COE "near miss" admission requirements. Of the 237 students who submitted PPST scores at application, 85 (36%) were in the "near miss" score range on at least one test, and therefore qualified for application on the basis of "other evidence". The number of "near miss" test scores for each individual test was as follows: 28 students in Reading, 52 students in Math, and 45 students in Writing. (For complete information about "near miss" criteria, see instructions contained in COE application packets).

On the PPST and the NTE, applicants were given credit for their best test score to date.

---

MEAN PPST SCORES FOR COE APPLICANTS : FY 1991-92

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STATUS	N	READING*	MATH*	WRITING**
Admit	234	179.8	180.1	177.0
Not Admit	<u>3</u>	179.6	177.0	177.3
TOTAL	237	179.8	180.0	177.0
NATIONAL AVG	***	174.7	174.8	175.2

\* minimum pass is 172

\*\* minimum pass was 175

\*\*\* ETS November 1984 Standardization Sample

---

MEAN NTE SCORES FOR COE APPLICANTS : FY 1991-92

---

STATUS	N	COMM SKILLS*	GEN KNOWLEDGE**
Admit	148	668.2	667.6
Not Admit	<u>03</u>	663.3	667.6
TOTAL	151	667.9	667.6
NATIONAL AVG	***	659	656

\* minimum passing score is 644

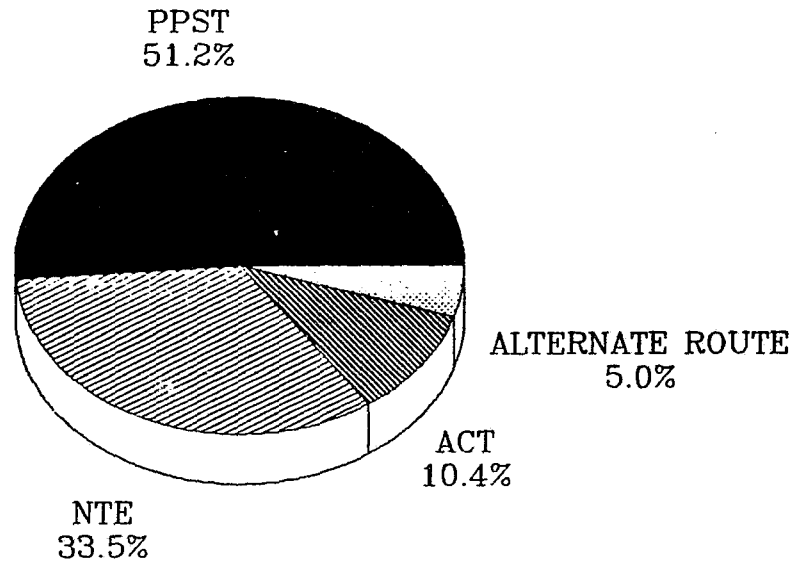
\*\* minimum passing score is 645

\*\*\* ETS November 1982 Standardization Sample



# ENTRANCE TESTING

## COE APPLICANTS : FY 1991-92



Alternate Route includes PPST Near Miss

## PASS-FAIL RATE ON PPST 1987-88 THROUGH 1991-92 BY ETHNICITY

		<u>1987-88</u>			
		<u>PASS</u>		<u>FAIL</u>	
	<u>N</u>	<u>%</u>		<u>N</u>	<u>%</u>
Native American	2	18%		9	82%
Black	1	50%		1	50%
Hispanic	20	43%		27	57%
Other	126	71%		51	29%
All	149	63%		88	37%

		<u>1988-89</u>			
		<u>PASS</u>		<u>FAIL</u>	
	<u>N</u>	<u>%</u>		<u>N</u>	<u>%</u>
Native American	4	44%		5	56%
Black	0	0%		0	0%
Hispanic	40	65%		22	35%
Other	161	85%		29	15%
All	205	79%		56	21%

		<u>1989-90</u>			
		<u>PASS</u>		<u>FAIL</u>	
	<u>N</u>	<u>%</u>		<u>N</u>	<u>%</u>
Native American	3	43%		4	57%
Black	0	0%		1	100%
Hispanic	38	66%		20	34%
Other	128	88%		18	12%
All	169	79%		43	21%

		<u>1990-91</u>			
		<u>PASS</u>		<u>FAIL</u>	
	<u>N</u>	<u>%</u>		<u>N</u>	<u>%</u>
Native American	5	50%		5	50%
Black	2	100%		0	0%
Hispanic	45	70%		19	30%
Other	157	92%		12	8%
All	209	80%		36	20%

		<u>1991-92</u>			
		<u>PASS</u>		<u>FAIL</u>	
	<u>N</u>	<u>%</u>		<u>N</u>	<u>%</u>
Native American	3	50%		3	50%
Black	0	0%		3	100%
Hispanic	51	80%		13	20%
Other	146	90%		18	10%
All	200	84%		37	16%

---

**MEAN ACT SCORES FOR COE APPLICANTS\* : FY 1991-92**


---

TEACHING PROGRAMS	N	English	Math	Soc.Sci	Nat.Sci	Composite
Admit	244	19.8	17.3	18.5	21.4	19.4
Not Admit	<u>5</u>	22.2	19.4	19.2	21.6	20.6
Applied	249	19.9	17.4	18.5	21.4	19.4
NON-TEACHING	N	English	Math	Soc.Sci	Nat.Sci	Composite
Admit	39	17.6	15.6	16.3	19.6	17.5
Not Admit	<u>0</u>	--	--	--	--	--
Applied	39	17.6	15.6	16.3	19.6	17.5
ALL APPLICANTS	N	English	Math	Soc.Sci	Nat.Sci	Composite
Admit	283	19.5	17.1	18.2	21.2	19.1
Not Admit	<u>5</u>	22.2	19.4	19.2	21.6	20.6
TOTAL APPLIED	288	19.5	17.1	18.2	21.2	19.1

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\* UNM Database had ACT scores for 288 out of 552 applicants (only 52%)

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**MEAN ACT SCORES FOR COE TEACHING PROGRAM ADMISSIONS : BY FISCAL YEAR**


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Fiscal Year	N	English	Math	Soc.Sci	Nat.Sci	Composite
1983-84	147	20.0	18.3	19.2	21.9	20.0
1984-85	141	20.0	19.5	20.2	22.6	20.7
1985-86	109	18.6	16.5	18.8	21.1	18.8
1986-87	132	19.4	17.9	19.3	22.3	19.9
1987-88	209	19.8	18.1	19.9	21.5	19.9
1988-89	157	20.1	18.4	19.3	21.9	20.1
1989-90	158	19.7	17.5	18.7	21.6	19.4
1990-91	221	20.1	18.3	19.6	22.0	20.1
1991-92	228	19.5	17.1	18.2	21.2	19.1
Level IV Average	*	20.6	20.5	20.5	23.8	21.5
UNM Average	**	20.8	20.4	20.5	24.1	21.6

---

\* N=20,341, sample from 13 doctoral degree granting institutions comparable to UNM. \*\* N=1191, sample from 1986-87 UNM freshman class. Both samples were taken across institution, as opposed to COE only.

**MEAN ACT SCORES FOR COE ADMISSIONS\***  
**FY 1982-83 through 1991-92**  
**(By Sex and Ethnicity)**

**BY SEX**

SEX	N	English	Math	Soc Sci	Nat Sci	Comp
FY 1991-92:						
Male	64	18.7	18.9	20.4	23.3	20.4
Female	<u>224</u>	29.8	16.6	17.6	20.6	18.8
TOTAL	288	29.5	18.2	18.2	21.2	19.2
1982-1991:						
Male	479	18.7	19.1	20.0	23.2	20.5
Female	<u>1371</u>	19.8	17.2	18.3	21.1	19.1
TOTAL	1850	19.5	17.7	18.7	21.7	19.4

**BY ETHNICITY**

ETHNICITY	N	English	Math	Soc Sci	Nat Sci	Comp
FY 1991-92:						
Other	192	20.7	18.4	19.5	22.6	20.4
Hispanic	79	17.4	14.8	15.8	18.7	16.8
Native American	16	17.4	14.0	15.5	17.9	16.4
Black	<u>1</u>	12.0	6.0	7.0	9.0	9.0
TOTAL	288	19.5	17.1	18.2	21.2	19.2
1982-1991:						
Other	1317	20.3	18.5	19.9	22.6	20.5
Hispanic	473	17.9	15.5	15.9	19.0	17.1
Native American	45	16.3	14.4	14.6	20.5	16.5
Black	<u>17</u>	12.0	13.2	11.8	11.3	12.4
TOTAL	1852	19.6	17.6	18.7	21.6	19.5

\* It should be noted that ACT scores were obtainable for slightly more than 50% of the students admitted in this time period.

\*\*\*\*\*  
 PART III : ENROLLMENT  
 \*\*\*\*\*

1004

In Fiscal Year 1991-92, COE Advisement Center continued collecting undergraduate enrollment information on students enrolled in 300 and 400 level COE courses (the size of the total student population makes keeping permanent records on 100 and 200 level courses extremely impractical).

After removing the graduate students (reported on later), the number of COE 300 level and 400 level courses taken, by semester, was:

SUMMER	960
FALL	3124
SPRING	3396

The above 7480 enrollments represent 2693 individuals.

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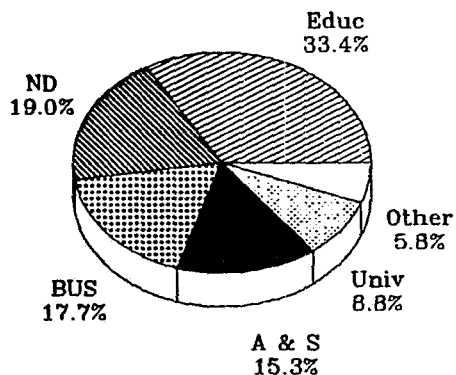
COLLEGE OF ENROLLMENT  
 FOR NON-GRADUATE STUDENTS TAKING UPPER DIVISION COE COURSES  
 FY 1989-90 - FY 1991-92

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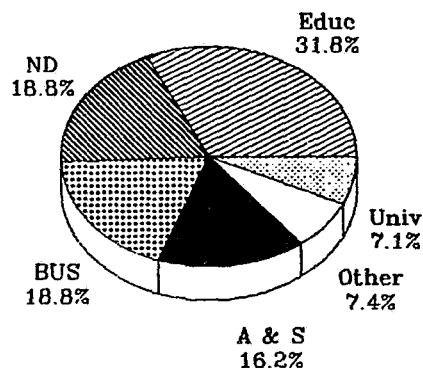
COLLEGE	1989-90		1990-91		1991-92	
	Number	Percent	Number	Percent	Number	Percent
A & S	326	13%	379	15%	435	16%
Education	868	35%	831	33%	857	32%
University	195	8%	219	9%	190	7%
Non Degree	499	20%	471	19%	507	19%
Univ. Std.	406	17%	440	18%	506	19%
Other	<u>163</u>	<u>7%</u>	<u>145</u>	<u>6%</u>	<u>198</u>	<u>7%</u>
ENROLLED	2457	100%	2485	100%	2693	100%

---

# COLLEGE OF ENROLLMENT OF STUDENTS TAKING COE UPPER DIVISION\* COURSES Comparing 1990-91 with 1991-92



ENROLLED 1990-91



ENROLLED 1991-92

\* "Upper Division" is 300 & 400 Level

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**DEMOGRAPHIC INFORMATION**  
**FOR NON-GRADUATE STUDENTS TAKING UPPER DIVISION COE COURSES**  
**FY 1991-92**

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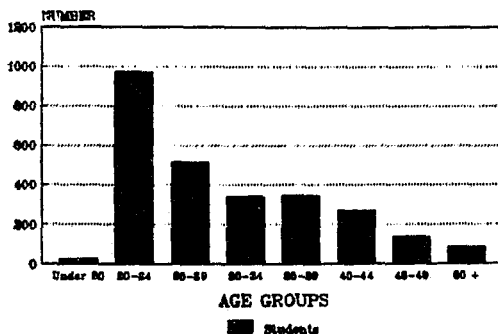
<u>AGE</u>		
<u>Age Group</u>	<u>Count</u>	<u>Percent</u>
under 20	27	1%
20 - 24	970	36%
25 - 29	518	19%
30 - 34	341	13%
35 - 39	344	13%
40 - 44	271	10%
45 - 49	138	5%
50 or over	<u>84</u>	<u>3%</u>
TOTAL	2693	100%

<u>SEX</u>		
<u>Sex</u>	<u>Count</u>	<u>Percent</u>
Male	796	30%
Female	<u>1897</u>	<u>70%</u>
TOTAL	2693	100%

<u>ETHNICITY</u>		
<u>Ethnicity</u>	<u>Count</u>	<u>Percent</u>
Native American	104	4%
Black	79	3%
Asian	26	1%
Hispanic	567	21%
Other	<u>1917</u>	<u>71%</u>
TOTAL	2693	100%

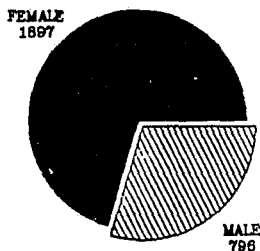
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# STUDENTS TAKING COE UPPER LEVEL COURSES\* 91-92 BY AGE GROUPS



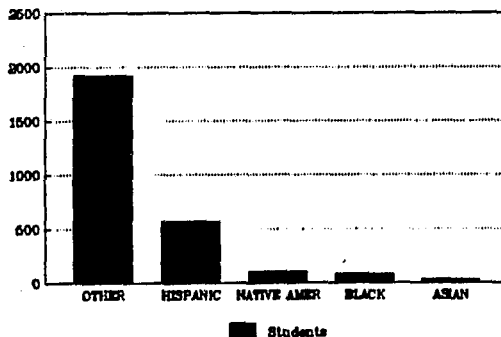
\*Courses numbered 300 and 400's

# STUDENTS TAKING COE UPPER LEVEL COURSES\* BY SEX 91-92



\*Courses numbered 300 and 400's

# STUDENTS TAKING COE UPPER LEVEL COURSES\* BY ETHNICITY 91-92



\*Courses numbered 300 and 400's



## GRADUATE STUDENT ENROLLMENT

In fiscal year 1991-92, the number of COE students admitted to the graduate school and taking graduate level courses, by semester, was:

SUMMER	999
FALL	1388
SPRING	1442

The above 38290 enrollments represent 1961 individuals.

---

CLASSIFICATION OF COE GRADUATE ENROLLMENTS\* : FY 1991-92

---

Masters	1363
Second Masters	37
Post Masters	326
Ed Specialist Cert Program	127
Doctoral	<u>108</u>
TOTAL	1961

---

\* UNM Data Base Classifications

In order to analyze the available information, it was desirable to define some categories which simplify analysis. The five classifications have been divided into 3 categories: Masters (masters, and second masters), Intermediate (post masters and ed specialist), and Doctoral. Students in the Intermediate category, depending upon how one looks at it, can be considered as being either masters or doctoral students. By using these 3 categories, the above classification breakdown becomes:

Masters	1400
Intermediate	453
Doctoral	<u>108</u>
TOTAL	1961

## COE GRADUATE ENROLLMENT BY SEX : FY 1991-92

CLASS	MALE		FEMALE		TOTAL ENROLLED	
Masters	360	26%	1040	74%	1400	100%
Intermediate	142	31%	311	69%	453	100%
Doctoral	<u>40</u>	37%	<u>68</u>	63%	<u>108</u>	100%
TOTAL ENROLLED	542	28%	1419	72%	1961	100%

## COE GRADUATE ENROLLMENT BY ETHNICITY : FY 1991-92

ETHNICITY	MASTERS		INTERMEDIATE		DOCTORAL		TOTAL ENROLLED	
Other	1020	73%	333	74%	84	77%	1437	73%
Hispanic	278	20%	80	18%	16	15%	374	19%
Nat Amer	52	4%	14	3%	5	5%	71	4%
Black	19	1%	11	2%	2	2%	32	2%
Asian	31	2%	15	3%	1	1%	47	2%

## COE GRADUATE ENROLLMENT BY DEPARTMENT : FY 1991-92

DEPT	MASTERS			INTERMEDIATE			DOCTORAL			TOTAL ENROLLED	
	% COE TOTAL	#	% DEPT TOTAL	% COE TOTAL	#	% DEPT TOTAL	% COE TOTAL	#	% DEPT TOTAL	% COE TOTAL	#
Art	6%	82	100%	0%	0	0%	0%	0	3%	4%	82
CIMTE	37%	515	86%	15%	68	11%	19%	20	6%	31%	603
Ed Adm	6%	90	47%	20%	91	47%	9%	10	20%	10%	191
Ed Fnd	2%	22	20%	13%	60	60%	20%	21	4%	5%	103
Coun & FS	11%	154	74%	10%	45	22%	7%	8	10%	11%	207
HPPELP	15%	210	62%	21%	95	28%	33%	36	00%	17%	341
Spec Ed	17%	237	79%	14%	62	21%	1%	1	0%	15%	300
TLT	<u>6%</u>	<u>90</u>	67%	<u>7%</u>	<u>32</u>	24%	<u>11%</u>	<u>12</u>	<u>9%</u>	<u>7%</u>	<u>134</u>
TOTAL ENROLLED	100%	1400	71%	100%	453	23%	100%	108	6%	100%	1961

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 PART IV : PROGRAM COMPLETIONS  
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COE UNDERGRADUATE DEGREES : FY 1991-92

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AREA	TEACHING MAJORS	Minors
	Majors	
Art Education	4	6
Bilingual Ed.	1	9
Biology	0	4
Business Ed.	1	4
Chemistry	1	4
Communication Arts	7	1
Earth Science	1	0
Elementary Ed.	139	0
English	0	9
Family Studies Ed.	4	0
General Science	0	38
Geography	0	1
German	0	1
Health Ed	1	0
History	0	5
Human Services	0	2
Language Arts	0	10
Life Science	2	0
Mathematics	12	11
Mathematics Ed	2	0
Music Education	0	2
P.E.	10	2
Psychology	0	25
Physical Science	2	0
School Health Ed	1	0
Social Studies	12	55
Sociology	0	4
Spanish	0	3
Special Ed.	27	7
TESOL	3	3
Theatre Arts	0	2
TEACHING MAJORS	230	

AREA	NON-TEACHING MAJORS	Minors
	Majors	
Athletic Training	8	0
Child Dev & Family Rel	11	4
Community Health Ed	12	0
Exercise Tech	10	0
General Family Studies	8	0
Nutrition/Dietetics	18	0
Recreation	12	0
NON-TEACHING MAJORS	79	

TOTAL 309 UNDERGRADUATE DEGREES

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## COE PROGRAM COMPLETIONS 1987-88 to 1991-92

DEPT	TEACHER LICENSURE		OTHER EDUCATION				TOTAL
	Bach	PostBach	Bach	Mast	Spec	Doct	
1987-88							
Art	6	7	0	12	-	-	25
CIMTE	125	98	-	169	0	12	404
Couns & FS	1	2	2	43	0	3	51
Ed Admin	-	-	-	28	7	3	38
Ed Found	-	-	-	13	0	6	19
HPPELP	17	4	41	24	1	14	101
Special Ed	0	1	-	56	0	3	60
TOE	6	3	3	17	-	6	35
TOTAL	155	115	46	362	8	47	733
1988-89							
Art	11	8	-	23	-	-	42
CIMTE	130	86	-	127	6	6	355
Couns & FS	0	2	2	40	0	7	51
Ed Admin	-	-	-	30	23	4	57
Ed Found	-	-	-	14	0	6	20
HPPELP	25	2	48	33	0	11	119
Special Ed	9	0	-	74	1	6	90
TOE	7	0	3	15	0	0	25
TOTAL	182	98	53	356	30	40	759
1989-90							
Art	1	3	0	22	0	0	26
CIMTE	168	67	-	135	0	4	374
Couns & FS	2	0	5	39	2	4	52
Ed Admin	-	-	-	41	24	4	69
Ed Found	-	-	-	17	0	14	31
HPPELP	13	2	39	33	0	12	99
Special Ed	17	1	-	73	0	7	98
TOE	9	1	2	20	0	0	32
TOTAL	210	74	46	380	26	45	781
1990-91							
Art	8	4	0	17	0	0	29
CIMTE	140	45	-	130	1	3	319
Couns & FS	1	1	8	31	1	4	46
Ed Admin	-	-	-	55	15	11	81
Ed Found	-	-	-	12	0	13	25
HPPELP	17	2	42	30	0	22	113
Special Ed	26	1	-	57	0	4	88
TOE	1	0	0	10	0	0	11
TOTAL	193	53	50	342	17	57	712
1991-92							
Art	4	4	0	19	0	0	27
CIMTE	183	60	-	117	0	11	371
Couns & FS	4	0	19	33	1	5	62
Ed Admin	-	-	-	32	19	6	57
Ed Found	-	-	-	6	0	6	12
HPPELP	12	2	60	30	0	12	116
Special Ed	27	1	-	64	4	7	103
TLT	0	0	0	37	0	4	41
TOTAL	230	67	79	338	24	51	789

**ETHNIC GROUPS : NUMBER & PERCENT OF COE INITIAL PROGRAM COMPLETIONS  
1987-88 through 1991-92**

ETHNICITY	TEACHING DEGREES									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Nat. Amer.	12	8%	6	3%	11	5%	13	7%	10	4%
Black	2	1%	2	1%	2	1%	2	1%	2	1%
Hispano	30	20%	52	29%	51	24%	46	24%	51	22%
Other	<u>110</u>	<u>71%</u>	<u>122</u>	<u>67%</u>	<u>146</u>	<u>70%</u>	<u>132</u>	<u>68%</u>	<u>167</u>	<u>73%</u>
TOTAL*	154	100%	182	100%	210	100%	193	100%	230	100%

ETHNICITY	NON-TEACHING DEGREES									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Nat. Amer.	0	00%	3	6%	2	4%	2	4%	3	4%
Black	0	0%	2	4%	2	4%	2	4%	0	0%
Hispano	11	24%	13	24%	11	24%	13	26%	12	15%
Other	<u>35</u>	<u>76%</u>	<u>35</u>	<u>66%</u>	<u>31</u>	<u>68%</u>	<u>33</u>	<u>66%</u>	<u>64</u>	<u>81%</u>
TOTAL*	46	100%	53	100%	46	100%	50	100%	79	100%

ETHNICITY	ALL BACHELORS DEGREES									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Nat. Amer.	12	6%	9	4%	13	5%	15	6%	13	4%
Black	2	1%	4	2%	4	2%	4	2%	2	1%
Hispano	41	21%	65	27%	62	27%	59	24%	64	20%
Other	<u>145</u>	<u>72%</u>	<u>157</u>	<u>67%</u>	<u>177</u>	<u>69%</u>	<u>165</u>	<u>68%</u>	<u>231</u>	<u>75%</u>
TOTAL*	200	100%	235	100%	256	100%	243	100%	309	100%

ETHNICITY	ADDITIONAL STUDENT TEACHING COMPLETIONS									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Nat. Amer.	1	0%	2	1%	2	3%	0	3%	2	3%
Black	1	0%	0	1%	0	0%	0	0%	0	0%
Hispano	11	11%	6	9%	7	9%	8	9%	4	6%
Other	<u>102</u>	<u>89%</u>	<u>90</u>	<u>89%</u>	<u>65</u>	<u>88%</u>	<u>45</u>	<u>88%</u>	<u>61</u>	<u>91%</u>
TOTAL	115	100%	98	100%	74	100%	53	100%	67	100%

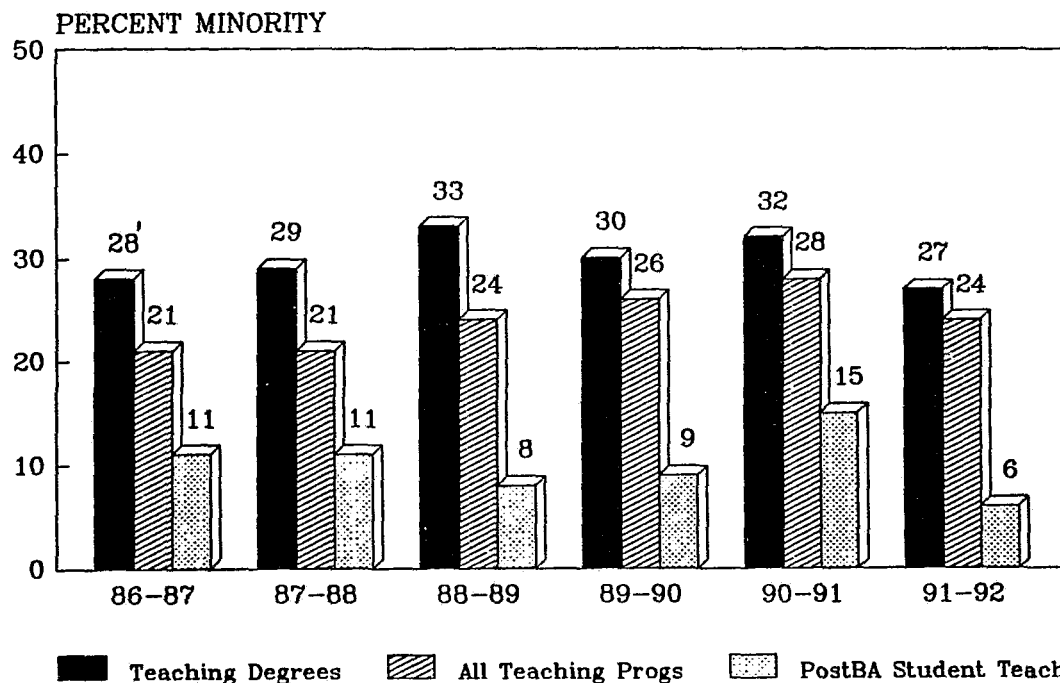
ETHNICITY	ALL INITIAL TEACHING PROGRAM COMPLETIONS									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Nat. Amer.	13	5%	8	3%	13	5%	13	5%	12	4%
Black	3	1%	2	1%	2	1%	2	1%	2	1%
Hispano	41	15%	58	21%	58	20%	54	22%	55	19%
Other	<u>212</u>	<u>79%</u>	<u>212</u>	<u>76%</u>	<u>211</u>	<u>74%</u>	<u>177</u>	<u>72%</u>	<u>228</u>	<u>76%</u>
TOTAL	269	100%	280	100%	284	100%	246	100%	297	100%

ETHNICITY	ALL INITIAL PROGRAM COMPLETIONS									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Nat. Amer.	13	4%	11	3%	15	3%	15	5%	15	4%
Black	3	1%	4	1%	4	1%	4	1%	2	1%
Hispano	52	17%	71	22%	69	22%	67	23%	67	18%
Other	<u>247</u>	<u>78%</u>	<u>247</u>	<u>74%</u>	<u>242</u>	<u>74%</u>	<u>210</u>	<u>71%</u>	<u>292</u>	<u>77%</u>
TOTAL	315	100%	333	100%	330	100%	296	100%	376	100%

\* Missing Values, Bachelors Degrees: 1 in 87-88

# COE TEACHING PROGRAM COMPLETIONS

## PERCENT MINORITY : 86-87 thru 91-92



\* Missing Ethnicity  
1 in 87-88

**SEX BREAKDOWN : NUMBER & PERCENT  
INITIAL PROGRAM COMPLETIONS  
1987-88 through 1991-92\***

SEX	TEACHING BACHELORS DEGREES									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Male	48	31%	42	23%	45	21%	40	21%	39	17%
Female	107	69%	140	77%	165	79%	153	79%	191	83%

SEX	NON-TEACHING BACHELORS DEGREES									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Male	14	30%	14	26%	17	37%	10	20%	8	10%
Female	32	70%	39	74%	29	63%	40	80%	71	90%

SEX	ALL BACHELORS DEGREES									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Male	62	31%	56	24%	62	24%	50	21%	47	15%
Female	139	69%	179	76%	194	76%	193	79%	262	85%

SEX	NON BACHELORS DEGREE STUDENT TEACHING COMPLETIONS									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Male	40	35%	30	31%	21	28%	21	40%	28	42%
Female	75	65%	68	69%	53	72%	32	60%	39	59%

SEX	ALL INITIAL TEACHING PROGRAMS									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Male	88	33%	72	26%	66	23%	61	25%	67	23%
Female	182	67%	208	74%	218	77%	185	75%	230	77%

SEX	ALL INITIAL PROGRAMS									
	1987-88		1988-89		1989-90		1990-91		1991-92	
Male	102	32%	86	26%	83	25%	71	24%	75	20%
Female	214	68%	247	74%	247	75%	225	76%	301	80%

**COLLEGE ENROLLED IN AT TIME OF INITIAL TEACHING PROGRAM COMPLETION  
FOR NON BACHELORS DEGREE STUDENT TEACHING COMPLETIONS  
1987-88 Through 1991-92**

COLLEGE	1987-88		1988-89		1989-90		1990-91		1991-92	
A & S	2	2%	7	7%	1	1%	0	0%	0	0%
BUS	3	3%	2	2%	0	0%	0	0%	0	0%
Grad School	29	25%	15	15%	12	16%	5	9%	22	33%
Non Degree	79	68%	31	32%	4	5%	0	0%	0	0%
Education	0	0%	42*	43%	57	78%	48	91%	45	67%
Other	2	2%	1	1%	0	0%	0	0%	0	0%
TOTAL	115	100%	98	100%	74	100%	53	100%	67	100%

\* In 1988-89, COE began to have Postbachelor students transfer in.

**COE ADVANCED DEGREES BY DEPARTMENT & PROGRAM**  
**Fiscal Year 1991-92**

DEPT/PROGRAM	MASTERS	DOCTORATES	TOTAL
Art Ed	19	0	19
Mult. Teacher Ed	0	11	11
Elementary Ed	77	0	77
Secondary Ed	<u>40</u>	<u>0</u>	<u>40</u>
CIMTE SUBTOTAL	117	11	128
Counseling	28	4	32
Family Studies	<u>5</u>	<u>1</u>	<u>6</u>
COUNS & FS SUBTOTAL	33	5	38
Ed Admin	32	0	32
Admin & Supervision	<u>0</u>	<u>6</u>	<u>06</u>
ED ADMIN SUBTOTAL	32	6	38
Ed Foundations	6	0	6
Psych Foundations	<u>0</u>	<u>6</u>	<u>6</u>
ED FOUND SUBTOTAL	6	6	12
Health, PE, and Rec	0	12	12
Health Ed	5	0	5
PE	18	0	18
Recreation	<u>7</u>	<u>0</u>	<u>7</u>
HPPELP SUBTOTAL	30	12	42
Special Ed	64	7	71
TLT	<u>37</u>	<u>4</u>	<u>41</u>
TOTAL	338	51	389

**EDUCATION SPECIALIST CERTIFICATES**  
**1991-92**

PROGRAM	COUNT	PERCENT
Education Administration	19	79%
Counseling and Family Studies	1	4%
Special Education	<u>4</u>	<u>17%</u>
TOTAL	24	100%



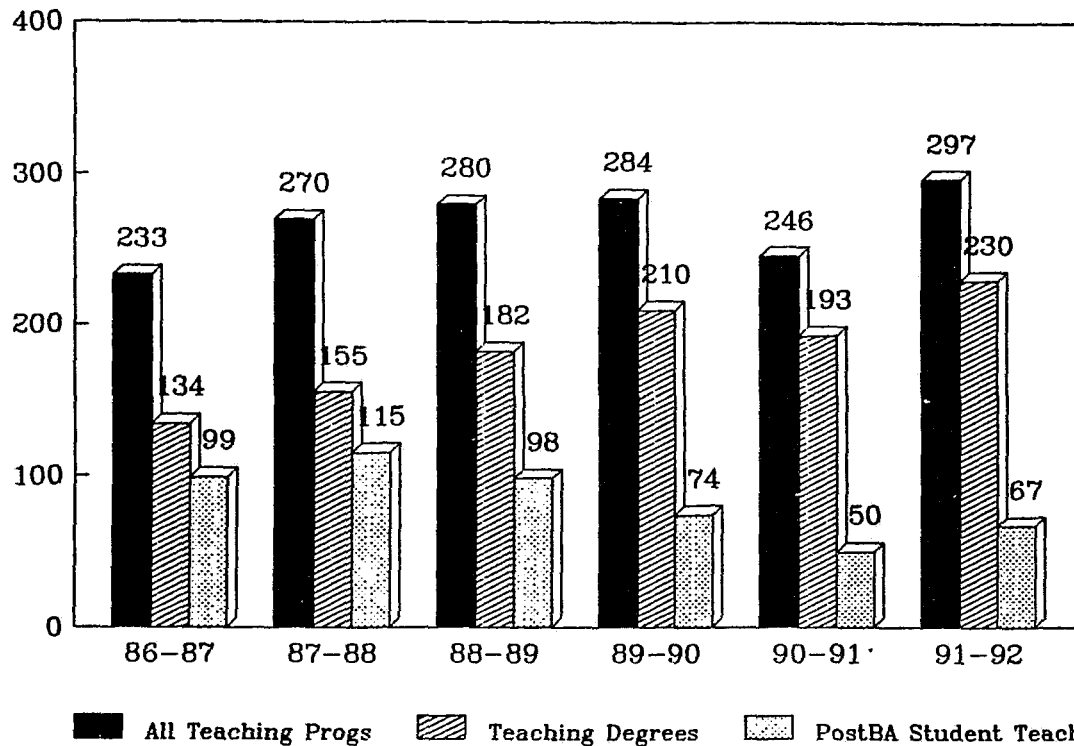
**ADVANCED PROGRAM COMPLETIONS**  
**By Program Completed & Ethnicity      1988-89 Through 1991-92**

	1988-89		1989-90		1990-91		1991-92	
<b>MASTERS DEGREES</b>								
Other	250	70%	269	71%	222	65%	247	73%
Hispano	72	20%	65	18%	82	24%	65	19%
Native American	18	5%	20	5%	22	6%	13	4%
Asian	12	4%	21	5%	9	3%	11	3%
Black	<u>4</u>	<u>1%</u>	<u>5</u>	<u>1%</u>	<u>7</u>	<u>2%</u>	<u>2</u>	<u>1%</u>
<b>TOTAL</b>	<b>356</b>	<b>100%</b>	<b>380</b>	<b>100%</b>	<b>342</b>	<b>100%</b>	<b>338</b>	<b>100%</b>
<b>DOCTORAL DEGREES</b>								
Other	33	83%	31	69%	35	61%	37	72%
Hispano	3	8%	10	22%	16	28%	11	22%
Native American	1	2%	0	0%	0	0%	1	2%
Asian	2	5%	3	7%	1	2%	2	4%
Black	<u>1</u>	<u>2%</u>	<u>1</u>	<u>2%</u>	<u>5</u>	<u>9%</u>	<u>0</u>	<u>0%</u>
<b>TOTAL</b>	<b>40</b>	<b>100%</b>	<b>45</b>	<b>100%</b>	<b>57</b>	<b>100%</b>	<b>51</b>	<b>100%</b>
<b>ED SPECIALIST CERTS</b>								
Other	24	80%	19	73%	9	53%	16	67%
Hispano	5	17%	7	27%	6	35%	5	21%
Native American	0	0%	0	0%	0	0%	1	4%
Asian	1	3%	0	0%	0	0%	2	8%
Black	<u>0</u>	<u>0%</u>	<u>0</u>	<u>0%</u>	<u>2</u>	<u>12%</u>	<u>0</u>	<u>00%</u>
<b>TOTAL</b>	<b>30</b>	<b>100%</b>	<b>26</b>	<b>100%</b>	<b>17</b>	<b>100%</b>	<b>24</b>	<b>100%</b>

**ADVANCED PROGRAM COMPLETIONS**  
**By Program Completed & Sex : 1988-89 Through 1991-92**

	1988-89		1989-90		1990-91		1991-92	
<b>MASTERS DEGREES</b>								
Male	83	23%	81	23%	66	19%	77	23%
Female	<u>273</u>	<u>77%</u>	<u>299</u>	<u>77%</u>	<u>276</u>	<u>81%</u>	<u>261</u>	<u>77%</u>
<b>TOTAL</b>	<b>356</b>	<b>100%</b>	<b>380</b>	<b>100%</b>	<b>342</b>	<b>100%</b>	<b>338</b>	<b>100%</b>
<b>DOCTORAL DEGREES</b>								
Male	15	38%	18	40%	28	49%	22	43%
Female	<u>25</u>	<u>62%</u>	<u>27</u>	<u>60%</u>	<u>29</u>	<u>51%</u>	<u>29</u>	<u>57%</u>
<b>TOTAL</b>	<b>40</b>	<b>100%</b>	<b>45</b>	<b>100%</b>	<b>57</b>	<b>100%</b>	<b>51</b>	<b>100%</b>
<b>ED SPECIALIST CERTS</b>								
Male	8	27%	7	27%	6	35%	6	25%
Female	<u>22</u>	<u>73%</u>	<u>19</u>	<u>73%</u>	<u>11</u>	<u>65%</u>	<u>18</u>	<u>75%</u>
<b>TOTAL</b>	<b>30</b>	<b>100%</b>	<b>26</b>	<b>100%</b>	<b>17</b>	<b>100%</b>	<b>24</b>	<b>100%</b>

# COE TEACHING PROGRAM COMPLETIONS 1986-87 thru 1991-92



COE INITIAL PROGRAM COMPLETIONS  
BACHELORS DEGREES  
1986-87 through 1991-92  
By Department

1018

TEACHER ED BACHELORS DEGREES

DEPARTMENT	86-87	87-88	88-89	89-90	90-91	91-92
Art Ed	3	6	11	1	8	4
CIMTE						
Elem Ed	68	86	96	136	106	139
Sec Ed	<u>23</u>	<u>39</u>	<u>34</u>	<u>32</u>	<u>34</u>	<u>44</u>
CIMTE TOTAL	91	125	130	168	140	183
Family Std	6	1	0	2	1	4
HPPELP	24	17	25	13	17	12
Special Ed	0	0	9	17	26	27
TLT	<u>10</u>	<u>6</u>	<u>7</u>	<u>9</u>	<u>1</u>	<u>0</u>
TOTAL	134	155	182	210	193	230

NON-TEACHING BACHELORS DEGREES

DEPARTMENT	86-87	87-88	88-89	89-90	90-91	91-92
Family Std	2	2	2	5	8	19
HPPELP	37	41	48	39	42	60
TLT	<u>2</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>0</u>	<u>0</u>
TOTAL	41	46	53	46	50	79

ALL BACHELORS DEGREES

DEPARTMENT	86-87	87-88	88-89	89-90	90-91	91-92
Art Ed	3	6	11	1	8	4
CIMTE						
Elem Ed	68	86	96	136	106	139
Sec Ed	<u>23</u>	<u>39</u>	<u>34</u>	<u>32</u>	<u>34</u>	<u>44</u>
CIMTE TOTAL	91	125	130	168	140	183
Family Std	8	3	2	7	9	23
HPPELP	61	58	73	52	59	72
Special Ed	0	0	9	17	26	27
TLT	<u>12</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>1</u>	<u>0</u>
TOTAL	203	201	235	256	243	309

# ADDITIONAL STUDENT TEACHING COMPLETIONS\*

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DEPARTMENT	1987-88	1988-89	1989-90	1990-91	1991-92
Art Ed	7	8	3	4	4
CIMTE					
Elem Ed	20	19	23	21	34
Sec Ed	<u>78</u>	<u>67</u>	<u>44</u>	<u>24</u>	<u>26</u>
CIMTE TOTAL	98	86	67	45	60
Family Std	2	2	0	1	0
HPPELP	4	2	2	2	2
Special Ed	1	0	1	1	1
TLT	<u>3</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>
TOTAL	115	98	74	53	67

## ALL INITIAL TEACHING PROGRAM COMPLETIONS (Non Bachelors Completions Based On Student Teaching)

DEPARTMENT	1987-88	1988-89	1989-90	1990-91	1991-92
Art Ed	13	19	4	12	8
CIMTE					
Elem Ed	106	115	159	127	173
Sec Ed	<u>117</u>	<u>101</u>	<u>76</u>	<u>58</u>	<u>70</u>
CIMTE TOTAL	223	216	235	185	243
Family Std	3	2	2	2	4
HPPELP	21	27	15	19	14
Special Ed	1	9	18	27	28
TLT	<u>9</u>	<u>7</u>	<u>10</u>	<u>1</u>	<u>0</u>
TOTAL	270	280	284	246	297

## ALL INITIAL PROGRAM COMPLETIONS (Non Bachelors Completions Based On Student Teaching)

DEPARTMENT	1987-88	1988-89	1989-90	1990-91	1991-92
Art Ed	13	19	4	12	8
CIMTE					
Elem Ed	106	115	159	127	173
Sec Ed	<u>117</u>	<u>101</u>	<u>76</u>	<u>58</u>	<u>70</u>
CIMTE TOTAL	223	216	235	185	243
Family Std	5	4	7	10	23
HPPELP	62	75	54	61	74
Special Ed	1	9	18	27	28
TLT	<u>12</u>	<u>10</u>	<u>12</u>	<u>1</u>	<u>0</u>
TOTAL	316	333	330	296	376

\* Student Teaching Completions represent those receiving a passing grade in a Student Teaching class, who have NOT received a COE undergraduate degree. They would be mostly Post-Bachelor licensure program completers, but could also be A & S or BUS students pursuing teacher licensure. This method gives a reasonable estimate for initial teaching program completions. In the future, it will be more accurate to count these completions directly from the "Post Bachelor" lists.

# REPORT OF THE DEPARTMENT OF ART EDUCATION College of Education

July 1, 1991 - June 30, 1992

James J. Srubek, Chairman

This is the last *Report* of the Department of Art Education as it has existed since its inception in 1947 at UNM. Beginning Fall Semester 1992, the department along with the other seven academic departments in the College of Education will be dissolved while the College realigns itself into three divisions as part of the University's reallocation scheme. Since it is the department chairs who write these *Reports* and since I have written sixteen of them, I would like to take this opportunity to recognize the past Art Education chairs who have worked hard to direct this department and report on its accomplishments over the past forty four years.

In 1947 two new departments were established at the University -- Music Education and Art Education. For a number of reasons a decision was made to locate Music Education in the College of Fine Arts and Art Education in the College of Education. Dr. Alexander Masley, arriving in New Mexico that year from Columbia University, became the first UNM professor of art education and the first chairman of the new department. He served as chair until 1969, when he retired, and for many years was a one-man department, establishing the philosophical and academic foundations of the department. When Dr. Masley retired, Dr. Donald MacIntosh, also from Columbia University, came to chair the department and served as chair until 1972. Following Dr. MacIntosh, Dr. Howard McConeghey returned to New Mexico from Eastern Washington University to become department chair; Dr. McConeghey was chair until 1976 when he stepped down to become a full-time professor in the department; he then retired in 1990. I came to UNM in 1971 from Penn State University as an assistant professor in art education and assumed the position of department chair in 1976.

It is with a great deal of emotion that I close this departmental chapter and the legacy of the past chairmen of Art Education. It has been my honor over the past sixteen years to carry on the work of Alex, Don and Howard. When the department enters the new Teaching and Learning Division of the College of Education in the Fall 1992, I hope that we can carry on the important mission of the late-great Department of Art Education begun by Alex Masley in 1947.

## A. Highlights of the Year.

In August of 1991, it was announced that the College of Education would be restuctured as part of the University's reallocation scheme. This announcement fairly well established the work to be done during the academic year. All the faculty were involved in extensive meetings and work to help establish a new structure for the College. However, in addition to this work, the art

education faculty also had a very productive year in carrying out the mission of art education and art therapy.

The enrollment and student credit hour production (SCH) for the academic year remained stable continuing a trend begun in 1981/82, which is when the art therapy program was initiated. This stability is partially a result of fixed faculty resources in the department and the necessary decision several years ago to limit the enrollment in the graduate art therapy program. This year the undergraduate SCH for the entire department was 45% while the graduate SCH was 55%. The SCH for the major sub-areas in the department were as follows: 1) service courses - 11.6%; 2) undergraduate art teaching licensure core courses - 13.8%; 3) master's level core courses - 9.5%; art therapy core courses - 26.5%; art studio-methods courses - 35.5%; independent study course - 3.1%. In the new arrangement of the College, two faculty members, Professors Abbenante and Wix (which is 40% of the department's full time faculty), will move to Division A along with about 27% of the department's SCH.

Art Therapy. The art therapy emphasis within the master's degree program in art education enjoyed another active and productive year. As usual this program accounts for far more than can be expected from two full-time faculty. The art therapy program was again re-certified by the American Art Therapy Association as one of about twenty such programs in the nation and the only one based upon archetypal psychology. In 1990/91, 52 completed applications were received for this program, while only 12 could be accepted. This year 70 completed applications were received and 15 were accepted. Twelve art therapy majors graduated at the end of this year. Employment of these graduates continue to be good.

During this year, three distinguished art therapists from across the country came as visiting instructors. Gladys Agell, head of the Art Therapy program at Vermont College conducted a workshop on the Ulman Personality Assessment. Edith Sullwold, Jungian therapist from Amherst, Mass., did a workshop entitled "Imagination's Wisdom." Meinrad Craighead, internationally known author and artist, presented a workshop entitled "Drawing Your Own Story." In March the department hosted the New Mexico Art Therapy Association's annual conference, and as part of that conference, Professor Linney Wix curated an exhibit in the Art Education Gallery illustrating the process of art therapy with artworks and case materials by some of her clients. This type of exhibition is quite unique and was begun last year in our gallery with Professor Abbenante's exhibit of a longitudinal case study of one of her clients.

In the summer of 1991, a special selection of art therapy courses was offered as the beginning of a summer art therapy institute at UNM. In addition to the annual special summer art therapy course, which was "Art Therapy and Alchemy" taught by Ethne Grey, Jungian analyst and adjunct faculty at Leslie College in Cambridge, Mass., three other special and related courses were offered: "The Use of Sand Tray in Art Therapy" taught by Susan McNofsky, one of a few internationally certified professionals in this area; "Dance and Movement Therapy" taught by Joanie Carlisle, certified movement therapist; and "Voice and Music Therapy" taught by Susan Hale, certified music therapist. Also, as a highlight to the summer offerings in art therapy, a national conference of the Jungian Art Therapy Association was held in the department in June. Art Ed-UNM has become the preferred location for this biennial national conference because of the unique art therapy program here. In addition to a similar set of offerings in the summer of 1992, Jasmine Hellich, an art therapist from Austria will teach the special summer course entitled "Healing Portraits in Art Therapy."

Two years ago in response to initiatives directed toward us by the Institute of American Indian Arts (IAIA) in Sante Fe and by Kathleen Westcott (A.T.R), the department embarked upon an investigation of the feasibility of a special art therapy training program based upon and directed toward indigenous Native American cultural practices and populations. This was a most exciting prospect because, among other reasons, it had never been done before anywhere. We were approached by the Native American community through the IAIA to investigate this possibility because our archetypally based art therapy program was very compatible with Native American medicine practices, the use of the *image* in Native American culture and the *need* for alternative therapies in Native American social and health services.

As a beginning, the department committed a third-time position to this project by hiring Kathleen Westcott, the only Native American registered art therapist in the country, to do a feasibility study for this program, be a liaison between our department and the IAIA and the Native American community, and to teach a class in cross-cultural art therapy. During this year, Professor Westcott completed the feasibility study, which documented the desperate need and enthusiastic support for this program by the Native American community not only in New Mexico and the southwest but also nationally. In addition Professor Westcott presented the idea of this program and received enthusiastic responses at, among other places, The National Annual Conference of United Psychiatrists in San Francisco, the American Indian Child Welfare Conference in Albuquerque and the All-Tribal Healthy Family Conference in Alaska. In addition, we received numerous letters of enthusiastic support from Native American health professional across the nation. We also held public meetings among the Native American community in New

Mexico to brainstorm this idea. Our department was on the verge of finalizing a formal letter of agreement with the IAIA to jointly develop this program. However, as a result of the University's reallocation scheme, this third-time position and the immediate possibility of developing this nationally unique program was unfortunately cut. However, it is hoped that this will not be the end of this marvelous, unique and challenging idea. Much credit must be given to Kathleen Westcott for her dream for this program and all the work she had done over the past two years on this project.

As the art therapy component of the art education department, including Professors Abbenante and Wix, moves to another administrative division of the college, I bow to their efforts and applaud their success. They are also reminded that they will always remain in our hearts and always be an inseparable part of our combined profession where the art process and image works its power and magic in the human psyche and soul. "A.T., come home!"

Art Education. The major areas within the art education component of the department consist of 1) service courses for non-art education majors, 2) the B.A. art teaching licensure curriculum, 3) the M.A. program, and 4) studio methods courses.

This year, service course enrollment, especially in Art Ed 214, "Art in the Elementary and Special Classroom, began to increase after several years of decline as a result of new state licensure requirements. In addition, "Art and the Exceptional Child," primarily for special education majors, and "Art in Early Childhood," for elementary education majors, did well indicating a continuing need. Service course SCH amounted to 11.6% of the department's total.

Enrollment remained steady (13.8% of the department's SCH) within the B.A. art teaching licensure curriculum. Professor Peterson increased the program's involvement in the A.P.S. year-round schools and the P.D.S. schools, especially by placing student teachers along with an art education program in Emerson Elementary School. More activity will take place in the P.D.S. schools next year with both Professors Peterson and Nateman (.250 FTE in P.D.S. schools) working there. As part of the art teaching licensure program, the Community Art for Children (SAK) offers art classes for community children taught by art education majors. This year the program enrolled approximately 85 children. The SAK program, directed by Professor Peterson, is the oldest program of its kind at UNM, where university students work with community children as part of a regular teacher preparation curriculum.



Studio-methods courses accounted for the largest percentage (35.5%) of the department's SCH. These courses are taken by undergraduate and graduate art education and non-art education students across the campus, especially including Fine Arts majors in Professor Srubek's porcelain classes, Professor Nateman's drawing class, Catie Angell's computer graphics class and Mary Colton's weaving class. Professor Srubek's unique Orientally-based porcelain class continues to grow in numbers and scope. This year Professor Srubek's Japanese teacher, Sensei Manji Inoue of Arita, Japan, returned as a visiting artist for three weeks in the porcelain class. Sensei Inoue is one of Japan's leading porcelain artists and is a "living cultural treasure" in his country. This was Sensei Inoue's forth visit to the class. Following this visit, Sensei Hanjiro Mizuno, a important and well known Japanese "Mingei" (folkart) ceramic artist also visited Professor Srubek's class. The later visit was co-sponsored by the College of Fine Arts, the Art Department and the New Mexico Potters Association. These two visits were by two of Japan's most distinguished ceramic artists and certainly "world class" individuals in their fields. The porcelain class, unique in the United States and drawing approximately 30 students each semester, is poised and ready for further development into a program and institute. Many students are interested in pursuing a major (undergraduate and graduate) in porcelain. The College of Fine Arts and the Art Department are interested in this possibility.

As a new formal direction in the department, Professor Nateman began preliminary work on establishing a museum education emphasis as an option in the master's degree program. The department has for a number of years has had an informal option for museum education. Professor Nateman consulted with the various unique museums in the state, including the new Children's Museum in Sante Fe. He also met with the people in the museum studies program in Fine Arts concerning a collaborative program in this area.

The art education gallery, directed by Professor Srubek, is both an educational arm of the department and a community resource in the area of art education. Below is the schedule of exhibitions held in the gallery this past year.

- August/September - *Adjunct and Part-Time Art Education Faculty*. A multi-media exhibition of work done by part-time and adjunct Art Education faculty at UNM.
- September/October - *Visual Poetry - Calligraphy on Clay*. Sculptural ceramic work with calligraphy by international artist Dr. Narae Mochizuki.
- October - *Enabled X*. Tenth annual exhibit of artwork produced by special education students participating in the Very Special Arts Program of New Mexico.
- November - *New Mexico K-12 Student Art*. Selected artwork from the New Mexico State Fair K-12 Exhibition.

- November/December - *Art Therapy: Image and Process*. A presentation of artwork and case material demonstrating the process of art therapy.
- January - *Arts Attack!* Selected artwork of New Mexico students participating in the UNM Arts Attacks Conference on the importance of art in education.
- January/February - *UNM Non-Art Faculty and Staff*. Artwork by UNM faculty and staff who are working in areas other than art.
- February/March - *Porcelain at UNM*. An exhibition by students of Dr. Jim Srubek who are currently working in porcelain at UNM.
- April/May - *Annual Art Education Graduating Students*. Artwork by graduating Art Education seniors and master's students.

## B. Plans for the Future.

As mentioned earlier in this *Report*, the department will be dissolved and reorganized in the College. Professors Josie Abbenante and Linney Wix, the art therapy faculty, will be housed administratively in Division A. Professors Jim Srubek and Phil Peterson will be in Division B, Teaching and Learning, while Professor David Nateman will be half-time in Division B and half-time in Division C, Innovative Programs. Details of how this will function will need to be worked out next year. All of the programs existing now will continue to function as in the past. During this coming year, the licensure program will undergo the periodic ten year review by the National Council of Accreditation of Teacher Education (NCATE).

The art therapy program will need to be defined within its new home. Talks this year with the College of Fine Arts have indicated interest in an integrated arts therapy program. This may be pursued. This is an unfortunate time to split art therapy administratively from its genesis in art education, especially in light of recent literature in the field of art therapy recommending that the field remain closely based in the studio processes of art and not stray too far into counseling and clinical orientations. The issues raised in cutting the Native American art therapy idea will need to be addressed and alternative funding pursued.

The service course area of the department will continue and possibly change and grow as the College changes and develops innovative programs in Division C. Professor Nateman will be our contact in this area. The licensure curriculum will continue and develop as the art education faculty examines this area and changes it along with the other College programs. Professors Srubek and Nateman have recently responded to an initiative from Kazuko Asaba, director of children's art programs in Japan, to work together on a Pueblo Indian children-Japanese children multicultural art education program, which began in New Mexico this summer.

Professor Nateman will continue developing the new museum education emphasis in conjunction with the College of Fine Arts and the unique museums in the state. After sixteen years of devoting at least 50% of his time to administrative matters in the department, Professor Srubek is highly desirous of having time to further develop the porcelain class into a program in conjunction with the the Art Department and College of Fine Arts, and in exploring the possibility of establishing a porcelain institute at UNM much like the Tamarind Institute of lithography here. He would also like to continue curating and directing the art education gallery, find time to finish writing his book on the Oriental porcelain method and develop his own creative work in porcelain.

### **C. Other Professional Activities and Outside Sponsored Research.**

In January, Professor Srubek participated in the *Arts Attack!* conference at UNM. This was a national conference examining the status of arts education in the schools, which was originated by a group of arts educators from the Colleges of Fine Arts and Education, the Albuquerque Public Schools, the State Department of Education and several other arts education advocacy agencies in the state. This group will continue this work in the state and plan subsequent conferences in this area.

Professors Abbenante and Wix team-taught a pre-conference workshop on case study material in art therapy at the annual conference of the American Art Therapy Association in Denver. Professor Abbenante presented a pre-conference workshop entitled "Art Therapy and Containers" at the American Women in Psychology conference in Long Beach, California.

Professor David Nateman received two grant awards for the coming year -- one from the UNM faculty research fund to conduct a survey of the status of art education in New Mexico schools and one from The American Crayon Company to coordinate a regional exhibition of children's art work.

Professor Peterson is submitting a proposal to General Mills for establishing a Downtown Center for Arts Education, which would be a community based program for arts education.

**1991-92 ANNUAL REPORT**

**Department of Curriculum and Instruction in  
Multicultural Teacher Education**

**Sigmund Mierzwa, Department Chair**

A., B.      Significant Achievements/Significant Plans and Recommendations

1.      **Enrollments**

The department, responding to increased student demand for its elementary education programs, initiated programs at several new sites. Enrollment in elementary education programs is expected to double within one year.

2.      **Native American Education**

The department received a contract from the NMCHE to initiate an upper division teacher education program at UNM Gallup. Also, the new Returning Peace Corps Fellows Program will provide teachers on the Navajo reservation.

3.      **Middle School Initiative**

The middle school initiative continues to advance. A middle school program should be forthcoming soon.

4.      **New Contracts/Grants**

In addition to the continuation of our award winning collaborative programs and bilingual education contracts, the department received several new awards in the areas of bilingual education, teacher education at UNM Gallup, and early childhood education.

C.      Appointments to Staff

Dr. Mary Patton and Dr. Teresa Kokoski joined the faculty for the 1991-92 school year.

D. Sponsored Research or Other Projects

1. Number and percent of faculty submitting proposals to outside agencies:

Nine (9) Faculty = 39%

2. Number and percent of faculty obtaining awards from outside agencies:

Nine (9) Faculty = 39%

ANNUAL REPORT  
DEPARTMENT OF COUNSELING AND FAMILY STUDIES  
COLLEGE OF EDUCATION

July 1, 1991 - June 30, 1992

Submitted by:

Pauline H. Turner  
Chairperson

DEPARTMENT OF COUNSELING AND FAMILY STUDIES  
COLLEGE OF EDUCATION

## ANNUAL REPORT

July 1, 1991 - June 30, 1992

Submitted by:  
Pauline H. Turner, Chairperson

The past year has been one of considerable activity, change, and challenge. Faculty, for the most part, have been involved in teaching, advising, program development, scholarly endeavors, and service activities in addition to participating in discussions and planning for the reorganization of the College of Education. Several changes have been made in faculty positions, and the department functioned under new leadership at the chair's level. Further, a site visit for the purpose of accreditation of the Counselor Education programs occurred in the fall. Finally, a flurry of activities around reallocation and restructuring have been occurring at a rapid pace since October.

## TEACHING

Courses in the department have continued to have high enrollments. The semester credit hour production for the 1991-92 year was as follows:

	<u>Summer '91</u>	<u>Fall '91</u>	<u>Spring '92</u>
Family Studies			
Undergraduate	354	1819	2138
Graduate	164	417	350
Subtotal	518	2236	2488



**Counseling and Family Studies  
1991-92 Annual Report**

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	<u>Summer '91</u>	<u>Fall '91</u>	<u>Spring '92</u>
<b>Counseling*</b>			
Undergraduate	42**	141	156
Graduate	404	1184	1152
Subtotal	446	1325	1308
<b>TOTAL</b>	<b>964</b>	<b>3561</b>	<b>3796</b>

\* Includes both Counselor Education and Counseling Psychology

\*\* Some Counseling courses have both a 400 and 500 level; these credit hours reflect those students registering at the 400 level

Under ordinary circumstances, the department would have been actively engaged in developing new courses, but due to reallocation and a de-emphasis on new course proposals, few actual curriculum changes were made. One new course was designed and taught at the doctoral level in the new Family Studies doctoral program; two additional new courses in the program have been designed to be taught in the 1992-93 academic year.

**NEW PROGRAMS**

The Family Studies doctoral program was implemented in the fall of 1991 with nine students admitted. Thirteen additional applications were received for 1992-93, and five were accepted for admission. Both faculty and students are enthusiastic about the program and its potential for growth.

Two faculty in the department (Professor Turner and Professor Shipman) continued working with the COE Early Childhood Consortium in developing an undergraduate interdisciplinary program in Early Childhood Education. This program will begin its formal approval route in the fall. Other departments involved in this endeavor are Special Education and CIMTE.

#### CHANGES IN PROGRAMS

Two significant decisions were made about existing programs in the department: Both Counselor Education and Counseling Psychology decided to place a moratorium on the admission of students to their doctoral programs for the 1992-93 academic year. In both cases, the decisions were based on limited resources. In the case of Counselor Education, the accrediting body recommended that two faculty FTE be designated to the doctoral program in addition to the faculty required to maintain appropriate faculty/student ratios for the master's program. In the case of Counseling Psychology, vacant faculty lines, lack of APA accreditation, and the tenuous status of the program for the future caused the faculty to make its decision.

#### ACCREDITATION SITE VISIT

On October 27-30, 1991, a team of three individuals made a site visit to the department to review the Counselor Education programs for the purpose of re-accreditation by CACREP, the national accrediting body. The team consisted of Dr. Ronald Bingham (Chair), Brigham Young University, Dr. Avraham Scherman, University of Oklahoma, and Dr. Judith Dobson, Oklahoma State University. Their visit was preceded by a self-study the previous year and by

an addendum to the self-study, completed late summer/early fall. During their visit, the team met with the Chair, the three unit coordinators, the Counselor Education faculty, the Counseling Psychology faculty, the students, the Dean (Peggy Blackwell), the acting Dean of the Office of Graduate Studies (Rich Holder), and the Provost (Paul Risser). They visited student practicum sites, both at Manzanita Center and selected community sites, as well as other relevant campus sites, such as the Mental Health Center.

The report following the site visit was generally positive, but several recommendations were made, of which the following are the most important:

1. Conduct a detailed review of the content of all courses to avoid duplication and to fill obvious gaps.
2. Make a clearer distinction between the School Counseling emphasis and the Community Counseling emphasis; increase the emphasis on School Counseling by accepting more students into this track.
3. Faculty should spend more time in research and greater consistency across faculty should be visible in contributing to the professional literature.
4. Obtain more input from students and cooperating agency personnel in program objectives.
5. Fill the open faculty line in Counselor Education with a tenure-track person.

6. Strengthen the Ph.D. in Counselor Education and eliminate the Ed.D.
7. Maintain a primary focus on a quality program.
8. Develop a formal monitoring system of students.

In addition to these recommendations, there were several specific minor curriculum changes recommended, most of which the unit has already implemented.

The final result of the site visit was that both Master's programs (School Counseling and Community/Agency Counseling) were accredited for a period of two years, at which time evidence that certain conditions have been met must be provided. The accreditation of the doctoral program was extended until September, 1992, continuation of which is contingent upon several conditions being met. The most significant of these is the designation of two faculty FTE being identified with the doctoral program, in addition to those assigned to the master's program. Because of limited resources (and the moratorium on hiring tenure-line faculty), the Counselor Education unit has withdrawn its doctoral program from consideration for CACREP accreditation and has placed a moratorium on accepting new students into the program. Unless conditions change dramatically, the doctoral program will be discontinued after the current students graduate.

## ORGANIZATIONAL STRUCTURE

On August 15, 1991, Pauline Turner assumed the position of Chair, relinquished by Wayne Maes, who had served for one year. Immediately thereafter, changes in faculty positions began to occur, and these changes continued to occur throughout the year. Lewis Dahmen retired, quite unexpectedly, in August, and a local search was implemented for his replacement. The department was fortunate to hire Dr. George Jaramillo-Leone as his temporary replacement for one year. Effective December 31, 1991, Mary Steir left the department. Once again, a local search was instituted, which resulted in the hiring of Dr. Maria Moya as a temporary replacement for the spring semester of 1992. In addition, a second national search was on-going for the replacement of Blaine Fowers. With the moratorium on tenure-track replacements, that search was changed from a tenure-track position to a one-year visiting. The search is still underway and has not yet been successful. Finally, two more retirements will become effective July 1, 1992: Marion Heisey and Darrell Anderson. Below are listed both the full-time and part-time faculty for the department, by program, for 1991-92:

### Full-time Faculty:

#### Counselor Education

Marion Heisey, Associate Professor  
George Jaramillo-Leone, Visiting Assistant Professor  
(filling vacant Dahmen line)  
Vonda Long, Associate Professor  
Wayne Maes, Professor  
Deborah Rifenbary, Assistant Professor (untenured)

Counseling Psychology

Darrell Anderson, Professor  
William Fishburn, Professor  
Dean Rudoy, Half-time Visiting Assistant Professor  
(filling vacant Fowers line)  
Mary Steir, Assistant Professor (through 12/31/91)  
Maria Moya, Visiting Assistant Professor (filling vacant  
Steir line from 1/1/92 through 5/15/92)

Family Studies

Guillermina Engelbrecht, Professor (on leave as Associate  
Dean, COE, no replacement)  
Estella Martinez, Assistant Professor (untenured)  
Pamela Olson, Assistant Professor (tenured)  
Virginia Shipman, Professor  
Mary Smith, Professor  
Richard Smith, Associate Professor  
Pauline Turner, Professor (Half-time teaching and half-  
time as Chair)

**Part-time (Adjunct) Faculty:**Counseling

Betty Kelley  
Jon Maaske  
Ron McGowan

Family Studies

Robert Duncan  
Anita Frank  
Holly Harrison (Early Intervention grant)  
Kathryn Herr  
Robin Jacobvitz  
Sushila James  
Jean Lowe (Early Intervention grant)  
Sandra Luck  
Hans Skott-Myhre

Two faculty went forward from the department for review for tenure or promotion: Estella Martinez for tenure and Vonda Long for promotion. The final outcome of both of these reviews is pending.

**SCHOLARLY ACTIVITY**

Many faculty were actively engaged during the year in scholarly activity. Papers were presented at regional or national meetings by the following faculty: Professor Turner, Professor Martinez, and Professor R. Smith. Professor Turner submitted the final manuscript and photographs for the publication of a book; Professor Long signed a contract for a book; several faculty had papers accepted for publication in refereed journals or chapters completed for books. Professor Rifenbary published a monograph and produced a video, and Professor Turner published a Directory of Early Childhood Training in New Mexico.

Faculty were represented at the following professional conferences during the year: Rocky Mountain Association for Counselor Education and Supervision, American Psychological Association, American Educational Research Association, American Association of Marriage and Family Therapists, National Council on Family Relations, National Association for the Education of Young Children, American Association for Counseling and Development, Southeastern Council on Family Relations, Eastern Educational Research Association, Western Regional Home Management/Family Economics Educators, National Association for Chicano Studies, Holmes Group meetings, and a conference sponsored by Cornell University on Household Time Use. Several faculty participated in the programs of these conferences as chairs of sessions, discussants, symposia participants, etc.

Outside funding was received by the following faculty:

Virginia Shipman, Albuquerque Public Schools, for Even Start Project, \$17,500

Pauline Turner, US Office of Education, Division of Special Education & Rehabilitative Services, for Personnel Preparation of Early Interventionists, \$75,000/year for 5 years

Pauline Turner, State Department of Education, Office of Child Development, for Survey of Early Childhood Training in New Mexico, \$18,418

Deborah Rifenburg, State Department of Education, for New Mexico Career Information Center, \$50,000 (re-funded for 1992-93)

Both Professor Long and Professor Turner received OFAC grants.



## SERVICE

Faculty in the department provide service to the department, the college, and the university; to the profession; and to the community. Department service includes serving on departmental search committees, advising student groups (Professor Olson and Professor Maes), and serving on departmental committees. Service to the college includes serving on college committees (Professor Olson, Professor Shipman, Professor R. Smith, and Professor Martinez), screening research proposals for appropriate treatment of human subjects (Professor Shipman), and working with the Early Childhood Consortium (Professor Shipman and Professor Turner). Service to the university includes serving on university committees (Professor M. Smith, Professor Turner, Professor Shipman, and Professor Martinez), serving on the Faculty Senate (Professor Long and Professor Turner), and serving on the Planning Team for Women Studies (Professor Turner). In addition, during the past year three faculty have participated in a significant way in the restructuring efforts: Professor Turner served on the Retreat Planning Team and chaired a task force, Professor Rifenbary served on the Retreat Planning Team and Professor Shipman participated in the before- and after-retreat planning team. Several other faculty members participated in the speakers' series, the town hall meetings, and the noon conversations. The Counseling Psychology faculty and the Clinical Psychology faculty jointly prepared a paper for the Dean and the Provost comparing and contrasting the two doctoral programs.

Service to the profession is achieved in a variety of ways. Professor R. Smith serves on national teams to accredit programs in Marriage and Family Therapy; Professor Fishburn is Membership Chair and Chair of the Task Force on Sexuality and Family Psychology in

the Division 43 of the American Psychological Association, as well as Associate Coordinator for the 1993 APA mid-winter convention and Coordinator for the 1994 APA mid-winter convention; Professor Martinez is Secretary of the Ethnic Minority Families section of the National Council on Family Relations; Professor Shipman was program chair for the Eastern Educational Research Association annual meeting; Professor Olson is Vice President of the Western Region of Home Management/Family Economics Educators; Professor Long is President-elect of New Mexico ACES and Professor Maes is Licensure Committee Chair; Professor M. Smith is First Vice President of the New Mexico Home Economics Association; Professor Fishburn is President-elect of the New Mexico Psychoanalytic Society; Professor Rifenburg is testing counselor education training materials for a national project and has participated in two Holmes group meetings; and Professor Turner went to Houston as a reader for national proposals for America 2000 schools submitted to the New American Schools Development Corporation; she serves on the National Advisory Board for the Parent-Caregiver Project at Cornell University; and she participated in the Governor's Summit on Education.

Service to the community and state by faculty is extensive, and no attempt will be made here to describe it fully. A few notable examples are as follows: Professor Turner was appointed by the Governor to serve on the Steering Committee for Child Care and Development to develop a long-range plan for early childhood services in New Mexico (she is Chair of the Quality Assurance Subcommittee); Professor Maes serves on the Advisory Boards for the Institute for Criminal Justice and the Memorial Hospital Challenge Program; Professor Shipman is on the Board of Directors for the NM Association for Community Education and serves on the Advisory Board for the Early Childhood and Family Education Program.

## FACULTY DEVELOPMENT

The department held a day-long fall retreat at the Sheraton Old Town during which time they laid out a plan of work for the year. It held a spring retreat at La Posada during which time program units engaged in planning and evaluation and discussions around restructuring occurred. In December, nine faculty members participated in an all-day Word Perfect workshop presented by T-VI. In February, Anita Alvarado presented a workshop to the faculty on sexual harassment. In November, Professor Turner attended a three-day workshop in Boulder, Colorado, on Chairing the Academic Department, and last summer Professor Martinez went to Riverside, California to meet and work with other Chicano researchers. Perhaps the most significant faculty development occurred around the variety of college-sponsored activities related to restructuring, which have already been described.

## MISCELLANEOUS

A variety of other items deserve mention. They are as follows:

1. The renovation of Manzanita Center was completed in the fall. Both faculty and students are enjoying the remodeled facility.
2. The department adopted a policy on dissertation committees and proposals.
3. Wayne Maes will be on sabbatical fall semester, 1992 and Guillermina Engelbrecht will be on sabbatical both fall and spring semesters, 1992-93.

4. Both Professor Fishburn and Professor Turner appeared on television twice during the year.
5. The department wrote a letter of support to First Lady Alice King for the creation of a cabinet-level agency on Children, Youth, and Families.
6. Dr. Fred Lopez from Michigan State University will be Visiting Associate Research Professor with the Counseling Psychology program for 1992-93.

#### SUMMARY AND CONCLUSIONS

As a department, the functions of teaching, research, and service have been close to exemplary. However, it is clear that there is considerable unevenness among faculty in these achievements. Several faculty in the department obtain consistently high ratings in teaching, and a few obtain consistently low average ratings. The same is true for research and scholarly activity--approximately two-thirds of the regular faculty are engaged in some kind of scholarly activity (regularity and intensity varies), and the other one-third are not and have not been for some time. The degree of service to the university, the community/state, and to the profession ranges from none to extensive.

Given ordinary circumstances, it would be appropriate to identify specific departmental goals for the coming year. Because of the new administrative structure, however, it seems more appropriate for goals to be set by individual programs, by multiple programs seeking some kind of linkage, by new program initiatives and collaboratives, and by divisions. Each program in the currently

existing department will, in the coming year, review and evaluate its curriculum, seek ways to link with other programs in the college, enhance its multidisciplinary and multicultural foci, and contribute positively to the restructuring efforts of the college (I hope!).

The coming year will abound with challenge and change. Most faculty in the department look forward to it with anticipation and enthusiasm.

Annual Report  
The Department of Educational Administration  
July 1, 1991 - June 30, 1992

Submitted by Paul Pohland

### Introduction:

During the 1991-1992 calendar year the Department of Educational Administration moved in several significant ways. Some movement was consistent with the Department's 5-year Plan, some charted new ground, some reflected strengthening of steps already taken, and some reflected adjustments to practice. All of these will be detailed in the Report which follows.

### I. Department Governance and Administration

A. On July 1, 1991, Professor Paul Pohland re-assumed the department chairmanship. In doing so, the co-chairs plus academic advisor arrangement in effect since 1989 was discontinued. The effects were severalfold: (1) greater administrative accountability was achieved; (2) ambiguity relative to locus of responsibility was reduced; and (3) administrative overhead was reduced by the equivalent of .5 FTE. As a function of the latter, direct faculty involvement in administration was decreased with a corresponding increase in traditional faculty activity.

Lest it be misunderstood, faculty collectively were deeply involved in department affairs through twice monthly department meetings and committee assignments.

B. Student involvement in governance continued through the auspices of the Graduate Student Association (EA). As the year progressed increasing input was requested from that group, particularly with respect to student award nominations.

C. To facilitate governance and administration, a departmental Policies and Procedures Manual was developed during the Summer of 1991. New policies were added to the Manual as they were adopted by the faculty. Ms. Susan Stratton was most instrumental in the Manual's development.

D. Departmental support staff were reorganized. With the addition of Mercy Salazar duties and responsibilities were redistributed. Ms. Salazar became primarily responsible for all student matters, while the Office Manager was responsible for fiscal accounting, scheduling, formal correspondence, faculty matters, and the supervision of work study.

E. Due to staff availability, a continuously updated, computerized student record system was finally brought on line. Having such a system makes possible accurate student accounting.

## II. Significant Achievements

Beyond the achievements identified above we list the following:

A. A re-configured Master's program. In its new form, the MA is organized around the 7 University Council for Educational Administration "knowledge domains." These include: (1) the legal, moral, and ethical dimensions of administration; (2) the economic and financial dimensions of administration; (3) educational policy, including community studies; (4) organizational studies; (5) leadership and management processes; (6) teaching and learning processes; and (7), societal and cultural influences upon school. Concurrently, new rules governing programs and admissions processes were adopted, notably the addition of an Assessment Center to complement the application file.

B. A re-configured Education Specialist program. Like the MA program, the Ed.S. was restructured along knowledge domain lines. Similarly, new rules of administration were adopted as well as the Assessment Center.

C. An Experimental Doctor of Education (Ed.D.) in Educational Administration. Devising this program was undoubtedly the major achievement of the year. The effort was initiated in the Fall, and included extending an invitation to Dr. Edwin Bridges of Stanford to visit with the department and, upon his recommendation, the subsequent convening of "focus groups" to provide design input. The design which emerged (Appendix 1) after innumerable meetings was presented to the COE Graduate Committee in February. The design was approved; however, given the College's re-structuring efforts, implementation was, upon request, deferred until the Summer of 1993.

As with the MA, new and strengthened admissions requirements and processes were approved for the Ed.D. Among the former is the addition of the MAT and submission of professional work samples; in the latter, participation in an Assessment Center is now required.

D. Strengthening the "Traditional" Internship. Significant changes were made in the internship program. First, Dr. Jo Ann Krueger, Director of CEAIP, was formally designated "Director of Internships." This brought the "traditional" interns under her jurisdiction and made possible transferring lessons learned in CEAIP to the "traditionals." Among these were cohort building, log keeping, executing a "problem project", and regular seminar attendance. In brief, despite more advantageous funding for CEAIP, considerable program parity was obtained.

### E. Continued Outreach

We list under achievements continued (and enhanced) faculty participation in outreach activities. Such activities are

detailed in individual faculty Annual Biographical Supplements. We simply list here such continuing contributions as Professor Bowes' Center for Community College Leadership, Professor Colton's direction of the NMRSC and BOEPAD, Professor Facey's directorship of OITEC, Professor Pohland's New Mexico Principal's Center (LEAD), and others too numerous to mention.

### III. Significant Plans

Clearly, the major factor affecting planning is the College's recent reorganization. Consequently, it is uncertain which, if any, of the department's long term (5 year) plans are germane. Moreover, it is likely that the immediate demand on time and energy resources will be related to implementing the divisional structure. Those caveats aside, primary goals would include:

1. Fleshing out the Experimental Ed.D.
2. Marketing and recruiting students for the Ed.D.
3. Adopting to the loss of Danforth funding for CEAIP.
4. Stabilizing enrollment in the Spanish Language Master's program.
5. Filling the position vacated by Professor Stapleton on a permanent basis.
6. Seeking greater fiscal support for outreach efforts.
7. Minority recruitment.

### IV. Staff Separations and Additions

The departmental staffing patterns remained fairly stable. As noted earlier, Ms. Mercy Salazar was added to the professional support staff. Regretfully, Professor Ernest Stapleton brought his 15 year tenure at the University to a close effective June 30. Dr. Facey replaced Dr. Blood as Director of OITEC. Dr. Blood returned to the department and will assume Professor Stapleton's duties as Academic Coordinator of the Spanish Language Master's Program. Dr. Milstein was on Sabbatical the entire academic year, and Dr. Blood enjoyed a sabbatical the Fall Semester.

### V. Other Relevant Data

Other relevant data, e.g., student credit hour production, student admissions and exits, individual research productivity, grant activity, and data bearing upon affirmative action concerns are available from the relevant university offices.



College Of Education

Department Of Educational Foundations

Annual Report

July 1, 1991 - June 30, 1992

Joseph G. R. Martinez, Chair

General Information. A. and B. The Department of Educational Foundations has experienced a year full of productivity and change in terms of a new assistant chair, new personnel, and the impact of the college's reallocation plan on the department. The highlights of these changes include:

1. Reallocation, the College of Education, and the Department of Educational Foundations.

The college's response to Reallocation was to institute far-reaching changes which will alter its very organizational and administrative structure. The new division structure for the college will result in the elimination of the eight existing departments. Current departmental programs will be housed in two of the three new divisions. Program integrity will remain intact until such time that a change is warranted through program evaluation.

2. New Developments

- a. Due to a formal request for a mini-sabbatical in the Fall, 1992 by the current chair, the department determined that an Acting Chair, selected from the ranks of the full-time faculty, would serve in Dr. Martinez'

F. Departmental Honors

1. Faculty Scholars Program: Spring, 1992
  - a. Dr. Candace Schau
  - b. Dr. Vera John-Steiner
2. Faculty Senate President: Dr. Mary Harris for AY 1992 - 1993
3. Regents' Scholars Program: Dr. Joseph G. R. Martinez was appointed as a Faculty Mentor

absence. Dr. David Bachelor was selected by Dr. Martinez to serve as Assistant Chair for Spring, 1992 and to serve as Acting Chair for Fall, 1992.

b. Due to the administrative changes mentioned earlier, there will be no need for an Acting Chair for the Fall, 1992.

### Personnel

#### C. Appointments of Staff

1. Patricia Snell replaced Cynthia Wolf as the Program Director for EM/LS.
2. Debra Schaffer replaced Lori Guevara as Department Secretary.

#### D. Other Staff Activities

1. The departmental merit ratings resulted in three faculty members being recommended for Merit III evaluation: Dr. Mary Harris, Dr. Jan Gamradt, and Dr. Tony Lam.
2. Dr. Jan Naslund joined the department on a full-time basis in January, 1992.

#### E. Sponsored Research or Other Projects

1. Dr. Amy Atkins - DEEP Project - \$238,000
2. Dr. Tony Lam - SWOOPE Project - \$97,538.14

ANNUAL REPORT, 1991-92  
DEPARTMENT OF HEALTH PROMOTION, PHYSICAL EDUCATION  
AND LEISURE PROGRAMS

John A. Gustafson, Chair

Introduction

During the 1991-92 academic year, the Department of Health Promotion, Physical Education and Leisure Programs (HPPELP) was administratively organized into five units: Health Promotion, Physical Education, Parks and Recreation, Leisure Services and the Center for Health Promotion. The directors of these units have submitted separate reports which are included with this annual departmental review.

General Comments and Highlights

Before classes began in the fall semester, faculty and Leisure Services staff met at a departmental retreat to consider objectives/direction for the academic year. Interim COE Dean Peggy Blackwell addressed the group at the initial part of the retreat, primarily in regard to the future of HPPELP. It was suggested that HPPELP consider its future within the College of Education and investigate alternative administrative structures such as that of proposing to be a division within the COE.

Small group meetings were then held to discuss administrative alternatives for the department and departmental programs. The small groups included: health promotion, exercise science, physical education, parks and recreation, and leisure services. With the exception of the Leisure Services Program, all of the small groups which, in reality, represented the academic units within the existing departmental structure, opted for pursuing division status within the

COE. The staff of the Leisure Services Program renewed their desire to become administratively aligned with the Vice President for Student Affairs.

A proposal was developed in which the Department of HPPELP would become the Division of Health and Human Performance. This proposed division would have had four academic sections: health education and nutrition, exercise science, physical education and parks and recreation plus the Leisure Services Program. The Division Proposal was presented to COE Dean Blackwell (copy attached). From that point on most of the departmental deliberations and activities were centered on implications of COE reallocation or restructuring considerations. There were of course some necessary general housekeeping details which needed to be addressed.

One of the highlights, however, was the development and approval of the Israeli Physical Education Program. Physical education teachers in Israel complete three year teachers' colleges which are very intense and are the equivalent of four years of university study. They do not, however, earn a Bachelor's Degree, only a teachers' certificate. A special program was initiated in which a class of 41 Israeli physical education teachers was accepted into the College of Education and UNM. These 41 students will take 30 credit hours at UNM and be granted Bachelor's Degrees in Education. The first 12 credit hours will be offered and taught the summer of 1992 in Israel. Four faculty of our department will travel to Israel in July and August and the Israeli students will travel to Albuquerque to take 12 credit hours on campus the summer of 1993. The remaining six credit hours will be taken by independent study.

Long time faculty member Dr. Nicholaas J. Moolenijzer died in January of 1992 after a 2 year battle with cancer. Dr. Moolenijzer had been at UNM for 21 years and had developed an

outstanding international reputation for his expertise in the areas of the history and philosophy of sport.

### Enrollments

Credit hour production for 1991-92 is listed below. Overall, the Department experienced a 2.6 percent increase.

<u>Fall</u>	<u>1990-91</u>	<u>1991-92</u>
Health Education	2261	2006
Nutrition	1671	1809
BIP	5179	5178
Physical Education	2143	2338
Parks and Recreation	<u>845</u>	<u>733</u>
	12,099	12,064
<u>Spring</u>		
Health Education	2347	2438
Nutrition	1755	1983
BIP	5752	5930
Physical Education	1967	2136
Parks and Recreation	<u>709</u>	<u>738</u>
	12,530	13,225
TOTAL	24,629	25,289

### Significant Achievements

Below are listed significant departmental achievements for 1991-92. To make the list complete, however, it is necessary to refer to the reports of the individual program directors.

1. Exhibiting the Department display for the purpose of recruiting students at the Southwest District AAHPERD Convention in Phoenix and at the AAHPERD National Convention in Indianapolis.
2. Continued strong participation and overall success of the Leisure Services Program, the Employee Health Promotion Program and the Wellness Centers.
3. Positive Code Three reviews for Dr. Joy Griffin and Dr. Karen Heller.
4. Development of the Israeli Physical Education Program.
5. Advancement of a proposal seeking division status for the Department within the College of Education.

#### Significant Plans

With the adoption of a new College of Education administrative structure which organizes the eight departments into three divisions, the Department of HPPELP no longer exists. Departmental programs have been placed in all three of the COE Divisions with Health Education faculty placed in Division C (Innovative Programs in Education), Special Physical Education faculty placed in Division B (Learning and Teaching), and Physical Education, Sports Administration, Parks and Recreation, and Nutrition faculty placed in Division A (Education in the Professions). The Department therefore has no significant plans for 1992-93.

#### Appointments to Staff

Lewis Alexander, Custodian

Faustina Alvarado, Custodian

Lorretta Brown, Secretary

Victoria Chilimidos, Secretary

Gilbert Garcia, Custodian

Melissa Heinz, Secretary

Bill Kane, Health Education Faculty

Hilda Lemus, Custodian

Charlie Lopez, Custodian

Cheryl Miller, Adult Fitness Program Coordinator

Juan Pino, Custodian

Michelle Romero, Secretary

Tom Vinyard, Custodian

Mary Williams, Wellness Center Coordinator

Separations from Staff

Richard Dow y Anaya, HPER Latin American Programs Director

Theresa Gutierrez, Secretary

Nicholaas Moolenijzer, Professor, Physical Education

Michelle Romero, Secretary

Cyndi Storey, Secretary

Cindy Turner, Health Education Faculty

Judy Wright, Wellness Center Coordinator

Sponsored Research

*Jim DePaepe.* Therapeutic Technologies Inc. Computerized Functional Electrical Stimulation effects on blood lipid levels, Max VO<sub>2</sub> and lactate, \$30,000.

*Elias Duryea.* Evaluation Director: SPRANS Grant to the Family Nutrition Bureau of the New Mexico Health and Environment Department: The Child Care Health Promotion Project, US Department of Health and Human Services, three year grant \$124,892.



*Elias Duryea.* Consultant/Prevention Specialist on Torrance County Adolescent Pregnancy Prevention Project: Cooperative Extension Service 4-H, New Mexico State University, \$20,000.

*Mike Hammes.* Department of Psychiatry National Center for American Indian and Alaska Native Mental Health Research, University of Colorado five year Keystone Project site coordinator, \$3,379,547.

*Bill Kane.* Centers for Disease Control and the New Mexico Department of Health and Environment evaluation team member of New Mexico Early Detection and Control of Breast And Cervical Cancer, \$3,734,320.

*Craig Kelsey.* Principal Investigator, RHOC Foundation, Development and Testing of a Psychosocial Rehabilitation Model as an Intervention Strategy, \$4,000.

*Craig Kelsey.* Principal Investigator, Comprehensive Masterplan, City of Rio Rancho, New Mexico, \$15,000.

*Craig Kelsey.* Principal Investigator. Partners in Education Program. U.S. Forest Service, \$10,000.

*Craig Kelsey.* Principle Investigator. Demand for Parks and Recreation Services as Determined by a Random Sample of New Mexico Residents (\$13,000); Statewide Comprehensive Outdoor Recreation Plan (\$8,500), National Park Service through the New Mexico State Office of Minerals, Energy and Natural Resources.

*Kathy Koehler.* Co-Investigator. Southwest Cancer Prevention Project for American Indians. National Cancer Institute, (4 year project) \$1,175,720.

*Kathy Koehler.* Principal Investigator. Dairy products in the diet of the healthy elderly: A longitudinal study. National Dairy Council, \$92,645.

*Cathie Stivers.* Study Evaluator, "New Mexico Early Detection and Control of Breast and Cervical Cancer", Chronic Disease Prevention and Control Section, Health Promotion Bureau of the Public Health Division, New Mexico Dept., Centers for Disease Control, \$2,800,740.

*Cathie Stivers.* Project Evaluator, "Development of Substance Abuse Prevention Communication Materials for the Zuni Pueblo, New Mexico", Office for Substance Abuse Prevention, awarded to Rehobeth McKinley Christian Hospital Behavioral Health Services, \$156,859.

#### PARKS AND RECREATION PROGRAM

Craig Kelsey, Director

The following represents the major activities and achievements of the Parks and Recreation Program, its faculty and students. The 1991-92 year has been a year of stability after the past pivotal and transitional year; and this stability has brought great results.

##### Personnel

This has been the second full year for Dr. Paul Miko, who was hired to replace Dr. Gerald Gustafson. Dr. Miko has brought changes to the therapeutic recreation curriculum, internship placements and has extended interests into Latin America.

##### Program

This is the second year of our National Recreation Park Association (NRPA) and American Alliance for Recreation and Leisure (AALR) national accreditation for our undergraduate degree program. This accreditation has been significant for the reputation, image and visibility of the program; and we have noted significant increases in our student numbers.

This year, we hosted for the second time the National Executive Development School, co-sponsored by UNM with the National Recreation Park Association (NRPA); and the conference was a major success. UNM has been asked to remain the host university for this national school, which will be held annually in December.

Our doctoral program is one of only ten in the United States and we are pleased that we have approximately forty (40) Ph.D. students in the program. The UNM doctoral program is emerging as one of the leading institutions for the training of ethnic minorities in the Park and Recreation field.

The total curriculum and titles of all courses were updated, improved and altered as necessary; and those changes received department, college and university approval and were placed into effect Spring of 1992. The program was also officially titled Parks and Recreation.

#### Faculty and Student Activities

It has been a productive year for faculty in teaching, student advisement and scholarly endeavors. The stability of the faculty has reaped significant rewards. Student numbers were up in undergraduate, masters and doctorate levels with particular growth at the doctorate level. And ICES scores and peer review for teaching were all high. The faculty have averaged per faculty member: two referred journal articles, one proceedings article, one-to-two national presentations, one-to-two regional presentations, one funded research grant and individual faculty have also contributed national journal editorialship and national professional association office membership. Graduate students have additionally participated in journal publications, national and regional presentations and funded grant activities.

### Future Plans

Important directions for the future include: review of the graduate program curriculum, continued recruitment of high quality minority doctoral students, continued excellence in research grant applications and hopefully, the establishment of a Hemispheric Environmental Education and Research Center.

### PHYSICAL EDUCATION - NON-PROFESSIONAL PROGRAM

Mary Jo Campbell, Director

### Significant Achievements

1. The new administrative structure (Director is a faculty member in PE with released time, Assistant Director is a regular Teaching Assistant with half time administrative responsibility and half time teaching responsibility, and all other teaching assistants are regular TA's) is working quite effectively.
2. New vendors were selected and have been doing an excellent job: Scuba, Fred Wells' The Scuba Company; Horsebackriding, Al and Patty Hickam's Turkey Track Stables and Rose Shipley's Sandia Trails.
3. New instructor, Gary Skidmore (Holiday Bowl), has been doing an excellent job in teaching the bowling classes.
4. Several new topics classes were added which were very successful: Ultimate, Triathlon, Water Fitness, English Horseback Riding, Wallyball and a section of Beginning Swimming which was designated for non-swimmers. We were able to offer these new classes by deleting the number of sections offered in swimming and tennis.
5. Monitoring the quality of the classes was improved by requiring all classes be evaluated by the students.

6. A revised, more comprehensive Basic Instruction Program Policy Manual was written.
7. New procedures were implemented which drastically decreased the number of class meetings that were cancelled due to instructor absence.
8. A new "end of the semester" procedure was initiated which greatly decreased the number of errors on the BIP grade reports.
9. A new attendance policy was set for students who audit a PE-NP class.
10. A new "health status/medical" questionnaire card was developed which must be signed by every student taking a PE-NP class.
11. Revised the monitoring of the BIP fitness fee payments.
12. Initiated "step" aerobic dance classes.

#### Significant Plans

1. Revise the BIP Policy Manual
2. Offer the following new activities if the budget permits: Tae Kwon Do, European Team Handball, Akido, Shooting For Women.
3. Meet with all the part-time instructors to insure their compliance with the BIP Policy Manual.
4. Increase the fee for the bowling classes.
5. Secure a permanent budget for the BIP.
6. Revise the BIP Fitness Testing Program.
7. Buy a new stereo system to be used in the aerobic dance classes.

## PHYSICAL EDUCATION PROGRAM

Mary Jo Campbell, Director

Significant Achievements

1. Revised the requirements for the graduate degree in Sport Administration.
2. There was an increase in the number of students pursuing the aerobic dance certificate.
3. Revised the Athletic Training Program so that it meets the requirements for accreditation for the National Association for Athletic Trainers.

Significant Plans

1. Revise the coaching minor requirements.
2. Revise course content in several of the courses required in the Physical Education Teacher Education Program.
3. Seek approval to retain lines for the Piper, Moolenijzer and DePaepe positions.
4. Attempt to maintain quality in all our programs despite the current reorganization in COE, and the current loss of faculty positions.

## HUMAN PERFORMANCE LABORATORY

Dr. Tom MacLean, Director

Activities/Accomplishments of Note

## Academic

Eight classes taught through the HPL; funded better than 12 students with graduate assistantships; six dissertation studies; three masters theses; multi-disciplinary instruction and collaboration between several peripheral and proximal units; Exercise Science Seminar; Adult Fitness Leadership course

Research

Collaborative research projects between a myriad of external units: Lovelace, VA, UNM SOM and UNMH; body composition investigations; continuance of the CFES Spinal Cord with Exercise Physiological Research: Adapted PE Running Economy; Fluid Replacement Investigations; Cross Training Studies

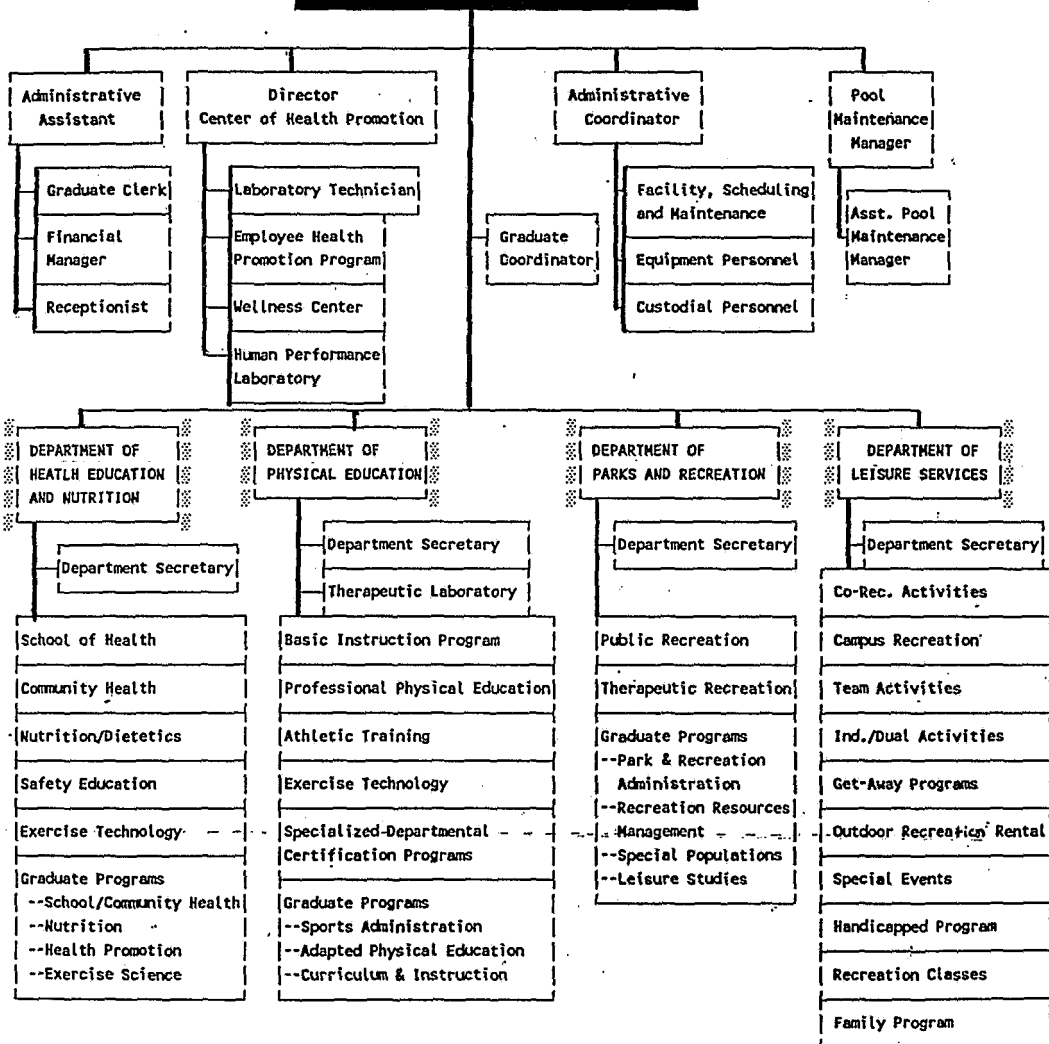
Presentations

National, Regional and Local American College of Sportsmedicine; AA Health, Physical Education, Recreation & Dance

Service

State Police Physiological Assessment Project; Employee Health Promotion Program: Lab testing; several APS and other group tours; Cholesterol Screening; Blood Pressure Screening; UNM Campus Police and Parking Services  
Revenue Generation: Employee Health Promotion/HPL

DEPARTMENT OF HEALTH PROMOTION, PHYSICAL  
EDUCATION AND LEISURE PROGRAMS







1064

**The University of New Mexico**

Department of Health Promotion,  
Physical Education and Leisure Programs  
Albuquerque, NM 87131-1251  
(505) 277-5151

November 21, 1991

TO: Peggy J. Blackwell, Dean, COE  
FROM: John A. Gustafson, HPPELP  
SUBJECT: Division Proposal

Attached is a proposal, submitted by the faculty of HPPELP, that the department be reclassified as a division within the COE. The document is intentionally brief as it was not believed necessary to go into great detail at this time. However, I believe enough information is provided so it can be determined how the Division structure can be implemented.

If a division structure is considered for the College, programs with common interest can be grouped yet overlap between divisions is also possible, all of which subscribes to interdisciplinary activity. The programs or sections as we call them, in the Proposal retain autonomy but are not burdened with administration. This is one of the main or primary characteristics of our proposal and which is most acceptable by our faculty.

We are not sure what the next step is or what procedures we should follow but we are interested to know your reactions and those of anyone else you consult. More information is available if you believe necessary. Thank you for your consideration.

**PROPOSAL**  
**Department of**  
**Health Promotion, Physical Education**  
**and Leisure Programs**

**Request for Status**  
**as**  
**Division of Health and Human Performance**

**presented by the faculty**  
**of**  
**HPPELP**

**November 1991**

INTENTIONS

The faculty in Health Promotion, Physical Education and Parks and Recreation have explored an array of organizational structures during the past two years. The faculty propose that Health Promotion, Physical Education and Leisure Programs (HPPELP) be reconfigured as the Division of Health and Human Performance. The major justifications for reorganizing the HPPELP format are: (1) efficiency of administrative operation; (2) consolidation of those College of Education (COE) faculty/program areas with common scholastic as well as pedagogic inquiry under a common organizational format; (3) enhancement of academic autonomy as well as identity.

While the Department of HPPELP proposes to the COE its plans to become a Division of Health and Human Performance, it would also like to encourage each of the other departments within COE to consider 'divisions' rather than 'departments' during their reallocation planning discussions. (1) A division structure, provides for more autonomy of program units regarding budgetary, personnel, and curriculum decisions. This is a particular need in HPPELP because of its size, and the number and variety of its programs. (2) In reorganizing its structure from department to division, faculty will become more knowledgeable of other programs within their own department, including commonalities as well as unique features. Similarly, this same increase in familiarity with different programs within the entire college will result. (3) As a result of division

structure, training of students in the COE will become more interdisciplinary, which seems to be a priority of the Preliminary Reallocation Plan: "Proposals for strengthening academic programs should pay particular attention to interdisciplinary programs; new resources will be allocated to strong programs throughout the University, including interdisciplinary programs." (4) Finally, the adoption of division structure will promote a stronger sense of unity within the COE than has been evident in the past. A pleasant by-product of this strategy would be the consequent boost in morale among COE faculty, staff and students, and their realization (as well as the general public's) of the variety and quality of offerings (program and people) that are available in the college.

The adoption of division structure within the COE will assist in achieving its mission (improve quality of teaching and learning; develop and/or improve programs aimed at leadership, research, and service; operate in a variety of settings and supporting a multicultural focus), and in its major task: the preparation of professional educators.

#### STRUCTURE

With this division structure, each section would be self-governing and led by a section chair but with much of the administrative duties remaining at the division level. Faculty personnel decisions for example would be initiated at the section level with each section chair making a recommendation to

the division director based on input received only from the section faculty. The division director would then forward a recommendation to the dean and attach the recommendation of the section chair. The deans advisory committee would consist of faculty from the division selected by the dean.

Curriculum additions and revisions would also originate with the section faculty. All curriculum proposals would need division faculty approval before being forwarded to the dean. The Health Promotion, Physical Education and Parks and Recreation faculty do not envision a need for curriculum matters to pass through a COE curriculum committee. The curriculum committee within the Faculty Senate is viewed as sufficient to maintain quality assurance and guard against duplication.

Once each year, the section chair would submit a budget request to the division director. The budget request would include anticipated needs for GA/TAs, equipment and part-time instruction. Operating supplies and materials for the sections would be provided by the Division. All accounts would be monitored by the administrative assistant for the Division.

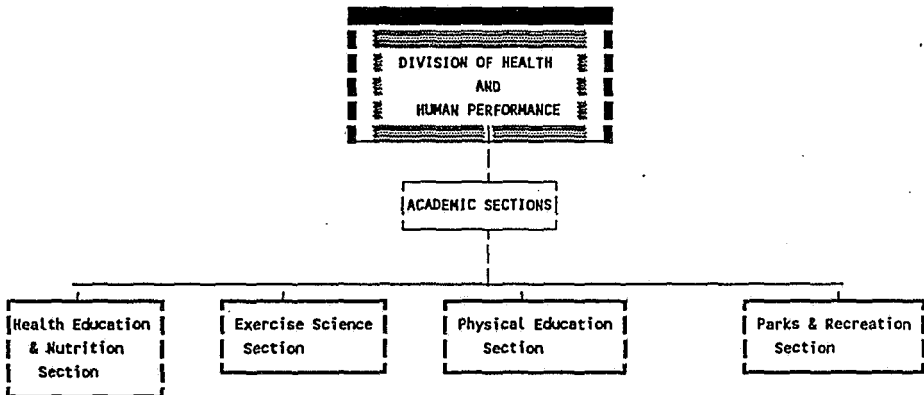
Undergraduate student records would be maintained by the section secretary. All policies and procedures regulating graduate students would be determined by the individual section faculty but would be implemented by the division administrative assistant.

LEISURE PROGRAMS

Leisure Services has constructed its own separate proposal supporting/outlining their intention to realign with the office of Student Affairs which is under consideration.

STRUCTURE CHART

A general schematic of the proposed Division of Health and Human Performance is shown below.



THE ANNUAL REPORT  
OF THE  
LEISURE SERVICES PROGRAM

1070

June 1, 1991 - May 31, 1992

Fred V. Perez, Director

The purpose of the University of New Mexico Leisure Services Program is to provide opportunities for participation in a wide variety of sports and recreational activities for the entire University community. One of the aims of the Leisure Services Program and staff is to provide a broad recreational program which will meet the demands and fulfill the needs of every student, faculty and staff person at the University. Participation is another objective of the Program; getting students, faculty, staff and members of special populations involved in physical activities which may help in the realization, proper use of leisure time, achievement and maintenance of good mental and physical health. The program is designed to encourage and welcome all University persons regardless of individual ability.

This program is a service oriented program for the entire University community, totaling approximately 24,000 students, 2,000 faculty, 5,000 staff, and their families. A cost of \$18.41 per student, per year entitles each student to participate in over 217 different scheduled activities and the privilege to utilize the numerous recreational facilities at various hours during the week and weekend. A primary objective of this program is to provide for the total well-being of the University community, in accordance with the University's commitment to educate the total individual and to care for the individuals' needs while they attend or are employed by the University.

This year was a record year in all program areas which can readily be seen in the statistics provided. It is believed that the previously mentioned objectives are being met at a very low cost to the University. At \$18.41 per student and with no additional cost to the faculty and staff, this program operates at a very cost effective rate.

The 1991 - 1992 Program consisted of ten areas of emphasis: 1. Campus Recreation 2. Team Activities 3. Individual and Dual Activities 4. Co-recreational Activities 5. Getaway Programs and Clinics 6. Outdoor Recreational Rental Shop 7. Special or Sponsored Events 8. Handicapped Program 9. Fitness Classes 10. Employment. The Leisure Services staff also aided the University of New Mexico sport clubs by advising, scheduling facilities, and serving as a publicity agent for various special events.

1. General Program Information

A. Recreation hours varied according to the facility utilized. Swimming Pool hours were Monday - Friday 7:00 a.m. - 3:30 p.m., and 5:30 - 9:00 p.m., Saturday from 10:00 a.m. - 5:00 p.m. and Sunday from 12:00 noon - 5:00 p.m. The total number of participations for the swimming pool for the year 1991-1992 was 131,135.

For the previous year the number of participations in the swimming pool was 127,090 which shows there was a increase of 4,045 participations in the usage of the pool this year. The reason for this increase was that the swimming facilities were not under construction and there were not many maintenance problems in the Olympic Pool this year.

Recreation hours for the gyms were Monday - Friday 3:30 - 10:00 p.m., Saturday 10:00 a.m. - 5:00 p.m. and Sunday 12:00 noon - 5:00 p.m. The total 1991-1992 number of participations for the recreational facilities were as follows:

Johnson Gym	25,037
South Gym	41,406
Weight Room	49,898
Faculty/Staff Weight Room	3,491
Racquetball Courts	13,314
Auxiliary Gym	25,842
Carlisle Gym	12,857
B-20 (Dance Room)	14,613
Wrestling Room	4,237
Swimming Pool	<u>131,135</u>
Grand Total for Open Recreation Programs	321,833
Turn Style Count	265,319

Detailed breakdown attached- Appendix I

Guests for 1991-1992 = 311

The number of participations in the recreational facilities was 321,833 which shows there was a decrease of 46,587 in the total number of participations in the Open Recreation Program. This decrease was directly related to the fact that we now require a picture I. D. as well as a UNM I. D. to access the facility which helps to eliminate the misuse of UNM I. D. cards. Due to budget constraints, the recreational facilities were only open 48 weeks rather than 51 which resulted in lower participations. There was also an decrease in our Turn Style Count of 38,184 for this year.



## 2. Leisure Services, Getaway, and Rental Programs

B. The Leisure Services, Getaway, and Rental Shop Programs in 1991-1992 offered 224 activities. The same programs this year included 217 different activities for students, faculty, staff, and the handicapped (both men and women). These activities ranged from the traditional football, basketball, softball, and track to the non-traditional sports such as skiing, racquetball, jazz dance, gymnastics, fencing, powerlifting, innertube water polo, aerobic dance, frisbee, and many others for men, women and co-rec participants. The total 1991-1992 participation statistics are as follows:

	<u>Participants</u>	<u>Participations</u>
Summer Program (June, July, August)		
Outdoor Shop	455	455
Men	50	200
Women	0	0
Co-Rec	96	516
Noon Hour	60	456
Getaway	773	2,304
Special Populations	423	423
Fitness	<u>481</u>	<u>12,326</u>
TOTAL (Summer Program)	2,338	16,680
	<u>Participants</u>	<u>Participations</u>
Total (Summer Program)	2,338	16,680
Fall and Spring Programs		
Men	3,520	15,592
Women	418	1,610
Co-Rec	337	1,970
Noon Hour	82	124
Special Populations	910	910
Getaway Program	6,614	6,634
Outdoor Recreational Shop	1,494	1,494
Fitness Classes	<u>2,084</u>	<u>78,748</u>
TOTAL	17,797	123,762

Detailed breakdown attached- Appendix I

For the previous year the number of participants was 18,085 which shows that there was a

1053  
Decrease of 288 participants in the Leisure Services Program this year.

Participations for the previous year were 83,418 which shows there was a increase of 41,344 for 1991-1992. Again, this is a record year for participations as the program is being used more often by the University community.

### 3. Outdoor Recreational Shop Rental

C. The Leisure Services Program furnishes the University community with a wide variety of rental camping and recreational equipment. This program has met with great student approval and use. The inventory will be increased with additional cross country skis, snow shoes, rafts, tandem bikes, 10 speed bikes, roller skates, volleyball sets, badminton sets, softball sets, horseshoes, croquet sets, golf clubs, frisbees, stop watches, binoculars, and other outdoor equipment. The shop is located in the Northwest corner of Johnson Center, Room B-12. The shop experienced a record year in use and revenue. The computer system has worked well in streamlining the shop's day to day operations. The Outdoor Shop has outgrown the room's capacity and needs additional space. This need is being addressed in Phase III construction.

### 4. Administrative Problems

D. Again, the record increase in participants and participations has caused over-crowded conditions in the currently available recreational facilities. These facilities were not built for 24,000 students and 7,027 faculty/staff; therefore, there is a dire need for the completion of Phase III of Johnson Center remodeling.

The shortage of recreational space should be eased with completion of Phase III of the Johnson Gym Project.

When Phase III becomes a reality, the amount of space available for additional programming will double. When the University funds the completion of Phase III it will address needs in the following areas: weight room, combative areas, special populations gyms, dance areas, racquetball courts, classrooms, indoor fitness rooms, and storage areas. The statistics clearly indicate that there is a continuing need in this area and those responsible for providing the cost of these services must understand the scope of funding Phase III.

The conditions of the athletic fields are better than they have ever been, but still need work. There should be a fence placed around the athletic fields for safety, supervision, and maintenance. This should be of great concern to the University because of the possibility of a law suit. Due to the construction of the new dormitories on our lower recreational athletic

fields, the number of usable fields has been drastically reduced. The existing field space (green area) should be guarded and protected against any future development of any kind. This area should remain as a permanent recreation green space and placed on the University of New Mexico Architect Master Plan as a permanent green space.

#### 5. Staff Structure Changes

E. Mrs. Kelley Spelman resigned her position, and Mrs. Nancy White was hired to fill this vacancy. Also hired was Ms. Julie Good to fill the position of Aquatics Director. The job titles of the Coordinating Staff were changed to Assistant Directors. A proposal to hire a Sports Club Assistant Director and an Accountant Technician has been submitted.

#### 6. Projected Growth

F. Our program has experienced tremendous acceptance from the students, faculty, and staff of the University. The program has also continued to keep abreast of student needs on our campus. We have a student body that is made up of older students and their need to be addressed.

The Summer Leisure Services Program, Special Population, Fitness Classes, and Getaway Program were very successful and will undergo changes and expansion. The plan to expand our Recreational Services to other parts of campus has started with the completion of our first satellite center in the Medical School. We have plans for other centers in the dorms, Student Union Building and other strategy locations on campus. Our program needs to develop more computerization and automatization of record keeping, payroll records, accounts receivable, expenses, bookkeeping, and verification of ID's by computer.

The Leisure Service Staff developed a Strategic Plan in 1992 to address the program's future development. We will continue to work on this strategic plan with a very detailed action plan. The administration has accepted a proposal for realignment of our program from the College of Education to the Division of Student Affairs. This will improve our program's administrative problems and will facilitate procedures for a better delivery of services to our customers.

Again, during the 1991 Summer Session Instructional Classes will be provided to children of faculty, staff, and students. These classes are also offered during the Christmas vacation period. These classes provide instruction for children ranging in age from 5 to 14 years of age. Lessons will be provided in swimming, tennis, and racquetball. The fees generated from these classes will be used for professional travel for the staff.

The Leisure Services Program experienced great success with sponsored events. These events were sponsored by various companies and provided the program with a great service in the form of awards, equipment and advertising. More events like this are planned for next year.

The program was also involved in various international sports exchanges with Mexico and several students enjoyed a tremendous cultural experience. These exchanges should be continued.

#### 7. Staff Professional Activities

G. The staff was involved in many professional projects over the year. Fred V. Perez was nominated to run for president of his national association. He was invited to conduct a Recreational Clinic in Chihuahua, and Zihautanejo, Mexico for the Association of Physical Education Teachers and Coaches from Mexico. In addition, various presentations at the National Intramural Recreational Sports Association Conference were made by Fred V. Perez, Laura Montoya, Tim E. Gutierrez, Pat Donovan, and Jim Todd. Fred Perez, Tim E. Gutierrez, Jim Todd, and Pat Donovan also served on various National Committees during the year. The staff was recognized through various national, state and local awards.

We were selected to host the National Intramural Recreational Sports Association Conference in Albuquerque in 1995.

## APPENDIX I

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## CAMPUS RECREATION MONTHLY HEAD COUNT REPORTS

Total Participation 1991-92

JUNE 1991

Johnson Gym	2,560
South Gym	1,942
Weight Room	4,048
Fac/Staff Weight Rm.	234
Racquetball Courts	983
Auxiliary Gym	1,798
Carlisle Gym	97
B-20 (Dance Rm.)	110
Wrestling Room	352
Swimming Pool	18,317
TOTAL:	30,441

Turn Style Count: 15,293

JULY 1991

Johnson Gym	2,428
South Gym	2,014
Weight Room	3,799
Fac/Staff Weight Rm.	271
Racquetball Courts	855
Auxiliary Gym	1,546
Carlisle Gym	269
B-20 (Dance Rm.)	77
Wrestling Room	232
Swimming Pool	13,920
TOTAL:	25,411

Turn Style Count: 16,098

AUGUST 1991

Johnson Gym	406
South Gym	729
Weight Room	1,007
Fac/Staff Weight Rm.	68
Racquetball Courts	275
Auxiliary Gym	468
Carlisle Gym	117
B-20 (Dance)	378
Wrestling Rm.	63
Swimming Pool	2,552
TOTAL:	6,068

Turn Style Count: 20,042

SEPTEMBER 1991

Johnson Gym	1,599
South Gym	4,616
Weight Room	5,941
Fac/Staff Weight Rm.	344
Racquetball Courts	1,422
Auxiliary Gym	2,516
Carlisle Gym	1,896
B-20 (Dance Rm.)	2,142
Wrestling Room	338
Swimming Pool	12,107
TOTAL:	32,921

Turn Style Count: 27,150

OCTOBER 1991

Johnson Gym	2,227
South Gym	5,289
Weight Room	5,687
Fac/Staff Weight Rm.	399
Racquetball Courts	1,464
Auxiliary Gym	2,379
Carlisle Gym	2,142
B-20 (Dance Rm.)	2,008
Wrestling	513
Swimming Pool	11,972
TOTAL:	34,080

Turn Style Count: 27,544

NOVEMBER 1991

Johnson Gym	2,751
South Gym	4,552
Weight Room	4,426
Fac/Staff Weight Rm.	316
Racquetball Courts	1,230
Auxiliary Gym	2,852
Carlisle Gym	2,840
B-20 (Dance)	1,770
Wrestling Rm.	438
Swimming Pool	10,502
TOTAL:	28,367

Turn Style Count: 30,246

# 1077 DECEMBER 1991

Johnson Gym	1,094
South Gym	2,309
Weight Room	2,246
Fac/Staff Weight Rm.	271
Racquetball Courts	637
Auxiliary Gym	1,228
Carlisle Gym	900
B-20 (Dance)	800
Wrestling Rm.	205
Swimming Pool	<u>6,591</u>
TOTAL:	16,281

Turn Style Count: 14,364

## JANUARY 1992

Johnson Gym	1,899
South Gym	2,861
Weight Room	3,208
Fac/Staff Weight Rm.	251
Racquetball Courts	958
Auxiliary Gym	1,757
Carlisle Gym	0
B-20 (Dance Rm.)	1,168
Wrestling Room	250
Swimming Pool	<u>7,946</u>
TOTAL:	20,298

Turn Style Count: 20,362

## FEBRUARY 1992

Johnson Gym	3,504
South Gym	6,147
Weight Room	6,451
Fac/Staff Weight Rm.	406
Racquetball Courts	1,798
Auxiliary Gym	3,973
Carlisle Gym	1,526
B-20 (Dance Rm.)	2,024
Wrestling Room	505
Swimming Pool	<u>13,559</u>
TOTAL:	39,893

Turn Style Count: 33,565

# MARCH 1992

Johnson Gym	2,579
South Gym	4,280
Weight Room	4,851
Fac/Staff Weight Rm.	343
Racquetball Courts	1,345
Auxiliary Gym	2,874
Carlisle Gym	1,045
B-20 (Dance)	1,601
Wrestling Rm.	494
Swimming Pool	<u>11,272</u>
TOTAL:	30,682

Turn Style Count: 27,573

## APRIL 1992

Johnson Gym	2,585
South Gym	4,729
Weight Room	5,231
Fac/Staff Weight Rm.	361
Racquetball Courts	1,485
Auxiliary Gym	2,779
Carlisle Gym	1,264
B-20 (Dance Rm.)	2,058
Wrestling Room	421
Swimming Pool	<u>14,301</u>
TOTAL:	35,214

Turn Style Count: 31,573

## MAY 1992

Johnson Gym	1,405
South Gym	1,938
Weight Room	3,003
Fac/Staff Weight Rm.	227
Racquetball Courts	864
Auxiliary Gym	1,672
Carlisle Gym	761
B-20 (Dance Rm.)	480
Wrestling Room	426
Swimming Pool	<u>8,096</u>
TOTAL:	18,872

Turn Style Count: 17,344

## APPENDIX II

1078

## SUMMER 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Men's 5 Player Basketball	50	200
Racquetball Tourney	0	0
Women's Tennis Singles	2	2
North Campus Softball	84	504
Volleyball	0	0
Noon Hour Golf Tournament	<u>12</u>	<u>12</u>
TOTAL .....	148	718

FITNESS CLASSES  
SUMMER 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Step Aerobics	58	2,175
Aerobic Dance (Summer Semester)	346	8,760
Water Aerobics	53	1,113
Swimming for Fitness	17	187
Fit by Five	<u>7</u>	<u>91</u>
TOTAL .....	481	12,326

GETAWAY PROGRAM  
SUMMER 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
El Rancho de las Golondrinas	3	0
Whitewater Rafting	30	30
Breakfast Horseback Ride	13	12
ADA Corporate Games	240	1,440
Windsurfing Classes	4	8
LDZ, National Hispanic Institute	256	512
Canoe River Clinic/Trip	5	5
Archaeological Horseback Ride	11	11
Silver City/Gila Wilderness Trip	10	30
Santa Fe Indian Market	23	23
Horseback Ride with Breakfast	18	18
Chase Crew Registration	41	82
Sandia Mountain Days	75	75
Archaeological Horseback Ride	12	12
Spanish Market	21	21
Windsurfing Clinic	<u>11</u>	<u>22</u>
TOTAL .....	773	2301



MEN'S  
FALL 1991

1080

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Over - the - Line	56	216
Golf (Singles)	19	19
One Pitch Softball Tournament	154	280
Track Meet	46	138
Frisbee Golf	12	12
Volleyball Triples	110	210
Flag Football	308	1,848
Karate	0	0
Powerlifting	9	9
1991 Cross Country Meet	35	35
Karate	0	0
1991 Swim Meet	23	103
One - On - One Basketball	44	88
6 Player Volleyball	160	960
Soccer	210	1,230
Racquetball	40	78
Badminton	16	30
Billiards	45	88
5'10" Under Basketball	176	946
5'10" Over Basketball	286	1,584
Miniature Golf	31	31
Tennis (Doubles)	16	32
Tennis (Singles)	23	44

1081

Penn/USTA Tennis League

9

72

TOTAL .....

1,850

9,062

MEN'S  
SPRING 1992

1082

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Free Throw Contest	59	59
3 on 3 Basketball Tournament (A)	105	400
3 on 3 Basketball Tournament(B)	25	80
Powerlifting	12	12
Karate	0	0
Judo	0	0
Reebok Decathlon	5	50
Ski Race	20	20
5 Player Basketball (A)	348	2,256
5 Player Basketball (B)	240	1,392
Flag Football	126	252
Indoor Over-the-Line	56	104
Table Tennis (Singles)	15	28
Table Tennis (Doubles)	0	0
Badminton	36	34
Karate	0	0
Biathlon	13	13
Golf (Doubles)	30	30
Billiards	10	8
Slow Pitch Softball (A)	384	2,112
Slow Pitch Softball (B)	80	416
2 Person Golf Scramble	18	18
Miniature Golf	8	8
Sand Volleyball	55	200

Bowling	<u>16</u>	<u>16</u>
1083		
TOTAL.....	1,661	7,508

WOMEN'S  
FALL 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Over-the-Line	4	0
Golf (Singles)	1	1
One Pitch Softball Tourney	28	28
Track Meet	6	15
Volleyball Triples	30	100
Tennis Singles	0	0
Miniature Golf	0	0
Frisbee Golf	0	0
Flag Football	28	84
Karate	0	0
Powerlifting	0	0
Karate	0	0
Cross Country Meet	0	0
Swim Meet	3	12
One-on-One	0	0
Bowling	0	0
Racquetball	2	2
Soccer	42	140
Volleyball (6 Player)	50	260
Badminton	0	0
Billiards	0	0
Basketball	66	308
Penn/USTA Tennis Leagues	4	12
TOTAL .....	377	1,456

WOMEN'S  
SPRING 1992

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Free Throw Contest	2	2
3 on 3 Tournament	4	0
Judo	0	0
Karate	0	0
Ski Race	0	0
5 Player Basketball	60	336
Powerlifting	1	1
Indoor Over-the-Line	0	0
Badminton	4	2
Table Tennis (Singles)	0	0
Table Tennis (Doubles)	0	0
Billiards	0	0
Karate	0	0
Biathlon	7	7
Golf Doubles	0	0
Slow Pitch Softball	64	288
Miniature Golf	2	2
Sand Volleyball	0	0
Bowling	4	4
2 Person Scramble Golf	0	0
TOTAL .....	148	642

CO-REC  
FALL 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Track Meet	4	4
Swim Meet	0	0
4 Player Basketball	11	0
Miniature Golf	0	0
Mushball	0	0
Bowling	0	0
Tennis	4	4
Kickball	<u>0</u>	<u>0</u>
TOTAL .....	19	8

1087

CO - REC  
SPRING 1992

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Walleyball	0	0
4 Player Volleyball	35	266
Ski Race	0	0
Mini Olympics	0	0
Biathlon	6	6
6 Player Volleyball	81	774
Indoor Soccer	192	912
Sand Volleyball	0	0
Table Tennis (Doubles)	0	0
Bowling	4	4
2 Person Golf Scramble	<u>0</u>	<u>0</u>
TOTAL.....	318	1,962



FITNESS CLASSES  
FALL 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Aerobic Dance	458	27,480
Step Aerobics	202	12,120
Water Aerobics	78	3,510
T'ai Chi Chih	10	80
Basic Climbing and Safety I	7	105
Self Defense I	11	66
Women and Weights I	22	88
Timex Disabled Wheelchair	17	17
Timex Fitness Aerobic Class	111	111
Women and Weights II	23	92
Self Defense II	<u>22</u>	<u>176</u>
TOTAL .....	961	43,845

FITNESS CLASSES  
SPRING 1992

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Christmas Break Aerobic Dance	34	510
Aerobic Dance	347	16,656
Step Aerobics	232	11,136
Water Aerobics	58	2,784
Self Defense	10	60
Women and Weights I	23	115
Parent/Child Swimming I	32	320
T'ai Chi Chih	8	64
Art Therapy	8	80
Swimming for Fitness	11	264
Parent/Child Swimming II	40	400
Women and Weights II	6	30
Lifeguarding	11	88
Water Safety Instruction	14	210
Break Aerobic Dance	<u>314</u>	<u>2,484</u>
TOTAL .....	1,148	35,201

NOON HOUR  
FALL 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
WBD Golf Tournament	8	8
Co-Rec Softball	0	0
Tennis (Singles)	0	0
Co -Rec Volleyball	25	37
Basketball	40	60
Racquetball	<u>9</u>	<u>19</u>
TOTAL .....	82	124

1091

NOON HOUR  
SPRING 1992

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Basketball	<u>0</u>	<u>0</u>
TOTAL .....	0	0

GETAWAY PROGRAM  
FALL 1991

1092

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATION</u>
Sandia Mountain Hostel/Jazz Weekend	2	0
Welcome Back Days Sports Trivia, Health Fair Table Mon.-Fri., and North Campus Table	3905	3905
Welcome Back Days Tennis Tournament	19	43
Santa Fe Fiestas - Zozobra	126	126
El Malpais National Monument	3	0
Kayak Trip	13	9
Chase Crew Registration	28	28
In Line Skate Demo	39	39
Blood Drive	4	4
Archaeological Horseback Ride	12	12
Getaway to Fall Colors	22	20
Balloon Glow	84	84
Balloon Rodeo	35	35
The Walking Getaway	4	4
Mass Ascension Balloon Fiesta	25	25
Archaeological Horseback II	12	12
Campus Fest	100	100
Crown Point Indian Rug Auction/Lecture	41	37
Acoma Sky City Tour	19	17
Ghost Towns on the Turquoise Trail	12	12
Dixon Studio Tour	12	12
Cross Country Ski Clinic	50	50
Turkey Trot	245	245
Cross Country Ski Lessons	12	10
TOTAL.....	4,824	4,829

GETAWAY PROGRAM  
SPRING 1992

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Snowshoe Hike I	18	18
Cross Country Ski Clinic	31	29
Sandia Ski Day I	52	52
Cross Country Ski Lessons	12	12
Santa Fe Ski Day I	37	37
Women's Trade Fair	350	350
Cross Country Ski Lessons II	20	20
Snowshoe Hike II	14	14
Jemez Hostel Weekend	17	34
Sandia Ski Day II	43	43
Traveling Abroad on a Shoestring	38	38
Lobo Ski Day	47	47
Annual Business Fair	372	372
Santa Fe Ski Day II	33	33
Southwest Circle Guest	38	38
Puye Cliff Dwelling	20	20
Easter Egg Hunt (LSSOA)	200	200
Earth Day Promotion	132	132
Fiesta Run	134	134
Archaeological Horseback Ride	10	10
Blood Drive	8	8
In Line Skate Demo	59	59
Pilar Whitewater Rafting	20	20
Sunday Horseback Ride	0	0

Student Staff Appreciation Day	68	68
Whitewater Rafting-Taos Box	6	6
Archaeological Horseback Ride II	<u>11</u>	<u>11</u>
TOTAL.....	1,790	1,805

SPECIAL POPULATIONS  
FALL 1991

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Tennis Doubles	0	0
Swim Meet	0	0
Billiards	<u>0</u>	<u>0</u>
TOTAL .....	0	0

SPECIAL POPULATIONS  
SPRING 1992

<u>ACTIVITY</u>	<u>PARTICIPANTS</u>	<u>PARTICIPATIONS</u>
Free Throw	0	0
Power Lift	0	0
Table Tennis	<u>0</u>	<u>0</u>
TOTAL .....	0	0



UNM LEISURE SERVICES SPECIAL POPULATIONS  
MONTHLY REPORT

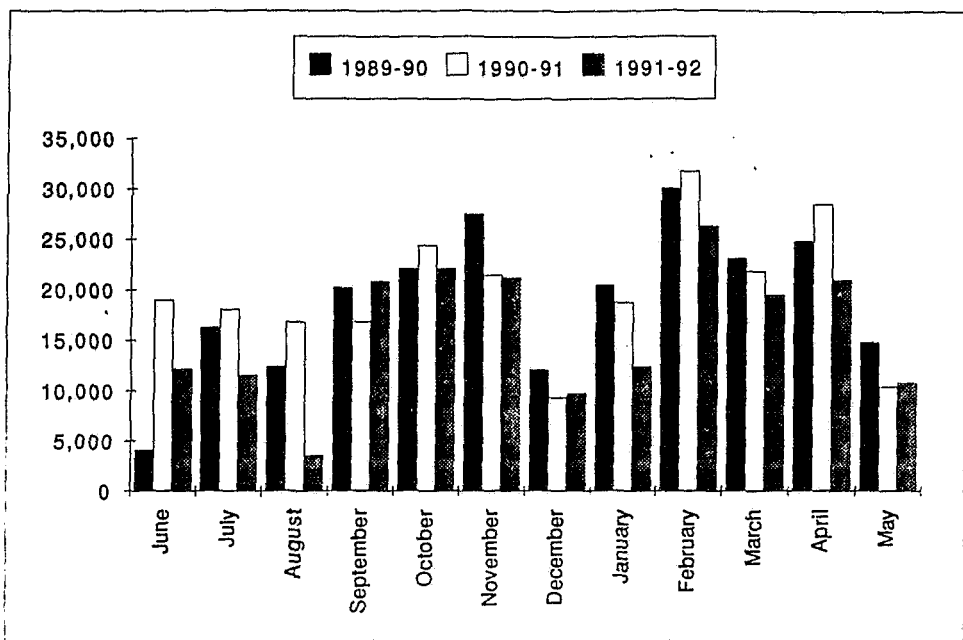
<u>MONTH</u>	<u>PARTICIPANTS</u>
June 1991	253
July 1991	157
August 1991	13
September 1991	299
October 1991	222
November 1991	165
December 1991	16
January 1992	28
February 1992	90
March 1992	33
April 1992	50
May 1992	<u>7</u>
TOTAL .....	1,333

1097

UNM LEISURE SERVICES OUTDOOR SHOP  
MONTHLY REPORT

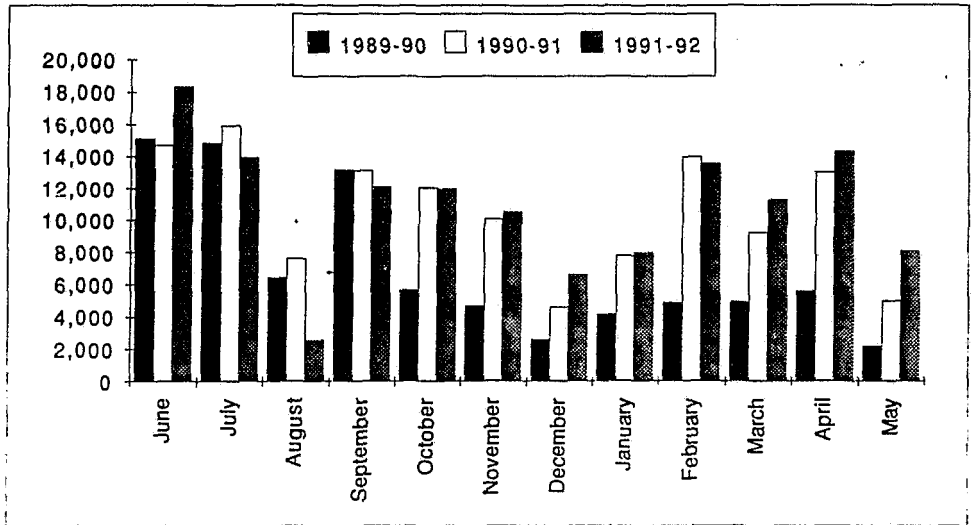
<u>MONTH</u>	<u>PARTICIPANTS</u>
June 1991	135
July 1991	211
August 1991	109
September 1991	129
October 1991	82
November 1991	47
December 1991	63
January 1992	147
February 1992	182
March 1992	134
April 1992	112
May 1992	<u>143</u>
TOTAL .....	1,494

APPENDIX III  
STATISTICAL DATA



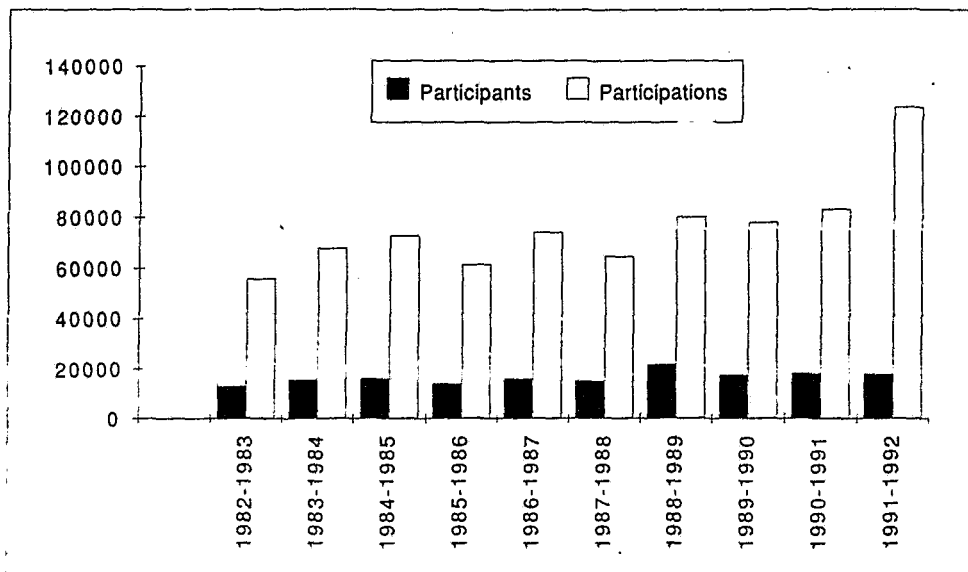
## STATISTICAL DATA

	1989-90	1990-91	1991-92
June	4,053	19,005	12,124
July	16,223	18,081	11,491
August	12,360	16,833	3,511
September	20,234	16,833	20,814
October	22,148	24,475	22,108
November	27,552	21,457	21,175
December	11,980	9,324	9,690
January	20,434	18,706	12,352
February	30,093	31,801	26,334
March	23,083	21,798	19,410
April	24,779	28,487	20,913
May	14,771	10,434	10,776
<b>TOTAL</b>	<b>227,710</b>	<b>237,234</b>	<b>190,698</b>



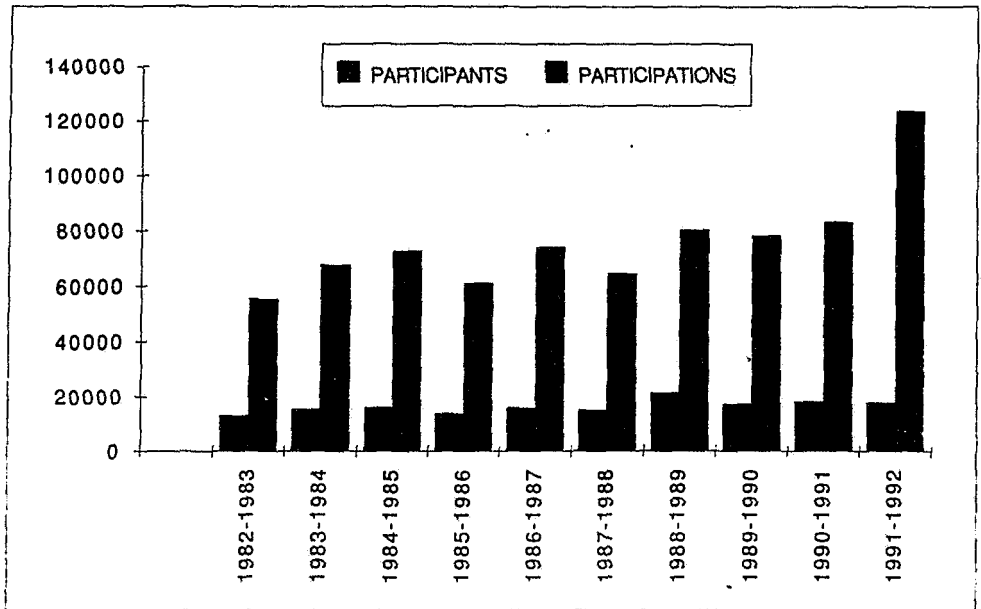
## STATISTICAL DATA

	1989-90	1990-91	1991-92
June	15,088	14,688	18,317
July	14,836	15,912	13,920
August	6,411	7,620	2,552
September	13,162	13,142	12,107
October	5,654	12,057	11,972
November	4,700	10,068	10,502
December	2,593	4,603	6,591
January	4,145	7,771	7,946
February	4,875	13,959	13,559
March	4,930	9,237	11,272
April	5,604	13,014	14,301
May	2,171	5,019	8,096
TOTAL	84,169	127,090	131,135



## STATISTICAL DATA

	Participants	Participations
1982-1983	12,894	55,388
1983-1984	15,423	67,669
1984-1985	16,068	72,729
1985-1986	13,860	61,134
1986-1987	15,936	74,130
1987-1988	15,013	64,502
1988-1989	21,386	80,324
1989-1990	17,317	78,225
1990-1991	18,085	83,418
1991-1992	17,792	123,762



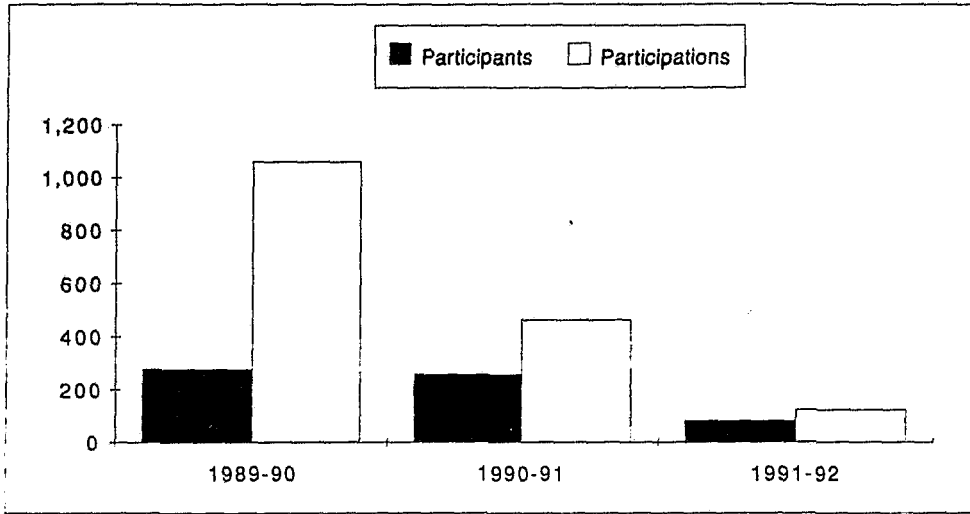
## STATISTICAL DATA

## PARTICIPANTS PARTICIPATIONS

1982-1983	12,894	55,388
1983-1984	15,423	67,669
1984-1985	16,068	72,729
1985-1986	13,860	61,134
1986-1987	15,936	74,130
1987-1988	15,013	64,502
1988-1989	21,386	80,324
1989-1990	17,317	78,225
1990-1991	18,085	83,418
1991-1992	17797	123,762
<b>TOTAL</b>	<b>17,797</b>	<b>761,281</b>

# NOON HOUR PARTICIPATION

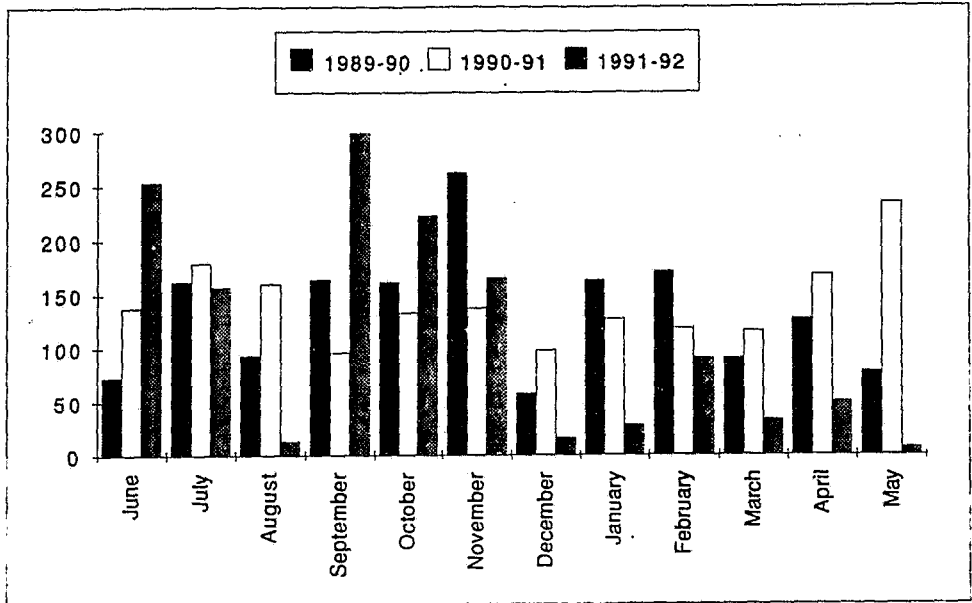
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## STATISTICAL DATA

	1989-90	1990-91	1991-92
Participants	278	258	82
Participations	1,060	462	124

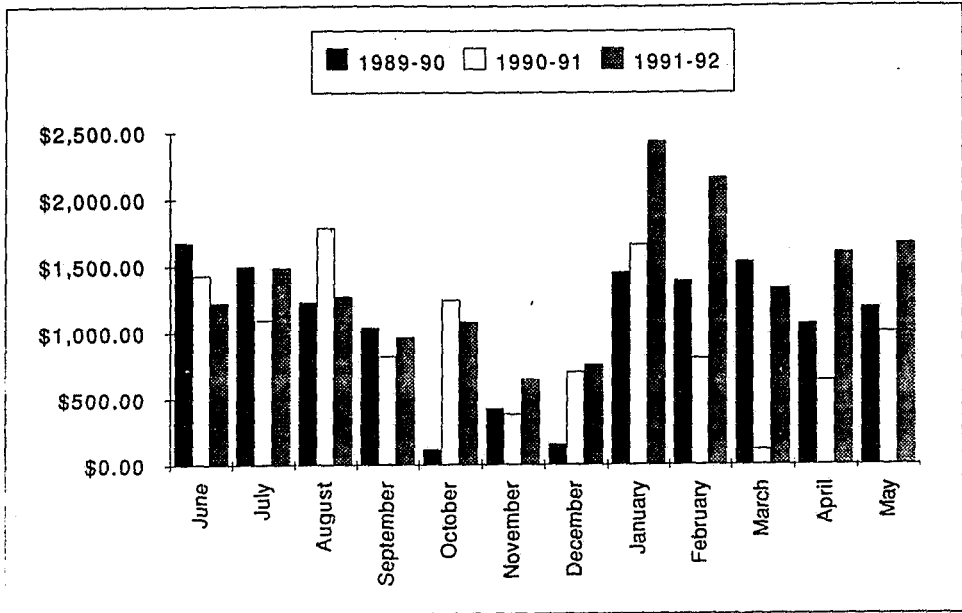




## STATISTICAL DATA

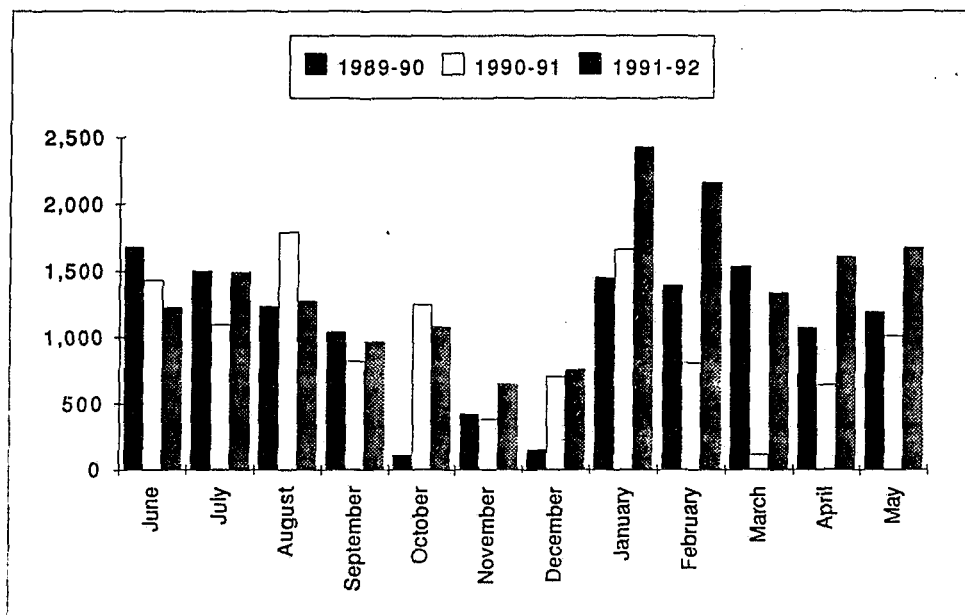
	1989-90	1990-91	1991-92
June	73	137	253
July	162	179	157
August	93	160	13
September	164	96	299
October	161	133	222
November	262	137	165
December	58	98	16
January	163	127	28
February	171	118	90
March	90	116	33
April	127	168	50
May	78	234	7
TOTAL	1602	1703	1333

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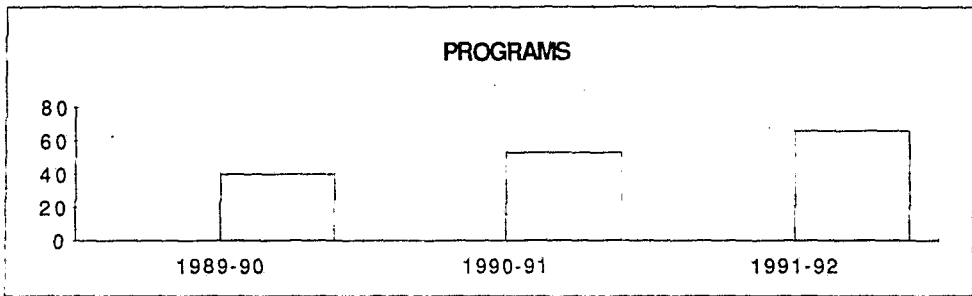
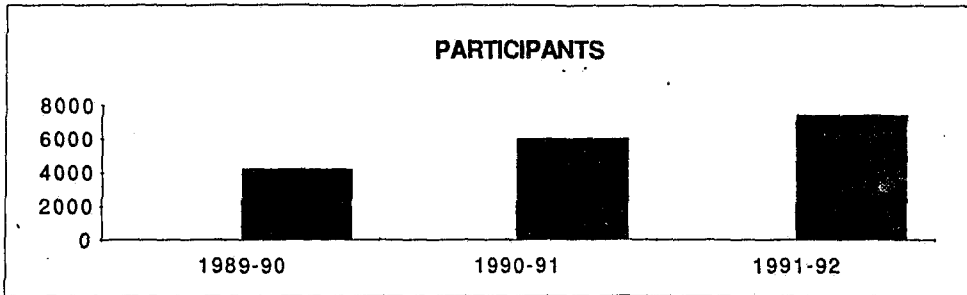
## STATISTICAL DATA

	1989-90	1990-91	1991-92
June	\$1,677.14	\$1,427.50	\$1,219.75
July	\$1,495.00	\$1,092.10	\$1,483.43
August	\$1,228.00	\$1,785.50	\$1,268.50
September	\$1,035.90	\$816.80	\$963.90
October	\$112.25	\$1,240.15	\$1,074.05
November	\$420.05	\$381.00	\$643.95
December	\$152.10	\$702.55	\$752.90
January	\$1,445.30	\$1,657.55	\$2,428.65
February	\$1,386.25	\$803.80	\$2,154.00
March	\$1,530.64	\$112.45	\$1,329.05
April	\$1,064.25	\$638.00	\$1,599.50
May	\$1,190.00	\$1,010.05	\$1,667.58
TOTAL	\$12,736.88	\$11,667.45	\$16,585.26



## STATISTICAL DATA

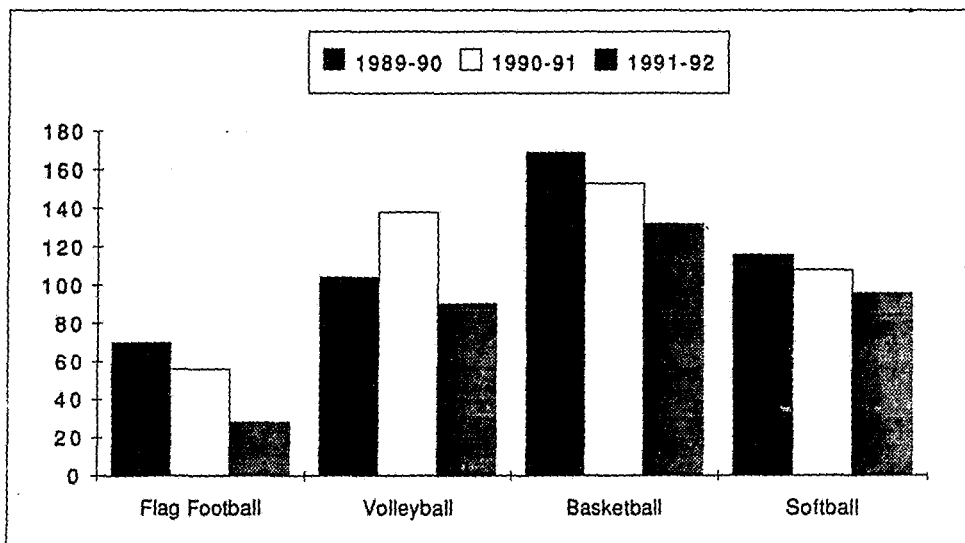
	1989-90	1990-91	1991-92
June	1,677	1,428	1,220
July	1,495	1,092	1,483
August	1,228	1,786	1,269
September	1,036	817	964
October	112	1,240	1,074
November	420	381	644
December	152	703	753
January	1,445	1,658	2,429
February	1,386	804	2,154
March	1,531	112	1,329
April	1,064	638	1,600
May	1,190	1,010	1,668
TOTAL	12,737	11,667	16,585



**STATISTICAL DATA**

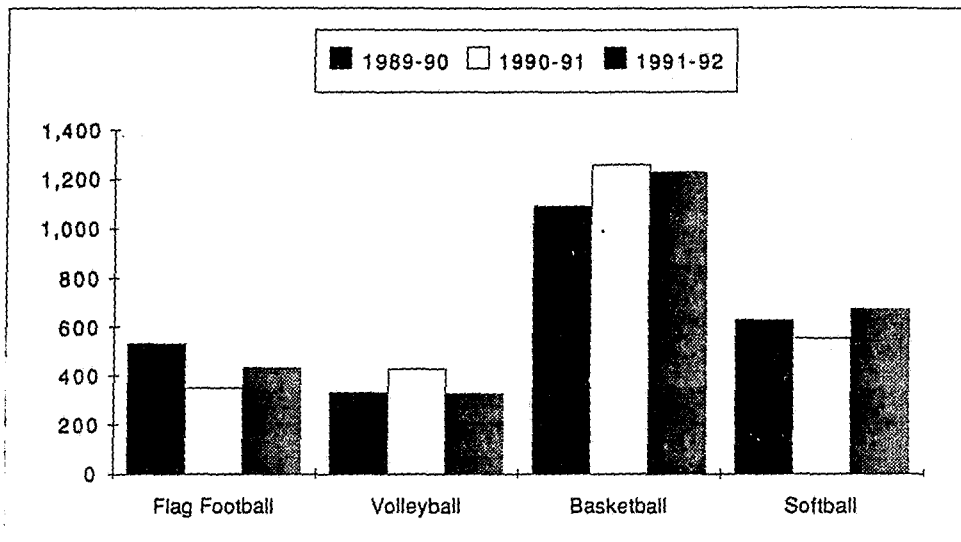
	1989-90	1990-91	1991-92
Participants	4,221	6,039	7,387

	1989-90	1990-91	1991-92
Programs	40	53	66



## STATISTICAL DATA

	1989-90	1990-91	1991-92
Flag Football	70	56	28
Volleyball	104	138	90
Basketball	169	153	132
Softball	116	108	96



## STATISTICAL DATA

	1989-90	1990-91	1991-92
Flag Football	532	350	434
Volleyball	331	427	325
Basketball	1,090	1,258	1,228
Softball	628	554	674

**ANNUAL REPORT**

**FOR**

**THE DEPARTMENT OF SPECIAL EDUCATION**

**1991-1992**

**submitted by**

**Deborah Deutsch Smith, Chair**

**June 1992**

**EXECUTIVE SUMMARY****FACULTY SEPARATIONS:**

Dr. James Everett (retired, effective May, 1992)  
Dr. Jozi DeLeon (joining NMSU as Assoc. Prof., effective August, 1992)

**SABBATICAL LEAVES:**

Dr. Richard McDowell (Fall, 1991)  
Dr. Roger Kroth (Spring, 1992)  
Dr. Elizabeth Nielsen (Spring, 1992)

**MAJOR ACCOMPLISHMENTS:**

Completed successful external Office of Graduate Studies review

**GRANTS IN OPERATION (1991-1992):**

APS/UNM Clinical Supervision/Intern Program (on-going) Carlene VanEtten (\$313,469).

Bilingual/ESL Special Education Training Project (Third Year), Jozi De Leon (\$147,413).

APS Tuition Sub-Contract (Academic Year 1991-92), Deborah D. Smith (\$21,720).

Training Rural Teachers in Technology (Third Year), Gary Adamson (\$74,747).

Training Project for Teachers of Young CLDE/LEP Students (Third year), Jozi De Leon and Carlene VanEtten (\$76,343).

The Twice-Exceptional Child Project: Identifying and Serving Gifted/Handicapped Learners (last 1/2 year ended 12/91), Elizabeth Nielsen (\$124,998).

Diagnostic Training Materials (First Year), Henry Pepe (\$5,000).

Leadership Training of Minority and Other Special Educators to Address Needs of Culturally Linguistically Diverse Children with Exceptionalities (First Year), Isaura Barrera Metz (\$95,184).

Personnel Preparation Project for Teachers of Students with Mental Retardation Mental Illness (First Year) Glen VanEtten, Carlene VanEtten (\$94,138).

State Wide Assistive Training Program, (First Year), Gary Adamson, (\$97,212).

NM Transition Specialist Training Project, (First Year), Ginger Blalock (\$98,821).

Program Effectiveness for Culturally & Linguistically Different Exceptional Students, (First Year), Jozi DeLeon (\$68,414).

Outreach Alliance 2000 Project, (First Year), Deborah Smith (\$1,009,932).

**Total Annual External funding: \$2,227,391**



**DEPARTMENTAL HIGHLIGHTS**

- \* 453 students enrolled during the Fall of 1991 and Spring of 1992
- \* The special education student body is diverse with 28% being from minority groups
- \* Approximately 69 students completed their degree and licensing programs during the 1991-92 academic year
- \* Of those graduates, 7% were from minority groups
- \* An average of 54 master's degree students completed master's projects or theses during each of the last two academic semesters, the remaining graduates passed comprehensive examinations
- \* An average of 127 students completed practicum (graduate level student teaching) for each of the last two academic years
- \* The Department is the main supplier of special education teachers and leadership personnel for the state
- \* The Department faculty obtained over 2 million dollars in external funding.

### A DESCRIPTION

During the past academic year, 1991-1992, the Department of Special Education had approximately 453 students enroll in its various on-campus programs with 14.5 FTE faculty members originating on the Department's instructional budget (with the addition of the Director of UNM's Children's Psychiatric Hospital's Mimbres School having her primary academic affiliation with the Department).

Although the special education faculty are engaged in numerous service, grant, and other professional activities relating to the education of students with disabilities and their families, the faculty have viewed their primary obligation as the preparation of instructional and leadership personnel to work in various capacities as special educators. The Undergraduate Program in Special Education which prepares individuals to become teachers of students with disabilities has continued to grow. The Special Education Teacher Licensing Program -- a certificate program whose students typically are working as special education teachers, but do not yet meet the New Mexico state requirements for special education teacher licensure -- provides a stable enrollment which should increase in the coming years. This is due to the universities across the state working towards the development of a uniform core set of three to four courses which the state licensing office would require of all special education teachers. The Master's degree program has a constant base of students at a level probably somewhat in excess of the number of students faculty should handle in graduate programs. The Educational Specialist's Certificate has become a viable option selected by many students working towards the development of advanced skills or knowledge. Many students studying in the assistive technology area, for example, are choosing the Ed.S. as their program option. Finally, the Department offers a nationally recognized and well attended doctoral degree in special education.

### External Review

During the fall semester, the faculty prepared a self-study report in accordance with the guidelines provided by the Office of Graduate Studies and the Senate Graduate Committee. During the spring, the committee came to campus to conduct their review. Their conclusions, which are available in their written report, are highly positive of the Department: its programs, faculty, and reputation.

### Advisory Board

During the 1990-1991 academic year, the department developed an advisory board to systematize feedback and input from its various constituencies regarding the quality and dimensions of its programs. This advisory board's members are special education directors from the following school districts: Albuquerque, Belen, Bernalillo, Los Lunas, and Moriarty. This group met with the faculty this year as well and all found that an opportunity to share our mutual concerns and dilemmas to be most helpful and productive.

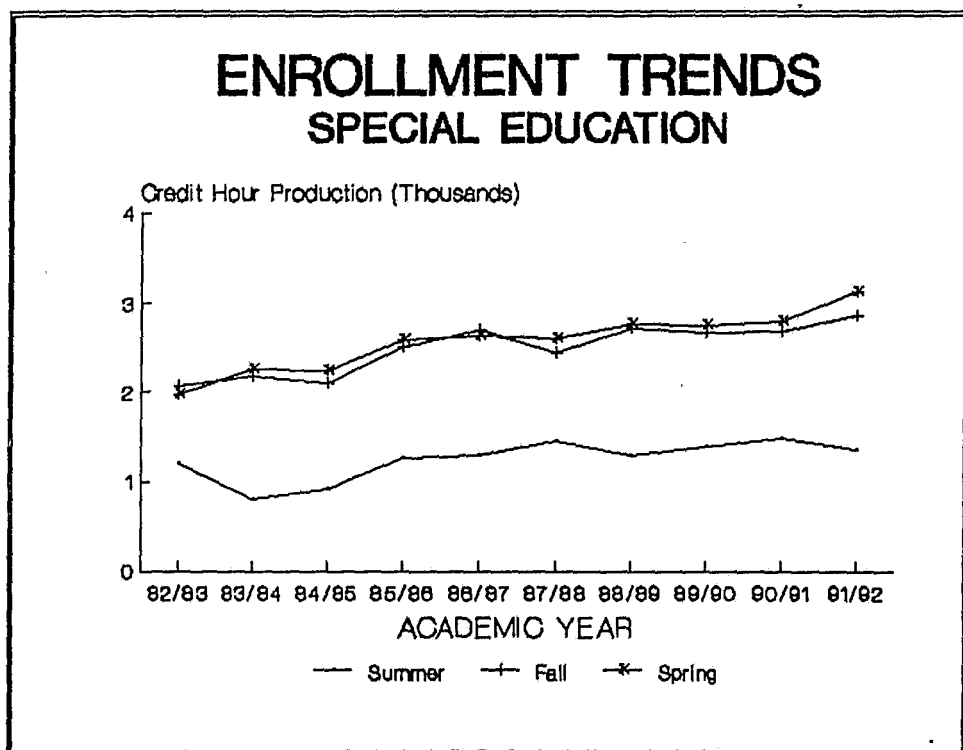
### Enrollment

The Department's enrollments remained strong. The demand for its graduates far exceeds its capabilities, but without additional faculty resources and replacements for those who resign, it is not feasible to expect greater increases in credit hour production. Figure 1, which follows, shows the Department's credit hour production trends for the past years. After a drop in 1982 (the time the undergraduate program was discontinued), trends shows strength and stability.

The potential for increased credit hour because of special education offerings in the future is great. A change in the licensing rules (with a core of required courses) would reduce the number of students taking one-hour topicals and possibly increase

on-campus enrollments. However, the measure of potential increases rests not only with our on-campus programs, but also with special education offerings off campus. For example, the Division of Continuing Education offered, 99 courses for 1341 credit hours during the 1991-1992 calendar year and Summer session of 1992. However, current classes are at capacity.

FIGURE 1



### Faculty Productivity and Contributions

Despite high instructional loads, the faculty are engaged in many service and other professional activities. As with most active faculty who work in a professional school at a major state university, professional service is a real obligation. Various constituents across the state and the region, believe that the special education faculty's expertise is a resource which is available. Therefore, the faculty is involved in a considerable number of outreach activities ranging from the provision of instruction (through the UNM Santa Fe Graduate Center, the Division of Continuing Education, and on-campus enrollments) to the provision of technical assistance to professionals throughout the state. Faculty members are also active at the national level. To illustrate their involvement -- they serve on 11 editorial review boards, over 50 task forces and major committees, and over 50 university and college committees. As a group, they hold 12 offices of professional organizations.

Just as another illustrative example of the faculty's national involvement and its positive affect on students can be made by the last (Oct., 1991) Council for Learning Disabilities Conference held in Minneapolis. At that meeting one of our faculty served as program chairperson, another chaired the medical strand, seven doctoral graduates presented, two faculty members presented, three current doctoral students presented, and several other faculty members and students attended.

This year also saw 10 journal articles and 12 chapters either published or accepted for publication. It also saw four books and three monographs actually released as publications. And, the faculty made over 50 presentations at national and state meetings and conferences.

It has been our belief that the special education faculty and its programs has brought the College and the University considerable positive national, state, and local recognition.

### The Special Education Student Body

The Department's program offerings are in demand, as indicated by our course enrollments. The faculty continually strives to ensure both diversity and quality. Of the total number of students currently enrolled in the department, almost 28% are from diverse backgrounds.

The Department's graduates show similar patterns of diversity, indicating an outstanding retention rate. Of the 1991-92 graduates, 7% of our graduates were from diverse backgrounds which showed the Department's ability to recruit, retain, and graduate students who come from many cultures.

### Demand for Program Graduates

One aspect of a program's viability is the demand for its product, in particular, the demand for its graduates. In this regard, in every aspect of our training programs the demand far surpasses the supply. This extraordinary unbalance between supply and demand exists at the local, state, and national levels. Table 1 identifies some of the demand indicators for special education personnel. These data provide some examples of the need for a broad range of special educators.

### Grant and Contract Activity

To support the Department's basic program offerings, to assist in meeting the state's personnel needs, and to provide support for students, the special education faculty have sought outside funding from local, state, and federal agencies. Considering the faculty's workload and commitment to instruction, their success rate in the grant and contract area is excellent. Figure 2 summarizes the Department's grant and contract activities over a ten year period and Table 2 lists specific proposals funded for the 1991-92 year. The total amount of external funding for this year was \$2,227,391.

TABLE 1

## DEMAND INDICATORS FOR NEW SPECIAL EDUCATORS

TEACHERS -- STATEWIDE

- \* 470 reported special education teacher vacancies statewide, as of May, 1992

TEACHERS -- ALBUQUERQUE PUBLIC SCHOOLS1991-92 Academic Year Data

- \* 1,500 special education teachers
- \* 500 new hires
- \* of those 500, 150 positions were due to new programs
- \* 350 special education teachers are on waivers (not fully licensed)

1992-93 Projections

- \* 100 new special education classes will be opened
- \* 300 vacancies by attrition (leaving the district) at least
- \* a conservative estimate of a need for 400-500 new special education teachers for the upcoming academic year

LEADERSHIP PERSONNEL

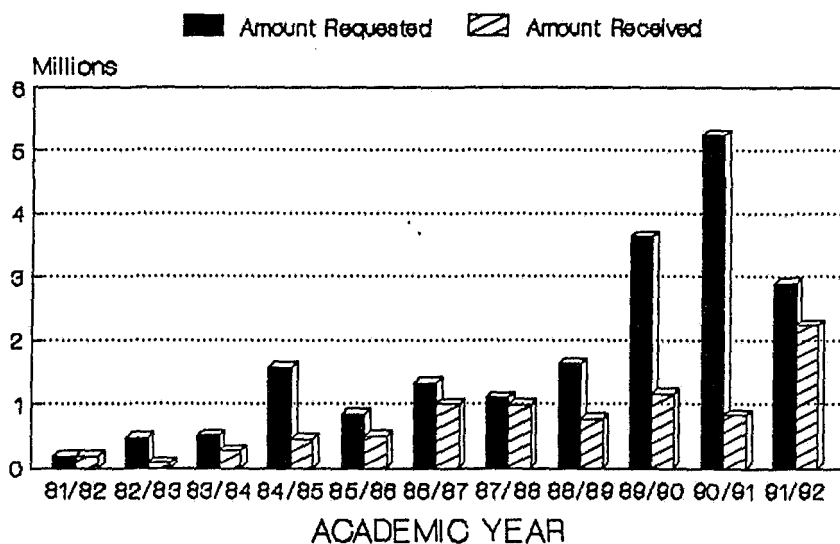
- \* approximately 320 new doctoral-level special educators are needed annually by the nation's IHE's

EDUCATIONAL DIAGNOSTICIANS

- \* 35-40 new diagnosticians needed annually statewide
- \* over 50% of New Mexico's student population are Hispanic, and there is a need for bilingual diagnosticians which we do produce

FIGURE 2

## Grant and Contract Activity Department of Special Education





**TABLE 2**  
**LIST OF GRANTS FUNDED**  
**FOR THE 1991-1992 YEAR**

PI	TITLE	FUNDING AGENT	GRANT PERIOD	AMT RECEIVED
Adamsen, G.	Training and Statewide Coordination of Assistive Technology Program	USDE	09/01/91-08/31/92	97,212
	Training Rural Teachers in SPC ED & REHAB. SERV. Technology		08/15/91-08/14/92	74,747
Blalock, G.	New Mexico Transition Specialist Training Project	USDE	09/01/91-08/31/92	98,821
De Leon, J.	Bilingual/ESL Spec Ed Training Project	USDE	08/15/91-08/14/92	147,413
	Program Effectiveness for Culturally and Linguistically Different Exceptional Students	USDE	10/01/91-03/31/93	68,414
Metz, I. & DeLeon, J.	Leadership Training of Minority and other Special Educators to Address Needs of Cultural/Linguistically Diverse Children with Exceptionalities	USDE	08/01/91-07/31/96	95,184
Nielsen, E.	The Twice-Exceptional Child Project: Identifying and Serving Gifted/Handicapped Learners	USDE	01/01/91-12/31/91	249,996
Pepe, H.	Diagnostic Materials	NMSDE	02/15/92-06/01/92	5,000
Smith, D.	APS Tuition Contract (Fall/91 Spring/92)	APS	08/20/91-05/29/92	21,720
Smith, D. & Cordova, I.	Outreach Alliance 2000 Project	USDE	10/21/91-10/20/92	1,099,932
VanEtten C. & DeLeon, J.	Training Project for Teachers of Young CLDE/LEP Students	USDE	06/01/91 to 05/31/92	76,343
VanEtten, C.	Teacher Exchange and Career Development Program	APS	01/02/91-06/30/92	313,469
VanEtten, G. & C.	UNM Personnel Preparation Project for Teachers of Students with Mental Retardation and Mental Illness	USDE	08/15/91-08/14/92	94,138
VanEtten, G. & Turney, P.	UNM Infant Intervention Specialist Training Project	USDE	01/01/91-12/31/91	75,000

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**Total: 2,517,389**  
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**COLLEGE OF EDUCATION**  
**DEPARTMENT OF TRAINING AND LEARNING TECHNOLOGIES**  
**ANNUAL REPORT**

**July 1, 1991 - June 30, 1992**

**By**

**Frank R. Field, Past Chairman**

**SECTION A: Significant Developments**

In the past year, the department has experienced both elation and despair. Activities throughout the year have provided the students, staff, and faculty with challenges, recognition, consternation, and frustration in equal measures as follows.

- The Training and Learning Technologies Department as the primary source of instructional technology, training and development, and adult learning courses in the College of Education provides a variety of high quality degree and professional development programs, as evidenced by the Spring 1992 Senate Graduate Unit Review, for individuals in the public schools and the corporate sector who want to improve performance through applications of learning technologies.
- In the past five years since the implementation of the TLT Action Plan, the department has implemented a systematic and extensive internal programmatic evaluation and reallocation. Faculty assignments/expertise, courses, degrees, and total programs have been expanded, focused, terminated, reduced and/or re-structured in

enterprise of meeting public and private demand; it offers a state/regional focus.

- **Students** There is a strong demand that fits with the regional needs and national trends (looking at the three areas--adult learning, instructional technologies, and training and development). The students are "returning students" who have experience, and see a match in the MA program with their goals. They are fairly well-established in what they do. In terms of admissions--most MA students are admitted, but the doctorate is very selective. In discussions with students, there was a great deal of consternation from those not admitted. Quality of students--they are well prepared. The doctoral dissertations rank well with those in the COE. Placements of graduates is good.

- **Faculty** There is a differentiation of faculty roles. There is strong leadership that contributes to a shared vision and cooperation. Faculty recruitment recently has been outstanding. Recent faculty stand up well in their research preparation. There is informal faculty development.

- **Resources** TLT is using MA level materials to support doctoral level work. Faculty use a great deal of their own materials to try to overcome this frustration, but this also means that such materials aren't necessarily available for all students. Facilities, equipment, materials are needed. TLT must look at strong contacts outside of the university. The role of credit hour generation

exceeding the amount spent on education in our colleges and universities.

- The Department is unique in its programmatic organization and its offerings. The American Society for Training and Development Directory of Academic Programs lists only thirty institutions of higher education as offering programs in Training and Development and Instructional/Learning Technology, most of which are relatively new. The combination of the adult learning, training and development, and instructional/learning technologies areas is considered as a "cutting edge" program structure.
- Linkages and integrated curriculum/programmatic efforts with other departments and other colleges are yet another achievement of the department. Strong ties and reciprocal curriculum activities are in place with many other departments. Courses have been cross-listed, team taught, students reciprocate between departments, faculty serve on other department graduate committees, specialized courses are offered for other departments, and the list goes on. The department welcomes the opportunity to share its expertise with students and faculty from other departments, as well as sending its students to other departments for specific expertise they have to offer.
- Productivity can be measured in a variety of ways. One of the most common is credit hour production. The department made a commitment to focus its available resources on graduate education, where the greatest client demand was. Attention is called to the credit hour production figures for the past five years. Productivity can also be measured in terms of numbers of students pursuing the various department programs.

faculty who would then be more involved in research.

- Due to budgetary restrictions there is concern with the ability to meet future instructional media and technology requirements, as well as with the ability of the Library to adequately support doctoral research. The primary reliance on State funding must be reviewed with the view toward funding diversification to include such possible sources as contracts and grants, student-contract work, and private-sector partnerships.

- The less than adequate overall facility for TLT programs requires a concerted effort to review the need for a capital improvement plan.

- A positive reputation of TLT exists in the State-wide community.

Unfortunately, this same reputation does not exist, with few exceptions, on-campus. The campus perceptions of TLT is what happened in the past -- not on what TLT is today.

- Overall, the mission statement of TLT is too narrow and needs to be reviewed in the context of an expansion from only technical training to the broader context of workplace learning.

■ The External Review Team summarized their report with the following statements.

"It is evident that the concerns just raised are resolvable through continued strong leadership, adequate funding, and constituency support. The overall view of TLT is that it is a strong department on a generally positive trajectory. The recommended way to retain these strengths and momentum is to retain it as an entity, and by

part time faculty, graduate admission and advisement, operational budgets, scheduling of classes, etc.

- What was observed by the external Graduate Unit Review Team in early 1992, has been changed significantly. Instead of 10 faculty lines in TLT to serve 200 plus graduate students, there are now seven. Of the seven, only three faculty remain in Division A with the program unit. The two excellent staff members who carried out the operational functions of the department in the past, have been reassigned to another division. What was once a "well oiled, and efficient operation" now faces an uncertain future, with limited senior/tenured faculty, limited staff support, and the necessity to reconstruct operational procedures anew. A recent comment reported from the Dean's office to a TLT graduate student regarding the changes being made to TLT indicated that if TLT were to have difficulty in continuing the programs - or even if it were to fail - it was the fault of the unit. This assumes that the faculty have some control over the process now in motion. For the record, the program unit has had little, or no role in the reduction of TLT resources. The responsibility rests with those who are making the decisions. The Fall and the year to come will prove to be an interesting time for all.

#### **SECTION B: Plans and Recommendations**

- There is much work to be done to bring the program unit back into functional status

department at the end of the Summer 1992.

**SECTIONS 5,6 & 7: Professional Activities**

Faculty members activities identified to the chairman have been reported in the annual supplements, annual reviews, and Code 3 reviews.

## MEC Annual Report

Period of Performance: July 1, 1991-June 30, 1992

**Summary:** MEC staff were involved in a number of management, development and related activities during the fiscal year ending June 30, 1992. The MEC coordinated the activities of the Multicultural and Gender Resources Center; directed or monitored 6 externally funded projects; submitted 4 continuation proposals; developed 6 competing proposals, and worked on a number of planning and, development, and staff training activities.

**Grant development efforts included:**

Continuation Proposals submitted for the Bilingual Education PhD Fellowship Program (\$85,000), one of two Bilingual Educational Personnel Training Projects (180,000), (one of the Ed Personnel Projects is terminating September 30, 1992. A Final Performance Report will be submitted by December 31, 1992), the HEP Program (\$360,296), and the UNM/Bernalillo Program Development Grant (\$85,325)

Competing Proposals developed/submitted for the Family English Literacy Program (\$172,782 - not funded); a Bilingual Education Personnel Training Project (\$ 174,577 - indications are that it will not be funded); a UNM/Belen Drug Prevention Project (\$265,245 - disqualified); a UNM/Pojoaque Drug Prevention Project (\$92,654 - not signed by UNM Grants Office); a UNM/APS Drug Prevention Project (\$208,022 - still in the running); and a Personnel Training and Development Grant submitted to OBEMLA as part of an IHE consortium (funded for 3 years, first year funding of \$299,185 with the University of Colorado as the fiscal agent and Leroy Ortiz and Jim Bransford serving as revolving PI and part-time coordinator respectively).

**Ongoing Project Management efforts included:**

Bilingual Education PhD Fellowship Project: this grant is currently supporting 10 doctoral students and is in the second of a three year funding cycle. Leroy I. Ortiz is Director.

Bilingual Education Educational Personnel Training Project (2): Each of these grants supports 40 students (15 full-time and 25 part-time). One of the grants expires September 30, 1992. The other is going into a third year of a 3 year funding period. Luisa Duran is directing both projects.

UNM/Bernalillo Counselor Training Project: Provides training for counselors and other school staff working in intervention, prevention, and referral for substance abuse prevention efforts. This grant expires on September 30, 1992. Marcella Garcia is acting Director.



UNM/Bernalillo Program Development Project: Provides core team development and training for teachers and administrators working with at risk youth in the development of a student assistance program. The grant is completing the first year of a 2 year funding period. Marcella Garcia is acting Director.

High School Equivalency Program: Provides instructional and related assistance to migrant students wishing to study for the GED. The Program is in the second year of a second three year funding cycle. The Program has served 708 students in the current fiscal period and has assisted 275 students earn a high school equivalency diploma. David Grant is the Director.

### **Other Activities included:**

Developing a resource library of substance abuse prevention and related workshops in preparation for coming year project activities and for future proposal writing efforts. MEC staff involved: Jim Bransford, Marcella Garcia, Gloria Romero, Jillian Gonzales, John Gillam.

Participating in various training workshops involving AIDS education, drug prevention strategies, resiliency, at-risk student intervention strategies, multicultural educational issues, women's awareness issues. MEC staff involved: Marcella Garcia, Gloria Romero, Jim Bransford.

Updating and developing the proposal boilerplates in concert with the Office of the Associate Dean for Research. MEC staff involved: Jim Bransford, Carlos Romero.

Establishing working contacts with other University entities for the purpose of cooperating in related program and proposal efforts chief among these contacts is the Latin American Institute. MEC staff involved: Leroy Ortiz, Jim Bransford.

Coordinating MEC Multicultural and Equity Resources Center. The Center has circulated 1,095 print materials and 229 films in-house. An additional 478 books and 75 films were circulated as part of the Center outreach effort. The Center conducted 38 presentations and orientations for school district staff and other organizations. MEC staff involved: Joe Gonzales.

Initiating an effort to solicit funding for the Special Collection of the Multicultural and Gender Equity Resources Center. Letters have been forwarded to 8 different foundations asking for application guidelines. A letter/proposal is currently being developed for submission to the Heineman Foundation with a due date of June 30, 1992. MEC staff involved: Joe Gonzales, Jim Bransford.

The MEC also co-sponsored a Colloquium Series with the Colleges of Arts and Sciences and Education, Departments of Educational Linguistics and Linguistics, featuring Bernard Spolsky of Bar-Ilan University, Israel (Thursday, March 5, 1992).

## BUREAU OF EDUCATIONAL PLANNING AND DEVELOPMENT

## UNM COLLEGE OF EDUCATION

David L. Colton, Director

July 1991-June 1992

The Bureau of Educational Planning and Development, supported by the College, the Provost, and external funding, fosters educational improvement projects in New Mexico.

## Accomplishments, 1991-92

During 1991-92 the Bureau emphasized school-based staff development initiatives and educational policy improvement. The Bureau's major programs and activities were the following:

Academy for School Leaders. Supported by a grant from the Rockefeller Foundation, the Bureau offered its first Academy for School Leaders in 1990-91. The Academy was designed to train school-based leadership teams which then would foster improvement in their schools' programs for at-risk youth. A second grant from Rockefeller permitted the Bureau to offer a second Academy in 1991-92. Six-person teams from six New Mexico middle schools (Gadsden, Las Vegas, Zuni, Picacho in Las Cruces, and Wilson and Ernie Pyle in Albuquerque) participated in the Academy's month-long 1991 summer training program. In the ensuing months Academy staff members provided support for the teams' leadership activities in their home schools. In January the Rockefeller Foundation awarded funds for a third year of Academy operations, commencing in the summer of 1992.

Middle School Project. New Mexico is one of several states participating in a Carnegie-funded effort aimed at improving state policies for middle schools, along the lines envisioned in the landmark Carnegie report, "Turning Points." The Bureau manages New Mexico's Carnegie grant, which supports regional and state-level policy development and advocacy for middle school education.

Sandia Labs Evaluation. Responding to the national priority assigned to math and science education, Sandia Labs has initiated a wide array of "Education Outreach" projects. Late in 1991 the Bureau entered into a contract with Sandia, designed to assist Sandia evaluate its initiative. The Bureau convened a national panel of evaluation specialists in January, resulting in a "white paper" describing general evaluation guidelines. In addition the Bureau initiated pilot evaluations of three projects, to be completed in August 1992.

Statewide Systemic Initiative (SSI). Throughout the summer and fall, the Bureau provided leadership and support for the development of a \$10 million proposal (to the National Science Foundation) for "systemic" improvement in math and science education throughout New Mexico. The proposal, which includes several elements developed in the Rockefeller Academies, emphasizes school-based staff development led by teams of teachers. An NSF site visit in February was followed, in May, by an NSF announcement that New Mexico was one of eleven states (of 35 applicants) selected for an award, to be administered through UNM and the Bureau. In addition, state funds have been

committed to the SSI. Operations are scheduled to commence in September 1992.

Tomorrow's Colleges of Education. The Holmes Group, a national confederation of research universities interested in improving teacher education, has begun planning for a nationwide study of the organizational contexts in which colleges of education operate. The Bureau participated in the national planning effort. In June UNM was notified that New Mexico had been selected as a pilot state for the national study. Funding is forthcoming. The New Mexico case study will be guided by the Bureau.

Professional Development Schools. The Bureau continued to provide staff support for the College's program to create Professional Development Schools at several sites, including two schools (Emerson and Chaparral) participating in the 1990 Rockefeller Academy.

Governor's Conference on Education. The Bureau actively participated in planning for the Governor's Conference on Education, held in November.

Human Service Collaborative. Bureau staff members have been working with the joint APS/United Way task force exploring options for interagency collaboration in the neighborhoods served by Emerson Elementary, Van Buren Middle, and Highland High School.

Vocational Education Policy Study. In a study commissioned by the State Department of Education, the Bureau identified policy options for the development of vocational education in New

Mexico. Following submission of the Report, the State Board of Education altered its governance structure for vocational education, and adopted a revised model for guiding future policy.

Senate Memorial 5. In 1990 the legislature adopted a Memorial directing the Legislative Education Study Committee to conduct a study of professional development policies for New Mexico teachers. The study continued during 1991-92. Bureau staff members are participating in the study.

APS Professional Standards Council. The Standards Council, a standard-setting body created by the Albuquerque Teachers Federation and the Albuquerque Board of Education, was created in 1989. Lacking staff support, it nearly foundered in 1991. The Bureau conducted a review of Council performance and offered recommendations for renewed effort. The Council now has been re-constituted and appears to be moving toward improved performance.

#### Prospects for 1992-93

In January the Bureau is scheduled for review, in order to establish directions for future development. The review will be conducted in the context of the goals established in "UNM 2000", the College of Education's new structure, and state and national needs and opportunities. Additional contextual constraints include the status of the New Mexico Research and Study Council, the not-yet finalized structure of the Statewide Systemic Initiative, and developments in agencies now funding the Bureau.

## Staff Additions and Separations

Chris Nelson: added December 1991  
Catherine Pelissier : added February 1992  
Betsy Conover: added February 1992  
Rose Mitchell: added June 1992  
Julia Pugh: added February 1992; separated June 1992  
Raymond Lopez: separated August 1991  
Eloise Colocho: separated July 1991  
Ester Montoya: separated July 1991  
Jennifer Ferrigno: separated December 1991

## Grants and Contracts Received

Rockefeller Foundation: New Mexico Academy for School Leaders,  
\$314,480, January 1992-May 1993.  
Carnegie Corporation: New Mexico Middle Schools Project,  
\$119,947, October 1991-September 1993  
Sandia National Laboratories: Evaluation of Education Outreach  
Initiative, \$106,923, October 1991-August 1992.

**NEW MEXICO RESEARCH AND STUDY COUNCIL  
1991-92 ANNUAL REPORT  
(FOR THE PERIOD JULY 1, 1991 THROUGH JUNE 30, 1992)**

*New Mexico Research and Study Council  
College of Education  
The University of New Mexico  
117-119 College of Education  
Albuquerque, New Mexico 87131  
Phone: (505) 277-2621; FAX: (505) 277-7976*

**THE ANNUAL REPORT OF THE  
NEW MEXICO RESEARCH AND STUDY COUNCIL  
JULY 1, 1991 - JUNE 30, 1992  
David L. Colton, Director**

<b><u>STAFF MEMBERS (F.T.E. = 4.50)</u></b>	<b><u>Employment</u></b>	<b><u>Separation Date</u></b>
David L. Colton, Director	7-01-91	
Patricia L. Tolley, Administrative Asst.	4-02-79	
Penelope J. Perrigo, Clerical Specialist V	12-05-88	
Sharon G. Christensen, Clerical Specialist V	1-02-92	
Susan K. Stratton, Graduate Assistant	8-19-91	5-16-92
Mark A. Ortega, Project Assistant	9-04-91	5-16-92
Brent Jaramillo, Work-study Employee*	6-24-91	5-15-92
Steve G. Fuentes, Work-study Employee*	9-09-91	5-15-92

\*Work-study and student employees on the payroll at the end of the spring semester are terminated. They may be rehired for the next semester if they meet the requirements for financial aid and maintain the needed grade-point average.

**BOARD OF DIRECTORS July 1, 1991 - June 30, 1992**

**Officers:**

Charles Ward, President (Superintendent, Santa Rosa Consolidated Schools)  
Susanna Murphy, Vice President (Superintendent, Tularosa Municipal Schools)  
Janel M. Ryan, Secretary/Treasurer (Superintendent, Truth or Consequences Municipal Schools)

**Other Board Members:**

Delbert Fraissinet, Superintendent, Socorro Consolidated Schools  
Arthur Blea, Superintendent, Pojoaque Valley Public Schools  
David Chavez, Superintendent, Loving Municipal Schools  
Leonard Aragon, Superintendent, Mora Independent Schools  
Roman Garcia, Superintendent, Vaughn Municipal Schools  
Herb Torres, Superintendent, Silver Consolidated Schools  
Vernon Jaramillo, Superintendent, Mesa Vista Consolidated Schools  
Alan Morgan, Representative, State Superintendent of Public Instruction, State Department of Education (represented by Michael Davis, Associate Superintendent for School Management Accountability).  
Joe Lopez, Representative, New Mexico School Administrators (Superintendent, Cuba Independent Schools)  
Wesley Lane, Executive Director, New Mexico School Boards Association  
Dr. Peggy Blackwell, Acting Dean, College of Education, University of New Mexico  
Dr. David L. Colton, Director, NMRSC

**Nominating Committee for Election of Officers for 1991-92:**

Joe Lopez, Cuba Independent Schools  
Charles Ward, Santa Rosa Consolidated Schools  
Susanna Murphy, Tularosa Municipal Schools



**COOPERATIVE PURCHASING PROGRAM  
ADVISORY COMMITTEE  
FOR 1991-92**

Inez Abeyta  
Lorraine Anglin  
Richard Baca  
Virginia Chavez  
Judy Crocker  
Gerald Elliott  
Greg Eriacho  
Benny Gallegos  
Bernice Gomez  
Tony Gonzales  
Paul Griego  
Bob Humphrey  
Chris Marquez  
Andy Martinez  
Carl Max  
Pete McFarlane  
Pauline McCormick  
Mike Miller  
Herrin Othole  
Ernest Polansky  
Ruth Porter  
Catherine Riley  
Francisco Sisneros  
Alice Tarin  
Robert Truitt  
Diane Trujillo  
Rose Trujillo  
Charles Wilson

Zuni Public Schools  
Silver Consolidated Schools  
Albuquerque Public Schools  
Zuni Public Schools  
Los Alamos Public Schools  
Moriarty Municipal Schools  
Zuni Public Schools  
Zuni Public Schools  
Jemez Mountain Public Schools  
Socorro Consolidated Schools  
Cibola County Schools  
Zuni Public Schools  
Belen Consolidated Schools  
Penasco Independent Schools  
Los Alamos Public Schools  
Sandia Prep School, Albuquerque  
Los Alamos Public Schools  
Cobre Consolidated Schools  
Zuni Public Schools  
Sandia Prep School, Albuquerque  
Hatch Valley Municipal Schools  
Mountainair Public Schools  
Socorro Consolidated Schools  
Hatch Valley Municipal Schools  
Hatch Valley Municipal Schools  
Pojoaque Valley Public Schools  
Bloomfield Municipal Schools  
Estancia Municipal Schools

## FOREWORD

Fiscal year 1991-92 was a year of training, transition, challenge, and change. The New Mexico Research and Study Council had a new director and five new employees, changed its location, and implemented many new ideas.

This year's director was David L. Colton, Ph.D., former dean of the College of Education. The Council offices moved from the Onate Hall office suite to the center of the University of New Mexico campus, 117 College of Education, in August 1991. Also new to the NMRSC were two graduate assistants and two student employees. A new, much needed, part-time clerical staff person was hired.

Many new ideas were implemented: The Computerization of the Cooperative Purchasing Program became a reality, with six pilot schools using computer diskettes to order supplies and receive bid awards information. The first Janitorial Fair was held, which allowed school personnel the opportunity to view products which would be bid by vendors in the Cooperative Purchasing Program. A research associate, funded by the University of New Mexico's College of Education, was employed to research "Professional Development for Teachers" for a five-month period. To save travel time and funds for school administrators, NMRSC meetings were scheduled in conjunction with those of the Cooperative Educational Services and Project LEAD, utilizing the same meeting facility, thereby reducing the three organizations' costs for meeting rooms, meals, and travel. For the first time, wellness activities became a part of the NMRSC-ASBO Annual Conference. Five new scholarships were given to the Quality Education Awards Program: UNM donated three summer-session teacher scholarships; the Albuquerque Mile High Optimist Club donated a three-year scholarship in memory of its first president, Stan Ulrich; and funds were raised for a scholarship to honor Earl Nunn, a long-time New Mexico educator.

This annual report will provide the reader with a descriptive narrative of the events and activities during the twelve-month period from July 1, 1991 to June 30, 1992.

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**THE NEW MEXICO RESEARCH AND STUDY COUNCIL  
(THIRTY-THREE YEARS OF COOPERATIVE ACTION)**

The New Mexico Research and Study Council adopted its first Constitution on January 14, 1959; seventeen (17) school systems became charter members of the Council at that time (see Appendix A).

Each school system and agency designates an administrator as its official voting member. The University of New Mexico supports the Council by providing one-quarter time of a professor to be the Council's executive director; UNM also provides about one-half of the office equipment and all of the facilities utilized by the Council's staff. The Council's revenues are produced primarily by membership dues and Cooperative Purchasing Program service fees. The dues and service fees are assessed on sliding scales based on each school system's enrollment.

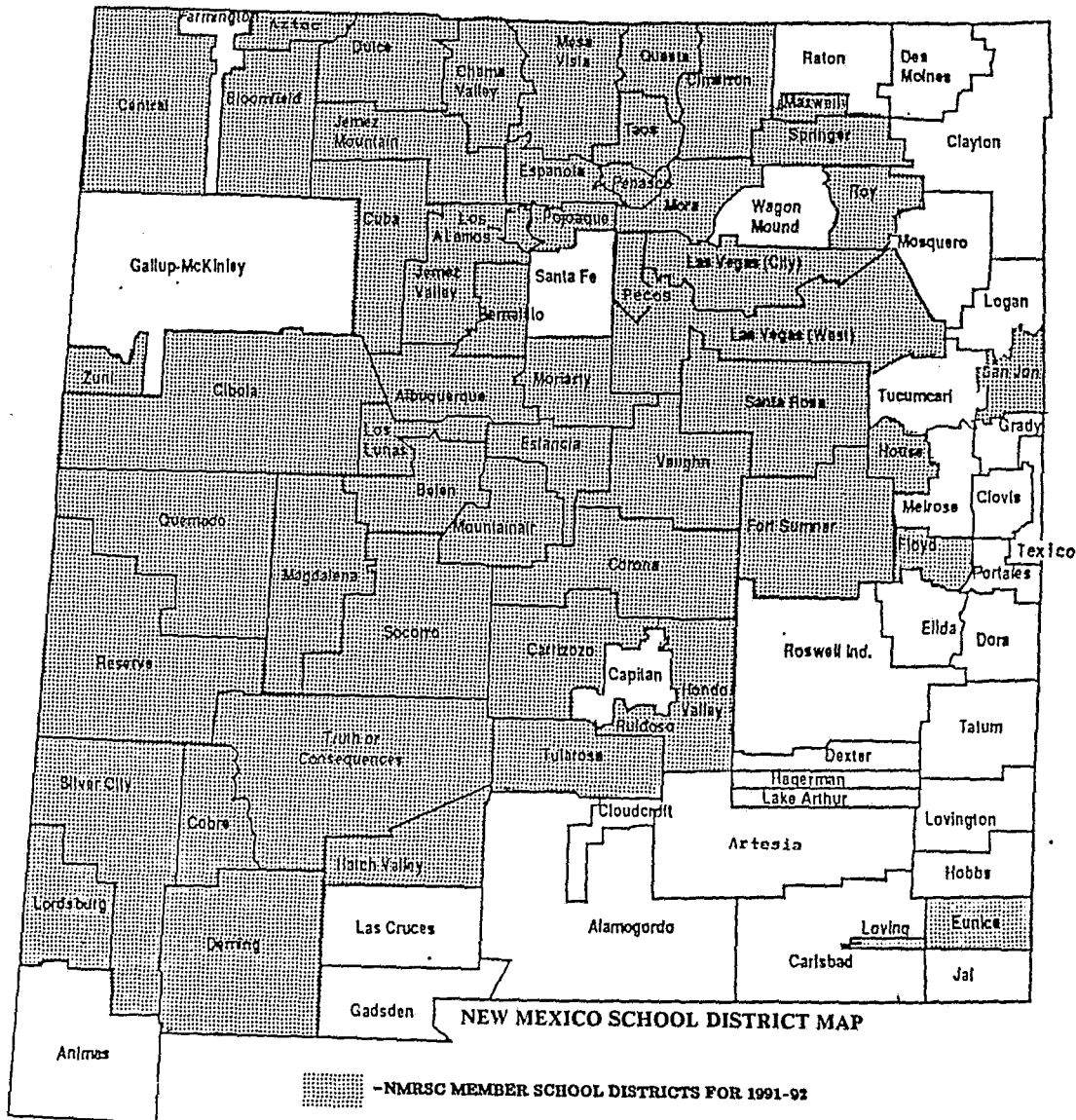
The Board of Directors of the Council is composed of members from participating school systems; the Dean of the College of Education at the University of New Mexico; the director of the NMRSC; and representatives from the New Mexico State Department of Education, the New Mexico School Administrators Association, and the New Mexico School Boards Association.

The Board of Directors acts as an administrative committee to the executive director and also recommends policies to the entire membership. The president and other officers are elected by the Board membership.

Membership in the New Mexico Research and Study Council is open to any school system and to other educational organizations within New Mexico.

**Purposes of the Council**

The New Mexico Research and Study Council is an organization designed specifically to facilitate cooperative study and solution of educational problems. Through the assistance of member school districts and the State Department of Education, the Council and the University of New Mexico provide the resources, direction and assistance necessary to successfully complete its projects and activities.



The New Mexico Research and Study Council Constitution and Bylaws, revised April 1990, states the purpose of the Council as follows:

"The New Mexico Research and Study Council (hereinafter called the Council) is an administering agency created by New Mexico public school districts and the University of New Mexico for promoting their mutual education purposes. The Council encourages, sponsors, and engages in service, research, workshop sponsorship, individual and group study, and cooperative purchasing in order to improve management and instruction in public elementary and secondary education in New Mexico. Projects and activities undertaken to fulfill this purpose are joint and cooperative in support, execution, and dissemination of findings. The University of New Mexico is the sponsoring institution; it provides the Council in-kind contributions such as office space, University facilities and services, and a part-time director."

The structure and functions of the Council are depicted in Figure 2.

### The Work of the Council

Ideas for Council projects come from a number of different sources. Most projects develop as a result of discussions and concerns relative to common problems by member districts that are voiced during discussions at general meetings and Board of Directors' meetings. Some come from ideas generated by the executive director and the NMRSC staff. Other ideas come from a variety of sources such as professional readings, teachers' concerns, national educational topics, etc.

The executive director and his staff are responsible for the necessary arrangements for completing projects. Personnel from member districts often provide leadership and expertise in planning and conducting projects. Aid is also received from the State Department of Education, various departments and personnel from the University of New Mexico, and other experts in the field of education. The Council utilizes the resources of as many institutions as necessary to accomplish the Council's goals and objectives.

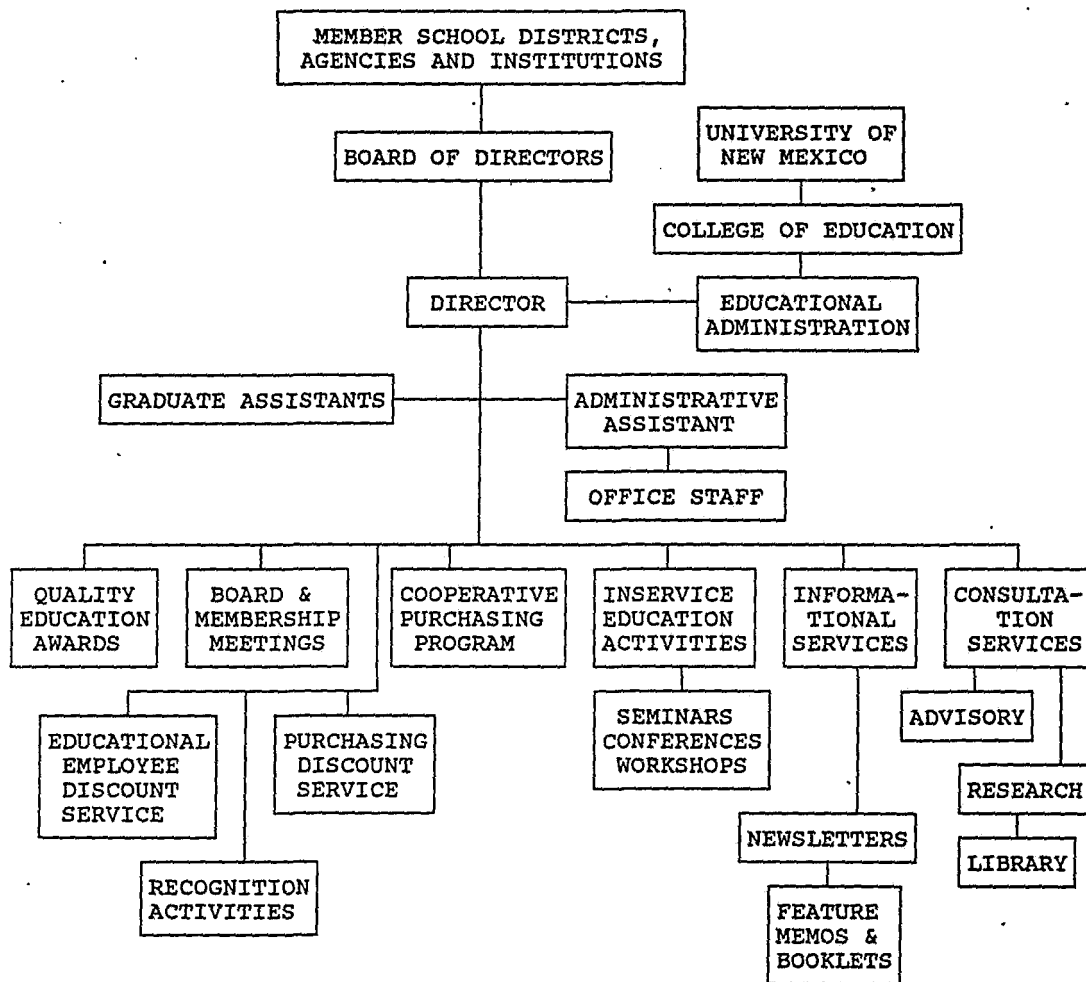
### Dues Structure for 1991-92

Dues were raised by \$50 for each ADM level by the Board of Directors on June 21, 1991.

<u>District Enrollment (ADM)</u>	<u>Dues</u>
299 or less .....	\$350
300 - 999 .....	\$550
1,000 - 1,499 .....	\$650
1,500 or more .....	\$750

FIGURE 2.

ORGANIZATION  
OF THE  
NEW MEXICO RESEARCH AND STUDY COUNCIL



**Purchasing Service Fee**

This service fee was created in 1976 and provided the Council with an ongoing method for computerized operation and continued improvement of the Cooperative Purchasing Program. The fee was raised from 78 cents per ADM in 1990-91 to 82 cents in 1991-92.

**COUNCIL FINANCES****FINANCIAL REPORT FOR JULY 1, 1991 - JUNE 30, 1992**

Note: This financial report is compiled from NMRSC records and the Financial Reporting System Documents dated August 1, 1992 for the twelve-month period ending June 30, 1992, from UNM's Pre-Audit Office.

**REVENUES:**

CPP Service Fees	\$ 66,190	
Membership Dues	32,300	
Vendor Reg. Fees, Workshop Registration Fees, and Other Income	<u>23,358</u>	
Total Income, FYE 6-30-92		\$121,851 <sup>a)</sup>
Carry-over Balance, 6-30-91		<u>4,237</u>
Total Revenues, FYE 6-30-92		\$126,085

**EXPENDITURES:**

Salaries, Wages, and Benefits	\$ 72,460 <sup>b)</sup>	
Supplies and Expenses	29,807	
Printing and Photocopying	8,544	
Communications	2,057	
Equipment	0	
Travel	720	
Tuition (Graduate Assistants)	1,771 <sup>c)</sup>	
Consultants (Computer, Workshops)	<u>2,629</u>	
Total Expenditures, FYE 6-30-92		\$117,988

Carry-over Balance 6-30-92		<u>\$ 8,097<sup>d)</sup></u>
----------------------------	--	------------------------------

<sup>a)</sup>The actual income for this year was \$12,848 less than the \$134,699 estimated income. Last year's estimate for the FY92 budget projected an optimistic increase in membership, which did not materialize.

<sup>b)</sup>Does not include costs paid by the University of New Mexico, e.g., the executive director's salary and fringe benefits, and the use of the facilities and equipment.

<sup>c)</sup>This tuition account is for graduate assistants' tuition. (This cost also includes payment of tuition for one course per semester for each permanent employee, when an employee takes advantage of this benefit.)

<sup>d)</sup>Through economical use of this year's funds by hiring the part-time CS-V only half a year, and by using "free" student help (SYEP high school students), rather than work-study students, and economical practices by the staff, though the income was less than anticipated, a carry-over balance of \$3,860 for FY92, added to the \$4,237 carry-over for FY91 gives a total carry-over balance for FY92 of \$8,097.00.



## COUNCIL PERSONNEL

The Council work force this fiscal year consisted of two full-time employees (an administrative assistant and a clerical specialist V), one part-time employee (clerical specialist V), two part-time graduate students, and two undergraduate, work-study student employees. These students worked from twelve to twenty hours per week, for a collective weekly total ranging between 24-40 hours. A research associate was funded by the University of New Mexico's College of Education, for a five-month period beginning April 27, 1992 to research the topic "Professional Development for Teachers."

As required by the University, work-study and student employees are terminated at the end of each school year. These same work-study students may be employed again the next semester if they qualify for financial aid. Student employees may be employed again if they are full-time students and have available hours which match the NMRSC need. These students are a vital, contributing part of the Council staff. They learn the programs and operations, and gain skills and knowledge, which not only benefits the Council, but enhances their college education. NMRSC also, again this year, employed two students through the Summer Youth Employment Program/JTPA for a seven-week period beginning June 22, 1992. There is no charge to NMRSC for the SYEP/JTPA students. NMRSC benefits from the assistance the students are able to render; the students benefit from the training received and work habits learned in a professional office setting, and from earnings supplied by SYEP. NMRSC is pleased to participate in a program which directly benefits underprivileged youth.

The workload this year was again heavy, with the Cooperative Purchasing Program consuming a major portion of the staff's time. The Annual Fall Conference (which the Council cosponsors with the Association of School Business Officials), the Quality Education Awards Program, the Legislative Seminar, the Purchasing Discount Service, and the Educational Employees Discount Program also consumed much staff time.

## SERVICE ACTIVITIES

The Council was again engaged in four major types of service activities during 1991-92:

1. Governance
2. Inservice education
3. Recognition
4. Purchasing

### 1. Governance

#### **Annual Membership Meeting**

The annual membership meeting was held March 24, 1992 at the Holiday Inn Pyramid, Albuquerque. To save members' travel costs, it was held during the State Department of Education Workshop.

Minutes of annual meetings are mailed to the full membership within two weeks after each meeting.

#### **Board of Directors Meetings**

Several meetings of the Board were conducted during 1991-92. The minutes of these meetings are distributed to all Board members and, when significantly pertinent, to all member school systems' chief administrators. (Minutes of all Board meetings conducted since the inception of the Council in 1959 are retained in the Council offices and are available for review by the membership.)

### 2. Inservice Education

The Council's annual Inservice Education Program is designed to address the efforts and educational and training needs of common interest to its members. This program focuses on immediate, as well as long-range, needs. The Council, through specifically planned workshops and similar services, acts as a catalyst for cooperative programs and staffing. During the 1991-92 fiscal year, the Council presented the following education activities.

#### **Educational Reform**

The Council continued to participate in educational reform conferences in the 1991-92 school year, particularly before the 1992 Legislative session, e.g. the Governor's Summit.

**Joint NMRSC/ASBO Workshop**

The ninth annual fall conference, sponsored jointly by the New Mexico Association of School Business Officials and the New Mexico Research and Study Council, was held in Taos, New Mexico at the Sagebrush Inn, October 16, 17, and 18, 1991. The conference theme was "Partnerships for Quality Education." The program featured simultaneous meetings for superintendents, business managers, and support personnel so that all attendees had a program of special interest for them at all times. Over two hundred persons attended the conference. Topics included:

1. SDE Legislative Package
2. Changes in Accounting System (including Chart of Accounts)
3. School Funding Formula
4. Software Computer Programs for Maintenance (A Success Story)
5. Energy - Grants and Cost Containment
6. Reducing Costs Through Efficient Building Design
7. Federal Programs and P.L. 874
8. Procurement
9. Training and Experience (T & E) Task Force, An Update
10. Testing Outcomes-Based Accreditation Accountability
11. Data Collection by SDE, Textbooks, Membership, Ethnicity, and Projections Report
12. School Based Management
13. Evaluations and Terminations
14. Creative Ideas in Food Service
15. Collective Bargaining
16. New Mexico Public Schools Insurance Authority (Update, Questions & Answers) and Prudential Carrier Information
17. Report on New Mexico Retiree Health Care
18. Budget and Reports by Diskette
19. Critical Capital Outlay and Property Valuations
20. New Superintendents' Survival and Success Techniques
21. Standards of Excellence
22. Handling Governmental Gross Receipts As They Relate To School Districts
23. Payroll Issues/Unemployment Compensation

The keynote speaker for the conference was Dr. Lowell B. Catlett, Professor, Agricultural Economics and Agricultural Business, New Mexico State University. He gave an excellent presentation entitled "How Many Einsteins?"

The Honorable Eloy Jeantete, Mayor of Taos, and Juan Aragon, Superintendent, Taos Municipal Schools welcomed the group. Great entertainment for the banquet was provided by the state-renowned Taos High School Mariachi Band, Taos Municipal Schools. First Lady Alice King,

State of New Mexico, addressed the attendees. Awards recognizing outgoing members of the Board of Directors were presented to Casey Martinez, past NMRSC president (former Superintendent, Pojoaque Valley Public Schools), Maria Fuentes-Leas, past board member (former Superintendent, Hondo Valley Public Schools) and Mason P. Costin, past board member (former Superintendent, Roy Municipal Schools).

### **Legislative Seminar**

The annual Legislative Seminar, held at the Eldorado Hotel in Santa Fe, February 5, 1992, was cosponsored by the New Mexico Research and Study Council and the Northern New Mexico Network for Rural Education. Presenters included: Alan Morgan, State Superintendent, State Department of Education; Michael J. Davis, Associate State Superintendent for School Management Accountability, State Department of Education; Dr. J. Placido Garcia, Jr., Executive Director, Legislative Education Study Committee; David Harris, Director, Legislative Finance Committee; Ed Gaussoin, Executive Director, New Mexico School Administrators; Wesley Lane, Executive Director, New Mexico School Boards Association; Frank Ready, Director, New Mexico Educational Retirement Association; Dr. Luciano Baca, Senior Budget Analyst, Department of Finance and Administration; and Carlos Atencio, President, Northern New Mexico Network for Rural Education. Topics included: Appropriations, Reform Act Provisions, Funding Formula Changes, Mill Levy for Operational Purposes, Critical Capital Outlay, Severance Bond Situation, General Obligation Bond Situation, NMPSIA Update, Retiree Health Care Update, ERA Update, and other legislation affecting education.

### **3. Recognition**

#### **Quality Education Awards Program**

The ninth annual Quality Education Awards Program was conducted in the fall and winter of the 1991-92 school year. Awards were presented January 10, 1992 at a noon luncheon celebration at the University of New Mexico's Continuing Education Conference Center. Sixteen school districts' entries were judged by a screening committee of 16 persons and a final awards

committee of 13 persons (college professors, and others in the educational field) to be the best of the 85 entries received. The 16 award-winning school program entries are listed on pages 11 through 13.

Administration winners were presented engraved plaques. Winners in all other categories received engraved plaques and monetary awards: First Place - \$250; Second Place - \$150; and Honorable Mention - \$75.00.

### **Scholarship Awards**

Scholarships to the state universities listed below were given as grand award prizes. All first-place winners in all categories received scholarships.

A new scholarship this year was the Albuquerque Mile High Optimist Club's Stan Ulrich Memorial Scholarship. Also new this year were three, summer school tuition scholarships for teachers donated by the University of New Mexico.

### **Distribution of Scholarships:**

#### Scholarships:

New Mexico Highlands  
(four-year renewable)

New Mexico Institute  
of Mining and Technology  
(four-year renewable)

Mile High Optimist Stan  
Ulrich Memorial Scholarship  
(three-year tuition to a  
second-year UNM student)

University of New Mexico  
(one-year tuition)

University of New Mexico  
(three teacher summer school  
tuition scholarships)

#### Received by:

Los Lunas Public Schools  
(Student: David J. Perea)

Tularosa Municipal Schools  
(Student: Jacob J. Carrillo)

Taos Municipal Schools  
(Student: David Sandoval)

Los Alamos Public Schools  
(Student: Andra Robinson)

Santa Fe Public Schools  
(Teacher: Sonia L. Blitz)  
Ruidoso Municipal Schools  
(Teacher: Yelena Temple)  
Las Cruces Public Schools  
(Teacher: Mary Ann Harrison)

## 1991 QUALITY EDUCATION AWARDS PROGRAM

## FIRST PLACE WINNERS

**Community Relations/Health****"The Power of Positive Students"**

Tularosa Elementary School

Tularosa Municipal Schools

Danny D. Miller, Principal; Susanna M. Murphy, Superintendent

**Humanities****"Taos High School Mariachi Band"**

Taos High School

Taos Municipal Schools

Nick Branchal, Band Director; Gilbert Archuleta, Jr., Principal; Juan A. Aragon, Superintendent

**Math/Science****"Project AIMS - Activities Integrating Math & Science"**

Katherine Gallegos Elementary School

Los Lunas Public Schools

Maribelle Ogilvie, Principal; Hugh Prather, Superintendent

**Other (Two entries tied for first place.)****"Camp Thunderbird, a 21st Century Project"**

Loma Heights Elementary School

Las Cruces Public Schools

Sharon S. Meier, Principal; Jesse L. Gonzales, Superintendent

**"For the Education Of All Children: An Inclusion Service Delivery Model Based On Parallel Architectural Structure"**

White Mountain Intermediate School

Ruidoso Municipal Schools

Richard Erhard, Special Education Teacher; Don Weems, Principal; Mike Gladden, Superintendent

**Administration****"Mountain School Third-Fourth Grade Team"**

Mountain Elementary School

Los Alamos Public Schools

Norma Puckett, Mary Halsted, Connie Witt, June Ettinger and Barb Royer, Teachers; Emily Engel, Principal; David Barbosa, Ph.D., Superintendent

## SECOND PLACE WINNERS

**Community Relations/Health****"Peaks, Potential, and Special People"**

Grace B. Wilson Elementary School

Central Consolidated Schools

Jennifer Miller, Fannie Atcitty, and Sharon Jensen, Teachers; Ron Vandivere, Principal; William A. Horton, Superintendent

**SECOND PLACE WINNERS (continued)****Humanities****"Mi Casa es su Casa"**

Zia Elementary School

Albuquerque Public Schools

Shari Reed, Teacher; LaVonne Winther, Principal; Jack Bobroff, Ph.D., Superintendent

**Math/Science****"Environmental Art & Science"**

Bernalillo High School

Bernalillo Public Schools

Liz Fritzsche and Lucy Cloyes, Teachers; Mary McBride, Principal; Gil Sena, Superintendent

**Other****"Enrichment Program"**

Hillrise Elementary School

Las Cruces Public Schools

Donna Alden and Kay Hansen, Teachers/PTO Coordinators; Kathleen Easterling, Principal;

Jesse L. Gonzales, Superintendent

**Administration****"Program Fair"**

Santa Fe Public Schools

John Waterman, Clinical Supervisor; Frank Nordstrum, Superintendent

**THIRD PLACE WINNERS****Community Relations/Health****"Health Fair 1991-92"**

Eddy Elementary School

Carlsbad Municipal Schools

Carole Weber, R.N., School Nurse; Rita McCracken, Principal; Anna L. Perez, Superintendent

**Humanities****"Alaska In New Mexico"**

Pojoaque Middle School

Pojoaque Valley Public Schools

Alfredo Celedon Lujan, Teacher; Thomas McReynolds, Principal; Arthur Blea, Superintendent

**Math/Science****"Hands-On Science Program"**

Martin Luther King, Jr. Elementary School

Albuquerque Public Schools

Evelyn Sanchez, Katherine Dousseo, Linda Ervay, Gloria Foesch, Carole Zibert, and

Lori Julander, Teachers; Nora Scherzinger, Principal; Jack Bobroff, Ph.D., Superintendent

**Other****"Ag in the Classroom"**

Edison Early Childhood Education Center

Carlsbad Municipal Schools

Sidnia Gardner, Teacher; Susan Townsend, Principal; Anna L. Perez, Superintendent

**THIRD PLACE WINNERS (continued)****Administration**

"Juntos Para Los Ninos Program"

Rio Grande Cluster Elementary Schools

Albuquerque Public Schools

Doris P. Anaya, Program Facilitator; John Mondragon, Ph.D., Assistant Superintendent;

Jack Bobroff, Ph.D., Superintendent

**4. Purchasing**

During the 1991-92 school year, the Council operated three purchasing programs: the Cooperative Purchasing Program, the Purchasing Discount Service, and the Educational Employees Discount Service. A brief description of each follows.

**Cooperative Purchasing Program**

The primary function of Council is the operation of the Cooperative Purchasing Program for member organizations. The program operates on the assumption that by consolidating a substantial portion of the annual school supply and equipment needs of member schools, and mass bidding these large quantities, substantial savings can be realized by the schools. Member schools are able to purchase supplies and equipment at a low price and with a minimum of time and effort.

The Cooperative Purchasing Program has been in operation for 33 years and, as a result, the savings to schools and taxpayers in the state have amounted to millions of dollars. Members who participate in the program typically save considerably more than the cost of annual membership dues and service fees they pay to the Council.

**Cooperative Purchasing Program Advisory Committee**

During the 1991-92 cycle of the Cooperative Purchasing Program, an advisory committee of purchasing agents, business managers, teachers, superintendents, and other member school personnel offered direction and assistance. These committee members met initially in October 1991 to provide suggestions and guidance to improve the program's utility and effectiveness. Committee members also participated in bid evaluation efforts in April 1992, lending their time



and expertise in the evaluation of samples, literature, and bids, and making recommendations for bid awards. Input from member schools is crucial in obtaining suitable, high-quality products.

#### **Computerization**

This past fall saw the beginning of computerization for NMRSC's Cooperative Purchasing Program. Six school districts' personnel were involved in the initial program. The districts are: Los Alamos Public Schools, Mesa Vista Consolidated Schools, Pojoaque Valley Public Schools, Santa Rosa Consolidated Schools, Silver Consolidated Schools, and Truth or Consequences Municipal Schools. Los Alamos Public Schools had the program written for their district, then gave it to the New Mexico Research and Study Council for use in other member districts. (NMRSC had worked with Los Alamos and computer programmers several times during the past few years to help the programmers develop this software.) When all member schools use the computerization program, it will be a great time saver for both NMRSC and its member schools as orders can be placed via computer diskettes and awards information can also be transmitted on diskettes.

#### **Janitorial Fair**

NMRSC's first Janitorial Fair, at the recommendation of the Janitorial Advisory Committee, was held at the Student Union Building of the University of New Mexico, January 31, 1992. According to both the vendors and school personnel who attended, it was worthwhile. It allowed vendors to exhibit their wares, and afforded member school employees the opportunity to examine products to bid in the cooperative purchasing program, and to ask questions about the products.

#### **Cooperative Purchasing Program Cycle**

The annual cycle of the Cooperative Purchasing Program begins for school districts in late fall when member schools are sent "Inventory Order Catalogs." These documents list 2,928 items in nine different categories. Participating schools indicate the quantities of each of the various items they intend to purchase through the program and return this information to the NMRSC office. These quantities are compiled, and along with item specifications, supplied to vendors who then

submit bids. Bid evaluations take place at the end of March, awards are made, and this information, including the awarded brand and model, price, and successful vendor, is made available to the schools. The schools also receive "purchase order worksheets" which list information relevant to placing purchase orders directly to the successful vendors. These worksheets are based upon the original quantities listed by the respective schools. Delivery of items occurs during the summer. Items available through the Cooperative Purchasing Program are updated annually. Typically, many item specifications need to be rewritten (an ongoing process).

#### **Purchasing Commitments (Table I)**

The total dollar volume of awards made in the Spring 1992 program was \$2,144,452.00.

#### **School System Savings**

In addition to savings on prices (estimated at 25-30%) participants save funds in preparation of bid requests, quality control, and bid award procedures. Moreover, the operations of the purchasing program provide exceptional staff development activities for participating district personnel.

TABLE I  
NEW MEXICO RESEARCH AND STUDY COUNCIL  
MEMBERS' DOLLAR COMMITMENT BY CATEGORY  
SPRING 1992 AWARDS

School	A. Janitorial	B. Lumber	C. Metal	D. Paper	E. Phys. Educ.	F. School Sup./Art	G. AV/Library	H. Science	I. Furniture/Equipment	Total
Aztec	-0-	1,521.04	-0-	18,820.50	-0-	13,752.12	406.32	-0-	394.20	34,894.18
Belen	14,270.28	-0-	-0-	8,446.86	699.26	6,701.90	3,860.91	-0-	-0-	33,979.21
Bernalillo	20,817.88	181.20	75.86	19,051.70	2,958.80	9,945.92	1,600.11	795.08	933.23	58,359.78
Bloomfield	10,413.18	188.79	72.28	35,988.26	4,334.90	21,522.05	5,276.19	1,012.57	7,604.89	84,613.11
Carriazo	313.04	3,058.76	1,432.08	278.19	2,088.92	798.86	1,349.34	164.21	-0-	10,030.82
Central	-0-	-0-	-0-	30,567.50	8,471.77	42,466.19	7,256.25	-0-	-0-	88,761.71
Chama	8,455.05	-0-	-0-	3,742.78	1,358.26	2,520.07	349.85	373.24	-0-	16,799.25
Cibola	22,933.32	2,150.97	2,031.58	11,375.49	7,423.37	18,103.69	7,441.05	917.87	17,683.70	90,061.04
Cimarron	6,724.40	59.25	972.92	5,554.59	4,206.52	5,067.87	1,906.75	1,846.67	26,855.36	96,061.04
Cobree	13,919.42	-0-	-0-	10,398.72	-0-	4,416.26	1,340.50	-0-	180.56	30,255.46
Corona	1,349.55	-0-	227.39	942.50	898.88	428.00	199.34	-0-	478.15	4,523.81
Cuba	14,011.37	904.82	998.68	4,982.60	2,694.93	9,092.12	5,564.74	3,716.66	2,797.92	44,763.84
Deming	26,746.12	-0-	45.55	29,329.11	4,622.17	18,553.93	5,764.01	2,020.66	5,225.62	90,307.17
Dulce	1,776.02	750.13	744.29	8,122.85	1,136.93	2,624.55	242.03	1,431.54	-0-	16,828.34
Espanola	31,790.75	1,527.75	1,134.69	52,834.75	15,835.08	36,240.14	4,092.40	6,515.78	17,629.50	167,600.64
Estancia	6,310.92	3,485.58	3,689.42	7,020.26	4,736.56	4,537.48	1,566.84	533.37	11,732.19	43,612.62
Floyd	924.24	181.77	32.40	1,679.75	154.00	1,129.83	855.92	206.82	-0-	5,164.73
Ft. Sumner	2,411.50	-0-	-0-	1,966.49	2,556.54	1,968.78	1,085.69	-0-	217.00	10,163.80
Hatch	14,488.17	-0-	-0-	8,082.41	14,190.27	9,437.51	8,647.47	3,729.61	-0-	58,575.44
Hondo	1,566.71	-0-	-0-	1,573.88	633.10	681.17	1,359.94	881.61	-0-	6,696.41
House	1,508.41	-0-	-0-	333.79	413.16	178.34	117.12	-0-	264.00	2,816.82
Jemez Valley	5,387.98	953.86	222.59	38,909.23	12,870.15	35,488.81	6,740.41	2,763.33	5,326.94	108,663.30
Las Vegas City	11,511.25	5,781.77	2,978.68	25,541.72	7,788.43	15,532.66	3,630.63	4,560.86	6,076.69	83,402.69
Lordsburg	5,293.85	2,571.66	416.77	8,004.23	5,946.69	10,836.17	2,588.28	854.04	1,713.14	38,226.83
Los Alamos	16,647.75	1,213.72	11.00	29,609.22	6,183.27	21,569.93	2,768.77	2,109.51	834.70	80,947.87
Los Lunas	33,256.67	5,313.25	-0-	3,324.92	5,979.40	2,329.57	259.22	261.87	-0-	50,724.90
Loving	-0-	387.47	151.06	-0-	-0-	-0-	-0-	-0-	-0-	538.53
Magdalena	4,235.95	-0-	-0-	2,737.95	3,039.37	3,184.55	368.55	-0-	569.00	14,135.37
Maxwell	1,053.53	419.78	247.94	2,028.24	522.77	1,911.01	488.59	271.98	828.44	7,772.28
Mesa Vista	4,420.82	-0-	-0-	8,324.40	3,947.76	8,127.32	961.08	3,203.39	-0-	28,984.77
Mora	4,168.25	-0-	-0-	10,410.69	4,991.61	6,833.97	526.99	756.71	2,624.05	30,342.27
Moriarty	8,997.01	2,362.43	917.72	27,935.13	1,879.75	12,196.27	1,064.68	1,679.26	-0-	57,032.25
Mountainair	3,961.26	632.95	104.65	3,847.41	2,481.20	3,047.09	452.46	152.25	3,341.24	18,020.51
NMRS	-0-	-0-	-0-	476.55	-0-	312.15	-0-	-0-	-0-	788.70
Pecos	5,505.70	1,899.10	1,191.07	6,617.75	2,415.72	4,404.71	1,244.25	738.36	222.65	24,239.31
Penasco	10,375.77	433.36	260.62	6,017.97	4,926.60	6,261.37	1,059.18	2,402.63	5,711.12	37,428.62
Pojoaque	12,105.11	22.98	681.43	4,098.02	-0-	589.15	-0-	-0-	-0-	18,335.00
Queen of Heaven	191.10	-0-	-0-	702.21	754.90	177.35	44.18	838.31	-0-	2,160.60
Quemado	1,033.36	403.76	1,235.67	1,380.08	1,793.54	951.10	1,025.92	36.62	144.40	8,004.45
Questa	3,874.90	-0-	1,774.07	3,462.47	3,137.01	-0-	3,848.03	1,518.04	739.38	18,353.90
Reserve	1,499.18	-0-	-0-	959.33	1,206.18	2,544.66	392.68	736.61	-0-	7,338.64
Roy	701.15	1,566.84	1,294.06	847.16	1,978.73	707.71	1,228.12	390.41	124.65	8,838.83
Ruidoso	134.52	-0-	-0-	13,303.76	-0-	2,666.51	-0-	-0-	-0-	16,104.79
St. Theresa	674.71	-0-	-0-	597.55	-0-	206.99	-0-	-0-	-0-	1,479.25
Sandia Prep	1,223.06	-0-	23.50	2,023.21	2,193.57	2,108.73	170.70	346.86	87.60	8,177.23
Santa Rosa	11,549.63	-0-	114.00	12,181.84	4,757.75	8,458.39	1,975.77	4,381.75	489.60	45,908.73
Silver	13,261.95	285.08	96.84	29,323.08	4,910.02	18,381.88	3,086.89	351.99	1,729.12	71,426.85
Socorro	-0-	7,274.74	3,549.40	14,936.28	7,190.02	10,126.67	2,578.38	536.02	-0-	46,191.51
Springer	1,374.07	1,719.68	1,454.11	486.38	2,146.82	1,061.29	183.41	475.77	-0-	8,901.53
T or C	7,143.51	1,412.71	958.68	21,336.83	8,263.36	19,388.95	2,118.70	2,146.10	61.55	62,830.39
Taos	29,256.30	236.70	441.63	22,832.22	8,458.33	14,677.58	6,224.50	1,706.51	8,654.68	92,668.45
Tularosa	6,897.59	-0-	-0-	6,004.62	3,741.35	6,833.05	3,730.80	2,297.53	67.40	29,572.34
Vaughn	2,251.07	1,627.32	231.76	2,540.81	846.58	1,796.76	1,514.88	146.28	422.97	11,378.43
Zuni	47,260.65	3,641.68	2,551.93	30,267.98	7,190.12	30,417.18	15,674.11	2,444.61	39,303.25	178,731.51
Zuni Reformed	384.91	80.98	-0-	297.08	-0-	494.10	83.00	-0-	-0-	1,340.07
Totals	454,352.89	54,251.88	32,366.32	602,459.30	202,954.42	463,752.41	126,293.73	62,542.15	145,479.34	2,144,452.44*

\*Total dollar commitment of the four private/parochial schools is \$13,157.15. Total dollar commitment of the one institution (NMRS) is \$788.70. Total dollar commitment of the 50 public school members is \$2,130,506.59. This total does not include orders by San Jon Municipal Schools, NMRS's newest member, nor Menaul School. Both placed orders late. Some vendors could fill their orders; others could not.

### Cooperative Purchasing Program Participation

Fifty-five New Mexico public schools, private schools, and institutional members participated in the 1991-92 Cooperative Purchasing Program.

### Vendor Awards (Tables II and III)

This spring the NMRSC made awards to 68 vendors for supplies and equipment on behalf of Council members. Award amounts ranged from a low of \$131 to a high of \$350,195. Forty-one of the 68 vendors were in-state and 27 were out-of-state.

TABLE II  
VENDOR AWARD INFORMATION  
FOR SPRING 1992

FISCAL YEAR	NUMBER OF VENDORS RECEIVING AWARDS	VALUE OF LOWEST AWARD	VALUE OF HIGHEST AWARD	VALUE OF ALL AWARDS
1992	68	\$131	\$350,195	\$2,144,452

### Purchasing Discount Service

The Purchasing Discount Service was a 1982-83 innovation of the Council. It was designed to supplement the Cooperative Purchasing Program. The 1991-92 program allowed member schools to buy items which could be legally purchased without advertising for bids at discounts ranging from 5% to 50% below retail.

### Educational Employees Discount Service

Initiated in 1984, this program provides a discount service to Council members' employees. Over 100 New Mexico businesses agreed to extend discounts from 5% to 50% to these employees. Membership cards and a purchasing guide are sent annually to members for distribution to their employees. It is difficult to accurately determine the usage (and savings) by member schools' employees, but reports to the NMRSC office indicate that the service is widely used.

TABLE III  
NEW MEXICO RESEARCH AND STUDY COUNCIL  
1992 DOLLAR AMOUNTS AWARDED TO VENDORS

NUMBER	VENDOR	AMOUNT AWARDED	RANK ORDER BY DOLLAR VOLUME
1.	*Allied School & Office Products	\$ 120,421.99	5
2.	*American Business Interiors	1,337.59	60
3.	*Audio Visual Electronics	10,272.41	36
4.	AVES Audio Visual	8,130.00	42
5.	Brodart Company	8,529.20	41
6.	BSN Corporation	16,739.16	28
7.	Cannon Sports Inc.	35,942.81	12
8.	Capital Imaging/Kores Division	222.70	67
9.	*CBN Corporation	7,235.25	45
10.	*Ceramic King	5,842.21	49
11.	*Charles F. Siebenthal, Inc.	21,643.45	21
12.	*Colborn's of New Mexico	308,498.25	2
13.	*Colby's Inc.	20,124.34	24
14.	*Consolidated Electric Distributors	28,307.82	17
15.	The Copper Penny	3,095.11	54
16.	*Custom Paint Center	17,635.87	27
17.	Davis Audio Visual	1,417.76	59
18.	Dick Blick West	17,937.32	26
19.	*Dixon Paper Company	24,269.44	20
20.	Don Lesmen Music Center	570.20	61
21.	*Eddelman Industries	11,670.69	35
22.	Educational Marketing System	232.00	65
23.	Electric Supply Company	3,248.21	53
24.	Fisher Scientific Company	27,263.36	18
25.	*Fleming Chemical Company	5,744.60	50
26.	*Frank Paxton Lumber Company	14,300.90	30
27.	*Gardenswartz Team Sales	47,457.67	11
28.	Gaylord Brothers Inc.	8,087.64	43
29.	*General Office Supply	122,649.99	4
30.	Hammond & Stephens Company	8,759.10	39
31.	The Highsmith Company, Inc.	4,287.65	52
32.	*J. C. Baldrige Company	18,056.06	25
33.	*Kitts Enterprises, Inc.	24,644.08	19
34.	*Lawn-Boy Supply Company Inc.	9,537.77	37
35.	LAWP Company, Inc.	6,095.00	47
36.	*Luchetti Music Inc.	14,143.00	31
37.	*M & W Sporting Goods	79,709.87	8
38.	*Meyer of New Mexico	21,233.34	23
39.	Micro Bio-Medics	5,901.58	48
40.	*NAS Corp.	223.58	66
41.	National Audio Visual Supply	5,618.93	51
42.	National Music Supply	1,851.00	57
43.	*Nationwide Papers	14,133.62	32
44.	*New Mexico Industries for the Blind	8,920.40	38
45.	*New Mexico Steel Company	1,749.15	58
46.	**No Award	397.17	63
47.	*Nobel/Sysco Company	2,875.32	55
48.	*Regal Supply & Chemical	111,601.03	6
49.	*REX Industries (CAM Industries)	52,218.82	10
50.	*Reliance Steel	6,919.60	46
51.	S & F School Supply Company	318.91	64
52.	Sargent-Welch Scientific Company	34,666.28	14
53.	*The Secretary Office Supply	476.00	62
54.	*Sierra Vista Office Products	8,632.33	40
55.	*Source One	52,412.01	9
56.	*Southwest Distributing	91,891.10	7
57.	*Southwest Paper Products	15,622.49	29
58.	Standard Stationery Supply Company	35,183.39	13
59.	*Strong's Office Products	139,327.40	3
60.	*Sunland Sanitary Supply Inc.	13,377.16	33
61.	The Tetra Company	130.80	68
62.	*Thomas A. Huey Manufacturing Company	21,425.37	22
63.	Troxell Communications Inc.	30,539.72	15
64.	Virco Manufacturing Corp.	29,446.23	16
65.	*Voss Lighting Company	7,912.94	44
66.	*Western Paper Distributors	350,194.98	1
67.	*Wiper Supply Inc.	2,791.32	56
68.	The Woodwind and The Brasswind	12,400.00	34

\*Indicates businesses receiving in-state preference.

\*\*\$397.17 was ordered by school districts on which no award was given.

Note: Amounts awarded do not include orders by San Jon Municipal Schools, NMRSC's newest member, nor Menaul School. Both placed orders late. Some vendors could fill their orders; others could not.

## APPENDIX A

Directory of Past Participants**Charter School Members**

1. Albuquerque Public Schools
2. Belen Consolidated Schools
3. Bernalillo Public Schools
4. Cuba Independent Schools
5. Encino Independent Schools
6. Estancia Municipal Schools
7. Gallup-McKinley County Consolidated Schools
8. Grants Municipal Schools
9. Jemez Springs Municipal Schools
10. Los Lunas Consolidated Schools
11. Magdalena Municipal Schools
12. Moriarty Municipal Schools
13. Mountainair Public Schools
14. Santa Fe County Schools
15. Santa Fe City Schools
16. Socorro Consolidated Schools
17. Vaughn Municipal Schools

**Charter Institutional Members**

1. New Mexico State Department of Education
2. The University of New Mexico

**Past Executive Directors**

1. Dr. Paul Petty, 1959-62
2. Dr. Devoy A. Ryan, 1963-66
3. Dr. Paul Petty, 1967
4. Tom Wiley, 1968
5. Dr. Herbert H. Hughes, 1969
6. Dr. Richard F. Tonigan, 1970-74,
7. Dr. William Runge, Acting, 1975 (while Dr. Tonigan was on sabbatical)
8. Dr. Richard F. Tonigan, 1976 to June 30, 1987
9. Dr. Eugene P. LeDoux, July 1, 1987 to August 2, 1990
10. Dr. Richard F. Tonigan, August 5, 1990 to June 30, 1991 (Interim)
11. Dr. David L. Colton, July 1, 1991 to August 15, 1992

**Past Presidents**

<u>Superintendents</u>	<u>District</u>	<u>Year</u>
J. Placido Garcia, Sr.	Socorro	1959-61
Manuel B. McBride	Grants	1962
Oliver Ortiz	Vaughn	1963
George Thompson	Magdalena	1964
Alfonso J. Garde	Belen	1965

... continued

## APPENDIX A (continued)

Superintendents

Frank B. Lopez  
 William Dwyer  
 Phillip Gonzales  
 Bernard Baca  
 Canuto Melendez  
 Pete Santistevan  
 John S. Aragon  
 Horace Martinez  
 E. V. Arvizu  
 Eloy J. Blea  
 Mary B. Sanchez  
 Jack Ward  
 Scott Childress  
 Silas Lopez  
 Gordon L. King  
 Melvin Cordova  
 Dr. Howard Overby  
 Felix L. Duran  
 H. B. Martinez  
 Casey Martinez  
 Juan Aragon

## Past Presidents (continued)

<u>District</u>	<u>Year</u>
Pojoaque	1966
Jemez Springs	1967
Cuba	1968
Los Lunas	1969
Pecos	1970
Bernalillo	1971
Belen	1972-74
Questa	1975
Grants	1975-76
Pecos	1977
Belen	1978-79
Bloomfield	1980
Gallup	1981 - 4/30/81
Las Vegas City	1981-82
Aztec	1983
Zuni	1984
Grants	1/1/85 - 6/30/85
Penasco	7/1/85 - 12/31/86
Mora	1987
Pojoaque	1988 - 6/30/89
Taos	1989-91

## University of New Mexico/NMRSC Graduate Assistants

Dr. John Barrett, 1959-61  
 Dr. Lloyd Cockrell, 1960-61  
 Dr. Emmett Shockley, 1962-64  
 Dr. Donald Lange, 1962-63  
 Dr. Roger Harrell, 1963-64  
 John Harris, 1964-65  
 Dr. John Grable, 1965-67  
 Carl Buckner, 1965-66  
 Dr. Arnold Brown, 1967-68  
 David Sanchez, 1967-68  
 Leonard Bearking, 1968-69  
 Dr. Jose Perea, 1969-71  
 Dr. Bob Hall, 1970-71  
 Dr. Dennis McCabe, 1971-72  
 Harold Gordon, 1972-73  
 Dr. J. Placido Garcia, Jr., 1973-75  
 Ismael Valenzuela, 1975  
 Dr. George F. Harrison, 1976-79  
 Dr. John Thorpe, Fall 1980  
 Daniel R. Garrison, 1979-81  
 Kurt Knoernschild, 1980-84  
 Dr. Carol Massanari, 1980-81  
 Dr. Beatrice L. Davis, 1981-83

Dr. Nancy Schilling, 1983-84  
 Judy Stevenson, 1983-84  
 \*Harold Sloan, 1984-85  
 Peter Harter, 1984-87  
 Dr. David A. Lepre, 1986-89  
 \*Sandra Kass, 1987-88  
 Dr. Susan T. Holderness, 1988-90  
 Paul Narbutas, 1989-90  
 James R. Waddick, 1990-91  
 Kevin J. Williams, 1990-91  
 \*Susan K. Stratton, 1991-92  
 Mark A. Ortega, 1991-92

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\*Doctorate in process; all who are designated with a doctorate (Dr.) performed the majority of their work on the degree while employed as a NMRSC graduate assistant.

## APPENDIX B

1991-92 Members of the  
New Mexico Research and Study Council

Public School Members

- \*1. Albuquerque
2. Aztec
- \*3. Belen
- \*4. Bernalillo
5. Bloomfield
6. Carrizozo
7. Central
8. Chama Valley
- \*9. Cibola
10. Cimarron
11. Cobre
12. Corona
- \*13. Cuba
14. Deming
15. Dulce
16. Espanola
- \*17. Estancia
18. Eunice
19. Floyd
20. Fort Sumner
21. Hatch Valley
22. Hondo Valley
23. House
24. Jemez Mountain
- \*25. Jemez Valley
26. Las Vegas City
27. West Las Vegas
28. Lordsburg
29. Los Alamos
30. Los Lunas
31. Loving
- \*32. Magdalena
33. Maxwell
34. Mesa Vista
35. Mora
- \*36. Moriarty
- \*37. Mountainair
38. Pecos
39. Penasco
40. Pojoaque Valley
41. Quemado
42. Questa
43. Reserve
44. Roy

Representative(s)

Jack Bobroff, Supt.  
 Ron Helland, Supt.  
 Barbara Armbruster, Supt.  
 Gil Sena, Supt.  
 John Aland, Supt.  
 Jimmie Banks, Supt.  
 William Horton, Supt.  
 Manuel F. Valdez, Supt.  
 Dennis Bryan, Supt.  
 Thelma Coker, Supt.  
 Dr. Harrell Holder, Supt.  
 George Langan, Supt.  
 Joe A. Lopez, Supt.  
 Dr. Sally Bell, Supt.  
 Yvette Montoya, Supt.  
 J. Delfinio Trujillo, Supt.  
 Carolyn Allen-Renteria, Supt.  
 Dr. John Turner, Supt.  
 Harold Sloan, Supt.  
 Fred Hase, Supt.  
 Cecil N. Davis, Supt.  
 Sergio Castenon, Supt.  
 Wayne Anderson, Supt.  
 Mary Robinson, Supt.  
 Adrian Meador, Supt.  
 Carlos Atencio, Supt.  
 David Salazar, Supt.  
 Phillip W. DeFoor, Supt.  
 Dr. David Barbosa, Supt.  
 Hugh Prather, Supt.  
 David Chavez, Supt.  
 Thomas Jackson, Supt.  
 Sid Barrett, Supt.  
 Vernon Jaramillo, Supt.  
 Leonard Aragon, Supt.  
 Dr. James Murlless, Supt.  
 James L. Hayes, Supt.  
 Herman Gallegos, Supt.  
 Nelson Lopez, Supt.  
 Arthur Blea, Supt.  
 Wilfred Lackey, Supt.  
 Kelt Cooper, Supt.  
 Mary B. Sanchez, Supt.  
 William Maes, Supt.

... continued



## APPENDIX B (continued)

Public School Members (continued)

45. Ruidoso
46. San Jon
47. Santa Rosa
48. Silver
- \*49. Socorro
50. Springer
51. Taos
52. Truth or Consequences
53. Tularosa
- \*54. Vaughn
55. Zuni

Private School Members

1. Armand Hammer United World College
2. Menaul School
3. Queen of Heaven
4. St. Therese School
5. Sandia Preparatory
6. Zuni Christian Reformed Mission

Educational Agencies  
and Institutions

1. Archdiocese of Santa Fe
- \*2. State Department of Education
3. NM School Administrators
4. NM School Boards Assoc.
- \*5. University of New Mexico

Representatives (continued)

Mike Gladden, Supt.  
Mike Chambers, Supt.  
Charles Ward, Supt.  
Herb Torres, Supt.  
Delbert Fraissinet, Supt.  
Robert Parnell, Supt.  
Juan A. Aragon, Supt.  
Janel M. Ryan, Supt.  
Susanna Murphy, Supt.  
Roman Garcia, Supt.  
Hayes A. Lewis, Supt.

Representatives

Dr. Theodore D. Lockwood, President  
Kurt Knoernschild, President  
Sister Martha Janysek, Principal  
Abe Armendariz, Principal  
Richard L. Heath, Headmaster  
Brian Kruis, Principal

Representatives

Brigetta Slinger, SSJ, Supt.  
Alan Morgan, State Supt. of Public  
Instruction, and  
Mike Davis, Assoc. State Supt., School  
Management Accountability  
Ed Gaussoin, Executive Director  
Wesley Lane, Executive Director  
Dr. David L. Colton, Director, New Mexico  
Research & Study Council

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\*Charter Member

## APPENDIX C

1991-92 NMRSC Publications

Annual Report, June 25, 1991  
Council News, December 1991, Vol. I, No. 1  
Council News, May 1992, Vol. I, No. 2  
Educational Employees Discount Service Purchasing Guide, June 28, 1991  
Purchasing Discount Service Booklet, May 22, 1991  
Quality Education Awards Program Booklet, May 5, 1992

## APPENDIX D

1991-92 NMRSC Meetings

July 25, 1991, Board of Directors Meeting, Sheraton Old Town, Weavers Room, Albuquerque

September 19, 1991, Cooperative Purchasing Program Vendors Meeting, Continuing Education Conference Center, UNM

October 3, 1991, Cooperative Purchasing Program Advisory Committee Meeting, Albuquerque

October 16, 17, and 18, 1991, NMRSC-ASBO Ninth Annual Joint Conference, Sagebrush Inn, Taos

October 16, 1991, Board of Directors Meeting, Sagebrush Inn, Taos

October 17, 1991, Annual Meeting, Quality Inn, Taos

November 15, 1991, Cooperative Purchasing Program Computerization Briefing, Los Alamos Public Schools, Los Alamos

November 22, 1991, Quality Education Awards Program Screening, Continuing Education Conference Center, UNM

November 26, 1991, Quality Education Awards Program Final Judging, Continuing Education Conference Center, UNM

December 7, 1991, Board of Directors Meeting, Holiday Inn Pyramid, Albuquerque

December 13, 1991, Cooperative Purchasing Program, Pilot Computerization Training Session, 119 College of Education, UNM

January 10, 1992, Quality Education Awards Program Awards Ceremony, Continuing Education Conference Center Ballroom, UNM

February 5, 1992, Sixteenth Annual Legislative Seminar, Eldorado Hotel, Santa Fe

February 5, 1992, Board of Directors Meeting, Eldorado Hotel, Santa Fe

March 24, 1992, Board of Directors Meeting, Holiday Inn Pyramid, Albuquerque

March 24, 1992, NMRSC/ASBO Conference Planning Committee Meeting, Holiday Inn Pyramid, Albuquerque

March 24, 1992, Annual Meeting, Holiday Inn Pyramid, Albuquerque

March 31, 1992, Janitorial Trade Fair, University of New Mexico Union Ballroom, UNM

April 21, 1992, NMRSC/ASBO Golf Tournament Planning Committee Teleconference

June 11, 1992, NMRSC-ASBO Conference Planning Committee Meeting, Hyatt Regency Hotel, Albuquerque

**THE ANNUAL REPORT  
OF  
LAPE (LATIN AMERICAN PROGRAMS IN EDUCATION)**

**July 1, 1991 - June 30, 1992**

**Drs. Guillermina Engelbrecht and Gary Anderson, Co-directors  
Ana Nolla, Graduate Assistant**

**ADVISORY BOARD MEMBERS**  
**(Appointed by the Dean)**

Greg Bowes: Faculty, Educational Administration  
Wayne Maes: Faculty, Counseling/Family Studies  
Vilma Mendez: Doctoral Candidate, Educational Administration  
Isaura B. Metz: Faculty, Special Education  
Paul Miko: Faculty, HPPELP  
Sara Dawn Smith: Faculty, CIMTE

## FOREWORD

In July 1990 Interim Dean Leroy Ortiz appointed an Advisory Committee regarding the mission, goals and leadership of the Latin American Programs in Education (LAPE). The Committee members were Drs. Frank Angel, Guillermina Engelbrecht (Chair), Leon Griffin, Wayne Maes, Sara Dawn-Smith, Ernest Stapleton and Tom Zepper.

In September 1990, the Advisory Committee, after lengthy deliberation, submitted the mission statement which was accepted and officially adopted by the Dean, and LAPE was re-established within the College. Interim Dean Ortiz allocated funding and appointed Drs. Guillermina Engelbrecht and Gary Anderson as co-directors.

In January 1991, only one major Latin American program existed within the college; the Spanish Masters Degree Program taught in Spanish. The charge of the LAPE co-directors was to increase and diversify Latin American programs in the college.

This report will document the first full year of LAPE activities, and project some possible future directions. Further long-term planning will be undertaken during the coming year in consultation with our advisory board.

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LAPE Programs .....	2
LAPE Budget .....	8

## APPENDICES:

Appendix A, Hemispheric Initiative Reports

Appendix B, Enrique Semo, Colloquium

Appendix C, USIA Workshop - UNM Seminar on Southwest Culture, Syllabus

Appendix D, III Inter American Symposium on Ethnography and the Classroom,  
Program

Appendix E, Freire Workshop

Appendix F, Women and Education in Latin America, Colloquium

Appendix G, AERA Symposium Proposals

Appendix H, Teacher Training Block in Mexico

Appendix I, Memo, UNM-UNAM Agreement

## LAPE's MISSION STATEMENT

In fall of 1990 a College of Education task force developed a mission statement for LAPE. This mission statement was designed to "insure the continuation of the tradition of responsiveness to educational needs in Latin America for which LAPE has become recognized." According to the task force, the mission of LAPE is:

1. To promote, continue, and enhance programs in education related to Latin America.
2. To collaborate with other university units which share similar concerns.
3. To stimulate research and promote understanding of the Latin American region in general and Latin American education in particular, within the College of Education and the University.
4. To actively exchange knowledge and personnel between Latin American countries and the College of Education.

During our first LAPE advisory board meeting, members expressed their support for the task force's mission statement and more specifically charged LAPE co-directors to concentrate on the areas of:

- program development and recruitment,
- the development of conferences and research exchanges with Latin America, and
- infusion of Latin America related educational issues into the COE program/curriculum.

**LAPE PROGRAMS**

The annual report will be organized around the four statements from the LAPE task force's mission statement:

To promote, continue, and enhance programs in education related to Latin America.

The following programs, conferences, and associations represent the fruits of LAPE's work during the last year. These programs will only be listed here and taken up in more detail in later sections.

1. Teacher Training Block in Puebla, Mexico.
2. COE minor in Latin American Studies.
3. The Third Inter-American Ethnography and the Classroom Conference.
4. SOELA (Student Organization for Education in Latin America)
5. Inter-American Electronic Conferencing Project on Qualitative Research in Education.
6. USIA Seminar on Contemporary Southwestern Culture

To collaborate with other university units which share similar concerns.

**Hemispheric Initiative Committee**

As a member of the Hemispheric Initiative Committee, Guillermina Engelbrecht worked closely with the committee in holding hearings and drafting the



final report. See Appendix A for LAPE's report to the committee. LAPE also sponsored a college talk on this topic by Enrique Semo, a history professor at UNM. (See Appendix B).

### **USIA Seminar on Contemporary Southwestern Culture.**

(October 7-16, 1991) This seminar was co-sponsored by The Latin American Institute and LAPE. Guillermina Engelbrecht and Gary Anderson were the academic coordinators and Carolyn Olsen, a CIMTE doctoral student, facilitated the curriculum workshops. Eleven Latin Americans scholars in North American studies were on campus to prepare curricula to take back to their countries of origin. (See Appendix C for syllabus).

To stimulate research and promote understanding of the Latin American region in general and Latin American education in particular, within the College of Education and the University.

### **Third Annual Inter-American Symposium on Ethnography and the Classroom**

This symposium took place June 22-24, 1992 at Hodgkin Hall and was co-sponsored by LAPE and CISE-UNAM (Centro de Investigación y Servicios Educativos - Universidad Nacional Autónoma de México). This symposium brought

together 15 Latin American and 15 North American educational ethnographers to discuss each others' work (See Appendix D for program).

Next year's symposium will be held in Mexico and financed by UNAM. It is hoped that the 1993 conference will be opened up through a call for papers and will include researchers from all over the U.S. and Canada and several Latin American countries.

Gatherings like this are important, in part, for the activities and relationships that "spin off" of them. For example, several events were a direct result of this years' symposium:

- A. Judith Green (UC, Santa Barbara) and David Bloome (U. of Mass.), who attended the symposium, presented as part of the COE's summer speakers program. Approximately 50 persons attended.
- B. Miguel Escobar, a Colombian protege of Paulo Freire and author of several books on Freire, gave an all day workshop on Freirian Pedagogy in the Kiva. Over twenty-five persons attended, many from the larger Spanish speaking community in Albuquerque. (See Appendix E).
- C. Miguel Angel Campos, Ph.D., professor at the Institute of Applied Mathematics of UNAM, was a visiting professor this summer. He taught a course in the department of Educational Foundations.
- D. Beatriz Schmuckler and Gabriela Delgado, Feminist ethnographers from Argentina and Mexico, gave a presentation under the auspices of LAPE, Women's Studies, and Latin American Institute (LAI). (See Appendix F). This is the first collaborative effort of these three programs, and discussions are underway for future collaboration.

- E. One AERA symposium on Latin American Ethnography was presented at AERA last year. At least four AERA symposia and paper proposals have resulted from this years conference. (See Appendix G for examples)
- F. COE faculty member Isaura Barrera will be editing a special edition on Bilingual Special Education for Revista de Investigación Educativa, an important Mexican educational journal that Miguel Angel Campos edits.
- G. Ginger Blalock and her husband hosted a party for the Latin American visitors. During their sabbatical in Mexico this fall they will be visiting several of them to discuss projects in special education.
- H. Gary Anderson and Martha Montero-Sieburth have prepared a book proposal for an edited book on Latin American Educational Ethnography. It is currently under review by Routledge and Garland Presses.
- I. Another outgrowth of the symposium is the development of an electronic network among educational ethnographic researchers in Latin and North America. Ana Nolla is currently coordinating this effort and helping researchers throughout the hemisphere connect up to the network.

The above activities did not emerge randomly from the Inter-American conference.

LAPE activities are designed to be synergistic and to foster LAPE's mission. The above activities have created inter-institutional, inter-departmental, and inter-disciplinary collaboration and have involved a variety of COE faculty in Latin American activities that have both provided professional opportunities and enhanced the COE's reputation in Latin America as a serious academic institution.

### **Teacher Training Block in Puebla, Mexico**

Sara Dawn Smith has organized a junior block experience in Puebla, Mexico for teachers-in-training. LAPE funded a trip to Puebla during which she worked out the

details of the program. Teachers-in-training would work with cooperating teachers at the Colegio Americano de Puebla. Students are currently being recruited for the first block next spring. (See Appendix H for a description of the program).

### **SOELA (Student Organization for education in Latin America)**

We currently have more than ten Latin American doctoral students in the Educational Administration Department alone. Many of these students are former COE Spanish Masters degree students. There are also numerous Latin American students in other departments. Moreover, there are many graduate students who have an interest in Latin American, and some who do dissertations there. Therefore, we have initiated a student organization to serve this population. The organization meets regularly and has a small yearly budget (\$1,000) for travel and research.

Talks are underway with Don Zancanella about the prospects of opening up the Rio Grande Writing Project to Latin American teachers (in Spanish).

### **COE Minor in Latin American Studies**

A minor in Latin American Studies (LAS) for undergraduate students and a teaching field in Social Studies with focus on Latin America for post-baccalaureate students, both in secondary education, are currently under review. Preliminary

discussions with Drs. Lynette Oshima and Leroy Ortiz have taken place. Kay Tenorio from the COE Advisement Center has received current offering in LAS to identify possible course combinations.

To actively exchange knowledge and personnel between Latin American countries and the College of Education.

Inclusion of LAPE in the UNM-UNAM agreement (convenio). LAPE is now officially included in the UNM-UNAM agreement (see Appendix I). Several faculty visits are under way as part of this agreement.

We are working on the development of a COE visiting scholars from Latin America program. Often Latin American scholars are interested in spending time during sabbaticals or on Fulbright awards at a North American university. We would like to seek ways to more systematically tap this source of talent for the college. The recent visit of Miguel Angel Campos from Mexico's UNAM is an example this type of exchange.

#### **National Science Foundation Grant.**

A Grant request was written and submitted under the U.S.-Mexico Cooperative Science Program for funding (\$9,940.00) conference travel and faculty exchanges. Although the initial effort was not funded, a revised proposal is currently being prepared.

<b>FINANCIAL REPORT FOR JULY 1, 1991 - JUNE 30, 1992</b>
--

**Revenues**

7/1/91	Beginning Balance	14, 203.42	
	Overhead Allocation	18, 297.00 <sup>1</sup>	
		<hr/>	
	Total Revenues		32, 500.42

**Expenses**

Materials and Services	3, 773.80	
Travel & Consultant Honoraria	5, 069.00	
GA Salaries & Tuition <sup>2</sup>	11, 023.92	
Faculty Salaries	300.00	
Benefits	84.97	
	<hr/>	
Total Expenses		20, 251.69

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**12, 248.73**

Committed Expense Closing of old LAPE Account	754.52
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<b>Carry-Over Balance June 30, 1992</b>	<b>11, 494.21</b>
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<sup>1</sup> \$7,500.00 were allocated at the end of June 1992.

<sup>2</sup> Includes 13 months GA & Tuition

**APPENDIXES**

**APPENDIX A**



**THE UNIVERSITY OF NEW MEXICO**

Latin American Programs in Education (L.A.P.E)  
College of Education

To: The Hemispheric Initiative Committee

From: Guillermina Engelbrecht, Gary Anderson, Co-directors of LAPE

Date: Aug. 30, 1991

Thank you for the opportunity to present our views to the Hemispheric Initiative Committee. As promised, we would like to make a few recommendations to the committee. These recommendations will be divided into three categories that I think will be relevant to your deliberations - 1. Conceptualization, 2. Resources, and 3. Administrative Coordination.

1. Conceptualization. How the Hemispheric Initiative defines itself will determine who is included and who excluded. Many in the College of Education would like to see the Hemispheric Initiative aid us in one of our primary missions - bilingual and multicultural education. Although there are scholarly interests among faculty in Latin America, we primarily see stronger linkages to Latin America as an opportunity to strengthen language and cultural opportunities for our faculty and students. Since we prepare teachers, administrators, and counselors for New Mexico's schools, we feel that strengthening our Latin American programs will help to reinfuse the Spanish language and Hispanic culture into the state. Do these kinds of programs fall within the definition of a Hemispheric Initiative?

Moreover, there is more than a little ambiguity in the expression "Hispanic culture". Hispanics in New Mexico are not Mexicans, per se, and they are even less connected culturally to countries south of Mexico. This issue, I think creates some conceptual puzzles for the hemispheric initiative. If we simply want to strengthen our scholarly and technical assistance programs with Latin America, then this issue is perhaps not important. If, however, we wish to use this initiative as an opportunity to explore who we are culturally, what our cultural relationship to Latin America is, and ways to reinfuse the Spanish language into a population that is fast losing it, then the issue of what New Mexico and Latin America have in common is an important one.

We would also hope that the initiative will not be dominated by private sector interests relating to the free trade agreements with Mexico and Canada.

2. Resources. In the last two years, the College of Education has allocated a significant amount of financial resources toward the promotion of Latin American programs in the college. The College of Education is backing up its rhetoric with resources and the University must do the same. The UNM 2000 report places the "University for the Americas" concept near the top of its

priorities for the next decade. If we are to, in fact, become the university for the Americas, it will take a reallocation of financial resources to make it work. Making even small amounts of seed money available to get programs off the ground would be helpful.

Perhaps, as important, though, as money, is a strong message from the central administration that Latin America is a priority. There are many non-monetary ways of doing this. For example, faculty lines can be set aside and used to motivate colleges to hire faculty that fit the university for the Americas profile. Many universities currently use this strategy for minority and/or spousal hiring.

3. Administrative Coordination. Many current efforts to establish programs with Latin America are carried out by entrepreneurial faculty and staff who have an interest in Latin America and the soft money these programs sometimes provide. Such efforts should not be discouraged, but in our view, they badly need coordination. This coordination can and often does occur at the college level, but the university should provide a "clearing house" where information can be shared and duplication of services eliminated. Such an agency may already exist, but there are several offices on campus which claim to provide similar Latin American services. These services need to be centralized, but their emphasis should be on facilitating services and coordinating information, and not on creating bureaucratic barriers.

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**APPENDIX B**

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UNIVERSITY OF NEW MEXICO

COLLEGE OF EDUCATION

  
*presents***ENRIQUE SEMO***Professor of History, University of New Mexico**Monday, February 10, 1992*

*1:00 - 2:00 pm  
in the Simpson Room  
in the Counseling Family Studies Building*



*Dr. Semo will speak on:  
"Should We Be A College for the Americas?  
A View From Across The Border."*



*Dr. Semo is a well known analyst of the Mexican social scene.  
Some of his recent books are **Hacia Un Nuevo Pensamiento Liberal**  
(Toward a New Liberal Discourse) (1990)  
and the Mexican Best Seller, **Crónica de un Derrumbe**  
(Chronicle of a Downfall: The Unfinished Revolutions of Eastern Europe) (1991)*

*He will speak about new opportunities for Inter-American  
relationships and recent developments in the Mexican system of Higher Education.*



*Conversation and afternoon refreshments  
following the forum in the Simpson Room.*

*Sponsored by: Latin American Programs in Education (LAPE).*

**APPENDIX C**

**UNM Seminar on Contemporary Southwestern Culture****Calendar**

**Monday, October 7: Participants arrive**

**Tuesday, October 8:**

**Session 1 (9:00 a.m.-12:00 p.m.)**

**Orientation**

**Guillermina Englbrecht, "Alineamientos actuales en el currículo"**

**Gary Anderson, "Como Desarrollar el currículo escondido"**

**Session 2 (1:30 p.m.-4:30 p.m.):**

**Gilbert M. Merx, "La trayectoria político-social de los Estados Unidos, 1945-1990"**

**Curriculum Workshop**

**Wednesday, October 9:**

**Session 1 (9:00-12:00):**

**Marcos Martínez, "El teatro como instrumento de enseñanza"**

**Curriculum Workshop**

**Session 2 (1:20-4:30):**

**John C. Condon "La comunicación cultural en un contexto interamericano"**

**Curriculum Workshop**

**Thursday, October 10:**

**Session 1 (9:00-12:00): Field trip to observe a bilingual dassroom at Acoma Pueblo  
(Coordinator: Camy Condon)**

**Session 2 (1:20-4:30):**

**Continuation of field trip**

**Friday, October 11:**

**Session 1 (9:00-12:00):**

**Jon M. Tolman, "Las culturas norteamericana y latinoamericana comparadas"**

**Curriculum Workshop**

## UNM Seminar on Contemporary Southwestern Culture

## Session 2 (1:20-4:30):

## Curriculum Workshop

Saturday, October 12: Albuquerque/Santa Fe (overnight)

Tomás Atencio, coordinator

## Session 1: (Albuquerque, a.m.)

E. A. Mares, "Literatura y sociedad en los Estados Unidos,"

## Session 2: (Santa Fe, p.m.)

Rena Swentzell, "The role of ethnic minorities in Southwestern Society"

## Museum visits

Sunday, October 13: Española-Taos (overnight)

(Tomás Atencio, coordinator)

## Series of museum tours and lectures

Monday, October 14:

## Session 1 (9:00-12:00):

Arrive back in Albuquerque

## Curriculum Development

## Session 2 (1:20-4:30):

Nelson Valdés, "La actuación de los hispanoamericanos en el sudoeste estadounidense"

Tuesday, October 15:

## Session 1 (9:00-12:00):

Erlinda Gonzales-Berry "La literatura chicana del suroeste"

## Session 2 (1:20-4:30):

## Curriculum Development Session

## Despedida [Graduation Ceremony]

Wednesday, October 16: Departure



**Phelps Stokes Fund**  
Foundation for Human Development

2400 N Street, N.W.  
 Suite 605  
 Washington, D.C. 20037  
 (202) 882-7790  
 Fax (202) 862-2610

10 East 07th Street  
 New York, New York 10128  
 212/427-6100

September 9, 1991

THIS LIST REPLACES ANY EARLIER LIST YOU MAY HAVE RECEIVED

\*\*\*\*\*

**Project: ISSUES IN THE STUDY OF AMERICAN CIVILIZATION**

\*\*\*\*\*

The international visitors and escort officer(s) now scheduled to come to your community are listed below. Please make certain that you have received biographical data for each visitor.

NAME

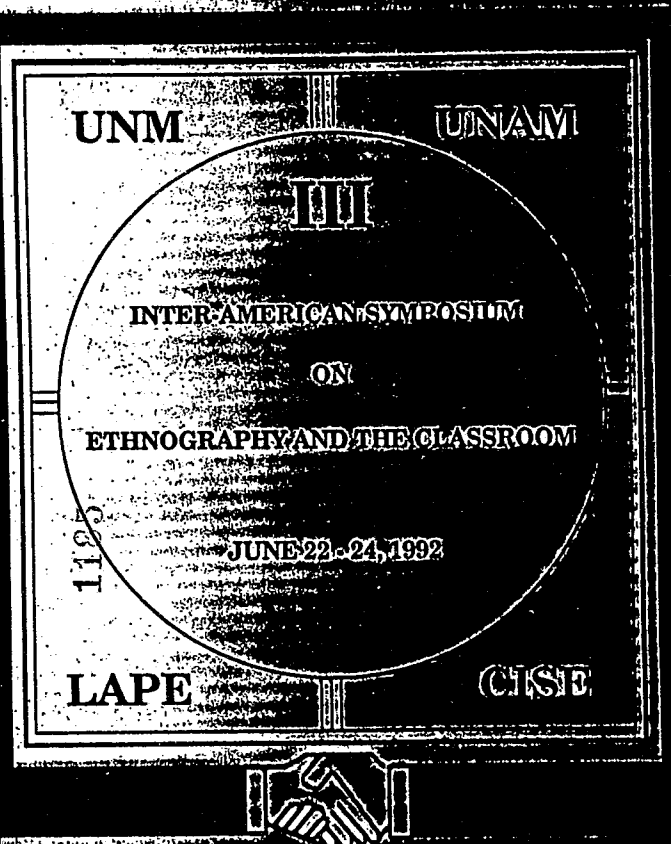
COUNTRY

1	Francisco Jose PINON	ARGENTINA
2	Marie Carrizosa de LOPEZ	COLUMBIA 0
3	Roy GAMERO Ruiz	COSTA RICA
4	Bruno Antonio ROSARIO Candelier	DOMINICAN REPUBLIC
5	Marcina MARQUEZ	HONDURAS
6	David Alejandro MILES Talbot	HONDURAS
7	Salvador Dorantes LOPEZ	MEXICO
8	Fernando ESTEVEZ Monso	URUGUAY
9	Gustavo SARMIENTO Villacreces	VENEZUELA
10	Roxanna CARDENAS	ESCORT OFFICER
11	Charles BECKER	ESCORT OFFICER





**APPENDIX D**



APPENDIX D

THIRD INTER-AMERICAN SYMPOSIUM ON  
ETHNOGRAPHY AND THE CLASSROOM

June 22-24, 1992

JUNE 22, Monday

9:00 - 10:00

Opening and Introduction:

Dr. Richard Holdér, UNM  
Dr. José Sarukhán, UNAM  
Chair: Guillermina Engelbrecht

TABLE 1 - Chair: Gary Anderson

10:00 - 10:35

María Bertely, CIESES, México

*Indians, Oaxaqueños, Citizens and School Processes. (Aproximación Histórica al Estudio Etnográfico de la Relación Indígenas Migrantes y Procesos Escolares: Familias Yalaltecas Asentadas en la Periferia Metropolitana)*

10:35 - 11:10

Martha Montero-Sleburth, Costa Rica,  
Harvard, USA

*Reclaiming African and Indigenous Cultures: Fox-Fire Inspired Curriculum Development in Costa Rica. (Desarrollo Curricular en Costa Rica: La Reclamación de las Culturas Indígenas y Africanas en Nuestra Talamanca)*

11:10 - 11:45

Coffee Break

11:45 - 12:20

Classroom Discourse Group, University of  
California, Santa Barbara, USA

**Two Languages, One Community. (Dos Lenguajes, Una Comunidad)**

12:20 - 12:55

**Elvira Souza-Lima, Universidade Federativa de Minas Gerais, Brazil**

*The Understanding of Cultural Differences in Classroom: An Account of a Teaching Experience at Araguaian River Community. (La comprensión de Diferencias Culturales en el Aula: Una Descripción de una Experiencia Pedagógica en la Comunidad del Río Araguaia).*

12:55 - 3:00

**Lunch - University House**

**TABLE 2 - Chair: Miguel Angel Campos**

3:00 - 3:35

**Bradley Levinson, University of North Carolina, USA**

*Against All Difference: Producing a Culture of Equality at a Mexican Secondary School. (Contra toda la Diferencia: Producción de una Cultura de la Igualdad en una Secundaria Mexicana).*

3:35 - 4:10

**Alejandro Cornejo, CCH-UNAM, México**

*Social and Educational Differentiation of Students at the National Autonomous University of México. (Diferencias Sociales en Estudiantes Preuniversitarios: Grupo Doméstico, Género y Papel en la Sociedad).*

4:10 - 4:45

**Juan Fidel Zorrilla, CESU, México**

*The Family and Public Higher Education in México: A Preliminary Discussion. (La Familia y la Educación Superior Pública en México: Una Discusión Preliminar).*

**JUNE 23, Tuesday**

9:00 - 10:00

**Discussion**

**TABLE 3 - Chair: Ann Nihlen**

10:00 - 10:35

**Beatriz Schmukler, CONICET, Argentina**

*Women and the Microsocial Democratization of Schooling. (Las Mujeres y la Democratización Microsocial de la Escuela)*

10:35 - 11:10

**Gabriela Delgado, CISE-UNAM, México**

*Participation in the Classroom: A Gender Perspective. (Participación en el Aula: Perspectiva desde la Relación de Género).*

11:10 - 11:45

**Coffee Break**

11:45 - 12:20

**Margaret LeCompte, University of Colorado, USA**

*A Framework for Hearing Silence: What does Telling Stories Mean When We are Supposed to be Doing Science. (Un Marco Conceptual para Oír el Silencio: Qué significa Contar Historias cuando debemos estar haciendo Ciencia).*

12:20 - 12:55

**Patricia Gumpert, Stanford, USA  
William Tierney, Penn State University USA**

*Author/Subject/Reader. (Autor/Sujeto/Lector)*

12:55 - 3:00

**Lunch - Sandia Pueblo**

**TABLE 4 - Chair: Guillermina Engelbrecht**

3:00 - 3:35

**Miguel Escobar, UNAM, México/Colombia**

*From Everyday Life to the Construction of Knowledge in the Classroom. (De la Vida Cotidiana a la Construcción del Conocimiento en el Salón de Clase).*

3:35 - 4:10

**Cynthia Klinger, UDLA, USA/México**

*Institutional Language and Communication. (El Lenguaje Institucional y la Comunicación).*

4:10 - 4:45

**Martha Corenstein, UPN, México**

*Qualitative Educational Research in México. (La Investigación Cualitativa en México).*

**JUNE 24, Wednesday**

9:00 - 10:00

**Discussion**

**TABLE 5 - Chair: Gabriela Delgado**

10:00 - 10:35

**Miguel Angel Campos, IMAS, México**  
**Sara Gaspar, CISE-UNAM, México**  
**Cecilia López, CISE-UNAM, México**

*Value Systems in Science Teaching: An Ethnographic Approach. (Los Valores Científicos en la Enseñanza de la Ciencia: Una Aproximación Etnográfica).*

10:35 - 11:10

**Judith Solsken, University of Massachusetts, USA**  
**David Bloome, University of Massachusetts, USA**

*Beyond Post-structuralism: Story and Narrative in the Study of Literacy in the*

*Everyday World of Classrooms. (Más allá del Post-Estructuralismo: Historia y Narrativa en el Estudio del Alfabetismo en el Mundo Cotidiano de las Aulas).*

11:10 - 11:45

**Coffee Break**

11:45 - 12:20

**Ileana Contreras, Costa Rica, UNM**

*Teaching for Learning without Understanding: A case Study of the Teaching of Mathematics. (Enseñanza para el Aprendizaje sin Compensación: La Realidad en la Enseñanza de las Matemáticas: Un Estudio de Caso).*

12:20 - 2:20

**Lunch - Garden Court**

**TABLE 6 - Chair: Margaret LeCompte**

2:20 - 3:00

**Mario Rueda Beltrán, CISE-UNAM, México. Alejandro Canales, CISE-UNAM, México. Martha Raquel Hernández, CISE-UNAM, México.**

*Pedagogical Practices in an Institution of Higher Education. (Prácticas Pedagógicas en una Institución de Educación Superior).*

3:00 - 3:30

**Suggestions for the organization of the IV Symposium as to topics, dates and place.**

3:30 - 4:15

**General Discussion**

4:15 - 4:45

**Closing Ceremony**

**APPENDIX E**

# FREIRE IN THE CLASSROOM

Sponsored by LAPE  
(Latin American Programs in Education)  
College of Education  
University of New Mexico

## HACIA UNA PEDAGOGIA DE LA PREGUNTA: PAULO FREIRE Y EL SALON DE CLASE

This workshop will review Freire's pedagogy and present a practical, hands-on, approach for the classroom. (The workshop will be presented in Spanish, no English translation will be provided.) (El taller se llevará a cabo en español -no habrá traducción al inglés.)



### FACILITATOR:

MIGUEL ESCOBAR, PhD., Universidad de Ginebra, Suiza. Miembro de la facultad de la Universidad Nacional Autónoma de México. El Dr. Escobar ha colaborado con Paulo Freire en varias ocasiones, desde 1974 en Ginebra hasta el presente. Es autor de varios libros, el más reciente siendo: *Educación Alternativa: Pedagogía de la Pregunta y Participación Estudiantil* (1990).

### CONFERENCE FEE:

\$ 10.00 (includes materials)

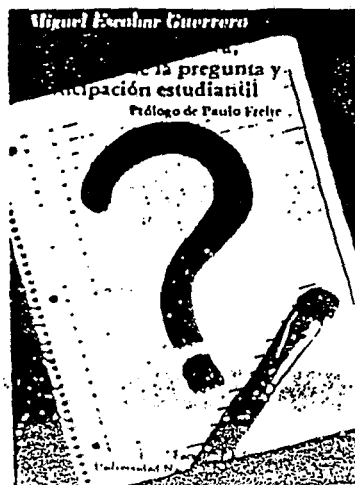
### WHEN:

Saturday June 20, 1992 from  
9:00 a.m. to 12:00 noon and  
1:30 p.m. to 4:30 p.m.

(A follow-up teleconference  
will be held with Dr. Escobar.  
Time and place to be announced  
at the workshop.)

### WHERE:

Kiva Auditorium on the University  
New Mexico campus



**APPENDIX F**

# WOMEN AND EDUCATION IN LATIN AMERICA

## SPEAKERS

### BEATRICE SCHMUCKLER (Argentina)

Dr. Schmuckler will discuss her research on the impact of women on the democratization of educational institutions in Latin America.

### GABRIELA DELGADO (México)

Professor Delgado will discuss her research on gender relations in the classroom

(Talks and discussions will be in English)

**WHEN:** Tuesday June 23, 1992 from 3:00 - 4:00 p.m

**WHERE:** The Parlor Room, Hodgin Hall, UNM Campus

\*\*\*\*\*

*Co-Sponsored by L.A.P.E (Latin American Programs in Education) L.L.C.A (Language, Literacy, Culture and the Arts) Initiative in the College of Education, Women's Studies, and the Latin American Institute*



**APPENDIX G**

## SYMPOSIUM AND EXPERIMENTAL FORMAT SESSION

## Proposal Cover Sheet

APPENDIX G

1407  
Proposal ID = \_\_\_\_\_

1993 AERA Annual Meeting

Session ID = \_\_\_\_\_

1. Symposium or Experimental Format Session Title Becoming Somebody: Ethnographic Studies of Mexican Secondary Schools (Works-in-progress)
2. Organizer Anderson Gary L.  
last name first name middle initial  
 Affiliation The University of New Mexico Telephone (505) 277-1298  
 Mailing address 405 Montclair S.E. Albuquerque, NM 87108
3. Chair (if different from organizer) Martha Montero-Sieburth  
last name first name (no initials) middle initial  
 Affiliation Simmons College Telephone (617) 232-3485  
 Mailing address 47 Addington Rd. Brookline, MA 02146
4. Participants: Please attach a separate sheet listing full name, institutional affiliation, mailing address, telephone number, and role and title of presentation for each participant, if applicable. Please abbreviate the name (last name first) and mailing address (including ZIP or postal code) of each presenter to 70 characters (including between-word spaces). Only names and addresses 70 characters or less will be published in the program address directory.
5. Subject descriptors: Indicate 3 one- or two-word (maximum two-word) descriptors for this symposium to be used in the subject index of the Program (see Section II)
1. Secondary Schools 2. Ethnography 3. Comparative Education
6. Time length request: 1½ hrs ☒ 2 hrs \_\_\_\_\_ Other (please specify): \_\_\_\_\_
7. Are you a member of AERA? ☒ Yes \_\_\_\_\_ No. If not, name AERA sponsor: \_\_\_\_\_
8. Will this session require audiovisual equipment? (Person signing this cover sheet will be invoiced for any AV; see AV policy, Section II.) No ☒ Yes \_\_\_\_\_ (specify equipment) \_\_\_\_\_
9. Format: \_\_\_\_\_ Traditional symposium \_\_\_\_\_ Panel discussion ☒ Experimental Format. If you wish the session to be considered for cosponsorship, please suggest other Division, SIG, or NCME International Studies

I hereby certify that this proposal has not been submitted to any other Division or Special Interest Group in AERA. All participants named, including discussants, have assured me of their willingness to participate and have certified that their papers have not been previously published or presented at other professional meetings.

Gary Anderson  
Signature

8/10/92  
Date

Be certain to enclose ALL OF THESE (incomplete proposals may not be considered):

6 SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH of the following:

Symposium and Experimental Format Session proposal cover sheet

2- to 3-page summary

PLUS two 3 x 5 index cards with symposium or experimental format session title and name and address of organizer and chairperson

Four self-addressed stamped envelopes (if mailed to or from the U.S.)

Two copies of a list of all participants, their mailing addresses, and telephone numbers

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE PROGRAM CHAIRPERSON

BY AUGUST 14, 1992

Airmail for International mail

Title of Symposium (Consultative Experimental format):

"Becoming Somebody: Ethnographic studies of Mexican Secondary Schools" (Works-in-progress from the field)

Chair/Discussant: Martha Montero-Sieburth, Simmons College

Juan Fidel Zorrilla, CESU (National University of Mexico),  
"Anomie and Student Life in an Innovative Mexican Secondary School"

Gary L. Anderson and Katheryn Herr, The University of New Mexico,  
"The Social Construction of Adolescent Identities: Voices from Mexican Secondary Schools"

Bradley Levinson, The University of North Carolina, "Against All Difference: Producing a Culture of Equality at a Mexican Secondary School"

Discussant: Philip Wexler, University of Rochester.

The last two decades have seen an impressive production of ethnographic studies of secondary schooling and students. Issues of school failure, violence in schools, and high rates of drop/push outs have made high schools a focus of intensive analysis. These studies cover such topics as student subcultures (Eckert, 1989; McLeod, 1988) Walker, 1988), school culture (Cusick, 1983), social control (McNeill, 1988), curriculum differentiation (Page and Valli, 1990), the transition to work (Valli, 1986; Weiss, 1990; Willis, 1977) minority school failure (Ogbu, 1987; Suarez-Orozco, 1987), gender (Weiss, 1988) desegregation (Metz, 1978), and uses of symbol and ritual in Catholic schools (Lesko, 1988, McLaren, 1986). With the exception of ethnographies done in Britain, most educational ethnographies of secondary schooling available to American educators are of U.S. schools. Little attempt has been made to use cross-cultural comparison as a vehicle to better understand how U.S. school cultures and student subcultures form and how student identities are constructed within these institutions.

This symposium will bring together four ethnographers (three studies) who have recently completed fieldwork on Mexican secondary schools. All three studies have captured the students' perspective on schooling and the ways students appropriate schooling practices in order to construct identities and occupational futures.

### Experimental Design:

Field work has been completed on all three of these studies. The data have been analyzed and, to some extent, theorized. Many theoretical puzzles remain, however, both within the studies themselves and how they inform the larger body of ethnographic work (mainly North American) on secondary schools and student identities. Rather than present the findings of these studies, the researchers will present their theorization at this point, highlighting particular theoretical puzzles that they are attempting to resolve. Phil Wexler and Martha Montero-Sieburth will comment on the puzzles from their own experience researching secondary schools in the U.S., Israel (in Wexler's case) and Latin America (in Montero-Sieburth's case). The chair will then elicit constructive feedback from the audience. This experimental format is somewhat similar to the consultation model in the AERA image bank.

### The Participants and Discussants

**PARTICIPANT:** Juan Fidel Zorrilla is a researcher at the National University of Mexico's Center of the Study of Secondary and Higher Education. He is a qualitative sociologist who has published widely in the area of sociology of education. Recently he spent one entire year observing and interviewing students at the Sciences and Humanities School, a college preparatory school under the auspices of the National University of Mexico (UNAM). This school was formed as an innovative school in 1972, with a philosophy very similar to our current Re-Learning movement. Zorrilla found that the freedom and autonomy that was the basis of the schools' founding philosophy left an inordinate educative role to the family. Zorrilla uses Durkheim's concept of "anomie" to analyse student life at the school. He portrays the students frame of reference in an anomic situation where educational contents are obviously not relevant.

**PARTICIPANT:** Bradley Levinson has just finished his dissertation research in the Anthropology Department at The University of North Carolina (Chapel Hill). A Spencer grant funded his year-long ethnography of a Mexican secondary school. Levinson is exploring the functions of group solidarity in Mexican secondary schools and the ways it impacts on students' academic lives and their identity formation.

**PARTICIPANTS:** Gary L. Anderson and Kathryn Herr both at the University of New Mexico, have just finished a Fulbright-funded oral history study of students in high and low SES Mexican secondary schools in Puebla, Mexico. Using the Bakhtinian notion of legitimated and non-legitimated voice, they are tracing the central dilemmas students of different social class backgrounds face in their identity formation. This study is part of a comparative study of high school students in New Mexico.

**DISCUSSANT:** Philip Wexler's new book Becoming Somebody: Toward a Social Psychology of the School reports ethnographic data from urban under-class, working class, and professional middle class high schools in the U.S. Wexler theorizes about how students' "identity work" in these schools is carried out within class-based institutions. Wexler's feedback is of particular interest since he has also studied an Israeli secondary school in which he used the Marxian notion of "contradiction" to make sense of student life there.

**CHAIR/DISCUSSANT:** Martha Montero-Sieburth of Simmons College is a Mexican/Costa Rican ethnographer who has done ethnographic research in both Latin America and the U.S. Her role, to some extent, will be to bridge the Mexican and U.S. realities in her comments. She is currently completing a book to be published by Ablex Press this year, studying the integration of immigrants into a predominantly Hispanic urban community in Boston.

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UNIVERSITY OF  
**ROCHESTER**

GRADUATE SCHOOL OF EDUCATION  
AND HUMAN DEVELOPMENT

Office of the Dean

August 4, 1992

Professor Gary Anderson  
The University of New Mexico  
College of Education  
Albuquerque, NM 87131-1261

Dear Gary:

I just got back into town yesterday, August 3rd, and I tried to reach you by phone at the numbers you listed. Since I could not connect with you, I am sending you this less personal communication, although I look forward very much to meeting you and talking with you. As you know, I admire your critical ethnography paper (if you still have any reprints, I would appreciate one).

I am really pleased by your symposium and by your invitation to be the discussant. I shall plan to be at AERA and hope to have the opportunity to talk then. Don't hesitate to call me at 716-275-8300 or 716-271-5189.

Sincerely,



Philip Waxler

PW:mz

# SYMPOSIUM AND EXPERIMENTAL FORMAT SESSION

## Proposal Cover Sheet

### 1993 AERA Annual Meeting

Proposal ID # \_\_\_\_\_

Session ID # \_\_\_\_\_

1. Symposium or Experimental Format Session Title Situating Ethnographic Research from the Perspective of the Other Culture

2. Organizer Montero-Sieburth Martha  
 Affiliation Simmons College first name \_\_\_\_\_ middle initial \_\_\_\_\_  
 Telephone ( 617 ) 738-2157  
 Mailing address 300 The Fenway, Boston, MA 02215

3. Chair (if different from organizer) \_\_\_\_\_  
 last name \_\_\_\_\_ first name (no initials) \_\_\_\_\_ middle initial \_\_\_\_\_  
 Affiliation \_\_\_\_\_ Telephone ( ) \_\_\_\_\_  
 Mailing address \_\_\_\_\_

4. Participants: Please attach a separate sheet listing full name, institutional affiliation, mailing address, telephone number, and role and title of presentation for each participant, if applicable. Please abbreviate the name (last name first) and mailing address (including ZIP or postal code) of each presenter to 70 characters (including between-word spaces). Only names and addresses 70 characters or less will be published in the program address directory.

5. Subject descriptors: Indicate 3 one- or two-word (maximum two-word) descriptors for this symposium to be used in the subject index of the Program (see Section II)

1. Research Paradigms 2. Comparative Education 3. Educational Perspectives

6. Time length request: 1½ hrs \_\_\_\_\_ 2 hrs X Other (please specify): \_\_\_\_\_

7. Are you a member of AERA? X Yes \_\_\_\_\_ No. If not, name AERA sponsor: \_\_\_\_\_

8. Will this session require audiovisual equipment? (Person signing this cover sheet will be invoiced for any AV; see AV policy, Section II.) No NO Yes \_\_\_\_\_ (specify equipment) \_\_\_\_\_

9. Format: \_\_\_\_\_ Traditional symposium \_\_\_\_\_ Panel discussion X Experimental Format. If you wish the session to be considered for cosponsorship, please suggest other Division, SIG, or NCME International Ed.

I hereby certify that this proposal has not been submitted to any other Division or Special Interest Group in AERA. All participants named, including discussants, have assured me of their willingness to participate and have certified that their papers have not been previously published or presented at other professional meetings.

Martha Montero-Sieburth  
 Signature

August 13, 1992

Date

Be certain to enclose ALL OF THESE (incomplete proposals may not be considered):

6 SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH of the following:

- Symposium and Experimental Format Session proposal cover sheet
- 2- to 3-page summary

PLUS two 3 x 5 index cards with symposium or experimental format session title and name and address of organizer and chairperson

Four self-addressed stamped envelopes (if mailed to or from the U.S.)

Two copies of a list of all participants, their mailing addresses, and telephone numbers

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE PROGRAM CHAIRPERSON  
 BY AUGUST 14, 1992  
 Airmail for international mail

## Situating Ethnographic Research from the Perspective of the Other Culture

The proposed experimental format session is an attempt at creating a forum for discussing the evolution of ethnographic research and its impact in education, in terms of paradigm shifts and from the perspective of other cultures beyond the United States.

The rationale for creating this forum arose from discussion with ethnographers from Mexico and other countries, at the Inter-American Symposium on Ethnography and the Classroom, June 1992, at the University of New Mexico, about the ideologies and paradigms which support ethnographic research in different countries. It would appear that U.S. ethnography, while highly differentiated along schools of thought, methodologies, and intent, has shifted in the past ten years towards concerns with the self, with "voice," with identity questions and political issues. Critical ethnography, linked to Marxist and neo-Marxist perspectives, feminism and post-structuralism is highly visible in the United States. Yet, in Mexico, Marxism as an educational influence is thought of as a paradigmatic position which has already been surpassed. Throughout Latin America, and particularly in countries like Mexico, a search for rationales which will create a greater understanding of ethnographic research in contexts such as the classroom, genders issues, textbook development and production, and teacher education is being explored. In this respect, the work of Paulo Freire has greatly influenced educational research and teacher education. For some Latin American ethnographers, there is an emergence of post-Freirian positions which have expanded use in teacher education programs and thinking.

Thus this session raises the following questions:

What influences can American ethnography have for countries such as Mexico and Honduras? Likewise, What impact and influence can ethnographic research as it is known in Latin America, and in particular, as it is being used in Mexico and other countries have for the United States?

To further explore these question, this experimental format will:

- a) Present an overview of paradigm shifts in Mexico and the United States with regard to ethnographic research
- b) Raise questions about the rationalities involved in such shifts, namely the creation of a critical paradigm in U.S. education research which points to an increasingly rationalist hegemony; and the adoption of a functionalist stance in some of the Latin American educational research
- c) Provide examples of such shifts through specific examples or case studies, eg. the rationality which underlies the production of textbooks in Honduras, for example; or post-Freirian developments in teacher education



- d) Raise the implications of such rationalities as part of a critique of critical ethnography
- e) Create a dialogue between North American and Latin American ethnographers

The presentations will be informed by various theoretical positions drawing from diverse theoretical schools: functionalism, empiricism, critical pedagogy, and Freirian-influenced thinking.

Several of the presenters will use Spanish for their exposition, but translations of the basic ideas will be made at the time of presentation.

The chair for this session is Dr. Martha Montero-Sieburth, Associate Professor at Simmons College, who has an extensive background in ethnographic research, both in the United States and abroad.

The presenters will be:

Dr. Juan Fidel Zorrilla, from the Centro de Estudios sobre la Universidad Nacional Autonoma de Mexico who will discuss the different rationalities used by U.S. and Mexican ethnographers.

Vilma Mendez, Doctoral Candidate, College of Education, University of New Mexico who will address the rationalities and politics of textbook production in Honduras.

Dr. Miguel Escobar, Professor at the Colegio de Pedagogia de la Facultad de Filosofia y Letras, Universidad Nacional Autonoma de Mexico who will discuss the evolution of Paulo Friere's stages of philosophical and educational development and will address post-Frierean thinking through his own work.

Dr. Leticia Barba Martin, Professor at the Facultad de Filosofia y Letras, Universidad Nacional Autonoma de Mexcio who will discuss the Professionalization of Teachers in Primary Education using their own Research of their Practice.

The discussant is Dr. Gary Anderson, Assistant Professor and Co-Director of the Latin American Programs in Education at the University of New Mexico, who through his collaboration with Mexican ethnographers during the past three years has developed an Inter-American Symposium on Ethnography and the Classroom. Dr. Anderson has written about critical ethnography and understands the present paradigm shifts between U.S. ethnographers and Latin American ethnographers.

List of Participants

Martha Montero-Sieburth  
47 Addington Road  
Brookline, MA 02146  
(617) 232-3485

Dr. Gary Anderson  
Assistant Professor  
Co-Director  
Latin American Programs in Education  
The University of New Mexico  
Albuquerque, NM 87131  
(505) 277-4533

Dr. Juan Fidel Zorrilla  
Hidalgo 5-B  
Axotla  
Col. Florida  
Mexico City 01030  
Mexico  
FAX 5 65 01 23

Dr. Miguel Escobar  
Ave. Universidad 676-51  
Col. Letran Valle  
C. P. 03600  
Mexico, D. F.

Vilma Mendez  
141 Colombia S. E. Apt. 3  
Albuquerque, NM 87106  
(505) 268-5693

Dr. Leticia Barba Martin  
Facultad de Filosofia y Letras  
Universidad Nacional de Mexico  
Mexico, D. F.

**APPENDIX H**

1203

P R O P O S A L

## TEACHING IN CULTURALLY/LINGUISTICALLY DIVERSE SETTINGS

A Proposal for a "University for the Americas" Initiative  
in Teacher EducationDepartment of Curriculum and Instruction  
in Multicultural Teacher Education

and

Latin American Projects in Education

Sara Dawn Smith, Professor

## Introduction

This proposal will incorporate several elements which are central to the role of the University of New Mexico. These include:

1. The education and professional development of teachers, both at the preservice and inservice levels;
2. the cultural exchange of expertise among UNM professors and educational professionals in Latin America;
3. the provision of opportunities for UNM faculty and students to improve their linguistic skills;
4. the opportunity for UNM faculty to do research within a culturally/linguistically different setting; and,
5. the building of a model for school and teacher education reform and renewal in professional practice in the preservice education of teachers and continuing professional growth of inservice teachers within both the New Mexico context and in a Latin American setting. After the pilot program is established, this model could be applied in other educational settings in Latin America.

Background:

The historical, linguistic, and cultural ties which link the State of New Mexico to Mexico, Meso-America, and South America give the University of New Mexico a unique opportunity to provide leadership in teacher education, not only state and region-wide, but nationally and internationally. The Department of Curriculum and Instruction in Multicultural Teacher Education (CIMTE) is the winner of several national awards for innovative collaborative teacher education programs. University faculty have shown themselves to be successful collaborators with school-based faculty and administrators, providing quality teacher development programs from preservice through inservice levels of teaching.

In addition, the College of Education's Latin American Programs in Education (LAPE) has provided training programs the Educational Administration Spanish Masters Program to hundreds of Latin American students for many years. Building upon these successes, it seems logical to broaden the scope of our efforts.

This proposal describes an opportunity for UNM students to combine their specialized professional education coursework on-campus with an extended field experience in Puebla, Puebla, Mexico at the Colegio Americano. This is a private school system in which native, Spanish speaking children receive one-half day instruction in English, and one-half day in Spanish. At the same time, University of New Mexico faculty would work with Mexican teachers from the Colegio to provide workshops and coursework on-site.

Additionally, there may be the possibility for Colegio and/or other Mexican teachers to travel to UNM for further coursework. Finally, there would be the potential for UNM faculty to take advantage of the opportunity to improve their own linguistic skills by taking intensive Spanish courses from one of the language institutes in Puebla, during the stay in Puebla.

#### Rationale:

In keeping with the CIMTE vision statement of offering a diversity of programs for varied cultures which demonstrate the values of openness, sharing, and collaboration, this alternative teacher education program would focus on the incorporation of multicultural experiences within the frame of an ever-evolving curriculum. While our teacher education programs have long incorporated elements of multicultural education, this program would extend the opportunities for UNM students to get to know people who have different linguistic and cultural backgrounds by living, studying, and learning with them.

Across our country, many students in the schools not only come from different cultural backgrounds, but have limited proficiency in speaking English. While there are those from American Indian, Asian, and other backgrounds, the majority of non-English speaking students are Hispanic, including Mexicans, Mexican-Americans, Cubans, and Central American immigrants. These young people bring the different customs, language, and experiences from their own cultural background into the culture of the school.

As we prepare teachers in our preservice programs, and work with classroom teachers in their ongoing professional development, university faculty must model a professional culture which honors the dignity of the learner, including learners who are culturally and linguistically different. Interdisciplinary learning, teaching, and community participation will be featured in this program as education students experience being students of teaching, first of all in their home community of the University of New Mexico, then in Puebla, Mexico. Beginning teachers will develop empathy for all learners, and will gain skills as well in working with students for whom English is a second or foreign language. They should develop insight into themselves as learners as they cope with functioning in another culture and a different language environment.

In this proposal possible plans are presented as alternatives for placing teacher education students in a Latin American educational setting. These provide the opportunity for UNM students to gain some background by studying education across cultures; a field experience in Mexico where living experiences with Mexican families and classroom work will expand the students' world view as well as their understanding of "schooling" and "culture;" and, a follow-up session following the field experience to look at ways the learnings gained can be applied in culturally linguistically different settings. All of these are combined with coursework from the teacher preparation program.

Approximately 20-24 student teachers may be selected into the program. In the initial experience, the numbers may be 12-15, as a pilot effort. Selection criteria would include:

1. Academic ability as evidenced by course selection and grade point average;
2. openness to new experiences, willingness to work with people of different linguistic and cultural backgrounds; and,
3. interest and desire.

From the beginning students must make a firm commitment to studying in Mexico at the designated time period. Speaking proficiency in Spanish, while desirable will not be required. Some conventional financial aid (such as student loans) will be available through UNM financial aid. Some program fellowships will be available to provide partial support in meeting the costs of the program.

#### PROPOSED PLANS Spring Semester, 1993

##### Teaching in Culturally/Linguistically Different Settings

Coursework, field experiences and life experiences at UNM and in the community as well as in Puebla, Mexico.

##### Professional Block Option:

Elementary and secondary students would be able to pursue their first professional teacher education courses in an alternative teacher education experience. Elementary student teachers will receive their methods courses and the initial experiences for student teaching in an on-site location -- such as the Bilingual Education Cluster of schools in Albuquerque (Dolores Gonzales, Reginald Chavez, East San Jose, and Eugene Field Elementary Schools), or an on-site location in the Bernalillo Public Schools which might include schools with a majority of Hispanic students, a majority of American Indian students, and/or a combination of these populations together with Anglo students. This would be a period of approximately ten weeks.

Secondary Education Prestudent teachers would be enrolled in their "Special Methods" classes and "Prestudent Teaching". These students would be assigned to secondary schools in Albuquerque with culturally/linguistically

different students. The Special Methods courses which would be: Social Studies, English, Modern and Classical Languages, and English as a Second Language. Math and Science are only taught in Spanish, so students with these majors who might desire this experience would be wise to choose the "Semester of Service" option instead of the "Professional Block Option."

Coursework will include:

#### Elementary

Course	Course Title	Credits
CIMTE 321	Social Studies Methods	3
CIMTE 331	Reading Methods	3
CIMTE 333	Language Arts Methods	2
CIMTE 393	Bilingual Ed/TESOL Methods	1
CIMTE 400	Student Teaching	4
CIMTE 593	Education Across Cultures	3
TOTAL		15

#### Secondary

Course	Course Title	Credits
CIMTE 4XX	Special Methods	3
CIMTE 362	Prestudent Teaching	3
CIMTE 583	Education Across Cultures	3
TOTAL		9

Students will be given some days for travel, with four weeks in Mexico, and one or two weeks back on campus to analyze and synthesize their experiences. While in Mexico students will work in classrooms of the Colegio Americano, participate in lectures, demonstrations, field trips, and discussions both with UNM faculty and Colegio staff. Visits to local schools will be arranged. Student journals will be an important element of analysis and reflection on the experience.

Students will be living with families while in Puebla, with arrangements being handled by the Colegio staff. Field trips which will be possible during the visit will include one-day trips to such sites as Santa Ana (known for its textiles), Cholula (world's largest pyramid), and Teotihuacan (ancient Indian cultural monument with Pyramids to the Sun and Moon). Weekend trips to Mexico City would include trips to Art museums, the world famous Museum of Anthropology, etc. Other possible trips could include a visit to Vera Cruz on the Gulf of Mexico.

The follow-up session will provide students with the opportunity to discuss, summarize, and react to their experiences of the semester after their return to their home campus. As student teachers compare and contrast their experiences, this course will serve as a "debriefing" and application seminar to reflect upon the meaning of working within a variety of different communities. Hopefully, UNM students will recognize with more appreciation the historical, cultural, and linguistic ties which connect the Americas,

additionally, they will have a greater understanding of working with the culturally diverse students that they will encounter in their teaching careers.

Faculty who work with student teachers and Colegio teachers in Mexico will have a follow-up trip to Puebla to continue to collaborate with the teachers in their professional development. Feedback from the teachers will be a part of planning for future collaborative work. Possible areas of work with Colegio teachers could include "Cooperative Learning," working to provide developmentally appropriate learning (from Early Childhood to adolescent learning); and the use of the clinical supervision approach to improve classroom practice.

#### Semester of Service Option:

For education students who are at other stages of their programs, and who would like an international education experience could choose to work an entire semester in the Colegio Americano in Puebla, one-half day classes are in English, the other half in Spanish. UNM students would be given the opportunity to work in classrooms for the semester. Assignments would include working at more than one level.

Students would be housed with families. This experience of living in a Mexican household will give UNM students an opportunity to learn and/or improve in usage of Spanish. This is an opportunity to learn the language through daily life. Students will participate in family outings, parties, and other events. It will also be a benefit to families who wish their children to have the chance to speak English with native speakers.

Students who would wish to take coursework in Spanish may take classes at the University of the Americas, a beautiful campus located in Puebla. There are also language institutes which offer classes at all levels of competency.

UNM coursework available during the semester would be available at both undergraduate and graduate levels. These include:

Course	Course Title	Credits
CIMTE 395/595	Field Experience	3
CIMTE 391/591	Problems	3
CIMTE 583	Education Across Cultures	3
TOTAL		9

Graduate students at the M.A. or Ph.D. level who are interested in a field site for research would be able to make individual arrangements. Graduate students from other College of Education departments would be welcomed as well, such as students seeking an internship in Education Administration or students from Physical Education, Music, or Art. The latter three programs are very strong at Colegio Americano. Administrative intern candidates would find an opportunity to work in a complex Bilingual environment with many challenging experiences.



**APPENDIX I**



## *The University of New Mexico*

College of Education  
Department of Educational Administration  
Albuquerque, NM 87131  
Telephone 505: 277-4533

To: Theo Crevenna, Deputy Director of The Latin American Institute  
Jose Sarukhan Kermes, Rector, La Universidad Nacional Autonoma de Mexico.

From: Gary Anderson, Asst. professor, College of Education

Date: October 10, 1994

Subject: Inclusion of the CISE-UNAM/ COE-UNM exchange in the general UNAM-UNM exchange (convenio).

The CISE-UNAM/ COE-UNM exchange program is well underway. UNAM researcher, Dr. Miguel Angel Campos recently spent a week in Albuquerque to discuss details of the exchange. Projects already underway are a collaborative research project involving a series of comparative case studies of students in Mexican and North American schools, an annual conference involving outstanding ethnographic researchers from both countries, and ongoing visits by researchers from both institutions. We are currently seeking funding for many of the projects described in the attached document. Any suggestions of funding sources would be greatly appreciated.

This memorandum includes the following documents: 1. A description of the various components of the CISE-UNAM/ COE-UNM exchange program. 2. A description of a current collaborative research project proposed by researchers in both institutions. (Fulbright funding is being sought). 3. Letters of invitation to the first annual symposium on ethnographic classroom research in Mexico City in June, 1991. 4. A list of the Mexican researchers who currently form the core of the exchange program.

It is with great enthusiasm that we embrace this collaborative effort between Mexican and New Mexican educators/researchers. We feel that New Mexico is an ideal place for Mexican and North American researchers to come together to study education. It is in this spirit that we seek to be part of a renewed commitment to collaboration on the part of UNM and UNAM.

Office of International Technical Cooperation (OITEC)

\* ANNUAL REPORT \*

July 1, 1991 - June 30, 1992

Gladis Fois-Maresma, Program Manager

I. Significant Developments during the Academic Year, 1992-1993

A. Spanish-language M.A. Program in Educational Administration

The College of Education Department of Educational Administration and the Office of International Technical Cooperation jointly offer this program, especially designed for Latin American educators.

Seven students from five different countries completed their program of studies at the end of the Summer Session, 1991. They are: María Mercedes Cotacachi and Susana Guerra from Ecuador; Gerardo León Guerrero, from Colombia; Ana Ninnette Luna, from El Salvador; Arcelia Rojas Salazar and María Irene Zapata, from Perú; and Ramón Ignacio Reyes, from Venezuela.

Five educators from four different countries received their M.A. diplomas on December 13, 1991. They are: Marco A. Cornejo Alvarez and Angel A. Poma Méndez, from Ecuador; Raúl Alfonso Rojas Romero, from Colombia; Wilberth Solano Ugalde, from Costa Rica; and Felipe

Hidalgo Villatoro, from Guatemala.

Luis Reyes, from Chile, received his Educational Administration Specialist certificate.

The following new students enrolled in the program in the Fall Semester, 1991: Ligia Arguedas, Evelyn Chen, Otilia Solis and Ileana Vargas, from Costa Rica; Rafael Basora from the Dominican Republic; Rosa H. Carrillo, Mario Montenegro, Edgar Orbea, Luis Rojas, Holger Ramos, and Nancy Tapia, from Ecuador; Jorge Charry Rodríguez, from Colombia; Harry Pozas, from Chile; and Carmen Santos, from Venezuela. These students came to UNM under auspices of the following international organizations: U.S. Agency for International Development, The Organization of American States (OAS), and the "Instituto Colombiano Agropecuario (ICA)".

María Elena Bejar, from Chile, Juan Carlos Camacho, from Colombia, and Luis Durstewitz, from Mexico, joined the program in the Spring Semester, 1992.

The following educators received their M.A. degree in Educational Administration at the end of the Summer

Session 1992: Rafael Basora, from the Dominican Republic; Rosa H. Carrillo, Mario Montenegro, Edgar Orbea, Holger Ramos, Nancy Tapia and Luis Rojas, from Ecuador; Jorge Charry, from Colombia; Harry Pozas, from Chile, and Carmen Santos, from Venezuela.

Pablo Moreno (Venezuela) and Ana Ninnette Luna (El Salvador) received their Educational Administration Specialist certificates.

Professor Ernest Stapleton, who had been Academic Coordinator for this program since 1982, retired on May 15, 1992. Dr. Ronald E. Blood, former LAPE/OITEC Director, has been named Academic Director beginning Summer Session 1992.

B. M.A. Program in Public Administration in Spanish (MAPAS)

This program is being offered jointly by the UNM Division of Public Administration and OITEC.

Eighteen professionals completed the program at the end of the Summer Session 1991. They are: Avelino Aiza, Rolf Arce, Fernando A. Beltrán, Benigno Caballero, Francisco E. Caero, Fressia Guzmán de

Sangüeza, María Antonieta Linares Cruz, José W. López, Martha Mallea, Angel Pacheco, Mario Poveda, Guadalupe Riera, Héctor Saldías and Adrián Silisque, from Bolivia; Beatriz Cantor Molina, Martha Lucía Florez, and Gladys Sandoval, from Colombia; and Aurora López, from México.

The following professionals started the program in the Fall, 1991, and received their M.A. degree in the Summer, 1992: Roberto Aponte, Angel Durán, Eddy Flores, Osvaldo Gil, Oscar Montaña, Haidee Saucedo, Germán Zamora, Miguel Angel Fernández, Fernando Núñez, Wilfredo Pastén, from Bolivia; Washington Chilibingua, Gustavo Giler, Angel E. Ibarra, Iván Palacios, Ana Cecilia Piedra, María Elena Rojas, Victor Hugo Rojas, Diana Zabala, and Oswaldo Guerra, from Ecuador.

#### C. Training Program for Salvadoran Journalists

A special training program for 25 mass media communicators from El Salvador is being conducted by the UNM Department of Journalism and OITEC. The project was designed specifically to provide the participants with improved technical skills, a better understanding

of the functions and responsibilities of the mass media in a democratic society, and strengthened skills in professional and community leadership.

The program started in May, 1992 and will be completed in December, 1992 under the academic coordination of Assistant Professor Bob Gassaway. Two of the original 25 participants returned to El Salvador before completion of the program. The remaining 23 are: José A. Bonilla, Roxana A. Bonilla, Nestor A. Calero, Carlos T. Castro, Wilfredo Cea, José Tulio Deras, Claudia Rivera Dueñas, Keyna de Escobar, Ana L. Estrada, Yanira Z. Flamenco, Fernando Golscher, William A. Hernández, Carla E. Jimenez, Isabel C. López, Elida Moreno, Luis Roberto Repreza, Rubén Salazar, Jorge A. Sánchez, Roberto A. Sánchez, Mauricio Sandoval, Arnoldo Tejada, Flor Valencia, Regina Vásquez.

#### D. Outside Professional Activities

In August, 1991, Dr. Jon Facey travelled to Tegucigalpa, Honduras to attend the formal establishment of a consortium of North American and Central American Universities to promote collaborative

programs among its members. In November of the same year, Dr. Facey attended an International Conference on Higher Education held at the University of Guadalajara, where he presented a paper on the development of graduate programs in Educational Administration.

In December, 1991 Dr. Ronald Blood, former OITEC Director, was invited by the University of Guadalajara to provide advice on how to establish a program in educational administration.

As a result of the visits by Drs. Facey and Blood to the University of Guadalajara, a Convenio was signed in February, 1992 between UNM and that institution to train University of Guadalajara administrators, through the establishment of a special M.A. level program in that area to be carried out partly at UNM and partly at the University of Guadalajara.

E. Technical Assistance to the Dominican Republic

The University of New Mexico, through its Office of International Technical Cooperation (OITEC) in conjunction with Albuquerque T-VI, is providing



technical assistance to educational institutions in the Dominican Republic in support of the efforts being made to develop a system of technical education in that country. Technical education emphasizes the learning of technical procedures and skills and aims at preparing individuals for employment in positions which lie between those of the skilled worker or craftsman and the professional. As an institution of technical education, Albuquerque T-VI provides opportunities for post-secondary occupational education and coursework leading to certificates and/or associate degrees.

A contract was signed between UNM and FUNDAPEC (Fundación APEC de Crédito Educativo) in early 1991. Between September and December of that year a series of courses were taught on site by UNM and Albuquerque T-VI instructors. Dr. José Rivera (UNM, Division of Public Administration); Dr. Curtis Lee, from Arizona; Dr. Ambrosio Ortega (UNM/T-VI); and Dr. Sigfredo Maestas (T-VI) travelled to the Dominican Republic during that period to teach courses in administration of technical vocational education institutions. A large group of university-level Dominican administrators and educators

attended the courses offered in this program, which is scheduled to continue during the academic year 1992-1993.

Albuquerque Mayor, Louis Saavedra, was invited to the Dominican Republic to speak on technical vocational education at a seminar organized by FUNDAPEC held November 15-20, 1991.

Also through OITEC, the University of New Mexico and the Albuquerque T-VI developed a program to promote the exchange of experiences between U.S. institutions of higher education and Dominican educational institutions.

The general objectives of this program are: 1) to bring to New Mexico and other areas of the United States groups of Dominican education leaders to observe the functioning of institutions of higher education in this country, and 2) to observe how the democratic process influences internal operation, participatory administration and community relations.

A group of 24 educators, which included a few from Honduras, arrived in Miami on May 31, 1992, where they visited Miami Dade Community College. From June 3-

10, the group visited several institutions in Texas. From June 11-14, the participants visited institutions in the State of Arizona, and from June 14-20, the group was in New Mexico, where they took part in activities especially planned for them at New Mexico State University (Doña Ana Branch Community College); the Albuquerque T-VI, and UNM.

F. In-Service Training at the American School  
in Torreón, México, August 5-19, 1991

A group of 40 teachers received an intensive training course at the end of the summer of 1991. The extension course, offered through UNM Continuing Education was coordinated by OITEC and delivered by CIMTE. Professor Robert Montoya was the instructor of the two-week intensive training on advanced instructional strategies. Through OITEC, UNM has delivered similar courses at the same site in previous years.

G. Appointment

Upon the resignation of Dr. Ronald Blood as Director of OITEC, effective June 30, 1991, Dr. Jon

Facey was named Interim Director beginning July 1, 1991.

#### H. Visitors

OITEC received the following visitors during the reporting period:

Ms. Wanda Dutton, Academic Specialist, Partners for International Education and Training/AID, Washington, April 26-28, 1992.

Ing. Victor Thome, Vice President, Administrative Council, INFOTEP (National Institute of Professional Technical Education); Col. Damián Encarnación, Director of Technical Education Program for the Army Forces; and Felix Manuel Comas, Member of the Council of Administrators, INFOTEP, May 11-15, 1992.

Lic. Victor González Romero, Provost; Dr. Salvador Acosta, Director of Secondary Education; Lic. Carlos Moyado, Director, Division of Academic Development; and Dr. Raúl Díaz, Director of Graduate Programs, of the University of Guadalajara, February 1992.

Roberto Liz, Executive Director of FUNDAPEC, Dominican Republic, April 28 - May 3, 1992.

Dr. Román Valladares and two more officials from UNITEC, a private university in Honduras, visited UNM in September 1991.

## II. Proposals

The following proposals were prepared and submitted by OITEC during the reporting period:

Training for Mass Communicators  
El Salvador

In-Service Training  
Mexico

Interamerican Conference on Math Education  
USA

Training and Technical Education  
Dominican Republic

Technical Vocational Education and Higher  
Education in the United States  
Dominican Republic/Honduras

Training in Design and Management of Service  
Club Activities  
El Salvador

Training of Disaster Relief Volunteers  
El Salvador

ESL Training - Mass Communicators (Phase I)  
El Salvador

Supervisory Training of Educational  
Administrators  
Guatemala

Training of Educational Supervisors  
Guatemala

Honduras Peace Scholarship II  
Honduras

Training Program for Nicaraguan Educators  
Nicaragua

III. The Following Individuals Joined the OITEC Staff  
During the Reporting Year

<u>NAME</u>	<u>TITLE</u>	<u>EFFECTIVE DATE</u>
Curtis, Lee	Consultant	September, 1991
Durstewitz, Luis	Grad. Assistant	June, 1992
Hershberger, Sarah	Grad. Assistant	August 1991
Mendez, Vilma	Grad. Assistant	January, 1992
Olsen, Carolyn	Grad. Assistant	June, 1992
Reyes, Luis	Grad. Assistant	June, 1992
Rodríguez, Alicia	Grad. Assistant	September, 1991
Sifuentes, María	Grad. Assistant	August, 1991
Urrutia, Edmundo	Grad. Assistant	September, 1991

IV. Separation from Staff

<u>NAME</u>	<u>TITLE</u>	<u>EFFECTIVE DATE</u>
Apodaca, Rita	Program Manager	August, 1991
Hershberger, Sarah	Grad. Assistant	May, 1992
Hurtado, Romelia	Grad. Assistant	May, 1992
Mendez, Vilma	Grad. Assistant	July, 1992

Ogando, Fernando	Grad. Assistant	May, 1992
Rodríguez, Alicia	Grad. Assistant	November, 1991
Stapleton, Ernest	Academic Coord., Spanish-language M.A. Program in Educational Administration	May, 1992
Urrutia, Edmundo	Grad. Assistant	November, 1991

#### V. Publications

During the reporting period, two issues of the LAPE/OITEC Newsletter were published and distributed to more than 2,000 former participants, alumni, and institutions in Latin America and the United States.

A new volume of "Analytical Summaries" by REDUC (Network for Documentation in Education), UNM Chapter, was published in November, 1991 under the editorship of Prof. Patrick (Rick) Scott of CIMTE.

#### VI. Funds Generated by OITEC During Fiscal Year 1991-1992

1. Master's Degree Program in  
Educational Administration . . . . \$ 177,127
2. Master's Degree Program in  
Public Administration . . . . . \$ 209,110

3.	Amendment No. 3, Guatemala Strengthen Political Science Faculty at USAC . . . . .	\$ 12,574
4.	In-Service Training (Teachers from Torreón, Coahuila) . . . . .	\$ 7,742
5.	Interamerican Conference on Mathematics Education . . . . .	\$ 6,000
6.	Training and Technical Education (Dominican Republic) . .	\$ 40,000
7.	Training for Mass Communicators (El Salvador) . . . . .	\$ 352,929
8.	Technical Vocational Education and Higher Education in the United States . . . . .	\$ <u>97,797</u>
	<b>Total . . . . .</b>	<b>\$ <u>903,279</u></b>

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