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Annual Report of the University, 1992-1993, Volumes 1-4

University of New Mexico

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# ANNUAL REPORTS
## 1992–93
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1. SIGNIFICANT DEVELOPMENTS

- Preparation, approval by President Peck, delivery to NMCHE of UNM's response to House Memorials 38 and 25 (on minorities and women).
- Development and packaging of a presentation on minorities at UNM to Hispanic community people and organizations.
- Renewal of faculty instructional workload report and other information for use by President Peck and others in the President's Council in testimony to the legislature on accountability by faculty.
- Significant workload and contributions to WICHE's Diversity Project:
  - responses to long questionnaire
  - projected demographics
  - substitution for O. Forbes on planning for diversity
- Reprogramming of obsolete computer program of the University of Southern California's Faculty Planning Model. Work remains incomplete.
- Support and staff work for University Planning Council, Faculty Senate Long Range Planning Committee, Senate President, Senate Budget Committee, Student Learning Outcomes Assessment Committee, Admissions and Registration Committee, Staff Council; Graduate Petition and grade Review Subcommittee
- Service to NMCHE's Outcomes Assessment Advisory Group; NMCHE's review group on diversity plans
- Service on Albuquerque Business/Education Compact
- 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 two surveys (Campus Climate for Diversity, ACT Student Opinion Survey) and helped to draw the sample for the ACT survey.
- 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 Student Affairs.
- Conducted secondary analyses and prepared report of all analyses of the Campus Climate for Diversity Survey for VP Zuniga Forbes.
Activities, Analyses, Reports, Presentations:

- 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.
- On loan to the Faculty Contracts Office to transform Source Data Station where in addition to inputting data on contract personnel, FCO staff additionally would use for the first time those data to inform themselves and the Provost's Office more generally on questions about faculty. Served on the search committee for the newly created Analyst Programmer I position in Faculty Contracts, filled March 22 by Dale Ball.
- By the end of the report period (mid-1993) the three of us had succeeded in converting an archaic batch-mode mainframe-based system designed to record data idiosyncratic to faculty to a stand-alone pc-based system housed in FCO and run by Dale.
- Half-time loan to the NMCHE to collect, summarize, analyze and report on statewide data from NM postsecondary institutions during a moratorium for the regular CHE data collection procedures.
- Educated staff on how to pose questions that could be answered informatively using a variety of data resources.
- In 1992 I joined an ad hoc Technical Advisory Group (so-called TAG team) formed to advise NMCHE staff on detailed specifications of the new CHE database, a vital task. The long term consequences of this activity I believe are promising from UNM's perspective as well as that of postsecondary education in NM more generally.
- In addition to these special opportunities I performed my usual collection of activities, a sampling of which is specified below (in no particular order).
- Produced lists of faculty (females, minorities, new faculty) showing counts, rank distribution, tenure status, for 1982, 1986, 1989, 1992, breaking by full time vs. part time for "demographic profile of the faculty." Updated the "Demographic Profile of the Faculty" based on Fall 1992 data. Improved the programs used to produce these reports (use of macro techniques, reducing changes required from one year to the next, etc.)
- Answered special query from ASM regarding graduates in its programs (simple counts, etc.).
- Standard reporting of faculty salaries and benefits, including CUPA, OSU, OSUGA, OSU regents, IPEDS, "UNM Faculty Salaries and Other Selected Indicators".
Produced descriptive summary on the distribution of faculty on I&G vs. non I&G sources.
Produced on short notice equivalent of CIRT production run IF0073, list of Faculty to be Reviewed for Code Three Decision for FCO.
Performed comparison of UNM faculty salaries to NASULGC norms, national, regional, peers, including first time separation of Planning from Architecture.
Began support work for non tenure track faculty task force, using most recent available instructional workload data to summarize instructional contributions made by interest group compared to regular faculty and teaching assistants.
Ran now standard reporting programs on student indebtedness for Student Financial Aid, plus a set of lists for John Whiteside on Fall 1990 freshmen not returning for third semester and anyone enrolled AY9192 with more than one loan.

Service to Committees:

University of New Mexico
- Faculty Senate Admissions and Registration Committee. Served as member. This past year, provided a considerable number of special analyses to support decision making on new admission standards passed by the committee and then the Faculty Senate.
- Faculty Senate Admissions and Registration Committee, Grade Petition Review Subcommittee. Served as member.
- Continued to give periodic presentations on Student Outcomes Assessment to various groups.
- 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. Committee disbanded in Fall 1992.

New Mexico Commission on Higher Education
- CHE Outcomes Assessment Advisory Group. Served as member. Helped to suggest the language and the process for the NMCHE's request for institutional plans on assessment of student outcomes from NM post-secondary institutions.
- CHE Workgroup to Review Institutional Plans for Minorities and Women (Diversity Plans). The committee helped to draft the review criteria for institutional diversity plans which had been submitted to the CHE. Served as member. I reviewed and wrote detailed critiques on the plans for 7 NM institutions.
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. Discontinued membership in Fall 1992.

2. PLANS AND RECOMMENDATIONS FOR THE FUTURE
- Get USC - Faculty Planning Model up and running.
- Continue to provide service and expert advice on student outcomes assessment.
- Estimate a model which predicts students at risk.
- Upon retirement of the Director, participation in the reorganization and staffing of the unit.
- Complete an environmental scan for use in strategic planning.
- Assume data coordinating functions (again!).
- Prepare and maintain data systems to support academic decisions and planning.
- Promote a trial of program planning and budgeting.
Plan, develop and implement a longitudinal student cohort tracking capability at UNM to serve the needs of the institution and individual units in the areas of planning, student outcomes assessment and enrollment management. Expand on the present Beginning Freshmen Cohort Tracking Analysis. Facilitate increased efficiency in accessing and using existing data on students and student performance.
- Continue with the planning and implementation of a campus-wide student outcomes assessment program to serve the planning and evaluation/accountability needs of the University and the requirements and interests of its public (including the NM Commission on Higher Education and the North Central Association). Provide technical expertise to the institution and individual units regarding student outcomes assessment, program evaluation, survey efforts; design, methodology and analysis of evaluation efforts.
- Support efforts to develop management information systems to serve planning efforts for the institution and individual units.
- Develop an on-line, accessible UNM "Fact Book of Selected Indicators"
- Conduct a limited program review of the functions of the office. For example, attempt to systematically determine what various units of the university routinely need from this office (e.g. President’s Office
and offices of individual Vice Presidents, Faculty, Staff and Student representative bodies, Academic units, external public, etc.). Coordinate efforts with other research/data units on campus (e.g. the Registrar’s Office) to reduce any overlap, increase efficiency, etc.

3. **APPOINTMENTS TO STAFF**

   **Constance P. Lockett**, Administrative Assistant, starting date 06/29/92; transferred from Academic Affairs. **James Grice**, Project Assistant from the Psychology Department, half-time, 12 months basis. Starting Date 08/18/92.

4. **SEPARATIONS FROM STAFF**

   **Elsie McConnell**, Administrative Assistant, retired after 23 years of service in Planning and Policy Studies.

5. **PUBLICATIONS:**

   - **James Grice** Explanation of short range, departmental enrollment projections.

   - **R. Cady** Provided major analytical support for UNM’s effort on WICHE’s Diversity Project. Prepared written answers to dozens of questions.

   - Wrote UNM’s response to House Memorial 38 on monotities and women.

   - Wrote and delivered a major presentation on tuition for UNM’s Planning Council.

   - Draft of technical paper on enrollment elasticity.

   - Presentation on NM demographics and educational demographics to Campus Minister’s Association, new commissioners of higher education, UNM Student Affairs staff

6. **OUTSIDE PROFESSIONAL ACTIVITIES OF STAFF MEMBERS.**

   **Tom Field**
   
   to the National Forum of the Association for Institutional Research, Chicago, May 1993.

   **Patricia Burris-Woodall**

   Professional Memberships:

   - Association for Institutional Research
   - Rocky Mountain Association for Institutional Research
   - Society for College and University Planning
   - American Evaluation Association
Service to Community and Outside Professional Work:

- UNM School of Medicine. Program Evaluation Consultant to Dept. OB/GYN Federally Sponsored Communication Project. Responsible for the design, implementation and analysis of all process and outcomes evaluation (3 years).
- UNM International Students' Programs. Friendship Family. Participant. (6 years)
- Member, Board of Directors, Parents of Intercultural Adoption (PICA) (a 501C(3) organization)
- Organizer/Teacher, PICA Heritage Camp, a multicultural daycamp for children (preschool to middle school). (5 years)
- Sunday School Teacher. First Unitarian Universalist Church.
- Parent Teacher Association, Montezuma Elementary School. Member

Richard H. Cady

- Publications Advisory Committee, Society for College and University Planning
- UNM Staff Councilman; Benefits Committee
- New Mexico First, Research Committee

7. Outside Sponsored Research
   NONE
COLLEGE OF ARTS AND SCIENCES

ANNUAL REPORT

July 1, 1992 - June 30, 1993

WILLIAM C. GORDON, DEAN
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The 1992-93 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.

Units within the College merged, divided and changed names in response to disciplinary trends, program developments and faculty deliberations. These changes include formation of the Department of Communication and Journalism as a result of the merger of the previous Department of Communication with the previous Department of Journalism, formation of the Department of Foreign Languages and Literatures and formation of the Department of Spanish and Portuguese as a result of the division of the previous Department of Modern and Classical Languages, and changing the name of the former Department of Geology to the Department of Earth and Planetary Sciences.

Three departments (American Studies, Chemistry and Political Science) successfully completed external reviews of their graduate programs and two departments (Communication and Journalism and Linguistics) obtained College, Faculty Senate, University Administration and UNM Regents’ approval of their proposals for new programs leading to the Ph.D. degree.

The ranks of the tenure-stream faculty in the College increased by a net of three as twenty-two new faculty were hired and nineteen resigned or retired. Funds budgeted for the College in the Spring of 1993 were sufficient to yield only a 4.2% average salary increase for faculty returning in 1993-94. Although all funds available to the College for 1993-94 exceed funds available in 1992-93, this increase is insufficient to support other aspects of the College’s operations which remain very seriously underfunded.
The College’s administration in 1992-93 changed compared to 1991-92. William C. Gordon was appointed Interim Dean while a national search was conducted to identify candidates for the position. Dean Gordon appointed Joan Bybee, Robert Fleming and Kenneth Frandsen as Associate Deans. Associate Deans of the College accepted individual responsibilities similar to those identified in annual reports covering the previous two years.

Associate Dean Robert Fleming assumed responsibility for the College’s student advisement effort and for validation of curriculum changes and graduation requirements. He 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 Joan Bybee served as the College office’s liaison with the College Undergraduate Education Committee and assumed responsibility for various aspects of campus life, faculty development and improvement and codification of various administrative procedures and policies involving academic personnel being considered for promotion and tenure.

Associate Dean Kenneth Frandsen continued to provide assistance and information concerning Affirmative Action and Equal Opportunity policies and data sources, liaison with the Equal Opportunity Programs and Faculty Contracts offices, and oversight of search and screening efforts in conjunction with the appointment of regular and temporary part-time faculty in departments of the College, in the Women Studies Program and in the General Honors Program. 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 Dean, College of Nursing, and Provost/Vice President for Academic Affairs. Christine Kozojet continued to serve as Development Officer in the College of Arts and Sciences.

New Chairpersons were appointed for AY 1992-93 in English (Michael Fischer), Geography (Bradley Cullen), Foreign Languages and Literatures (Diana Robin), Spanish and Portuguese (Erlinda Gonzales-Berry), and, beginning Semester II, in Communication and Journalism (Everett M. Rogers). An Interim Chair was appointed in Psychology (John Gluck). Marta Weigle of American Studies, Karl Schwerin of Anthropology, Ronald Cummings of Economics and Karen Remmer of Political Science announced their intentions to relinquish their responsibilities as Chairpersons effective the beginning of AY 1993-94.

III. AFFIRMATIVE ACTION

The College continued its efforts to increase the cultural and gender diversity among its faculty during AY 1992-93. 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 1991-92 and AY 1992-93, added seventeen new faculty to the College of Arts and Sciences ranks for AY 1993-94, nine females and eight males, including one Hispanic female, an African American male, and one Asian male. Of the nineteen separating faculty, one is female and one is Hispanic. Special recruiting efforts, outside the framework of conventional searches,
identified one Hispanic female, one Hispanic male, and one female who will begin their appointments during AY 1993-94 and a Native American male whose appointment begins in AY 1994-95.

During AY 1992-93, 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 1993-94.

IV. RESEARCH AND SCHOLARLY ACTIVITY

The scholarly and creative achievements of Arts and Sciences faculty that resulted in published works during 1992 are thoroughly documented in the annual volume of Faculty Publications and Creative Works issued by the Office of the Associate Provost for Research. The level of activity both in grant expenditures and new grant awards decreased slightly in AY 1992-93 compared to AY 1991-92, as detailed in Table 10.

Three events of special significance to the College’s research posture and creative character occurred during AY 1992-93. The first was the appointment of James Milgram as Regents’ Professor of Mathematics and Statistics. Milgram’s significant achievements and international reputation in geometry and topology will be important assets in one of the College’s established doctoral programs.

The second was the resignation of Marlan Scully, Distinguished Professor of Physics and Astronomy and Director of the Center for Advanced Studies. Scully’s reputation as a senior scientist in the areas of laser physics, quantum optics and superconductivity and his leadership of the University’s Center for Advanced Studies contributed significantly to doctoral programs in the College.
The third was the retirement of Rudolfo Anaya, Regents' Professor of English and acclaimed author of works treating the Hispanic experience in the Southwest. Anaya's creative achievements and artistic accomplishments provided unique and distinctive models for students and faculty concerned with literary matters.

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 only a slight increase in the total FTE budgeted faculty for AY 1992-93 compared to AY 1991-92, 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

Advisement and Record Center

Under the supervision of the Associate Dean for Student Academic Affairs, Robert Fleming, the College Advisement Center admits students to the College, advises them and monitors their academic performance (including placing students on probation or suspending them if necessary), and certifies them 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 assist with new admittees
and transfer students on Saturdays and after hours. Each year advisors go to the branch campuses in Gallup, Los Alamos, and Valencia County and to area junior colleges such as Santa Fe Community College and Northern New Mexico Community College.

In addition to routine matters, the Center handles all student petitions for waivers and the first steps in grievance procedures. Advisors are responsible for all pre-professional advisement. The Health Sciences Advisory Committee screens dossiers and interviews candidates for admission to medical and dental school. 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. This year, 31 such letters were written.

One or more advisors and the Associate Dean participated in a number of extramural activities this year, including the annual Welcome Back Days, the Career Fair, Pre-Med Day, Advisement Centers Update Conferences, College Enrichment Program Orientations, eleven different summer orientation programs run by the Dean of Students' office, and adjusted their procedures to allow for the new telephone registration system. The early identification program to allow constituent departments to identify majors earlier began to bear fruit this year, as Arts and Sciences departments reported satisfaction with the earlier contact with their majors. The advisement staff for the year consisted of:

Robert E. Fleming, Associate Dean
Gertrude Brown, Receptionist and Computer Operator
Julie Bustamante, Advisement Co-ordinator
Monique Denzler, Advisement Co-ordinator
The College Graduate Committee oversaw several important changes during the 1992-93 academic year. The newly-merged Department of Communication and Journalism implemented its newly restructured graduate program and presented a plan for the granting of a PhD degree. This plan was approved by the Curriculum Subcommittee, the Graduate Committee as a whole, and later by the entire faculty of the College of Arts and Sciences. The Department of Linguistics also presented a successful plan for the creation of a PhD program which was approved at the subcommittee, the committee, and the College level. Both plans have received all appropriate University approvals and are awaiting approval at the state level.

Other subcommittees functioned smoothly: the Subcommittee on Students selected nominees for fellowships and forwarded them to the Office of Graduate Studies; the Faculty Subcommittee screened sabbatical requests and suggested changes in some individual requests before forwarding them to Associate Provost Richard Holder.
Subcommittee Assignments:

Subcommittee on Faculty

John J. Bergen (Spanish & Portuguese)
Bob Cogburn (Math & Statistics)
Robert Fiala (Sociology)

Subcommittee on Curriculum & Standards

Jan Schuetz (Communication/Journalism)
Tom Niemczyk (Chemistry)
Richard W

Richard Waterman (Political Science)

Subcommittee on Students

Brad Cullen (Geography)
Jane Slaughter (History)
Jim Boone (Anthropology)
Brian Lanter (For Lang & Lit) Student Representative

Senate Graduate Committee Representatives

Oswald Baca (Biology)
Ken Frandsen (Communication/Journalism)
Peter White (English)

Graduate Committee Membership

Robert E. Fleming (A&S, Chair)
Jane Caputi (American Studies)
James Boone (Anthropology)
Oswald Baca (Biology)
Tom Niemczyk (Chemistry)
Jan Schuetz (Communication/Journalism)
Linda Riensche (Comm. Disorders)
Shaul Ben-David (Economics)
Peter White (English)
Brad Cullen (Geography)
John Geissman (Earth & Planetary Sciences)
Jane Slaughter (History)
Sherman Wilcox (Linguistics)
Robert Cogburn (Math & Statistics)
Donald C. Lee (Philosophy)
Neb Duric (Physics)
Richard Waterman (Political Science)
Michael Dougher (Psychology)
Robert Fiala (Sociology)
John Bergen (Spanish & Portuguese)
Edward DeSantis (Graduate Studies)
The Arts and Sciences 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 Joan Bybee is Chair of the Arts and Sciences Undergraduate Committee.

Departmental faculty representatives to the Arts and Sciences Undergraduate Committee for 1992-93 were: Maggie Werner-Washburn (BIOL), Mark Ondrias (CHEM), Fred Bales (COMM/JOURN), Richard Hood (COMDIS), Richard Santos (ECON), Scott Sanders (ENGL), Rod Snead (GEOG), Maya Elrick (E&PS), Charles Steen (HIST), Joan Bybee (LINGS), Ron Schrader (MATH), Abraham Anderson (PHIL), Stephen Gregory (PHYS), Robert Sickels (POLSCI), Harold Delaney (PSYCH), Pat McNamara (SOC), and Diana Rebolledo (SPAN/PORT).

During 1992-93, the Undergraduate Committee approved two Form B requests, one from Biology proposing a new course, BIOL 497 (Principles of Gene Manipulation) and one from Chemistry, CHEM 107L (Chemistry for Nontechnical Majors Laboratory). The latter course is a lab course to accompany Chemistry 105.

Among the Forms C considered and approved by the committee were a number of revisions in the English Department’s major concentrations. The deletion of the Teaching Concentration and the Pre-Business Concentration were approved. Minor changes in the requirements for the Professional Writing, Creative Writing, Liberal Arts, Pre-Graduate and Pre-Law Concentrations were approved.

Minor changes in the major in Chemistry, in the major in Languages, in Russian Studies and in the honors program in Political Science were also
approved. A new major in European Studies was proposed and approved.

The History Department requested a change in requirements that would allow a grade of C- to count toward graduation, where previously students were required to achieve a grade of C or better in History courses counting toward graduation. The effect of this change is to make a C- count as a C. The full faculty of Arts and Sciences voted on and approved this change.

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 Fall 1992, 353 students achieved this honor; in Spring 1993 the number of students was 358. Students who met the criteria for inclusion on the Dean's List received a letter of appreciation and congratulations signed by Dean Gordon and Associate Dean Fleming. After the Spring 1993 Semester, we decided that those students whose computer record indicated that no "directory information" be released would not be included in the published Honor Roll unless they provided us with a signed release authorizing us to include them. Of the Spring Honor Roll students, 112 had such a privacy flag; 58 of those students returned signed releases.

Core Curriculum

In May of 1992 the Faculty Senate voted to approve a proposal for a Core Curriculum. In September the full faculty had a general meeting at which the Senate's recommendation was overturned. The Faculty Senate was then obliged to reconsider its approval. The approval of the Core Curriculum was a complex issue: some faculty opposed it because it would drain resources from existing programs, while others found the proposal itself to be objectionable. Since the Arts and Sciences Senators needed to
know the opinions of their constituency, the College office circulated a questionnaire asking for the opinion of faculty on a series of issues related to the Core Curriculum.

Nearly two-thirds of the Arts and Sciences Faculty responded to the questionnaire. The results showed that about half of the faculty would favor the establishment of a core curriculum, but a resounding majority opposed the particular proposal passed by the Senate in 1992. Most faculty responded that a core curriculum should resemble the Arts and Sciences distribution requirements.

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 Arts and Sciences 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 Arts and Sciences IRB, consisting of Mike McKee (Chairperson, Arts and Sciences, Fall 1992 and Spring 1993, Beatrice Vigil (Secretary, Arts and Sciences), Dolores Butt (Communicative Disorders), Richard Harris (Psychology), Gill Woodall (Communication and Journalism), Shannan Carter (Med. Center Counsel), Liane Donisthorpe ( Lawyer), and Matthew Medina
(Graduate Student) reviewed a total of 174 proposals from the following units: American Studies (n = 9), Anthropology (11), Biology (2), Comm/Journ (3), Communicative Disorders (4), Economics (1), English (1), Linguistics (8), Political Science (4), Psychology (115), Sociology (7), Spanish/Port (2), Engineering (1), Law (1), and other institutions (5). 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 1993 Summer session allocation to the College was slightly more than that of 1992, as detailed in Table 12. Our support of unique summer programs - intensive language institutes, study abroad programs and field schools continued.

Travel and Special College Funds

The College budgeted approximately $204,000 for faculty travel during AY 1992-93, with approximately $177,000 being distributed to departments to administer under their own individual guidelines and approximately $27,000 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 Arts and Sciences Women's Caucus continued its tradition of having regular meetings. Two such meetings were held in the fall semester and four during the spring semester. Under the leadership of Diana Robin
The Spring meetings included interviews with the two new Regents, Penny Rembe and Barbara Brazil. In addition, the Women's Caucus met with all the candidates for the position of Provost as well as with the candidates for the Dean of Arts and Sciences. The issue that dominated discussion in the Caucus was the issue of sexual harassment. Members were particularly concerned that no workable procedure for handling sexual harassment cases has been established at UNM.

Members of the Arts and Sciences Women's Caucus Steering Committee for 1992-93 were: Beverly Burris (SOC), Joan Bybee (LING/A&S), Bel Campbell (PHYS), Lynette Cofer (PSYCH), Erlinda Gonzales-Berry (SP/PORT), Nancy Gonzalez (MATH), Minrose Gwin (ENG), Louise Lamphere (ANTH), Diane Marshall (BIOL), Jean Newman (LING), Shane Phelan (POL SCI), Mary Power (ENG), Karen Remmer (POL SCI), Diana Robin (FL&L), Susan Tiano (SOC), Katherine Vogel (BIOL), Marta Weigle (AM ST), Margaret Werner-Washburn (BIOL).

Caucus of Arts and Sciences Faculty Senators

Given problems of communication between the Faculty Senate and the College of Arts and Sciences experienced in the recent past, and given the important issues to come before the Senate during the 1992-93 academic year, an informal caucus of Arts and Sciences Faculty Senators was established. The Arts and Sciences Faculty Senators met several times during the year, especially preceding Senate meetings in which issues affecting the College were to be voted on. The Senators merely discussed the issues and shared with one another what they knew to be the views of their colleagues. Each Senator was assigned a department which did not have a representative on the Senate, and that Senator communicated regularly with the chair of that department.
Development Efforts

Development efforts for the College in 1992-93 centered around solicitation of major and planned gifts with the central development office continuing to provide services for a phonathon to raise funds from the general alumni population. Deferred gifts totalled $750,000 and corporate contributions increased by $59,000. Gifts from foundations remained consistent with fiscal year 1991-92.

After examination of the endowment accounts held by the College and the departments, Christine Kozojet has been working to transfer unused spending balances back to the principal endowment accounts, where the funds earn a substantially higher return. This ongoing effort has to date increased the total Arts and Sciences endowment value by over $85,000. The process will continue over the next year until all accounts are working for the College in the most productive way. Other related successes include working to earmark an endowment held outside the College to be used to permanently fund a poetry series produced by the Department of English. By working with the donor, the UNM Press and the department, $5,000 annually is now available for publishing the series.

A number of corporations and foundations were presented with proposals for funding. Christine Kozojet consulted with the principal investigators to prepare materials for submission to these private organizations. Cultivation continues with these organizations as well as with alumni and friends. As an example, a conference held in May by the Department of Communication and Journalism hosted guests from the community and throughout the country. Ongoing communications will continue and proposals will be forthcoming as the Department develops ways to implement ideas generated at the conference.
Stewardship of past donors was another priority for the year. Those holding endowments were personally updated on the account balance and the use of the funds. Others were entertained at various events or personally visited by faculty members, department chairs, Dean Gordon and Christine Kozojet.

Results of the annual phonathon were analyzed and recommendations for future solicitation of alumni were presented to the Dean. Many of the recommendations will be put into place for the upcoming year. Most notably a College-wide news brochure will be mailed to approximately 26,000 alumni to be followed by a mail appeal. The phonathon will be used as the final attempt at connecting with the alumni body.

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, 1992-93**

<table>
<thead>
<tr>
<th>Department</th>
<th>Chairpersons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AMERICAN STUDIES</strong></td>
<td>Marta Weigle</td>
</tr>
<tr>
<td><strong>ANTHROPOLOGY</strong></td>
<td>Karl Schwerin</td>
</tr>
<tr>
<td><strong>BIOLOGY</strong></td>
<td>David Ligon</td>
</tr>
<tr>
<td><strong>CHEMISTRY</strong></td>
<td>Cary Morrow</td>
</tr>
<tr>
<td><strong>COMMUNICATION/JOURNALISM</strong></td>
<td>Jean Civikly, Interim</td>
</tr>
<tr>
<td></td>
<td>Everett Rogers</td>
</tr>
<tr>
<td><strong>COMMUNICATIVE DISORDERS</strong></td>
<td>Linda Riensche</td>
</tr>
<tr>
<td><strong>EARTH &amp; PLANETARY SCIENCES</strong></td>
<td>Barry Kues</td>
</tr>
<tr>
<td><strong>ECONOMICS</strong></td>
<td>Ron Cummings</td>
</tr>
<tr>
<td><strong>ENGLISH</strong></td>
<td>Michael Fischer</td>
</tr>
<tr>
<td><strong>FOR LANG &amp; LIT</strong></td>
<td>Diana Robin</td>
</tr>
<tr>
<td><strong>GEOGRAPHY</strong></td>
<td>Bradley Cullen</td>
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<tr>
<td><strong>HISTORY</strong></td>
<td>Jonathan Porter</td>
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<tr>
<td><strong>LINGUISTICS</strong></td>
<td>Jean Newman</td>
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<tr>
<td><strong>MATHEMATICS &amp; STATISTICS</strong></td>
<td>Alex Stone</td>
</tr>
<tr>
<td><strong>PHILOSOPHY</strong></td>
<td>John Bussanich, Acting</td>
</tr>
<tr>
<td><strong>PHYSICS &amp; ASTRONOMY</strong></td>
<td>David Wolfe</td>
</tr>
<tr>
<td><strong>POLITICAL SCIENCE</strong></td>
<td>Karen Remmer</td>
</tr>
<tr>
<td><strong>PSYCHOLOGY</strong></td>
<td>John Gluck, Acting</td>
</tr>
<tr>
<td><strong>SOCIOLOGY</strong></td>
<td>Beverly Burris, Acting</td>
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<tr>
<td><strong>SPANISH &amp; PORTUGUESE</strong></td>
<td>Erlinda Gonzales-Berry</td>
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**Interdepartmental Programs**

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<thead>
<tr>
<th>Program</th>
<th>Chairpersons</th>
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<tbody>
<tr>
<td><strong>ASIAN STUDIES</strong> (minor, major)</td>
<td>Noel Pugach</td>
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<tr>
<td><strong>COMPARATIVE LITERATURE</strong> (minor, major)</td>
<td>Diana Robin</td>
</tr>
<tr>
<td><strong>ECONOMICS-PHILOSOPHY</strong> (major)</td>
<td>Ron Cummings/Russell Goodman</td>
</tr>
<tr>
<td><strong>BIOCHEMISTRY</strong> (major)</td>
<td>Robert H. Glew</td>
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<tr>
<td><strong>CRIMINAL JUSTICE</strong> (major)</td>
<td>Gary Lafree</td>
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<tr>
<td><strong>ENGLISH-PHILOSOPHY</strong> (major)</td>
<td>Michael Fischer/Russell Goodman</td>
</tr>
<tr>
<td>Field</td>
<td>Instructor(s)</td>
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<tr>
<td>-------------------------------------------</td>
<td>--------------------------------------</td>
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<tr>
<td>EUROPEAN STUDIES (minor)</td>
<td>Charles McClelland</td>
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<tr>
<td>ITALIAN STUDIES (minor)</td>
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<tr>
<td>MEDIEVAL STUDIES (minor)</td>
<td>Helen Damico</td>
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<tr>
<td>PEACE STUDIES (minor)</td>
<td>Donald Lee</td>
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<tr>
<td>QUATERNARY STUDIES (minor)</td>
<td>Roger Anderson</td>
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<tr>
<td>RUSSIAN STUDIES AND EAST</td>
<td>Nataska Kolchevska</td>
</tr>
<tr>
<td>EUROPEAN STUDIES (minor, major)</td>
<td>Nataska Kolchevska</td>
</tr>
<tr>
<td>SOCIAL WELFARE (minor)</td>
<td>Richard Coughlin/Tomas Atencio</td>
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<tr>
<td>IBERO-AMERICAN STUDIES (Ph.D.)</td>
<td>Robert Himmerich y Valencia</td>
</tr>
<tr>
<td>LATIN AMERICAN STUDIES (minor, major)</td>
<td>Robert Himmerich y Valencia</td>
</tr>
<tr>
<td>PALEOECOLOGY (minor)</td>
<td>Roger Anderson</td>
</tr>
<tr>
<td>PERIOD STUDIES (minor)</td>
<td>Helen Damico</td>
</tr>
<tr>
<td>RELIGIOUS STUDIES (minor, major)</td>
<td>Andrew Burgess</td>
</tr>
<tr>
<td>SCIENCE, TECHNOLOGY &amp; SOCIETY (minor)</td>
<td>Ron Reichel</td>
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**TABLE 2**

**STANDING & SPECIAL COMMITTEES**

**COLLEGE OF ARTS AND SCIENCES, 1992-93**

**A&S Graduate Committee**

Robert E. Fleming, Arts and Sciences, Chairperson
Jane Caputi, American Studies
James Boone, Anthropology
Oswald Baca, Biology
Tom Niemczyk, Chemistry
Jan Schuetz, Communication/Journalism
Linda Riensche, Communicative Disorders
John Geissman, Earth & Planetary Sciences
Shaul Ben-David, Economics
Peter White, English
Brian Lanter, For Lang & Lit
Brad Cullen, Geography
Jane Slaughter, History
Sherman Wilcox, Linguistics
Robert Cogburn, Mathematics & Statistics
Donald C. Lee, Philosophy
Neb Duric, Physics & Astronomy
Richard Waterman, Political Science
Michael Dougher, Psychology
Robert Fiala, Sociology
John Bergen, Spanish & Portuguese
Edward DeSantis, Graduate Studies

**A&S Undergraduate Committee**

Joan Bybee, Linguistics, Chairperson
Maggie Werner-Washburn, Biology
Mark Ondrias, Chemistry
Fred Bales, Communication/Journalism
Richard Hood, Communicative Disorders
Maya Elrick, Earth & Planetary Sciences
Richard Santos, Economics
Scott Sanders, English
Rod Snead, Geography
Charles Steen, History
Ron Schrader, Mathematics & Statistics
Abraham Anderson, Philosophy
Stephen Gregory, Physics
Robert Sickels, Political Science
Harold Delaney, Psychology
Pat McNamara, Sociology
Diana Rebolledo, Spanish & Portuguese

**A&S Junior Faculty Promotion and Tenure Committee**

Ben Mann, Mathematics & Statistics, Chairperson
Ruth Salvaggio, American Studies
Table 2 (continued)

Louise Lamphere, Anthropology
Oswald Baca, Biology
Fritz Allen, Chemistry
Gill Woodall, Communication/Journalism
Laura Crosse, Earth & Planetary Sciences
Helen Damico, English
Alan Hudson, Linguistics
Neil Mitchell, Political Science
Ron Yeo, Psychology
John Lipski, Spanish & Portuguese

A&S Senior Faculty Promotion and Tenure Committee

Anthony Cardenas, Spanish & Portuguese, Chairperson
Alfonso Ortiz, Anthropology
Kathryn Vogel, Biology
Jan Schuetz, Communication/Journalism
Shaul Ben-David, Economics
Linda Hall, History
Garland Bills, Linguistics
Tom Kyner, Mathematics & Statistics
Fred Schueler, Philosophy
John Panitz, Physics & Astronomy
Peder Johnson, Psychology

A&S Human Subjects Committee

Fall 1992

Mike McKee, Economics, Chairperson
Gill Woodall, Communication/Journalism
Dolores Butt, Communicative Disorders
Richard Harris, Psychology
Shannan Carter, Medical Center Counsel
Liane Donisthorpe, Community Representative
Matthew Medina, Student Representative

Spring 1993

Mike McKee, Economics, Chairperson
Gill Woodall, Communication/Journalism
Dolores Butt, Communicative Disorders
Richard Harris, Psychology
Shannan Carter, Medical Center Counsel
Liane Donisthorpe, Community Representative
Matthew Medina, Student Representative
### TABLE 3

Changes in status of tenure-stream faculty in the College of Arts and Sciences: Decisions reached in AY 1992-93 to take effect in AY 1993-94.

**Promotions to Full Professor**

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vera Norwood</td>
<td>American Studies</td>
</tr>
<tr>
<td>Jeffrey Froehlich</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Larry Barton</td>
<td>Biology</td>
</tr>
<tr>
<td>Gordon Johnson</td>
<td>Biology</td>
</tr>
<tr>
<td>Richard Holder</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Peter Ogilby</td>
<td>Chemistry</td>
</tr>
<tr>
<td>John Geissman</td>
<td>Earth &amp; Planetary Sciences</td>
</tr>
<tr>
<td>Crayton Yapp</td>
<td>Earth &amp; Planetary Sciences</td>
</tr>
<tr>
<td>Lynn Beene</td>
<td>English</td>
</tr>
<tr>
<td>Michael Buchner</td>
<td>Mathematics &amp; Statistics</td>
</tr>
<tr>
<td>Bernd Bassalleck</td>
<td>Physics &amp; Astronomy</td>
</tr>
<tr>
<td>John McIver</td>
<td>Physics &amp; Astronomy</td>
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<tr>
<td>Michael Dougher</td>
<td>Psychology</td>
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</table>

**Promotions to Associate Professor and Award of Tenure**

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Leonard</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Mark Hampden-Smith</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Robert Gassaway</td>
<td>Communication/Journalism</td>
</tr>
<tr>
<td>Alok Bohara</td>
<td>Economics</td>
</tr>
<tr>
<td>Alberto Davila</td>
<td>Economics</td>
</tr>
<tr>
<td>Christine Sauer</td>
<td>Economics</td>
</tr>
<tr>
<td>Gary Harrison</td>
<td>English</td>
</tr>
<tr>
<td>Krysztof Galicki</td>
<td>Mathematics &amp; Statistics</td>
</tr>
<tr>
<td>Terry Loring</td>
<td>Mathematics &amp; Statistics</td>
</tr>
<tr>
<td>Nancy Gonzales</td>
<td>Mathematics &amp; Statistics</td>
</tr>
<tr>
<td>Yisong Yang</td>
<td>Mathematics &amp; Statistics</td>
</tr>
<tr>
<td>Richard Waterman</td>
<td>Political Science</td>
</tr>
<tr>
<td>Steven Gangestad</td>
<td>Psychology</td>
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<tr>
<td>Phillip Gonzales</td>
<td>Sociology</td>
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</table>

**Awards of Tenure to Current Associate and Full Professors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
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<tbody>
<tr>
<td>Henry Trewhitt</td>
<td>Communication/Journalism</td>
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</table>

**Positive Mid-Probationary Reviews**

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
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<tbody>
<tr>
<td>Sam Efromovich</td>
<td>Mathematics &amp; Statistics</td>
</tr>
<tr>
<td>Wolfgang Rudolph</td>
<td>Physics &amp; Astronomy</td>
</tr>
<tr>
<td>Kieko Nakao</td>
<td>Sociology</td>
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</table>

**Positive Third-Year Reviews**

<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Maya Elrick</td>
<td>Earth &amp; Planetary Sciences</td>
</tr>
<tr>
<td>Laurie Alberts</td>
<td>English</td>
</tr>
<tr>
<td>Jay Epperson</td>
<td>Mathematics &amp; Statistics</td>
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</tbody>
</table>
### 1993-94 New Appointments

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>A. Gabriel Melendez</td>
<td>American Studies</td>
</tr>
<tr>
<td>Patricia Crown</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Carole Nagengast</td>
<td>Anthropology</td>
</tr>
<tr>
<td>Martin Kirk</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Karen Foss</td>
<td>Communication/Journalism</td>
</tr>
<tr>
<td>Bradford Hall</td>
<td>Communication/Journalism</td>
</tr>
<tr>
<td>Diana Rios</td>
<td>Communication/Journalism</td>
</tr>
<tr>
<td>Teri Hamill</td>
<td>Communicative Disorders</td>
</tr>
<tr>
<td>Yemane Asmerom</td>
<td>Earth &amp; Planetary Sciences</td>
</tr>
<tr>
<td>Andrew Morrison</td>
<td>Economics</td>
</tr>
<tr>
<td>Guillaume Ansart</td>
<td>Foreign Lang &amp; Literatures</td>
</tr>
<tr>
<td>Susanne Baackman</td>
<td>Foreign Lang &amp; Literatures</td>
</tr>
<tr>
<td>Monica Cyrino</td>
<td>Foreign Lang &amp; Literatures</td>
</tr>
<tr>
<td>Timothy Moy</td>
<td>History</td>
</tr>
<tr>
<td>R. James Milgram</td>
<td>Mathematics &amp; Statistics</td>
</tr>
<tr>
<td>Barbara Hannan</td>
<td>Philosophy</td>
</tr>
<tr>
<td>Amy Schmitter</td>
<td>Philosophy</td>
</tr>
<tr>
<td>Patricia Henning</td>
<td>Physics &amp; Astronomy</td>
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<tr>
<td>Kenneth Coleman</td>
<td>Political Science</td>
</tr>
<tr>
<td>Kathy Stansbury</td>
<td>Psychology</td>
</tr>
<tr>
<td>John Roberts, Jr.</td>
<td>Sociology</td>
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<tr>
<td>Bert Useem</td>
<td>Sociology</td>
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### Resignations/Retirements (effective 1993-94)

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Philip Bock</td>
<td>Anthropology</td>
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<tr>
<td>Roy Caton</td>
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<td>Richard Crooks</td>
<td>Chemistry</td>
</tr>
<tr>
<td>Lynda Shaver</td>
<td>Communication/Journalism</td>
</tr>
<tr>
<td>* Jeffrey Grambling</td>
<td>Earth &amp; Planetary Sciences</td>
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<td>Ronald Cummings</td>
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<td>Peter Gregory</td>
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<td>Rudolfo Anaya</td>
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<tr>
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<td>Foreign Lang &amp; Literatures</td>
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<td>Robert Cogburn</td>
<td>Mathematics &amp; Statistics</td>
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<td>William Hart</td>
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<td>Seymour Alpert</td>
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<td>Christopher Leavitt</td>
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<td>Marlan Scully</td>
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<td>Christopher Birkbeck</td>
<td>Sociology</td>
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<tr>
<td>Edward Gilliland</td>
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</tr>
<tr>
<td>Santa Arias</td>
<td>Spanish &amp; Portuguese</td>
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<tr>
<td>Angel Gonzales</td>
<td>Spanish &amp; Portuguese</td>
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* deceased
<table>
<thead>
<tr>
<th>Department</th>
<th>Regular Faculty</th>
<th>Residual Instruction</th>
<th>GAs/TAs</th>
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<td>Chemistry</td>
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<td>Communication/Journalism</td>
<td>18.67</td>
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<td>Earth &amp; Planetary Sciences</td>
<td>19.00</td>
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<td>Sociology</td>
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<td>Spanish &amp; Portuguese</td>
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<td>A&amp;S DIC</td>
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<tr>
<td>TOTAL</td>
<td>381.42</td>
<td>36.07</td>
<td>188.75</td>
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Date Source: College of Arts and Sciences Instructional Budget, 1992-93
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Data Source: Arts and Sciences Registered Students Listing
TABLE 6

DEGREES AWARDED
COLLEGE OF ARTS AND SCIENCES

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<th>Year</th>
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10 Year Change 445 96.7 34 19.9 21 38.9 55 24.4

(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.

-24-
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Total 2

915 913 948 159 226 205 73 74 75

1 Interdisciplinary program at the doctoral level.
2 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&S final graduation lists. Advanced degrees from Graduate Studies final graduation lists.
### TABLE 8

**ACADEMIC PROBATIONS, SUSPENSIONS AND RELEASES**

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<td>No. %</td>
<td>No. %</td>
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<td>111 2.5</td>
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**Number of Students Enrolled in Arts and Sciences**

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### TABLE 9

**DEGREES GRANTED WITH HONORS***

#### Honors in General Studies

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#### Departmental Honors

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</tr>
<tr>
<td>Mathematics &amp; Statistics</td>
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</tr>
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<td>Political Science</td>
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<tr>
<td>Psychology</td>
<td>10</td>
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<tr>
<td>Sociology</td>
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Initiated into Phi Beta Kappa: 104
Initiated into Phi Kappa Phi: 67

*Requirements completed Semester I, 1992-93; Semester II, 1992-93; Summer 1992*
### TABLE 10

NEW RESEARCH AND TRAINING GRANTS, 1992-93

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<th>Number of Faculty</th>
<th>Number of Grants</th>
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TABLE 11

BUDGETED GAs/TAs, RESEARCH AND PROJECT ASSISTANTS, 1992-93

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<td>31</td>
<td>0</td>
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</table>

TOTAL 553 223
TABLE 12
SUMMER SESSION DATA, 1992 AND 1993

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<tr>
<th>Department</th>
<th>Final 1992 Figures</th>
<th>Final 1993 Figures</th>
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<tbody>
<tr>
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<td>Allocation</td>
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<td>Biology</td>
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<td>Modern &amp; Classical Lang.</td>
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<td><strong>$766,710</strong></td>
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<td></td>
<td><strong>$830,000</strong></td>
<td>100.00</td>
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** Amount does not include EWDP allocation ($23,800) and Continuing Education allocation ($30,000).
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<th>Department</th>
<th>General/Departmental Allocations</th>
<th>Special Request Allocations</th>
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<td>American Studies</td>
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<td>Chemistry</td>
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<td>Earth &amp; Plan Sciences</td>
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<td>History</td>
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<td>Linguistics</td>
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<tr>
<td>Spanish &amp; Portuguese</td>
<td>7,000.00</td>
<td>2,724.00</td>
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**TOTAL**                        | $176,900.00                      | $26,937.51                  
**TABLE 14**

A&S Disbursements of Special College Funds

<table>
<thead>
<tr>
<th>Department</th>
<th>Reprint Funds</th>
<th>Speakers' Fees</th>
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<tr>
<td>Arts &amp; Sciences</td>
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<tr>
<td>Biology</td>
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<td>Chemistry</td>
<td>300.00</td>
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</tr>
<tr>
<td>Communication/Journalism</td>
<td></td>
<td>450.00</td>
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<tr>
<td>Communicative Disorders</td>
<td></td>
<td>400.00</td>
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<tr>
<td>Earth &amp; Plan Sciences</td>
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<tr>
<td>Inst. of Meteoritics</td>
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<tr>
<td>Economics</td>
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<td>For Lang &amp; Lit</td>
<td>300.00</td>
<td>300.00</td>
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<tr>
<td>Geography</td>
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<td>History</td>
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<tr>
<td>Linguistics</td>
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<td>200.00</td>
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</tr>
<tr>
<td>Spanish &amp; Portuguese</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$16,744.61</strong></td>
<td><strong>$7,594.89</strong></td>
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</table>
The American Studies Department continued to operate as a committee of the whole to guide the large graduate program, supervised by graduate adviser Professor Jane Caputi, and growing undergraduate program, headed by undergraduate and Southwest Studies adviser Professor Vera Norwood. The five active faculty members found much of their time taken up by department governance and graduate program matters during the fall semester. The spring semester was largely devoted to preparing for the April Graduate Unit Review mandated by the Faculty Senate Graduate Committee and the Office of Graduate Studies. At the end of the summer session, Professor Marta Weigle will have completed nine years as department chair and will move full-time into the Anthropology Department while retaining tenure in American Studies.

A. Significant Achievements

Each faculty member maintained a high level of professional activity. Professor Vera Norwood published
Made From This Earth: American Women and Nature. Professor Ruth Salvaggio completed work on and a report about the "Pilot Project on Women and Science" for the University of New Mexico and Los Alamos National Laboratory. Professors Jane Caputi, Marta Weigle and M. Jane Young published new articles in books, and articles by the first two appeared in refereed journals. Each member of the faculty attended and/or delivered papers at one or more professional meetings and served as manuscript referees. Professor Ruth Salvaggio is on the advisory board of Literature and Psychology and Professor Marta Weigle on the advisory board of the Encyclopedia of American Folklore. Professor Jane Caputi is a contributing editor for Trivia: A Journal of Ideas; Professor Marta Weigle is co-editor of the Folklore and Society Series at the University of Illinois Press and on editorial boards for Journal of Anthropological Research, Journal of the Southwest, and Western Folklore; Professor M. Jane Young is consulting editor for Archaeoastronomy. Professor Vera Norwood serves on the Women's Committee of the American Studies Association, while Professor Ruth Salvaggio is second vice-president of the Women's Caucus of the Modern Language Association.

B. Significant Plans and Recommendations for the Future

Under the overall editorial supervision of department
chair Marta Weigle, the American Studies faculty completed a 162-page, Department Self-Study in April 1993. The concluding "Summary and Plans," pages 88-91 of the Self-Study, were written jointly by the American Studies faculty and are reproduced herein to show the department consensus in this area.

The Graduate Unit Review team included Professors George Lipsitz (Ethnic Studies, University of California, San Diego), Barbara Babcock (English and Comparative Cultural and Literary Studies, University of Arizona), Rod Ewing (Earth and Planetary Sciences, University of New Mexico) and Elaine Tyler May (American Studies, University of Minnesota). The external review committee's final report was dated May 2, 1993, but it was not received by the Department until after its June 30, 1993, release by Senate Graduate Committee Chair Professor L. Donald Partridge. Incoming chair Professor Vera Norwood will prepare the required "written summary of the unit's response to the report" during the fall 1993 semester. Nevertheless, the report is reproduced on the following pages to show some recommendations for the future.
SUMMARY AND PLANS

Nearly thirty years ago, John Kouwenhoven asked us to think about how common our common culture was, as he put it, to "determine the limits of our community of experienced particulars." ...The perspective draws on the deeply rooted ambiguity that has allowed American Studies practitioners...to observe the frictions and tensions that serve both to name particular experiences and to trace the products of social consensus in ways that continually reformulate the mechanism by which a unified culture is constituted.

The questioning of universalism has led to an exciting search for a common vocabulary. It encourages us to enter into a conversation about whether there is still a "we" at the heart of American culture and to wonder how that "we" is constituted. It requires us to reconstruct the disembodied voice--sometimes known as "the American people"--under whose rubric we are all subsumed in a way that will simultaneously provide a more inclusive framework and take a standpoint that distinguishes our perspective from that of an earlier and narrower notion of the American persona.


American Studies is the longest-standing doctoral program at the University of New Mexico. For nearly fifty years, with a small but dedicated and productive faculty and an equally dedicated and productive cadre of graduate students, it has more than repaid the University's modest investment of funds. It enjoys an excellent standing nationally, regionally, in the state, and on campus. It is important to Southwest Studies at UNM and offers a rare opportunity for students with wide-ranging regional and local interests to engage in significant, individually tailored, interdisciplinary research at the graduate level.
In keeping with the priorities of UNM 2000 and with a clear sense of the changing nature of American Studies nationally, as well as student demand, the Department has developed four areas of emphasis: Southwest studies, cultural studies, gender studies, and environment, science and technology. Developing a fifth area — race, class and ethnicity — is crucial.

The excerpts from recent American Studies Association presidential addresses which introduce various sections of this self-study all point to the critical future the field faces. Across the country, departments must commit to emphasizing the study of diversity in their programs. Obviously, each of our current areas of interest necessitates some study of the differences between social groups in America. The specific examination of pluralism as a defining paradigm for any discussion of American life and thought informs the field now in the same way the search for a unifying "American character" did fifty years ago. If American Studies at UNM is to continue to build the study of American cultures into our program and contribute to national and international directions in interdisciplinary cultural study, we must add the fifth area of emphasis in race, class, and ethnicity.

This fifth area entails a commitment to increasing cultural diversity in our faculty, the courses we teach, and the students we accept into our graduate and undergraduate programs. In addition, we need to encourage stronger ties with the existing ethnic studies programs on campus and to foster better collaborations with faculty in other departments who teach courses in race, class and ethnicity.

Ideally, we would like to maintain an 8:1, graduate student to faculty ratio. Initially, admission quotas, graduation rates, and normal attrition should bring a 10:1
ratio in another year or two. The graduate curriculum will be reorganized to accommodate a two-semester American Culture Studies sequence and a regular rotation of seminars in each of the five areas. All aspects of that program, including the ACS reading list, will be reviewed annually.

The New America book series has tremendous potential for faculty and graduate students. This will likely be reviewed and revived in the near future.

Without additional faculty, the department will not be able to implement many of the plans summarized above and suggested throughout this self-study. As of fall 1993, we will have five full-time associate professors (Biebel, Caputi, Norwood, Salvaggio, Young), with one (Biebel) on leave. Professors Weigle and White will be engaged in full-time instructional duties in Anthropology and English respectively.

Within five years, American Studies needs to build to the equivalent of ten full-time faculty, nominally two for each of the five areas of emphasis. In descending order of preference, the means for doing this would be the following:

1) National searches for new faculty lines.
2) Opportunity hires for new faculty lines.
3) Joint appointments between American Studies and faculty in other campus departments.
4) Affiliated faculty who remain 100% in their department but are committed to teach (or cross-list) at least one course in American Studies on a regular basis and to serve on American Studies students' committees.

A strong, interdisciplinary department, particularly one that bridges the social sciences and the humanities, American Studies is important to the intellectual vigor of the College of Arts and Sciences, and to the campus in general. It can respond to non-
traditional and uniquely creative students, and it can serve as a catalyst for fruitful collaboration in a number of areas that are of great importance to American culture. With our well-established focus on gender studies and our ongoing commitment to strengthening all aspects of the department in regard to issues of race, class, and ethnicity, as well as Southwest studies, we affirm the goals of UNM 2000 and place ourselves within the purview of the University for the Americas. At the same time, such emphases link us to the overall aims of the American Studies Association, both at a national and an international level. We are a highly productive faculty, engaged in significant research, publication, and teaching in our individual areas of expertise and we look forward to the opportunity to expand our contributions to our students, the university, the academic community at large, and the particular region in which we are situated.
May 2, 1993

University of New Mexico
Office of Graduate Studies
107 Humanities Building
Albuquerque, NM 87131-1041

ATTENTION: L. Donald Partridge

Dear Professor Partridge,

The external review committee has completed our evaluation of the American Studies Department and hereby report our findings to you. Our review included on-campus interviews with students, faculty, administrators, and staff personnel; close scrutiny of qualifying exam questions and answers, course syllabi, and departmental reading lists; examination and evaluation of the departmental self-study.

The Department of American Studies at the University of New Mexico is a serious and productive unit. Despite its small size, the department’s faculty teaches a large number of graduate students, publishes an impressive number of books and articles in refereed scholarly journals, and maintains a visible presence at regional and national scholarly meetings. The departmental emphases -- on Southwest and regional studies, environment, technology and culture, folklore, mass media, popular and material culture, and gender studies are appropriate and effective in providing important resources for the university, for the state of New Mexico, and for the field of American Studies at large. We also endorse the department’s aim, announced in its self-study, to establish a concentration in race, class, and ethnicity. Over the years the department has made good use of some campus resources such as the Southwest Hispanic Research Institute, and it has been an important source of advanced training for personnel from many cultural institutions in the state. We were most impressed by the enthusiasm about ideas and the commitment to interdisciplinary scholarship expressed by students and faculty during our campus visit.
Along with its many strengths, the American Studies Department also confronts serious structural, intellectual, and procedural problems. These problems are both subtle and serious; how they are handled will determine a great deal about the future of the department. Decisions in recent years by several faculty members to return to their home departments or to take positions at other institutions have reduced the already meager resources of the Department. The associate professor status of the five full-time professors who remain leaves the Department poorly positioned to secure resources from the outside due to a lack of senior leadership. Important new initiatives for the study of race, class, and ethnicity have suffered from inadequate dialogue between the department faculty and their colleagues in other disciplines -- on and off campus. In addition, ideological and personal antagonisms threaten to undermine the climate of collegiality and mutual respect necessary for scholarly inquiry.

In our judgment, most of these problems stem from the size of the unit, the lack of contact with other faculty to fulfill adequately its inter-disciplinary mission, and the difficulties of conducting original discovery research about potentially divisive subjects like identity, culture, and power. Our recommendations focus on one central goal -- to broaden the conversation within the American Studies Department so that pending decisions about governance, curriculum, new faculty, and research draw on as wide a range of voices as possible. From our perspective, the future of the department depends upon its ability to tap the resources and wisdom of the university and of the broader scholarly community beyond it to create appropriate structures of governance, pedagogy, research, and student-faculty interaction.

As a small unit, the Department of American Studies must rely on help from other departments for instruction, advising, governance, and intellectual dialogue. Yet the university's structures often follow narrow disciplinary lines that discourage interdisciplinary work. Students report that they are sometimes closed out of necessary methods classes in other disciplines; faculty members outside of American Studies complain that their departments neither encourage nor reward work with American Studies students. On the other hand, department chairs from related disciplines indicate they have little knowledge of what American Studies wants from them, and say they would welcome initiatives that explore common theoretical, methodological, and pedagogical concerns. Our recommendation is to broaden the governance structure of the American Studies Department so that affiliated faculty members from related fields including English, History, Political Science, Sociology,
and Anthropology play an active role in all departmental decisions. Perhaps the department could consider re-establishing the advisory committee that was recently disbanded or look at how similar departments in other universities draw upon associated faculty for guidance, cooperation, and even leadership.

As an inter-disciplinary field, researchers in American Studies have to understand the central intellectual questions and debates, paradigms, standards of proof, and rhetoric of inquiry of more than one scholarly discipline. In order to be truly inter-disciplinary rather than merely non-disciplinary or extra-disciplinary, American Studies scholars need experience in disciplinary as well as interdisciplinary contexts. Consequently, we recommend that the University provide funds to help American Studies graduate students work as teaching assistants and instructors in traditional departments whose methods and concerns relate to their own scholarship. These new TA positions might be located in departments that agree, in turn, to support American Studies through faculty participation and space for American Studies graduate students in graduate classes.

At the University of New Mexico, as at most research institutions, individuals and departments are rewarded for producing original discovery scholarship that makes significant contributions to the conduct of research in any given area. Many of the faculty members have been successful in establishing themselves as researchers along these lines, but we recommend that the department pay more attention to what it means to transform students from receivers of research into professional colleagues capable of generating research. In our view, current course syllabi, departmental reading lists, and comprehensive exams focus on objects of inquiry at the expense of foundational knowledge of methods, theories, and scholarly controversies. Graduate students in this department are exposed to an appropriately broad range of topics, but exams seem directed toward testing their knowledge about what they have read in the past, rather than asking them how they might apply what they have studied as future scholars in the field.

The nature of interdisciplinary work in American Studies has also changed over the years, and we urge the department to develop a more self-conscious and self-reflexive understanding of their place within the broader American Studies project. The departmental self-study quotes excerpts from addresses by presidents of the American Studies Association, which is a good start, but these need to be supplemented in the department’s conversation about
itself by the many articles that provide meta-commentary about the nature of the field — articles that appear frequently in the American Quarterly, American Studies, Prospects, and American Studies International, as well as in monographs and edited collections. In our view, faculty and students need more sustained engagement with the arguments that have shaped and transformed American Studies over the past fifty years so that they can locate their relationship to them more precisely. In addition, we recommend more direct engagement with scholarly arguments about the sociology of knowledge, feminist epistemologies, and the "crisis of representation." Much work in the department draws on these areas implicitly; we think that the department would benefit from more study, discussion, and publication that addresses them explicitly.

In our discussions with American Studies faculty, they presented themselves as confident of their strengths in gender studies, science and technology, and Southwest studies, but cognizant of the need to develop new strengths in the study of race, ethnicity, and class. We agree with their assessment on both counts. Yet we are concerned that they repeatedly described their intentions in these areas solely in terms of adding specific individuals from aggrieved racial groups to their roster instead of defining broader curricular and research goals. We certainly support the principle and practice of affirmative action, and agree that members of previously under-represented groups bring great strengths to a department both in their situated knowledge as scholars and citizens as well as in their ability to function as important role models and mentors for all students. But we are concerned that this focus on specific individuals has distracted the department from important theoretical discussions about the nature of cultural identity and the methods needed to learn about it. In our view, many of the most antagonistic conflicts in the department stem from a kind of "essentialism" among students — i.e. the belief that identities are innate rather than culturally constructed, that aggrieved populations have monolithic and unified experiences, and that the personal and subjective experiences of oppressed people constitute a higher form of knowledge than systematic study from the outside. We do not demean or discard the importance of "first voice" and subjective knowledge, nor do we ignore the enormous harm perpetrated on aggrieved populations by regimens of knowledge that colonize, trivialize, and distort. But we believe that scholarship should draw upon both individual and collective knowledge, that things need to be understood from far away as well as from close-up. Most important, we feel that scholarly research can only take place if all perspectives are welcomed, if the common pursuit of truth unites scholars around specific standards and procedures of inquiry and demonstration, and if
mobilizing evidence and arguments for potentially unconvinced readers constitutes the core of scholarly research and writing. We propose that the proseminar be expanded so that it establishes clearly for students the nature, purpose, and conventions of scholarly work. In addition to expanding this course, other core courses need to be added to the graduate curriculum where students pursue research, and we feel that the combined graduate and undergraduate courses should be eliminated.

We feel that the department is right to place the study of race, class, and ethnicity at the top of their agenda; such study is a prerequisite for research in American Studies these days. We recommend that the university help the department connect with scholarly debates in these areas by helping fund conferences that aim at illuminating current controversies among scholars about these issues. Theorists working along these lines are already familiar to the faculty -- perhaps conferences or a speakers series could bring to campus scholars like Kimberle Crenshaw, Lizabeth Cohen, Norma Alarcon, Michael Omi and Howard Winant, Elsa Barkley Brown, David Roediger, Robin D.G. Kelley, Barbara Fields, Lisa Lowe, Trinh Minh-ha, Hazel Carby, Hertha Dawn Wong, Michael Rogin, Greg Sarris, and Renato Rosaldo -- all of whom can help theorize these difficult questions about the conduct, theories, and objects of research. We also urge the department to participate in the important re-theorizing of nationalism that plays such an important role in cultural studies today across the disciplines. The work of numerous scholars including Jose David Saldivar, Nestor Canclini, Juan Flores, Gloria Anzaldua, Arjun Appadurai, Hommi Bhabha, Benedict Anderson, Teshome Gabriel, and Amy Kaplan is very important in this respect, and engagement with it would enable the department to participate more fully in borderlands, diaspora, and hemispheric initiatives on and off campus.

In the departmental self-study, the department compared itself with similar departments at the University of Texas, the State University of New York at Buffalo, the University of Minnesota, Brown University, and Yale University. While we feel that it is unrealistic to expect that the department at New Mexico will ever have the resources available at private institutions like Yale or Brown, we feel that it is not unrealistic to think that the department could establish an influence in American Studies equal to or better than the programs at Texas, Buffalo, and Minnesota. But to do so, the department needs to move beyond its traditional regional focus, and begin producing researchers and research that engages with the most advanced currents in the field. The department deserves more resources to do this job: more positions in the core faculty, fewer -- but more carefully
selected -- graduate students, better financial assistance and teaching opportunities for graduate students, and more money for travel and research. But it also needs to make better use of its connections to the broader community of scholars on and off campus, to self-consciously locate itself within the debates that dominate the field, and produce graduate students poised to take their places as productive researchers and teachers.

George Lipsitz
(for the review committee)
Barbara Babcock
Rod Ewing
Elaine Tyler May

cc: Barbara Babcock
Rod Ewing
Elaine Tyler May
C. **Appointments to Staff**

Faculty percentage appointments in American Studies for 1992-93 were as follows: Caputi (1.00), Norwood (1.00), Salvaggio (1.00), Weigle (.50), and Young (1.00)—a total of 4.50 FTEs. Biebel was on sabbatical leave throughout the year. Young was on half-time sick leave during the fall 1992 semester.

Despite the considerable demands of the Graduate Unit Review, Staff Assistant Justina Shoemaker served capably and heroically in both the ordinary administrative work of the department and the extraordinary requirements of the review process. Work/Study students Teresa Abeyta and William Whitaker were skilled in performing the demanding assistance work of that position.

D. **Separations from Staff**

Professor Chon Noriega resigned from the University on July 14, 1992, in order to accept a teaching position at UCLA.

E. **Sponsored Research**

Although all five faculty members 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 1992 - 30 June 1993

BIZARRO

By DAN PIRARO

MY SHAMAN SAID MY SEPARATION ANXIETY WOULD BE EASED IF I CONFRONT MY FEELINGS OF RESENTMENT TOWARD MY PARENTS AND WORK AT IMPROVING MY POOR SELF-IMAGE — THEN MAKE AN OFFERING OF WILD BOAR'S TUSKS TO THE BEETLE GODS.
UNIVERSITY OF NEW MEXICO
DEPARTMENT OF ANTHROPOLOGY
Annual Report
1 July 1992 - 30 June 1993

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I GENERAL DEPARTMENT INFORMATION
I. General Department Information

A. Significant Achievements During 1992-1993

The faculty continued intensive discussions throughout the year on revision of the undergraduate program, and while progress was made in developing a multi-track program for majors and designing a one semester freshman level course to introduce the whole field of anthropology, a great deal remains to be done in completing a thorough revision.

In anticipation of a new departmental chair for the coming year, the faculty initiated a year-long review and revision of the organizational structure of the department (discussed in more detail below). In the Spring, the Advisory Council took a further step in examining present and future departmental structure and goals by calling on all five subfields to develop a clear mission statement defining their intellectual overview, then showing how their program addresses that perspective, identifying existing
strengths as well as what remains to be developed. Extensive discussion centered on selection of the next chair, culminating in a decision at the end of the Fall semester.

Faculty and graduate students maintained their usual active involvement in research, with a high success rate in winning grant awards. The visibility of the Department remained undiminished. The Department and/or the Maxwell Museum were mentioned in 8 out of 18 issues of the Campus News. Professor Basso continued to participate as a member of the Religious Freedom Coalition Committee, which finally succeeded this year in introducing a bill before Congress. Associate Professor Jeffrey Long began a two year research appointment as a senior staff fellow with the National Institute of Alcoholism and Alcohol Abuse in Washington, DC.

1. Changes in Faculty

Although hired in the summer of 1991, Dr. Magdalena Hurtado and Dr. Kim Hill did not join us until Fall semester 1992. Ana Magdalena Hurtado is a native of Venezuela who recently acquired U.S. citizenship. She received a Ph.D. in Anthropology from the University of Utah in 1985. Her research interests include the socioeconomic determinants of maternal and child health, the social environment as a determinant of parental behavior and care, ethnicity in American society, reproductive and economic success among Hispanic Americans, the evolution of the sexual division of labor, and the behavioral ecology of hunter-gatherers.

Kim Hill received a Ph.D. in Anthropology from the
University of Utah in 1983. He is interested in surviving populations of foragers and hunter-gatherers their subsistence strategies particularly as an expression of optimal foraging strategies, and their population characteristics.

We were also joined this year by Dr. Anthony Falsetti, who was hired as a Visiting Assistant Professor for two years to fill in for Assoc. Prof. Jeffrey Long, especially in our critical courses dealing with human genetics. Dr. Falsetti received his Ph.D. in physical anthropology from the University of Tennessee in 1989. His research deals with human variation and adaption, quantitative method and theory, skeletal biology, paleoanthropology, human osteology, functional morphology and forensic anthropology.

Faced with a continuing shortage of ethnology faculty, we were successful in hiring Dr. Susan Coutin as a Visiting Assistant Professor to teach three undergraduate courses during the Spring semester. Dr. Coutin received her Ph.D. from Stanford University in 1990. She has studied a protest movement in Argentina and the sanctuary movement in the United States. Her research interests include power and resistance, agency and change, interpretive anthropology, law, gender, religion, Latin America and the United States.

Assistant Professor Robert Leonard was granted tenure and promotion to Associate Professor. Associate Professor Jeffery Froehlich was promoted to full Professor.

In December the Faculty voted for Erik Trinkaus to assume the position of Department Chair beginning Fall semester 1993. Their
selection was ratified through the formal appointment of Prof. Trinkaus to be the next Chair by Dean Gordon.

2. Salary

Salaries for the current year increased a miserable 1.5 percent, leaving little opportunity to address internal inequities, much less to improve our competitive standing nationally. From a selfish point of view the nationwide economic slump has inhibited other institutions this year from luring away some of our more attractive scholars. Under Dean Gordon’s leadership the salary picture has improved for the coming year. The general salary increase of 3.8 per cent made it possible finally to begin addressing the gross inequity of salaries at the Associate Professor level. Salaries for all of the current Associate Professors were brought above $35,000, with an average increase for that rank of 4.39 per cent. Though this doesn’t entirely solve the problem (they should all be earning somewhere in the $40,000+ range), it does make several positive steps in the right direction. A greater than average raise was recommended for Prof. Santley to bring him above $40,000 and Dean Gordon added to this amount (though note that most full Professors are above $50,000). Among Associate Professors the Chair moved to equalize salaries among those who have shown comparable productivity. A greater than average raise was also recommended for Asst. Professor Leonard to make his salary more commensurate with recent promotions to that rank, and again this was supplemented with an additional increment.
from Dean Gordon.

3. Budget

In budget terms 1992-93 was an extremely difficult year. The 3100 line (Supplies & Expenses) remained the same as last year, except for a token addition of $2500 to underwrite paleontology field expenses. Fifty per cent of this line was funded from College overhead returns. The travel budget was increased by $2000 to $12,000, but then 50 per cent of that amount was funded out of College overhead. What hurt the most was a College mandated rescission of $86,890 to the Vice President for Academic Affairs, which amounted to $11,500 more than the total non-salary budget for the Department.

Some of this shortfall was achieved by funding the visiting appointments out of College overhead. I view this as an extremely dangerous precedent for two reasons. In the first place indirect costs or overhead returns are variable, and unpredictable from year to year. The second objection is more philosophical; I believe that overhead returns should be used to encourage and support further research and scholarship, rather than being dissipated in support of what should be fundamental expenditures in any institution whose primary mission is that of education, i.e. salaries, supplies, travel, etc.

Thirteen faculty were assisted in attending 22 meetings. Two thousand five hundred dollars of the travel budget was also spent to underwrite the Department share of the cost of bringing three
candidates for the ethnology position to campus for interviews.

Indirect cost returns were used to support visits by ten other eminent scholars from other campuses, and 20 graduate students were assisted with travel to pursue advanced research.

GA/TA support was increased by $3,000 to accommodate an increase in base salaries. Unfortunately, it was impossible this year to increase our 0.30 FTE appointments to a larger proportion of FTE. Seven support GA positions continued to be funded at 0.50 FTE.

4. Departmental Organization

With the arrival of Profs. Hurtado and Hill, the former Biosocial program under Biological Anthropology became self-standing this year as a separate subfield, now known as Human Evolutionary Ecology. Membership on the Advisory Council was modified so that one representative would be elected from each subfield.

A desire by some faculty to have more direct input into departmental operations led to proposals for departmental restructuring. After voting on a detailed ballot and lengthy discussions about implementation of the preferences indicated by the vote, a number of structural changes were implemented in faculty roles in departmental decision making. Responsibility for most long-range planning and policy was delegated to the Advisory Council, with the exception of undergraduate program development, which will be the responsibility of the Undergraduate Committee and graduate program
development, which will be the responsibility of the Graduate Committee. Most short-term issues, such as faculty positions, course load reductions and buyouts, tenure and promotion reviews, and negotiation with potential faculty will either remain the province of the Chair or be conducted in consultation with the Advisory Council. Space matters will remain the concern of the Space Committee.

The Chair will continue to be primarily responsible for representing departmental interests to the outside. The Chair will also be responsible for distributing funds relating to equipment, travel, speakers, and other discretionary expenditures.

Based on rankings submitted by the subfields, the Graduate Committee will recommend GA/TA assignments; however, the Chair will make the actual appointments based on enrollments and special course needs. Other graduate student support will involve faculty ratification of ranked nominations from the subfields. Each year the Advisory Council will establish criteria for determining faculty raises, but the actual allocation of such raises will remain the responsibility of the Chair.

5. Subfield Programs & General Courses

Although Prof. Lamphere returned from sabbatical, the retirement of Profs. Barrett and Sebring at the end of the Academic Year 1991-92 created a serious crisis for Ethnology in staffing courses and directing graduate students. This crisis was met in the short term by hiring Dr. Susan Coutin to teach three courses ANTH - 7
during the Spring semester. Due to commitments made by the previous Dean to other programs, and the funding crisis within the College, Anthropology was initially denied permission to seek replacements for their retirees. Once Dean Gordon recognized the seriousness of our short staffing, he authorized the Department to initiate a search for one replacement. We were successful in hiring Dr. Carole Nagengast who will join the faculty beginning Fall 1993. Nonetheless, concern about the faculty shortfall led the Ethnology faculty to forgo admission of any new graduate students for Fall 1993. This decision proved appropriate when Prof. Bock announced that he would retire at the end of the Summer session. There were 65 graduate students in Ethnology for 1992-93.

In Biological Anthropology several of the graduate students continued their research on early man. Prof. Trinkaus held the Snead/Wertheim lectureship this year. He also published a book on Neandertals that received widespread publicity in the popular press. The third week in June nearly 55 law enforcement officials, medical examiners and pathologists from across the nation participated in the nation's only approved Continuing Medical Education course in forensic anthropology, sponsored by the Department of Anthropology and led by Visiting Asst. Professor Anthony B. Falsetti. Other than having a new roof put on the primate paleontology trailer, little progress was made in remodeling it for lab use. UNM graduate student Michele Church was honored by the American Academy of Forensic Sciences by being named winner of the "J. Lawrence Angel Student Paper Award." Biological Anthropology ANTH - 8
had 28 graduate students in 1992-93.

The Biosocial Program was reorganized this year as a separate subfield, now known as Human Evolutionary Ecology. They were joined by Profs. Hurtado and Hill. The Albuquerque Men project continued to dominate their efforts. Prof. Hurtado initiated a close collaborative research relationship with the MEDTEP program being conducted in the School of Medicine; late in the Spring she was formally hired by the MEDTEP program as a research director. Graduate enrollment in HEE for 1992-93 was 21.

The Archeology faculty continued to pursue negotiations for the hiring of Prof. Jane Buikstra as a stellar addition to the faculty. Unfortunately, the leadership gap in the central administration (with an interim Dean during the whole year and an interim provost during the Spring) made it extremely difficult to move forward on this initiative. With the formalization of Dean Gordon as permanent Dean of Arts and Sciences, and the hiring of a permanent Provost beginning August 1993, we anticipate finalizing this process in the coming academic year. Efforts by Arizona State University to hire away Assoc. Prof. Wills from our faculty were met by a counter offer to his spouse, Dr. Patricia Crown, of their faculty. Dr. Crown's acceptance makes this faculty the strongest faculty in the country for Southwest expertise in archeology. In their January-February Bulletin, the Society for American Archeology ranked the UNM Archeology program among the top ten nationwide. For 1992-93 there were 73 graduate students in Archeology.

The Linguistic Anthropology faculty continued to work closely
with the Ethnology faculty. Due to the faculty shortfall in the latter, as well as budgetary limitations, Linguistic Anthropology was unable to initiate their revised program this year. Implementation will begin with academic year 1993-94. Linguistic Anthropology had 6 graduate majors this year.

For Fall 1992 there were 156 undergraduate Anthropology majors in the College of Arts and Sciences, with another 55 majors listed in University College. Graduate enrollment for all five subfields totalled 193.

6. Leaves

Prof. Robert Santley was on sabbatical leave during Fall 1992. Assoc. Prof. Wills took sabbatical leave for the academic year 1992-93, and Prof. Jane Lancaster was on sabbatical leave during Spring 1993.

7. Staff

The work performance of our Office Manager, Yolanda Sanchez, became increasingly unsatisfactory, with frequent sick leaves, chronic tardiness, and inability to keep up with her workload. This led to conflict with her immediate superior the Academic Support Aide. The Chair attempted throughout the Spring semester to mediate the issues involved, drawing as well upon advice from the office of Human Resources. Ms. Sanchez was unwilling to significantly modify her performance and ultimately gave notice of her resignation on 12 May 1993, effective immediately.
Guadalupe Montoya, Department Secretary, resigned in order to care for her grandmother who is quite ill. Although we sought some way to keep Ms. Montoya employed part time, she felt that her first priority was to her grandmother. A search to replace both vacancies is underway as this report is being written.

8. Space Modifications

Little progress was made this year in addressing the chronic shortage of space for the Department. Without adequate space we were unable to provide laboratory facilities for our new hires. Additional hires anticipated in the next one or two years will further exacerbate this problem. Efforts to provide alternate space for OCA, which would free up the south half of the Annex for Archaeology offices, labs, and assistantship space, have so far been unsuccessful.

The trailer obtained last year to be used for laboratory space by Prof. Froehlich to support his paleontology courses has yet to be reroofed to make it weather tight. Because of limited funding no further remodeling has been accomplished.

Space available to the department remains inadequate. 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 incoming Chair will continue to work with the Dean to seek answers to our myriad space problems.
9. Research and Scholarship

Departmental research and scholarship was comparable to last year. Thirteen faculty presented papers at 15 professional meetings within the United States, seven faculty presented papers at international meetings. Prof. Wirt H. Wills served as a UNM Regents' Lecturer. Prof. Erik Trinkaus held the Snead/Wertheim lectureship this year, which culminated with his presentation on Wednesday 28 April, "The Neanderthals: Images of Ourselves." Eight graduate students presented papers at professional meetings, with six receiving departmental subsidies for their travel.

Prof. Leonard worked assiduously in drawing up a proposal to utilize U.S. Forest Service facilities on a cost-share basis in the Gallina Basin of the Santa Fe National Forest in Northwest New Mexico. This agreement made it possible to conduct the summer archeological field school in that area. It is anticipated that it will be possible to continue this cooperative arrangement in subsequent years.

Anthony Martinez held an Opportunity Fellowship for a second year, John Bock was named to a Challenge Assistantship, and Troy Tucker held a Graduate Fellowship Award from the National Science Foundation.

The Department recognized Wendy Bustard, a Masters level student, who presented the Frieda D. Butler Memorial Lecture on Thursday 12 November 1992, entitled "Planning for the Past: An Analysis of the Use of Space in Southwest Pueblos." Caroline Hartse was recognized with her presentation of the Ruth E. Kennedy
Memorial Lecture on 26 April 1993, entitled "Out of the Ark: Disaffiliation among the Contemporary Hutterites." The first New Mexico Folklore Scholar in Anthropology is Arthur Martin who is investigating Anglo culture in Taos. The 1992-93 MacCaulley Scholarship was awarded to Laura D. Mack.

Through the course of the year 34 public presentations were made to the Anthropology lecture series, eight by faculty, 12 by advanced graduate students, and 16 by visiting scholars. In addition, Anthropology co-sponsored the Centennial Lecture presented by Stephen Jay Gould in Popejoy Hall on 10 November 1992. Anthropology continued its collaboration with the Medieval Studies Program in co-sponsoring the annual Medieval Lecture series, 1-4 March. The topic this year was Science and Technology in the Middle Ages."

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

The tradition of a joint commencement ceremony continued with American Studies, Geography and Linguistics. This year Anthropology awarded 36 B.A. degrees, 13 B.S. degrees (see Attachments III and IV); 26 M.A.s and one M.S. (see Attachments V). Ten doctoral students also completed their degrees (see Attachment VI).
B. Significant Plans and Recommendations for the Near Future

Last year's prediction that there would be little movement in addressing space needs was borne out this year. Two additional faculty are joining us this year. This makes it even more important that additional space be identified within the coming year. There is a prospect that with the moving of the N.M. Educators Federal Credit Union from their present location on Lomas Blvd., that space could become available for OCA use, thereby freeing the space currently occupied by them in the Annex. Renewed attention should also be directed to the long term need for a new building.

Although we were unsuccessful in finalizing negotiations with Prof. Buikstra to assume the Leslie Spier Distinguished Professorship, she continues to express an interest in joining this faculty. Incoming Provost Coleman has also indicated that she is impressed with Prof. Buikstra's record and is disposed to work with us in developing a concrete offer.

Two of last year's retirements were in Ethnology, and another Ethnologist is retiring at the end of the summer session, thereby leaving that subfield in a steady state condition. The Ethnology faculty is continuing to review its program with respect to future programmatic objectives and needs. We will be seeking authorization to make an additional hire in Ethnology during the coming year.

The Undergraduate Committee, is continuing its assessment of the curriculum. Several alternative plans were discussed during the
year and a new introductory Freshman course is being developed. It will probably be offered on a trial basis during the Spring 1994 semester. A multi-track major is being developed, whereby a student can concentrate on two out of five of the subfields. Discussion will continue throughout the coming year on how best to modify other aspects of the undergraduate program.

During the Spring the Anthropology Computer Committee (consisting of Profs. Leonard, Santa Ana & Falsetti, with graduate student Ariane Oberling) prepared a request for connectivity and upgrades to enhance the departmental computer lab. Facility upgrades would allow us to accommodate increased student enrollments in existing laboratory courses. Dean Gordon considered this proposal to be so strong that it was incorporated into a broader College proposal for enhanced computer facilities. The College proposal has been approved, with the prospect that early in the year the main Anthropology building and the Annex will be hardwired with fiber optics and connected to the campus computer network. This in turn will provide access to a variety of national and international networks, through Bitnet and Internet. Network access will greatly facilitate communication among scholars, both on campus, nationwide and internationally. Network access will also facilitate administrative efforts, giving immediate access to current account balances, faculty and student records, administrative regulations, etc.

The incoming Chair, Prof. Trinkaus, will undoubtedly be developing other plans for the coming year as well as for the
longer term.

C. **Appointments to Staff**

Although letters of offer were signed Summer 1991, Assist. Professor Ana Magdalena Hurtado and Assoc. Professor Kim Hill did not join our faculty until August 1992. Anthony Falsetti was hired as a Visiting Assistant Professor to fill in for Assoc. Professor Jeffrey Long who has taken a two year leave of absence to conduct research as a Senior Staff Fellow at the National Institutes of Health. Dr. Susan Coutin was hired as a Visiting Assistant Professor to teach Ethnology courses for the Spring semester 1993. Karen Marty was hired as Graduate Secretary for the Department on 20 July 1992.

D. **Separations from Staff**

Prof. Philip Bock announced that he would retire on 30 July 1993, at the end of teaching a summer school course. He will continue as Editor of the Journal of Anthropological Research for at least two more years. Leslie Spier Professor Emeritus James Spuhler, 75, died 2 September 1992 at his home in Santa Fe. Adjunct Assistant Professor Ali El Mak, a visiting Fulbright Scholar from Sudan, died in December 1992. Yolanda Sanchez, Office Manager, resigned 12 May, effective immediately. Guadalupe Montoya, Department Secretary, resigned 30 April, effective 14 May.
E. Publications

Departmental faculty are not equally responsive in reporting publications, thus data on this aspect of departmental scholarship is incomplete. For those 12 who have accounted for current publications, there are two books, 17 journal articles, 20 book chapters, 2 edited books, three journals being edited by members of the department, and five research reports.

F. Outside Professional Activities

For those 12 faculty reporting their outside professional activities, manuscripts or research proposals were reviewed for 27 different entities. They served on 13 editorial boards, three professional advisory boards, and one served as a series editor. Three are journal editors. Four held office in a professional association, four served as moderators for a meeting or panel, there were 19 lectures off campus, and eight instances of media appearances. Four also reported serving as a professional consultant.

G. Outside Sponsored Research

Faculty research activity involved submission of 23 proposals to outside agencies by 13 faculty. Five faculty were successful in being awarded funding for 6 grants; three people continued research on projects for which funding had been approved in preceding years (see Attachments VIII and IX). One faculty person also undertook research in collaboration with the MEDTEP program at the UNM School.
of Medicine.
H. ATTACHMENTS
ATTACHMENT I
PUBLIC LECTURES
1992/93

Jane Stevenson Day, Denver Museum of Natural History
"Aztec: The World of Moctezuma"
08/23/92

Maria Beatriz Rocha-Trindade, Universidade Aberta, Lisboa
"Festas do Povo de Campo Maior" - Ceremonial Art, Ritual and
Ethnicity in Portugal
09/21/92

Randy Thornhill, Department of Biology, UNM
"Sexual Selection and Fluctuating Asymmetry: The Question of
Beauty"
09/23/92

Wenda Trevathan, Dept. of Sociology & Anthropology, NMSU
"Exploration of the Effects of Social Environment on the
Reproductive Function of Women"
10/05/92

Joanne McCloskey, Ph.D. candidate, Dept. of Anthropology, UNM
"Changing Fertility Patterns of Navajo Women"
10/09/92

Steve Gangestad, Dept. of Psychology, UNM
"Good Genes and Good Parents: Sexual Selection and Variation
in Mating Propensities"
10/21/92

W. David Kingery, Dept. of Anthropology, Univ. of Arizona
"The Ceramic Sciences: Archeology Connection"
10/22/93

Steven Byers, Ph.D. candidate, Dept. of Anthropology, UNM
"Relationship Between Stress Markers and Adult Body Size"
11/04/92

Magdalena Hurtado, Dept. of Anthropology, UNM
"Childhood Asthma in Hispanics"
11/04/92

Stephen Jay Gould, Harvard University
"Evolution, Humankind, Race and Equality"
CENTENNIAL SPEAKERS SERIES
11/10/92

Trenton Holliday, Ph.D. candidate, Dept. of Anthropology, UNM
"Coming in from the Cold: Neanderthals and Modern Humans"
11/14/92
"Health Services Research in Mother Child Care Clinics of Cairo Egypt: How Applied Can Symbolic Anthropology Be?"
11/15/92

Evelyn Early
"The Life of an Academic in the Diplomatic Service"
11/17/92

Evelyn Early
"From Fieldwork to Personal Narrative Text: Everyday Performances of Baladi Women of Cairo, Egypt"
11/17/92

Astrid Kodric-Brown, Dept. of Biology, UNM
"Mechanisms and Processes of Sexual Selection"
11/18/92

David Hurst Thomas, Curator, American Museum of Natural History
"Whatever Happened to Good Old Fashioned Archeological Data?"
12/04/92

Raymond Peterson & Jeffrey Long, Dept. of Anthropology, UNM
"Demographic Analysis of a Small Human Population: The Ramah Navajo"
12/04/92

Michael Alvard, Ph.D. candidate, Dept. of Anthropology, UNM
"Testing the Ecologically Noble Savage Hypothesis: Faunal Resource Use by the Piro of Amazonian Peru"
12/16/92

Jerry Rose, Dept. of Anthropology, Univ. of Arkansas
"Paleopathology: Can it be Done? An Early 20th Century African-American Example"
01/29/93

Otto Santa Ana, Dept. of Anthropology, UNM
"Chicano English and the Nature of the Chicano Language Setting"
03/31/93

Christine Tardieu, Centre National de Recherche Scientifique & Musee National d'Histoire Naturelle, France
"Bipedal Walking in Chimps and Humans: Kinesiology and Morphology"
03/31/92

Larry Gorbet, Dept. of Anthropology, UNM
"Leaky Grammars: What, Why, and So What?"
04/07/93
Sherman Wilcox, Dept. of Linguistics, UNM
"Language from the Body"
04/21/93

Susan Coutin, Visiting Ethnology Prof., Dept. of Anthropology, UNM
"Chicago Seven and the Sanctuary Eleven: Conspiracy and Spectacle in the U.S. Courts"
04/22/93

Miguel Leatham, Ph.D. candidate, Dept. of Anthropology, UNM
"NAFTA: A Field View from Mexico"
04/29/93

Peter Simonson, Ph.D. candidate, Dept. of Anthropology, Univ. of Michigan
"'Serious Men and Tigers': Negotiating Images of Masculine Identity in the Dominican Republic"
05/04/93
ATTACHMENT II
1992/93 ANTHROPOLOGY BROWN BAG SERIES
IN PALEOANTHROPOLOGY

Tom Berger, M.A. candidate, Dept. of Anthropology, UNM
"New Excavations at Hayonim Cave (Israel)"
11/09/92

Steve Kuhn & Mary Stiner, Dept. of Anthropology, UNM
"Early Paleolithic Research at Yarimbargaz (European Turkey)"
11/23/92

Robert Tompkins, Dept. of Anthropology, UNM
"Life Histories of Neandertal and Cro-Magnon"

Erik Trinkaus, Dept. of Anthropology, UNM
"The Middle Pleistocene Sites of Atapuerca (Burgos, Spain): Hominid Remains and Artifacts"
02/01/93

Lawrence Straus, Michel Guilbaud & Anthony Martinez, Dept. of Anthropology, UNM
"Excavations and Lithic Analyses at Le Trou Magrite and Huccorgne, Belgium"
03/31/93

Steven Churchill, Ph.D. candidate, Dept. of Anthropology, UNM
"The Upper Arm of Neandertal and Cro-Magnon"
04/01/93

Michel Guilbaud & Anna Backer, Dept. of Anthropology, UNM
"Technology Associated with the Saint-Cesaire Neandertal"
04/02/93

Eudald Carbonell, Universitat Rovira i Virgili, Tarragona, Spain
"L'Abric Romani (Catalonia, Spain): A Long Mousterian Sequence--Current Chronological and Paleoethnological Results"
04/05/93

Tom Berger, M.A. candidate, Dept. of Anthropology, UNM
"Neandertal Traumatic Injuries: A Function of Activity and/or a Bias in the Record?"
04/12/93
ATTACHMENT III
1992/93 BACHELOR DEGREES CONFERRED
ANTHROPOLOGY

BACHELOR OF ARTS

Summer 1992, Semester III

Colleen Trinity Baker
Theodore Ellis Friedman
Cami Lyn Heald

Fall 1992, Semester I

Karen Andreas
Colleen Baker
Angelo Deodato
Tamara Goodman
Susan Hanley
Karen A. Kaderli
David A. McCullough
Stephen Post
Jennifer Sellers
Stacy Shepherd
Rosemarie Speckman
Jennifer White
Lisa Wisniewski

Spring 1993, Semester II

David J. Barklow
Tracy Jean Campbell
Tanya Marie Critchfield
Anne Farr
Phillip John Giarratano
Bradley Schuyler Humble
Patricia Ann Kincaid
Laura Ann Kohlhousen
Mark Carl Manthey
Anne Brewer Marsden
Diana Marie Mercer
Kathy Miller
Kimberly Ann Padilla
Robert Leigh Torrison
Cristina Alcia Ugarte
Eric Luis Villegas
Lorien Farrow Warner
Susan Whipple
Brenda Joan Wilkinson
ATTACHMENT IV
1992/93 BACHELOR DEGREES CONFERRED
ANTHROPOLOGY

BACHELOR OF SCIENCE

Summer 1992, Semester III
Bruce Gregory Phillips

Fall 1992, Semester I
Marcy Acquafresca
Jennifer E. Lucky
Kathy Miller
Brent Randolph
Scott Reardon

Spring 1993, Semester II
Kathleen Susanne Bell
Lara Lyn Chetkovich
Jennifer L. Galindo*
Kristin Faber Henry
Joy Kathleen Ingram
Laura Denice Mack*
Michael Passman

*with distinction
ATTACHMENT V
ANTHROPOLOGY MASTERS DEGREES CONFERRED 1992/93

MASTER OF ARTS
Beverly Abreu
Aaron Alan
Shannon Anderson
Bettina Behrens*
Thomas Berger*
Nicholas Chapin
Thomas Estenson
Deidre Fitzpatrick*
Ray Haney*
Marc Healy
William Hudspeth
Kiara Hughes
Ingrid Johnson

*with distinction

MASTER OF SCIENCE
Raymond Peterson

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

Thomas Berger
Rebecca Miller
Hillard Zallen

Deidre Fitzpatrick
Ray Haney
ATTACHMENT VI
ANTHROPOLOGY DOCTORAL DEGREES CONFERRED
1992/93

GRADUATE        DISSERTATION CHAIR         SUBFIELD

Summer 1992, Semester III
Alexandra Roberts  Lewis R. Binford  Archeology
   An Archaeological and Ethnohistorical Investigation of
   Restricted Mobility Among Navaho Families in the Wupatki
   Basin, Arizona

Fall 1992, Semester I
Joanne E. McCloskey  Louise Lamphere  Ethnology
   Changing Fertility Patterns Among Three Generations of Navajo

Nancy Nelson  Karl H. Schwerin  Ethnology
   The Pocket Economy: Street Vendors and Public Order
   in Bogotá, Colombia

Colleen Costin  Jane B. Lancaster  HEE
   Female/Female Competition Among Captive Tufted Capuchins

Steven N. Byers  Stanley Rhine  Biological
   The Relationship Between Stress Markers and Adult Body Size

Spring 1993, Semester II
Richard Wojcik  Lewis R. Binford  Archeology
   Resource Transfer Systems of Foragers of Alaska,
   the Northwest Coast, and California

Michael Alvard  Hillard Kaplan  HEE
   Testing the Ecological Noble Savage Hypothesis:
   Faunal Resource Use by the Piro of Amazonian Peru

Caroline M. Hartse  Philip K. Bock  Ethnology
   On the Colony: Social and Religious Change among
   Contemporary Hutterites

David Batten  Robert Santley  Archeology
   Factors in the Growth of Cities: Transportation
   and Supply in Preindustrial Europe

Ran1 Alexander  Robert Santley  Archeology
   Colonial Period Archeology of the Parroquia de
   Yaxcaba, Yucatan, Mexico: An Ethnohistorical
   and Site Structural Analysis
<table>
<thead>
<tr>
<th>NAME</th>
<th>TITLE</th>
<th>1st APPOINTMENT</th>
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<tbody>
<tr>
<td>BECKER, Thomas</td>
<td>Asst. Professor (part-time)</td>
<td>1986/87</td>
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<tr>
<td></td>
<td>Epidemiology, disease ecology</td>
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<td></td>
<td>New Mexico Tumor Registry</td>
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<td></td>
<td>Cancer Center, UNM School of Medicine</td>
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<td>CAMILLI, Eileen</td>
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<td>1986/87</td>
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<td></td>
<td>Archeology, methodology; SouthWest US, Great Basin</td>
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<td>CHAPMAN, Richard C.</td>
<td>Senior Res. Assoc. in Anthropology</td>
<td>1982/83</td>
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<td>Archeology, cultural resource management; Southwest US; Assoc. Director, OCA</td>
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<td>DEAN, Glenna J.</td>
<td>Adj. Asst. Professor (part-time)</td>
<td>1988/89</td>
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<td></td>
<td>Archeobotany, palynology, coprolite analysis, paleodiet, paleoecology; Southwest, Great Basin</td>
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<td>EL MAK, Ali</td>
<td>Adj. Asst. Professor</td>
<td>1990/91</td>
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<td>Arabic literature, Black American literature, Native American mythology &amp; literature, translation</td>
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<td>FRITZ, John M.</td>
<td>Adj. Assoc. Professor</td>
<td>1980/81</td>
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<td></td>
<td>Archeology, theory and method; western North America, India</td>
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<td>HOGAN, Patrick</td>
<td>Senior Res. Assoc. in Anthro</td>
<td>1988/89</td>
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<td></td>
<td>Archeology, cultural ecology and evolution, paleo-environmental reconstruction; Southwest, Great Basin; Asst. Director OCA</td>
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<td>HOLLOWAY, Richard G.</td>
<td>Adj. Asst. Professor</td>
<td>1990/91</td>
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<td></td>
<td>Palynology, ecology, Quaternary environments, plant systematics, biostatistics, paleoclimatology</td>
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<td>KNEEBONE, Ronald</td>
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<td>Spatial structure, mathematical symbology, assemblage formation, nonequilibrium thermodynamic models, human space economies; Mesoamerica, Southwest, Sub-Arctic</td>
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<td>RISSEr, David R.</td>
<td>Adj. Assoc. Professor</td>
<td>1990/91</td>
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<td></td>
<td>Epidemiology, biostatistics, evolutionary genetics, primate biology, human genetics and variation, environmental health, Chronic Disease Research Branch, Indian Health Service</td>
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<td>SEBASTIAN, Lynne</td>
<td>Adj. Asst. Professor 1990/91</td>
<td>Political anthropology, complex cultures, archeological theory and method, historic preservation; Southwest, Chacoan cultures Deputy State Historic Preservation Officer</td>
</tr>
<tr>
<td>STUART, David E.</td>
<td>Visiting Assoc. Professor (part-time) 1986/87</td>
<td>Cultural ecology, hunters and gatherers; Southwest U.S. Asst. V.P. for Academic Affairs</td>
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<td>TOMPKINS, Robert</td>
<td>Adj. Asst. Professor 1992/93</td>
<td>Pleistocene hominids</td>
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<td>TRINKAUS, Kathryn</td>
<td>Senior Res. Assoc. in Anthro. 1983/84</td>
<td>Old World archeology, lithics, complex societies; Research Associate-Staff II, Maxwell Museum</td>
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<tr>
<td>WINTER, Joseph C.</td>
<td>Assoc. Professor (part-time) 1980/81</td>
<td>Archeology, cultural resource management; California, Southwest; Director OCA</td>
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<td>YU, Guodian</td>
<td>Visiting Scholar 1991/92</td>
<td>Ethnopharmacology Dept. of Pharmacognosy, China Pharmaceutical Univ.</td>
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ATTACHMENT VIII
DEPARTMENT OF ANTHROPOLOGY
1992/93 RESEARCH PROPOSALS SUBMITTED

H.F. GUGGENHEIM FOUNDATION
Jane Lancaster (Biosocial)
Hillard Kaplan (Biosocial)
When Men Hit Women: An Evolutionary Theory of Male Domestic Violence
submitted 31 July 1992 ($76,897) $58,983

NATIONAL ENDOWMENT FOR THE HUMANITIES (NEH)
Ann Ramenofsky (Archeology)
Archeological Analysis of an Excavated Assemblage from Tsama, New Mexico
submitted 19 Sept. 92

Otto Santa Ana (Linguistic Anthropology)
Developing a Linguistically-adequate and Educationally operational Model of Linguistic Proficiency
submitted 10 Sept. 92 $4,750

Lawrence G. Straus (Archeology)
Middle & Upper Paleolithic and Mesolithic Research in Southern Belgium
submitted 7 Jan. 1993 $17,600

NATIONAL INSTITUTES OF CHILD HEALTH AND HUMAN DEVELOPMENT

Hillard Kaplan & Jane Lancaster (HEE)
Male Fertility and Parenting in New Mexico: Phase III
submitted 1 Oct. 92 (total 3 yrs. $1,090,870) $524,107

NATIONAL SCIENCE FOUNDATION (NSF)

Louise Lamphere (Ethnology)
Atsushi Sumi (Ethnology)
Management Practices of Japanese-Owned Firms in the United States
submitted 19 Sept. 92 $9,435

Erik Trinkaus (Biological Anthropology)
Lower Limb Cross-Sectional Geometry of Near Eastern Middle Paleolithic Homids
submitted 12 Nov. 1992 ($20,048) $10,138

James Boone (Archeology)
Rural Settlement and Islamization in Medieval Andalusia
submitted 30 November 1992 (3 yrs $174,271) $59,273
Jane Lancaster (HEE) & Hillard Kaplan (HEE)
Supplement - Male Fertility and Parenting in New Mexico
submitted 18 December 1992 $24,000

Jane B. Lancaster (HEE)
REU Supplement for BNS - 9111552
submitted 18 December 1992 $4,000

Hillard S. Kaplan (HEE)
REU Supplement for BNS - 9111552 $4,000

Phillip Bock (Ethnology)
Terre Satterfield (Ethnology)
Owls, Loggers and Environmentalists
submitted 4 Jan. 1993 to the Anthropology division $6,673

Phillip Bock (Ethnology)
Terre Satterfield (Ethnology)
Owls, Loggers and Environmentalists
submitted 4 Jan. 1993 to the division of Decision, Risk and Management Sciences $6,673

Erik Trinkaus (Biological Anthropology)
Charles E. Hilton (Biological Anthropology)
Locomotor Kinesiology in Modern Human Foragers
submitted 21 Jan. 1993 $12,000

Erik Trinkaus (Biological Anthropology)
Robert G. Franciscus (Biological Anthropology)
Nasal Morphology in Western Old World Later Pleistocene Hominids and the Origins of Modern Humans
submitted 5 March 1993 $11,900
supplementary proposals submitted to Leakey, Wenner Gren, Sigma Xi, SRAC

Erik Trinkaus (Biological Anthropology)
Lower Limb Diaphyseal Cross-Sectional Geometry of Near eastern Middle Paleolithic Homids
submitted 2 June 1993 $26,907

Sylvia Rodriguez (Ethnology)
Arthur Martin (Ethnology)
The Culture of Capitalism in a New Mexico Town: Narratives & Practices of Everyday Life Among Taos Lifestyle Migrants
submitted 23 June 1993 $11,430
ATTACHMENT IX
DEPARTMENT OF ANTHROPOLOGY
1992/93 RESEARCH PROPOSALS FUNDED

WILLIAM T. GRANT FOUNDATION
A. Magdalena Hurtado (HEE)
Maternal and Child Health among Mexican Americans:
Women’s Work and Father Absence
submitted 15 July 1992 ($110,000) $35,000
approved 9/17/92 $105,000
approved 10/22/92 $2,254

NATIONAL ENDOWMENT FOR THE HUMANITIES
Mari Lyn Salvador (Ethnology)
The Art of Being Kuna (NEH Planning Grant
at the Fowler Museum of Cultural History, UCLA
effective 1992-94 $50,000

NATIONAL FOREST SERVICE
Robert D. Leonard (Archeology)
Challenge Cost-Share Agreement between the Santa
Fe National Forest and the Dept. of Anthropology,
UNM
approved 21 May 1993 $7,392

NATIONAL GEOGRAPHIC SOCIETY
Lawrence Straus (Archeology)
Middle and Upper Paleolithic Research in Southern Belgium
submitted 16 Oct. 1992 $17,600
approved $12,500

NATIONAL SCIENCE FOUNDATION (NSF)
Jane Lancaster (HEE)
Research Experiences for Undergraduates
(REU Supplements)
approved 3 March 1992 $8,000

Louise Lamphere (Ethnology)
Phillip Montoya (Ethnology)
Cultural Innovation & Environmental Protection:
Peasants in Costa Rica
submitted 31 July 1991 $11,485
approved 8/11/92 $8,858

Jane B. Lancaster (Biological Anthropology)
Lisa G. Rapaport (Biological Anthropology)
Social influence on the development of foraging
behavior in golden lion tamarins
submitted 7 November 1991 $10,182.00
approved $9,083.60
postponed to 11/30/93
Hillard Kaplan (HEE)
supplement - Male Fertility and Parenting
in New Mexico: Phase II
approved 05/25/93

$20,000
ATTACHMENT X
DEPARTMENT OF ANTHROPOLOGY
1992/93 STUDENT RESEARCH PROPOSALS SUBMITTED

ASSOCIATION FOR WOMEN IN SCIENCE
Sharon Pochron (Biological Anthropology)
Diet of the yellow baboon, Ruaha National Park, Tanzania
20 August 1992 $500

EXPLORERS CLUB
Charles E. Hilton (Biological Anthropology)
Locomotor Kinesiology in Modern Human Foragers $1,200

L.S.B. LEAKEY FOUNDATION
Charles E. Hilton (Biological Anthropology)
Locomotor Kinesiology in Modern Human Foragers
submitted 2 March 1992 $8,075
submitted 26 August 1992 $8,118.85

SIGMA DELTA EPSILON
Sharon Pochron (Biological Anthropology)
Diet of the yellow baboon, Ruaha National Park, Tanzania
20 August 1992 $3,000

SIGMA XI
Charles E. Hilton (Biological Anthropology)
Locomotor Kinesiology in Modern Human Foragers $375

WENNER-GREN FOUNDATION
Arthur Martin (Ethnology)
Investigation of Anglo Culture in Taos
submitted 11/92 $12,000
ATTACHMENT XI
DEPARTMENT OF ANTHROPOLOGY
1992/93 STUDENT RESEARCH PROPOSALS FUNDED

FREIE UNIVERSITÄT BERLIN - Arbeitsstelle für vergleichende Gesellschaftsgeschichte
Howard J. DeNike (Ethnology)
Vereinigung Demokratische Juristen
approved 16 December 1992
DM 12,000

HARVARD UNIVERSITY, Peabody Museum
Thomas D. Berger (Archeology)
Excavation at Hayonim Cave, Israel
supplemented with $400 from the Department
requested from SRAC - $250

L.S.B. LEAKEY FOUNDATION
Michael Alvard (HEE)
Rain Forest Foraging Peoples of Sulawesi, Indonesia: Exploratory Research
submitted 24 February 1992
approved 10/06/92
$5,380

Russell D. Greaves (Archeology)
Subsistence and technological organization among the Pumé of Venezuela
submitted 9/9/91
approved 13 Feb. 1992, subject to NSF funding
$15,000
$4,500

John Bock (HEE)
The Determinants of Variation in Children's Labor in a Southern African Community, Botswana
submitted 16 Sept. 1991
approved 13 February 1992
$9,962.50
$9,000.00

LUSO-AMERICAN FOUNDATION
Garnett McMillan (Archeology)
Excavation at Alcaria Longa & Mertola, Portugal
submitted October 1992
$7,000

NATIONAL SCIENCE FOUNDATION (NSF)
William Troy Tucker (HEE)
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
approved 6/1/92
$9,084
Steven E. Churchill (Biological Anthropology)  
Human Upper Body Evolution in the Eurasian Later Pleistocene  

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UNM - STUDENT RESEARCH ALLOCATIONS COMMITTEE

**Summer 1992**

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<td>Holly Anselmo</td>
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<td>Colleen Costin</td>
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<td>Mary Jane McReynolds</td>
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<td>Shawn Lee Penman</td>
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<td>Lisa G. Rapaport</td>
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<td>Richard M. Reycraft</td>
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<td>Theresa A. Satterfield</td>
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<td>Mark Richard Stenger</td>
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**Fall 1992**

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<td>Diane D. Crumley</td>
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<td>Cristina Ann Davies</td>
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**Spring 1993**

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<td>Bobbi M. Hohmann</td>
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<td>Trenton W. Holliday</td>
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The Journal again published four quarterly issues totaling 375 pages. International contributions have increased, and articles from Germany, Iceland, and several from Canada were included. Subscriptions have remained steady. The purchase of a new word processor and printer was made possible by economies in supplies and travel and with the help of increased income from reprints; no outside funds were requested. Staff has remained constant. The Editor will retire from UNM on August 1, 1993, but will continue to edit the Journal for two years as arranged while planning for a smooth transition. Among the plans approved by the Editorial Board will be a special issue celebrating the Journal's 50th year of publication, to include an essay contest on "The Future of Anthropology."
III OFFICE OF CONTRACT ARCHEOLOGY (OCA)
A. Review of Activities and Achievements

FY 92-93 was a productive year, with a number of large reports produced, and large projects (or phases of large projects) completed. However, because so much time and effort was spent on current projects, relatively little time could be spent on bringing in new projects. This situation will continue for some time, as explained later in this report. Details of our accomplishments, problems, and goals are discussed below.

1. Publications and Projects

Five volumes of *Anthropological Studies For The Transwestern Pipeline Expansion Project* were also produced, with J. Winter as Principal Investigator. These were Volume III - *Chaco Mesa Survey*, by Charles W. Amsden; Volume IV - *Remote Sensing Studies*, by Frank Wozniak, John Ponczynski, and Tim Church; Volume V - *San Juan Lateral Survey*, by Charles W. Amsden; Volume VI - *Transwestern Mainline Survey*, by Ronna J. Bradley; and Volume VII - *Project Administration*, by Carl Phagan. The remaining 13 volumes will be produced in FY 93-94 (drafts of certain of them have already been produced). These volumes describe the results of the excavation of 165 archeological sites, and the ethnological investigation of 43 contemporary Navajo and Hopi Native American properties, along a 500 mile pipeline transect across New Mexico and Arizona.

Patrick Hogan served as principal investigator on several projects that resulted in large reports, including *An Investigation of AIRFA (American Indian Religious Freedom Act) Concerns Relating to the Fruitland Coal Gas Development Area*, by David Brugge. Hogan's research also resulted in *Along the Butterfield Trail: A Reconnaissance Survey of 40.5 Miles on Public Lands*, by Peggy A. Gerow, and *Archeology of the San Juan Breaks the Navajo Occupation*, edited by Patrick Hogan.

Details of these and other projects are discussed below.

The University of New Mexico's Office of Contract Archeology (OCA) completed a reconnaissance survey of segments of the Butterfield Trail during 1992. The survey, directed by Peggy Gerow (Project Director) and Patrick Hogan (Principal Investigator) verified the route of the trail between Las Cruces, New Mexico and the New Mexico-Arizona border, identified several areas where remnants of the trail were still visible, and documented stage stations and other features related to use of the trail between 1858 and 1880.

During the summer of 1992, OCA continued excavations at Archaic sites in the Rio Puerco valley near Albuquerque, New Mexico. The fieldwork was directed by Patrick Hogan (Principal Investigator) and...
Janette Elyea (Project Director), and involved areally-extensive excavations at eight shallowly-buried residential sites ranging in age from ca. 4000 to 1600 BP. Structures at the sites ranged from ephemeral brush shelters to shallow pithouses, and there was considerable variability in both the associated facilities and number of structures present. Analysis of the sites should provide new information on the factors leading to the adoption of cultigens, and should help clarify the relationship among Southwestern Archaic traditions.

In September and October 1992, Patrick Hogan (Principal Investigator) and Peggy Gerow (Project Director) supervised OCA's investigations at a cluster of 13 Archaic sites in west-central New Mexico. Projectile points from the sites include both Oshara and Cochise styles, suggesting an occupation span of ca. 7500-3000 BP. Although the sites are largely surficial, they appear relatively unaffected by post-depositional processes. Consequently, artifact and site-structure analyses should yield basic information about the nature of the occupations and more detailed data concerning Archaic lithic technologies.

During the fall of 1992, OCA completed a survey of an Anasazi community in the El Malpais region south of Grants, New Mexico. Fieldwork, under the direction of Janette Elyea (Project Director) and Patrick Hogan (Principal Investigator), documented 64 sites representing a dispersed Pueblo II community of pithouse villages with an associated Great Kiva, and a larger early Pueblo III community centered on the Dittert Site, a suspected Chacoan outlier. This project is part of an ongoing effort by OCA and the BLM to document Chaco and post-Chaco communities in northwestern and west-central New Mexico.

Peggy Gerow (Project Director) and Patrick Hogan (Principal Investigator) supervised investigations by OCA at San Pedro, New Mexico during December 1992. San Pedro is a small Hispanic farming and mining community in the central Rio Grande Valley. It was founded in 1846 and completely abandoned by the end of World War II. The project involved mapping the village, documentation of the remaining
buildings, and archival research and interviews with former inhabitants to compile a history of the settlement.

Jeanne A. Schutt (with Richard C. Chapman as Principal Investigator) directed an OCA Class III survey of 1180 acres in seven parcels near Stanley, New Mexico during September and October of 1992. Thirty-two archeological sites and 113 isolated occurrences were identified. The majority of sites, including small structural sites, water control features, and nonstructural sites, date to the Pueblo IV period and are probably associated with the occupation of Pueblo Blanco, a large 1450 room pueblo immediately outside of the survey area. A number of historic short and long term camps and residences occupied between 1907 and 1920 were also identified.

Jeanne A. Schutt (with Charles W. Amsden and Richard C. Chapman as Principal Investigators) directed the remainder of OCA’s 10% sample survey of the Fort Wingate Army depot near Gallup, New Mexico. Twenty, eighty acre quads within five ecological zones were surveyed and resulted in recording 80 sites and 170 isolated occurrences. An additional survey of an area surrounding Fenced Up Horse valley and the Casa Vibora community (515 acres) identified 71 sites and 70 isolated occurrences. Many of the sites are apparently associated with the occupation of Casa Vibora and date to the Pueblo II and III periods (AD 900-1300). A number of historical Native American sites were also recorded which date to the turn of the century through the late 1920s and 1930s. A second phase of survey targeting an additional 6230 acres was initiated in June of 1993, which is expected to continue through August of 1993.

The second phase of a parallel ethnographic study at Fort Wingate to identify sites, Traditional Cultural Properties, and other concerns of importance to Navajo and Zuni residents of the region was continued in the fall of 1992 by Susan Perlman (Project Director) with Richard Chapman as Principal Investigator. This study emphasizes interviews and field visits with both Navajo and Zuni participants, and has resulted in identification of a great number of trails, homesites, springs, gathering areas, and other features of significance to both tribal groups.
The first phase of data recovery along Alameda Boulevard in Albuquerque's north valley was initiated in March of 1993 with Richard C. Chapman as Principal Investigator. Excavations, with Jeanne A. Schutt and William H. Doleman serving as Project Directors, and Carolyn Daniel (Field Director) focused upon prehistoric, Spanish Colonial, and Territorial period occupations at several locations which had been previously discovered between Rio Grande Boulevard and 4th Street. Considerable quantities of lithic artifacts, both Puebloan and Spanish Colonial ceramics, and domestic and nondomestic faunal remains have been recovered from early Spanish Colonial midden deposits, which are most probably associated with the Spanish settlement of the Alameda Plaza in the early 1700s. The first phase of excavation was completed in June of 1993.

William H. Doleman was Project Director for test excavations at four lithic sites west of Hatch, New Mexico. With Richard C. Chapman as Principal Investigator, Doleman developed a research program for data recovery emphasizing a number of experimental approaches toward distinguishing Archaic from Formative era foraging strategies for that region. Fieldwork is scheduled for late summer of 1993.

William Doleman (with Charles W. Amsden as Principal Investigator) completed a Class III archeological survey of 160 acres in the Boles Wells Water System Annex of Holloman Air Force Base near Alamogordo. Three sites and 17 isolated occurrences were recorded. All three sites contain prehistoric lithic components (two possibly Archaic), and one site contains an additional historic component dating to the early 1900s. The research was directed at obtaining an initial estimate of site densities and types in different environmental zones within the Boles Wells Annex.

Data Recovery fieldwork at seven Navajo Pueblito sites was completed in May, 1993 by Michael P. Marshall (Project Director), with Richard C. Chapman as Principal Investigator. Analysis of ceramics, lithics and metal artifacts from this unique set of Gobernador Phase sites is now in progress.
In 1992, OCA completed field work at the final four sites along the Transwestern (ENRON) Pipeline Expansion Project. Rick Morris was in charge of the fieldwork at the four sites, while Carl Phagan served as Project Administrator and Joseph Winter is Principal Investigator. All four sites were in Arizona. They consisted of an 1880s homestead in Fort Valley near Flagstaff, a 1920s lumber camp near Flagstaff, a small lithic scatter near Big Chino Wash, and an isolated hearth near Hunters Point. This brings the total number of sites treated during mitigation to 165; 43 current cultural resources were also investigated in detail. All analyses have been completed, and a 20-volume report series is in preparation. Seven of the volumes have already been produced.

2. Financial Statement

Most of our effort in FY 92-93 concentrated on completing previous projects, and relatively few new projects or contracts were brought in (Tables 1-2). Also, no new big projects were advertised, although several of our BLM and Army Corps of Engineer new work orders were substantial.

Table 2 lists the adjusted totals for new projects and the new indirect costs represented by them. Since this report is being submitted early, as required by the Anthropology Department chairman, I do not have the university's figures on the indirect costs actually generated by expenses this past year. Our basic, 1-18065 General Account operating budget was $118,918.00.

3. Scholarly Accomplishments

In addition to the research reports discussed above, OCA staff made a number of scholarly contributions in the form of papers presented at professional meetings, articles in journals, and classes taught at UNM. Joseph C. Winter, OCA Director, taught through the 1992 Southwest Institute at UNM, and the 1993 New Mexico Institute for Public School Teachers, held at Highlands University. An article of his
### Table 1  Summary of OCA Activities 7/1/92 - 6/30/93

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<td>Hawk Missile Excavations</td>
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<td>Analysis Ongoing</td>
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<td>Cox Ranch Excavations</td>
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OCA-7
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<td>185-461B/491/496/497</td>
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<td>Draft Report being Reviewed by Bureau of Land Management</td>
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<td>Jones Canyon Survey</td>
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<td>185-508</td>
<td>Bureau of Land Management</td>
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<td>Final Report in Preparation</td>
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<td>Clayton Airport Extension Survey</td>
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<tr>
<td>185-490</td>
<td>Leedshill-Herkenhoff, Inc.</td>
<td>Adobe Acres Survey</td>
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<td>Valencia Excavation, Modification</td>
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<td>MIT Lincoln Lab</td>
<td>1 Acre Survey</td>
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<td>Tri-Sect Landfill Access Road Survey, NM State Land Office</td>
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<td>Assessment of BLM Portions of the Tri-Sect Landfill Access Road</td>
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<td>185-509</td>
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<td>Data Recovery at LA 98670</td>
<td>Prefield Preparation in Progress</td>
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<td>Jones Canyon Survey</td>
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coauthored with Patrick Hogan) concerning the early Navajo was published in *Special Publication* 1 of the New Mexico Archaeological Society, which was edited by Bradley Vierra, another OCA employee. Winter also published a book review in *Plains Anthropologist*, and participated in a DOE-funded study of Katmai Volcano, in Alaska.

Charles Amsden of OCA taught an Independent Studies course at UNM, and presented one paper at the Crow Canyon Institute’s annual conference on archeology in the Four Corners area. Rick Morris organized a symposium at the 1993 *Society For Historical Archeology* annual meetings, and presented a paper on the historic site of Gold Road. Harding Polk, Monique Kimball, Julia Hammett, Jannifer Gish, Ken Brown, and Marie Brown also presented papers in the symposium, on various aspects of Gold Road, a site investigated by the Transwestern Pipeline Expansion Project (TPEP). Jannifer Gish and Jeanne DeLanois also presented papers concerning the TPEP data at the 1992 International Palynological Congress, while Julia Hammett published a paper in *Landscape Ecology*. Gish and Hammett also participated in the 1992 Southwestern Ethnobotanical Workshop.

In addition to editing a book (see above), Bradley Vierra also organized and led a symposium at the 1993 *Society For American Archaeology* annual meetings. Vierra presented a paper in the symposium, as well as one other paper at the Coronado Expedition Conference. Vierra additionally wrote a chapter in a book that will be published by the University of Illinois Press.

4. Public Outreach

The Alameda Boulevard project emphasized considerable involvement with students and teachers from Alameda Elementary School. Jeanne Schutt, Carolyn Daniel, and William Doleman conducted numerous field orientations for students, provided opportunities for student and local resident volunteers, conducted numerous on-site television interviews, and undertook field tours for other civic groups such as the Sandoval County Historical Society and the Meadowlark Senior Citizens’ Center. Richard Chapman also

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provided frequent background telephone interviews for local newspaper and television reports, and June-Piper prepared a public information brochure concerning the project.

B. Plans, Problems, and Recommendations

Our goals this year are relatively simple:

1) We need to complete the ENRON project 20 volume report series, and as many of the outstanding BLM and Army Corps of Engineers work orders.

2) We hope to be reawarded (for the third time) the Army Corps of Engineers state-wide contract. We will also be submitting a proposal for the BLM state-wide contract, which would be reawarded in FY 94-95.

3) Other government and private company contracts will also have to be brought in, if we are going to be able to continue supporting 3 full-time Principal Investigators and our other permanent employees.

C. Staff Appointments

Table 3 lists all of the various staff who were hired, resigned, or were separated by OCA during FY 92-93. Currently, 58 employees (including 4 work study) are employed at OCA. They include 13 on the ENRON Project, and 46 in the main office. The director works in both places.
### Table 3A Main Office OCA Personnel Changes

#### 1. HIRING OF NEW OCA EMPLOYEES
7/1/92 - 6/30/93

- Albertson, Van ***
- Batten, David ***
- Brown, Kenneth **
- Brown, Marie **
- Chapin Nicholas ***
- Church, Michele ***
- Estes, Robert ***
- Gustafson, Hansene ***
- Herder, Eric **
- Hubley, Patricia ***
- Kramer, Karen ***
- McEnany, Timothy ***
- Medlock, Linda *
- Medlock, Raymond ***
- Morris, Rick *
- Olsen, Nancy ***
- Polk, Harding *
- Ramirez, David **
- Redd, Ingrid **
- Romero, Louis *
- Vierra, Bradley **
- Weidner, Kathleen ***
- Wellman, Kevin **

#### 2. SEPARATION OF OCA EMPLOYEES
7/1/92 - 6/30/93

- Felix-Kludt, Brigitte 9/16/92
- Hobbs, Alfred 9/16/92
- Kennedy, Michael 3/3/93
- Menke, Kurt 3/24/93
- Phippen, Robert 10/7/92
- Pudwill, Richard 5/1/93

#### 3. STUDENT EMPLOYEE HIRING
7/1/92 - 6/30/93

- Allen, Aaron 6/1/93
- Bustard, Wendy 6/30/93
- Dawson, James 6/1/93
- Eakin, Joanne 6/3/93
- Healy, Marc 6/1/93
- Kaman, Colleen 6/8/93
- Ketch, Ana 5/2/93
- LeJeune, Christain 7/1/93
- McMillan, Garnett 3/26/93
- Pierce, Kathy 5/25/93
- Reycraft, Richard 5/25/93
- Sayer, Camille 6/1/93

#### 4. WORK STUDY EMPLOYEES
7/1/92 - 6/30/93

- Hudson, Geri
- Estes, Robert

---

* Changed from permanent on ENRON Project, to on-call at main office

** Resigned from ENRON Project, and hired as permanent employees at main office

*** New employees hired within 7/1/92 - 6/30/93
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<th>End-Date</th>
<th>Position</th>
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<td>Aragon</td>
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<td>03/09/93</td>
<td>Staff Assistant</td>
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<tr>
<td>Bair</td>
<td>Gerald</td>
<td>A.</td>
<td>04/08/91</td>
<td>01/28/93</td>
<td>Site Excavation Director</td>
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<tr>
<td>Brown</td>
<td>Kenneth</td>
<td>L.</td>
<td>01/02/91</td>
<td>04/30/93</td>
<td>Assist. Proj. Admin.</td>
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<tr>
<td>Brown</td>
<td>Marie</td>
<td>E.</td>
<td>04/17/91</td>
<td>02/26/93</td>
<td>Faunal Analyst</td>
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<tr>
<td>Burchett</td>
<td>Timothy</td>
<td>W.</td>
<td>04/08/91</td>
<td>04/09/93</td>
<td>Crew Chief, Analyst, SED</td>
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<tr>
<td>Burgett</td>
<td>Galen</td>
<td>R.</td>
<td>03/25/91</td>
<td>10/30/92</td>
<td>Site Excavation Director</td>
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<tr>
<td>Cipoleti</td>
<td>John</td>
<td>J.</td>
<td>08/10/92</td>
<td>09/15/92</td>
<td>Assist. Ethnobotanist</td>
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<td>Cohen</td>
<td>Claudette</td>
<td>R.</td>
<td>09/20/92</td>
<td>06/18/93</td>
<td>Editor</td>
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<td>Brandon</td>
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<td>05/17/93</td>
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<td>De Lanois</td>
<td>Jeanne</td>
<td>L.</td>
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<td>08/31/92</td>
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<tr>
<td>Dye</td>
<td>Nancy</td>
<td>Jane</td>
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<td>08/21/92</td>
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<td>Econonou</td>
<td>William</td>
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<td>Eck</td>
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<td>C.</td>
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**Personnel Provided by Temporary Services**

- Andrulis, Ingrid
- George, Jean
- Nelson, Katherine

CS V

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OCA-18
The report is summarized within the framework of the Maxwell's two chief areas of mission - Research and Public Education. As is always the case, planning was oriented toward these two complementary directions; resulting program development generally reflects maintenance of the Maxwell's exhibition and collections status and heightened efforts to expand research infrastructure, academically-oriented and formal public education programs. In addition, two major continuing 1993 initiatives are dictated by the Maxwell's status and history. As a UNM museum, it is included in the planning phase for a new university museum center. As an officially designated repository for the storage and curation of New Mexico state and federal archaeological collections the Maxwell is legally responsible to implement the provisions of the federal Native American Grave Protection and Repatriation Act (NAGPRA). Both of these initiatives gained momentum in the 1992-3 year. In this summary I mention this year's highlights.

RESEARCH

1) Senior Research Coordinator. The chief development this year was the filling of a new senior position of Senior Research Coordinator (SRC). The position, created with the strong support of Provost and Dean of Arts and Sciences, provides a vital component for expanding the research infrastructure of the Maxwell. The SRC is responsible for identifying appropriate research initiatives relating to the Maxwell's vast anthropological collections, coordinating such initiatives with appropriate scholars, encouraging the involvement of UNM anthropology graduate students, supervising these programs, and facilitating their publication, if possible through the Maxwell's
publication series. This new position is already showing results with an ongoing reassessment of the Sandia Cave materials in conjunction with Drs. Frank Hibben (UNM), Richard MacNeish (Andover Foundation for Archaeological Research) and Irv Taylor (UN San Diego). A regional conference on the Hohokam Culture is also being developed.

2) Museum Sponsored Research Programs. During this year the 3-year research program headed by Lance Trask on Jemez Mountain rock art was completed. This program resulted in the identification, recording and contextual analysis of several hundred art panels. This work formed the basis of a paper at the national Society for American Archaeology meetings in St. Louis and will ultimately be published by the Maxwell.

The Curator for Southwestern Ethnology continues her research into the kinship basis of Zuni crafts (fetish and jewelry). The research will be published next year in a Maxwell Museum book on jewelry, the successor to the fetish volume already published.

3) Forensic Anthropology Symposium. During the week of June 21, the Maxwell Museum hosted the annual symposium in Forensic Anthropology of the Armed Forces Institute of Pathology. This Advanced Medical Education symposium used the Maxwell's Physical Anthropology Laboratory, collections, and staff in this nationally renowned symposium to train pathologists, physicians, forensic scientists and anatomists in the advanced techniques and principles of forensic investigation. This program represents an important item in the Maxwell's responsibility to generate research from its staff and collections.

4) Publication and Library Resources. Also in the area of research the museum further developed its support structure for its anthropological library - the Clark Field Library and Archive. Trained volunteer
librarians supervised by the Maxwell Museum Association (museum foundation) are now working regularly to organize and catalogue the steadily increasing collections. In addition, a public fundraiser attracted sufficient funding to enable purchase of four major anthropological journals, an important contribution at a time of heightening costs.


PUBLIC EDUCATION

1) School Education Program. Two converging factors dictate the direction of the Maxwell's important classroom teaching program—a consistent shortage of funding and a growing need for cultural education in the schools to compensate for program cuts due to budgetary shortages in the public school systems. In this setting the Maxwell has during the year made strong efforts to build partnerships in order to face its heightened responsibilities in this area. To this end, the Maxwell has completed a collaborative agreement with the US Bureau of Land Management to develop a classroom instructional program for rural schools in New Mexico, to be implemented in 1993-4.
In addition, partnership with the University of Northern Colorado led to a week-long school teacher's summer course presented at UNM on Hispanic History (CIMTE 593: Folk Art to Fine Art: Hispanic Culture Across Generations). This course included instruction by New Mexico artists and historians and provided 3 graduate credit hours for school teachers. This partnership is now generating a major NEH grant to support research of innovative teaching programs in the rural schools of the Mountain West and a pilot implementation program. Other partnerships with the Pueblo of Zuni Public School System and the National Park Division are in the process of development.

2) Public Symposium. In June, the Maxwell Museum's education division sponsored a public symposium titled The 'New' New Mexico History. Including Drs. Sarah Deutsch and Ramon Gutierrez, two of the foremost scholars of New Mexican History, the symposium drew a public audience of over 200 people to listen to and participate in a discussion of new directions in this field.

NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (NAGPRA)

The Native American Graves Protection and Repatriation Act (NAGPRA) was signed by President Bush in November 1990. NAGPRA requires that institutions holding human remains, other burial items, and objects of unusual religious and ceremonial significance, originating from anywhere in the United States, prepare inventories of these materials, publish the inventories, solicit the wishes of related groups regarding possible return of the items and, if the request is deemed valid, return them.
This Act applies chiefly to Native American materials. The Maxwell Museum, as trustee for UNM, holds a very considerable quantity of such materials, collected during 60 years of anthropological research in various regions of the US, especially in the Southwest and Alaska. The collections derive from such major sources as the long-standing UNM Archaeological Field School, the joint UNM-National Park Service Chaco Project (1960-1985) and ongoing work of UNM's Office of Contract Archaeology, as well as from individual UNM-affiliated scholars.

The Maxwell is mandated to complete the inventory and subsequent publication over the next 3 years. Wherever possible, the museum is establishing collaborative funding with the Federal agencies who are the owners of land from which collections were excavated, successfully in the cases of the US Bureau of Land Management and the US Forest Service. BLM materials are being completed; the US Forest Service materials are now being studied. With the support of the Dean of the College of Arts and Sciences and the Provost, the Maxwell has obtained UNM funding to complete the project.

**UNM MUSEUM CENTER PROJECT PLANNING**

For approximately 3 years, the UNM Facility Planning Office has been coordinating the planning phase of a project mandated by the Regents to explore the feasibility of locating the University Art Museum, The Tamarind Institute, and the public programs of the Maxwell Museum of Anthropology in a single property, the Galles property at the corner of University Blvd. and Central Avenue. During the past year, this planning phase has become more intensive with the preparation of a feasibility study by a museum consultance firm and a local architect.

The result of this study, now awaiting regential discussion, transfers
the Maxwell's exhibition galleries, public education division, museum store, and public programs division, to the new property. This will allow additional public access and parking and provide much increased possibilities for collaboration with the art museum over the many areas of cultural interest that they share. The entire program now awaits approval by the Regents. If this is favorable architectural planning and programmatic development planning will involve most of the Maxwell's staff members.

APPOINTMENTS TO STAFF

Linda Cordell 01/19/93
Brenda Dorr 01/06/93
Michael Monetti 06/01/93

SEPARATIONS FROM STAFF

Richard Jaworski 11/29/92

PUBLICATIONS

Marian Rodee Revising Old Navajo Rugs
Krisztina Kosse "The Evolution of Large, Complex Societies" in Journal of Anthropological Archaeology
Mary Smith Docent Manual "Heritage of the Andes"
Garth Bawden "An Archaeological Study of Social Structure and Ethnic Replacement in Residential Architecture of the Tumilaca Valley" in Domestic Architecture, Ethnicity, and Complementarity in the South-Central Andes
"The Evolution of Political Systems" review in American Anthropologist
Kathryn Trinkaus "Mortuary Behavior, Labor Organization and Social Rank" in Regional Approaches to Mortuary Analysis in press
<table>
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<th>Name</th>
<th>Activities and Achievements</th>
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| Krisztina Kosse | Co-curate with Zuni Arts and Crafts Co-op and Zuni Museum exhibit "A Zuni looks at Frank Hamilton Cushing: Cartoons by Phil Hughte"  
Treasurer of New Mexico Museum Association |
| Mary Smith      | Instructor appointment to the College of Education  
AAM MAPP III reviewer |
| Marian Rodee    | Speaker at symposium on Navajo and Pueblo weaving  
Speaker at Philadelphia Academy of Arts |
| Katherine Pomonis | President of New Mexico Museum Association |
| Garth Bawden    | Member of Advisory Board of Northern Pueblo Cultural Center  
Awards Co-ordinator for Society for American Archaeology  
Member of Editorial Board of Archaeology Magazine  
Member of Anthropological Review Boards of:  
Latin American Archaeology  
Cambridge University Press  
University of Oklahoma Press  
Reviewer for Anthropology proposals for National Science Foundation  
National Endowment for the Humanities  
Presented paper at annual meeting of Southwest Archaeology Association |
| Frieda Stewart  | Co-producer, Mor Stew! Productions educational video  
American Association of Museums  
Museum Advocacy Team member |
ANNUAL REPORT OF THE DEPARTMENT OF BIOLOGY

July 1, 1992 — June 30, 1993

J. David Ligon
Professor and Chair

RECEIVED
AUG 25 1993
COLLEGE OF ARTS AND SCIENCES
I. INTRODUCTION

In the past year, the Department of Biology received two major awards related to the education of minority students, a Howard Hughes grant and a RIMI (Research Instrumentation for Minority Institutions) award from the National Science Foundation (NSF). We also were awarded a computer lab by AT&T. Our incorporation of these programs into the Department is now complete, and they are aiding materially in the training of our students. Similarly, our REU (Research Experiences for Undergraduates) award from the NSF has made it possible to bring in students from all over the country to conduct research at the Biology Department’s LTER (Long-Term Environmental Research) site (see Appendix G). Thus, we have moved forward in parallel on two teaching fronts, cell and molecular biology and environmental ecology.

I gratefully acknowledge with thanks the support and hard work of my Associate Chairs, Professors Scott Altenbach, Cliff Crawford, Sam Loker, Howard Snell and Randy Thornhill, of my Departmental Administrator, Mrs. Sharon Kubler, and of a marvelous group of professional staff including (but not limited to) Vivian Kent, Beth Dennis, Bill Gannon, Trini Lovato, Karl Malivuk, Dee McDonnell, Jane Mygatt, Anne Rice and Roy Ricci.

A. Significant Developments and Achievements.

1. RESEARCH DAY. Our second Research Day (Appendix B) was again organized 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, and awards were made for the most outstanding presentations.

2. THE UNDERGRADUATE PROGRAM. Biology remains one of the most popular majors in the College of Arts and Sciences. As of Spring 1993, there were 703 Biology majors, with 479 in A & S and 134 in the General College (a 13% increase over the previous year).

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 21,950 semester credit hours (588, Summer 1992; 10,564, Fall 1992; 10,798, Spring 1993) and awarded 84 B.S. degrees. This number was 35 percent of the 239 B.S. degrees awarded by A & S for the FY. We also awarded six B.A. degrees during this period. These degrees were distributed as follows: Summer 1992, 8; Fall 1992, 26; Spring 1993, 65. An additional 33 students who received B.S. or B.A. degrees in other majors graduated with minors in Biology. Our undergraduate advisors for the FY were Gordon Johnson, William Johnson and John Trujillo.

3. 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 four outstanding potential graduate students in an effort to entice them to enter our graduate program, two of whom decided to enter our program. 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.

c) Degrees awarded.

During the FY 1992-93, we awarded 11 Ph.D. and five M.S. (I) and three 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:

Carlos Blanco-Montero (Crawford) is living in Albuquerque and working with the New Mexico State University Extension Service.
Forrest W. Davis (Yates) is working as a forensic scientist for the Albuquerque Police Department.

Stephen Evanko (Vogel) has a post-doctoral research position in the Department of Pathology at the University of Washington.

Lee Fitzgerald (Snell) is an Adjunct Assistant Professor in the Biology Department, and is working in the Herpetology Division of the Museum of Southwestern Biology.

Katelijine Flies (Crawford) is teaching biology at TVI here in Albuquerque.

Steven Kucera (Taylor) is conducting post-doctoral work here at UNM.

Pablo Marquet (Brown) is a postdoc at the Ecology Department of the Universidad Católica de Chile in Santiago, Chile.

Maria (Pimmy) Niewolt (Kodric-Brown) is an Assistant Professor in the Department of Biology, the University of Nevada in Reno, NV.

M.S. (I):

Karen Romero (Riedesele) is a Research Technologist in UMN’s Department of Biochemistry.

James Stuart (Snell)

Angela Welford (Duszynski) is a Research Technologist in the EM Facility in our department here.

M.S. (II):

Glen Dennis (G. Johnson)

Paulette Ford (Brown & Scott) is either working with the U.S. Forest Service or is a graduate student at University of Arizona at Flagstaff.

Christopher Padilla (Werner-Washburne) is a Ph.D. student in the Department of Biology at the University of California at San Diego.
James Robbins (Vogel) is a Ph.D. student in our department here.

Debra Tull (Kodric-Brown) is a Ph.D. student in our department here.

d) Graduate student teaching awards. This year's winners of our department's "Outstanding Graduate Student" teaching awards were: Fall 1992, Jennifer Miyashiro and Kenneth Moberg.

e) Graduate student committee service. During the FY, the following graduate students served the department as members of important standing committees: Graduate Policy—Sandy Brantley and Jennifer Frey; Representatives to Faculty Meetings—Bill Gannon; Research Allocations (GRAC)—Patricia Ashby, Colleen Hatfield, Doug Kelt and Allan Landwer; Graduate Student Selection—J. Miyashiro; Undergraduate Policy—Toby Bennett.

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 four papers presented at regional, national and international meetings; five publications in refereed journals; two awards for outstanding student paper or poster presented at a scientific meeting; 12 grants/awards received for research support from professional societies/state or federal or private granting agencies. For example, awards and grants came from the American Museum of Natural History, the Buffalo Foundation, the Bureau of Land Management, Fulbright, Furman University, the UNM Graduate Studies Office. These achievements are in addition to departmental teaching awards and jobs/postdocs secured by our degree recipients.

4. BUILDING ADDITIONS OR ALTERATIONS COMPLETED. Castetter Room 239 was remodeled to accommodate the confocal microscope facility awarded to Dr. Steve Stricker.
5. **Biology Faculty, Scholarly and Professional Activities, CY 1992.** See Appendix A for a complete account of all professional, scholarly and teaching accomplishments of the Biology FTE faculty for the CY 1992.

6. **The Biological Society of New Mexico (BSNM).** In December 1992, the BSNM sent its eighth annual newsletter (Appendix C) to nearly 2,100 alumni and supporters of our program in Biology. During FY 1992-1993, 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 pay for part of the expenses incurred by our annual departmental graduation exercise (May 15, 1993); and 7) to provide cash award to the graduating senior Biology major(s) selected as Outstanding Undergraduate for the FY. (See Appendix D.)

7. **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 E.

8. **National Ecology Research Center, Denver Fish and Wildlife Service (NERC/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 NERC/DFWS for this past FY is attached (Appendix F). During this past year, Dr. Norm Scott, who contributed greatly to our department for many years, was transferred to California.
9. **LONG-TERM ECOLOGICAL RESEARCH (LTER) PROGRAM.** The annual report of Biology LTER is attached (Appendix G).

10. **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 1992-93.

11. **LOREN D. POTTER ENDOWED CHAIR, PLANT ECOLOGY.** A detailed history of the development 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, 1993, this fund was worth $172,227. 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.

12. **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, 1993 was approximately $4,010.

13. **FACULTY EXCELLENCE FUND.** During the FY, this special departmental fund continued to slowly grow. The balance in this account as of June 30, 1993, was approximately $1,290.

14. **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 H lists the individual seminar speakers hosted during FY 1991-92.

**B. Significant Plans and Recommendations.**

We hope to begin the recruitment process is early Fall of 1993 for two faculty positions, one in ecology and the other in cell/molecular biology.

A complete roster of all Department of Biology faculty and graduate students for FY 1992-93 is included (Appendix I).

D. Faculty Promotion.

During the FY, Drs. Larry L. Barton and Gordon Johnson were promoted from associate to full professor. These promotions became effective on July 1, 1993.

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 J).

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 K).

G. Appointments to and Separations from Staff.

All appointments to our staff during the FY, noted in bold face type, and all separations from our staff during the FY are noted at the end of Appendix K.

H. Course Offerings, Department of Biology, FY 1992-93.

Included is a complete listing of all courses and laboratories offered by Biology during FY 1992-93 (Appendix L). 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 L are taken from final grade reports issued at the end of each semester.

I. Sponsored Research.

During 1992, 27 FTE professors, and a number of our adjuncts and associates, received 32 new awards/contracts from private, state and federal agencies outside UNM (see Appendices M and A [Sec. 3]). Also during 1992, 20 of our 34 FTE professors, and a number of our adjuncts and associates, submitted 95 proposals to various granting agencies (see Appendix N). The current year funds from outside contracts that were in force in Biology during FY 1992-93 totalled $4,885,170; these represented $14,255,263 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

1992-93 ANNUAL REPORT

DEPARTMENT OF BIOLOGY
APPENDIX A

BIOLOGY FACULTY,
SCHOLARLY AND PROFESSIONAL
ACTIVITIES, CY 1992
I. SCHOLARLY ACTIVITIES

A. BOOKS AUTHORED.

None.

B. BOOKS EDITED.

**BROWN**


C. CHAPTERS IN BOOKS OR MAJOR SYNTHETIC REVIEWS.

**BARTON**


BROWN


DAHM


MARSHALL


MILNE


MOLLES


VOGEL


D. ARTICLES IN REFEREED JOURNALS.

BACA


BARTON


BROWN


CRAWFORD


DAHM


DUSZYNSKI


KODRIC-BROWN


LIGON


LOKER


MILNE


NELSON


STRICKER


THORNHILL


TOOLSON


VOGEL


WERNER-WASHBURNE


YATES


E. BOOK REVIEWS.

**DAHM**


**JOHNSON, W.**


**KODRIC-BROWN**


**RIEDESEL**


F. ARTICLES IN NON-SCHOLARLY JOURNALS.

None.

G. QUASI-PUBLIC REPORTS FOR INTERNAL/EXTERNAL CIRCULATION.

**ALTENBACH**

Report to State of New Mexico Abandoned Minelands Bureau on "Bat Use and Occupancy of Abandoned Mines in the State of New Mexico," 1992.

**DAHM**

DUSZYNSKI

Edited/wrote Vol. 8, Department of Biology Annual Newsletter (1992) 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 67th Annual Meeting of the American Society of Parasitologists. Mailed by Allen Press to 1,500 members and subscribers of the Journal of Parasitology. 37 p.


YATES


H. ABSTRACTS (REFEREED OR INVITED).

BACA


BARTON


DAHM


**JOHNSON, G.**

Johnson, G.V. and D.C. Hudson. 1992. The role of iron in symbiotic nitrogen fixation by nodulated leguminous plants. ABS PAP American Chemical Society 203 (APR):51-AGFD.

**KERKOF**


**LOKER**


**LOWREY**


**MOLLES**


**NELSON**

RIEDESEL


VOGEL


I. ABSTRACTS (CONTRIBUTED).

BACA


BROWN


DAHM


DUSZYNSKI


KERKOF


KODRIC-BROWN


LOKER

Hertel, L., F. Monroy, R. Uchikawa and E.S. Loker. 1992. Functional characterization of hemolymph lectins produced in Biomphalaria glabrata following exposure to Echinostoma
*paraensei*. Presented at the 67 Annual Meeting of the American Society of Parasitologists, Philadelphia, PA, August 4-8.


**MILNE**


**NATVIG**


**NELSON**


**RIEDESELS**


**STRICKER**


**TRUJILLO**


**VOGEL**


**WERNER-WASHBURN**


YATES


J. OTHER.

ALTENBACH

Photographs of bats on the cover of *Natural History Magazine* and in an article by Anne Brooke entitled "Sure Footed Bats," *Natural History Magazine*, October 1992.


DUSZYNSKI

Travelled to the Atlanta, GA, to site visit their convention facilities for the 1993 Annual Meeting of the American Society of Parasitologists (ASP) to be held jointly with the American Society of Tropical Medicine & Hygiene (ASTMH) in October 1993.

Travelled to Seattle, WA, to attend the Annual Meeting of the ASTMH and to meet with their Executive Committee to finalize plans for the October 1993 joint meeting with ASP noted above.

Research Affiliate, The Harold W. Manter Laboratory of Parasitology, University of Nebraska State Museum, Lincoln, NE.


MOLLES


Guest Faculty, Laboratorio de Hidrobiologia, Universidada Polytecnica de Madrid, Spain, November-December 1992.
SNELL


STRICKER

Photographs contributed to review articles:

Berridge, M.J. Review on calcium dynamics in cells [Nature (Lond.) (in press)].

Smiley, S. Review on holothurian microanatomy. [Microanatomy of Invertebrates series (in prep).]

Reviewed grant proposals for NSF: Division of Cell Biology (2); Division of Developmental Biology (2).

THORNHILL

Professor, Nordic Council Course on Sexual Selection, University of Helsinki, Finland, February 1992.

TRUJILLO


II. PROFESSIONAL PUBLIC ACTIVITIES

A. COLLOQUIUM PRESENTATIONS, UNM AND ELSEWHERE.

CRAWFORD


MOLLES


THORNHILL

YATES


B. SEMINAR PRESENTATIONS, UNM AND ELSEWHERE.

BACA

Research Seminar on Coxiella, UNM School of Medicine’s Department of Microbiology

Research seminar on historical research currently underway in Tome, NM, area, 1793-1846, Valencia County Historical Society, Belen, NM, November 8, 1992.

BROWN

UNM, Biology Department
UNM, Anthropology Department
University of Illinois at Chicago, Department of Biology

DAHM


"Watershed research at the Sevilleta Long-Term Ecological Research Site." Sevilleta Field Station, July 15, 1992.


EVANS

Departmental Seminar Series, "The ecological and evolutionary significance of physiological plasticity in plants," Indiana University Department of Biology, October 1992.
JOHNSON, G.


KERKOF

Cellular/Molecular/Micro Biology Seminar, "Optimization of TSH-induced Gene Expression in Ovine Thyroid Gland Cells in Culture," UNM Department of Biology, September 25, 1992.

KODRIC-BROWN

Ecology seminar, "Nested Subsets: Community structure of fishes in Australian mound springs," UNM Department of Biology.

LOKER


"Flukes and snails: Mechanisms of parasite infectivity and host resistance," Department of Biological Sciences, University of Keele, Staffordshire, June 16, 1992.

"Flukes and snails: Mechanisms of parasite infectivity and host resistance," Centre de biologie et d'Ecologie Tropical et mediterraneenne, University of Perpignan, Perpignan, France, June 22, 1992.


LOWREY


MILNE


NATVIG

Friday noon seminar, "Structure and function of superoxide dismutases in N. crassa," UNM Department of Biology, April 1992.
Invited talk, Department of Plant Sciences, "Enzymatic defenses against oxidative stress in *Neurospora crassa,*" University of California, Berkeley, May 1992.

**NELSON**

Biochemistry and Molecular and Cellular Biology Seminar, "Molecular Analysis of Sexual Development in *Neurospora crassa,*" UNM School of Medicine, April 4, 1992.

**SNELL**


**STRICKER**


**THORNHILL**

Department of Zoology, University of Helsinki, Finland.
Department of Zoology, University of Stockholm, Sweden.
Department of Biology, University of Jyväskylä, Finland.
Integrative Animal Behavior Program, Indiana University.
Evolution and Human Behavior Program, University of Michigan.
Biosocial Seminar Series, Department of Anthropology, UNM.

**TOOLSON**

Department of Biology, "Thermal Physiology of Cicadas," Bowling Green State University, Bowling Green, OH, February 12, 1992.


**YATES**

Invited seminar, "Funding possibilities for RUI institutions and individuals," Murray State University, Murray, KY, March 1992.

"The National Science Foundation: Overview, budget and funding possibilities," Department of Biology, New Mexico State University, April 1992.


"Reorganization and funding potential at the National Science Foundation, "Department of Biology, UNM, September 1992.


"Reorganization at the NSF and its effect on funding for the biological sciences," Museum of Natural History, University of Nebraska, Lincoln, NE, April 1992.


C. INVITED AND PLENARY TALKS AT PROFESSIONAL MEETINGS, WORKSHOPS, ETC.

BACA


BARTON


**BOURNE**

Human Anatomy and Physiology Society Meeting
UNM Program in A&P

**BROWN**


**CRAWFORD**


**DAHM**


**EVANS**


**JOHNSON, G.**

KODRIC-BROWN

Symposium participant, Guppy Symposium at the Ecological and Evolutionary Ethology of Fishes, University of New Hampshire, Durham, NH.

LOWREY

National Science Foundation Workshop on Computerization of Natural History Collections, "Computerization efforts in the UNM Herbarium." University of California—Berkeley, CA, May 1992.


"Phylogeny, adaptive radiation, and biogeography of Hawaiian Tetramolopium (Compositae; Astereae)," Symposium on Patterns of Speciation and Biogeography of Hawaiian Terrestrial Biota, American Institute of Biological Sciences Meeting, Honolulu, HI, August 1992.

MILNE


Workshop Participant, NSF, "Complexity in ecology," Albuquerque, NM.

THORNHILL


TOOLSON


VOGEL


**YATES**


**D. CONTRIBUTED TALKS AT PROFESSIONAL MEETINGS, WORKSHOPS, ETC.**

**BACA**


**BARTON**


Annual Summer Meeting of American Institute of Chemical Engineers, "Biotransformation of toxic heavy metals resulting in colloid formation," Minneapolis, MN, August 1992. (with H.E. Nuttall, Jr. and W.C. Lindemann)


BROWN

American Society of Mammologists
Ecological Society of America
Southwestern Association of Biologists

CRAWFORD

Annual meeting of the Ecological Society of America, "Does variation in summer precipitation modify the influence of an exotic tree on arthropod assemblages in the Rio Grande gallery forest?", Honolulu, HI, August 1992. (Co-author: M.C. Molles, Jr.)

DAHM


DUSZYNSKI


EVANS


KERKOF


KODRIC-BROWN

Animal Behavior Society Annual Meeting, Queens's University, Kingston, Ontario Canada, "Female choice of multiple male criteria in guppies: Interacting effects of male agonistic behavior, coloration and courtship."

LOKER

Monroy, F.P. and Loker, E.S. 41st annual meeting of the American Society for Tropical Medicine and Hygiene, "Characterization of Biomphalaria glabrata hemocyte secretions:


**MOLLES**


**NELSON**


**STRICKER**


**THORNHILL**


**VOGEL**


YATES


E. ATTENDANCE AT PROFESSIONAL MEETINGS, WORKSHOPS, ETC.

**ALTENBACH**


**BACA**


The joint New Mexico-El Paso meeting of the American Society for Microbiology, El Paso, TX, October 23-24, 1992.


**BROWN**

Invited participant, Ames Group meeting, Brigham Young University

**DAHM**

50th Annual Meeting of the American Society of Limnology and Oceanography, Santa Fe, NM, February 9-13, 1992. Also served as a session chair.

Environmental Protection Agency Workshop for Environmental Monitoring and Assessment Program (EMAP), Cincinnati, OH, February 26-28, 1992.
Seventh Annual Meeting of the U.S. Landscape Ecology Society, Corvallis, OR, April 9-12, 1992.

First International Conference on Groundwater Ecology, Tampa Bay, FL, April 25-29, 1992. Also served as a session chair.


Annual Fall Meeting of the American Geophysical Union, San Francisco, CA, December 6-11, 1992.

DUSZYNSKI


41st Annual Meeting, American Society of Tropical Medicine & Hygiene (ASTMH), Seattle, WA, November 15-19, 1992.

JOHNSON, G.


KERKOF


KODRIC-BROWN

Southwest Association of Biologists Annual meeting, Camp Tonotozona, AZ.

LIGON

American Ornithologists' Union Meeting, Iowa State University, June 1992.

LOKER

LOWREY

American Institute of Biological Sciences Joint Meetings, Honolulu, HI, August 1992.

NSF Workshop on Computerization of Natural History Collections, University of California—Berkeley, CA, May 1992.

Taiwan-USA Symposium on Phytogeography and Botanical Inventory of Taiwan, Taipei, Taiwan, March 11-12, 1992.

Southwest Symposium on Rare and Endangered Plants, Santa Fe, NM, March 1992.

MOLLES


NATVIG


West Coast Neurospora Conference University of California, Santa Cruz, CA, August 21-22, 1992.

NELSON


University of California, West Coast Neurospora Conference, Santa Cruz, CA, August 21-22, 1992.

RIEDESEL

American Physiological Society with FASEB, Anaheim, CA, April 5-9, 1992.

The American College of Clinical Pharmacology, Houston, TX, May 6-8, 1992.
STRICKER


THORNHILL

Animal Behavior Society Meeting, Queen's University, Kingston, Ontario, Canada.

Human Behavior and Evolution Society Meeting, Albuquerque, NM.

VOGEL


WERNER-WASHBURNE

Society for the Advancement of Chicanos and Native Americans in the Sciences meeting, San Antonio, TX.

Structural Biology Meeting, Santa Fe, NM.

American Society for Cell Biology meetings, Denver, CO.

YATES


Society for the Preservation of Natural History Collections annual meetings, Lincoln, NE, April 1992.

American Association for the Advancement of Science National Meeting, Chicago, IL, February 1992.
F. **Testimony in a Scholarly Capacity at Hearings of Commissions, Legislative Committees, etc.**

**BOURNE**

Human Anatomy and Physiology Society Meeting

**BROWN**

Presentation to selected Santa Fe high school students, program organized through Santa Fe Institute.

**LIGON**

Chair, American Ornithologists' Union Committee on the Conservation of the Red-cockaded Woodpecker

**YATES**

Testified before the U.S. Department of Treasury on the global biodiversity crisis and made recommendations on appropriate funding to developing countries.

Quoted in *Science* magazine and in an article in the *New York Times* on the state of systematic biology in the U.S.

G. **Presentations to General Audience in a Scholarly Capacity.**

**AL TENBACH**


**BARTON**


**CRAWFORD**


DAHM

Sombre del Monte Elementary School, March 6, 1992.
Friendly Philosophers, August 24, 1992.

LIGON

Invited lecture, New Mexico Ornithological Society

LOWREY


NATVIG


NELSON


TRUJILLO


YATES

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.

BARTON

Chairman, Committee for Selection of Outstanding Doctoral Dissertation for 1992 at UNM, Sigma Xi award.

BROWN

Southwestern Research Station, American Museum of National History: Scientific Advisory Board.

DAHM


DUSZYNSKI

Invited Panel Member/Participant, ASP Symposium on United States' Parasite Collections, convened at the 67th Annual Meeting of ASP in Philadelphia, August 6, 1992.

External Peer Reviewer, Terrestrial Initiative In Global Environmental Research (TIGER), Natural Environmental Research Council, UK, refereed one grant proposal.

External Peer Reviewer, NSF, refereed two grant proposals.

Panel Member, Biotic Surveys and Inventories, NSF, refereed 15 proposals, four as primary panel discussant, 11 as secondary panel discussant.


Nominated, Student Exchange Programs, to serve as the New Mexico representative on the Advisory Board for the Western Interstate Commission for Higher Education (WICHE), appointment pending Governor King's approval.

JOHNSON, G.

Judge State Science Fair, Chairman Senior Botany Division, Socorro, NM, April 4, 1992.

KODRIC-BROWN

Chair, Corrales Bosque Advisory Commission, drafted "Corrales Bosque Preserve Ordinance," the first of its kind for the Albuquerque area and state.
Member, Desert Fishes Council

Narrated and served as a technical advisor for CBC production of a nature film on the role of color in animals' lives.

**Ligon**

NGS Proposal Review (1)
NSF Proposal Review (1)
Evaluator, Recovery Plan for the Northern Spotted Owl

**Loker**

Review Panelist, Tropical Medicine and Parasitology *Ad Hoc* Study Section, National Institutes of Health, October 1992.

**Lowrey**

Member of New Mexico Plant Recovery Team, U.S. Fish and Wildlife Service.

National Science Foundation Panel Member, Survey and Inventory Panel, Division of Environmental Biology, January 1992.

National Science Foundation Panel Member, Conservation Biology Panel, Division of Environmental Biology, December 1992.

**Milne**


Reviewer of work plan for Chambers Group, Inc., Irvine, CA.

**Nativig**

Reviewer, NSF Systematic Biology and Population Biology, approx. four proposals.

Judge of oral student presentations, UNM Department of Biology First Annual Research Day, April 1992.

**Nelson**

National Science Foundation, reviewed two grants.

**Stricker**

Served on UNM Cancer Center committee reviewing grants.

*Ad hoc* reviewer for NSF Division of Cell Biology and Division of Developmental Biology.
VOGEL

National Institutes of Health, Pathobiochemistry Study Section, Ad hoc member, February.

State of New Mexico, review committee to select recipients of President’s Award for Teaching Excellence, Jr. High and High School Science Teaching, June.

WERNER-WASHBURN


Ad Hoc reviewer, NSF Cell Biology program and Genetics program.

YATES

Director, Systematic Biology Program.

Cluster Director, Systematic and Population Biology Cluster, Division of Environmental Biology, National Science Foundation.

Acting Director, Biological Research Resources Program, National Science Foundation.

Acting Division Director, Division of Environmental Biology, National Science Foundation.

Created and ran three outside review panels for Systematic Biology, National Science Foundation.

NSF representative to the Global Environmental Facility (GEF), World Bank.

NSF Representative to the Neotropical Biodiversity Program, Smithsonian Institution. (Most proposals reviewed here were in Spanish.)

NSF/US Agency for International Development (USAID) Steering Committee for Biodiversity. In addition to making funding recommendations, helped develop policy and draft guidelines.

Helped develop and served as a Division of Environmental Biology representative to the NSF Molecular Evolution Working Group.

Organized and hosted a workshop on Molecular Evolution, Washington DC, March 1992. (with Carol Lynch, Mark Courteney and Peter Artsburger)

I. SERVICE AS EDITOR OF SCHOLARLY JOURNAL.

BROWN

Journal of Biogeography, and Biogeography and Global Change Letters: Associate Editor for North America.
SNELL

Editor, Noticias de Galápagos, June 1992-present.

YATES

Managing Editor, Museum of Southwestern Biology Publications, UNM.

J. SERVICE ON EDITORIAL BOARD OF SCHOLARLY JOURNAL.

BARTON

Biometals

BROWN

Evolutionary Ecology Editorial Board

CRAWFORD

Journal of Arid Environments
Madoqua, Consulting Editor
Associate Editor, Desert Ecology Series, University of Arizona Press

LOKER

Member, editorial board, Journal of Invertebrate Pathology, three-year term beginning November 1990

Member, editorial board, Journal of Medical and Applied Malacology, 1992

MARSHALL

Editorial Board, Ecology, October 1992-present

THORNHILL

Associate Editor, Evolution
Consulting Editor, J. of Comparative Psychology
Advisory Editor, Zoology, Analysis of Complex Systems

VOGEL

Co-Editor, European Journal of Cell Biology
Editorial Board, Archives of Biochemistry and Biophysics

YATES

Editorial Board, Museum of Southwestern Biology Publications, UNM.
K. **Service as Officer of Professional Organization (Indicate Whether Elected or Appointed).**

**BACA**

Vice President, American Society for Rickettsiology and Rickettsial Diseases, elected.

Alternative Councilor, New Mexico Branch of the American Society for Microbiology, elected.

**BARTON**

Treasurer of Sigma Xi, UNM Chapter, elected.

**BROWN**

President, American Society of Mammologists

**DUSZYNKI**

National Program Officer, American Society of Parasitologists, appointed and confirmed by ASP Council, 1988-96.

Archivist, Annual Coccidiosis Conference, appointed.

Archivist, Southwestern Association of Parasitologists, appointed.

Member, Meeting-Site Selection Committee for 1993-1996, American Society of Parasitologists, appointed.

**JOHNSON, G.**

Member (1985- ), Steering Committee for International Symposia on Iron Nutrition and Interactions in Plants, appointed.

**LIGON**

Elective Councilor, American Ornithologists’ Union

**LOKER**

Member, In Memorium committee, American Society of Parasitologists, 1992-93, appointed.

Secretary-Treasurer, Southwestern Association of Parasitologists, 1992-95, elected.

**LOWREY**

Chairman, Systematics Section, Botanical Society of America, AIBS Meeting, 1991, elected.
SNELL
North American Vice President, Charles Darwin Foundation, elected.

THORNHILL
Executive Committee, North American Councilor, International Society for Behavioral Ecology

YATES
Recording Secretary, American Society of Mammalogists, elected.
Board of Directors, American Society of Mammalogists, elected.

L. List Journals and the number of papers you refereed for each in 1989.

ALTENBACH
Journal of Mammalogy (2)

BACA
Infection and Immunity (3)
The Journal of Clinical Investigation (2)
International Journal of Epidemiology (1)
Clinical Microbiology Reviews (1)

BARTON
Biometals (4)
Applied and Environmental Microbiology (1)
Canadian Journal of Microbiology (1)

BROWN
American Naturalist (2)
Ecology (2)
American Midland Naturalist (1)
Journal of Animal Ecology (2)
Condor (1)
Journal of Mammalogy (1)
Conservation Biology (1)
Science (1)

DAHM
Limnology and Oceanography (1)
Ecology (1)
Freshwater Biology (1)
DUSZYNSKI

Journal of Parasitology (8)
Journal of the Helminthological Society of Washington (1)

KODRIC-BROWN

Ethology (3)
Behavioral Ecology and Sociobiology (4)
Evolution (2)
Environmental Biology of Fishes (3)
Canadian Journal of Zoology (2)
American Naturalist (5)

LOKER

Journal of Medical and Applied Malacology (2)
Developmental and Comparative Immunology (1)
Journal of Invertebrate Pathology (4)
Journal of Parasitology (4)

LOWREY

Proceedings of the Idaho Academy of Sciences (1)

MARSHALL

American Naturalist (1)
Canadian Journal of Botany (1)
Evolution (2)
National Science Foundation (4)

MILNE

American Naturalist (1)
Conservation Biology (1)
Landscape Ecology (1)
Reclamation Ecology (1)
Ecology (2)
Oak Ridge National Lab. (1)

RIEDESEL

Journal of the Faculty of Science, United Arab Emirates University (1)

STRICKER

International Journal of Invertebrate Reproduction (1)
Zoologica Scripta (1)
Developmental Biology (2)
TOOLSON

Annals of the Entomological Society of America (2)
Evolution (1)
Journal of Thermal Biology (2)
Journal of Insect Physiology (1)

VOGEL

European J. Cell Biol. (14)
Archives of Biochem. Biophys. (4)
J. Biol. Chem. (1)
J. Orthop. Res. (1)
Amer. J. Respiratory Cell and Molec. Biol. (1)
J. Cell Physiol. (1)
Conn. Tiss. Res. (1)
Matrix (2)

WERNER-WASHBURNE

Reviewer, Journal of Bacteriology (1)

YATES

Journal of Mammalogy (1)

III. GRANTS, EXTRAMURAL AND INTRAMURAL

A. SUBMITTED TO ALL AGENCIES IN 1989 (SEE TABLE I, ALSO).

AL TENBACH

"Evaluation of Bat and Wildlife Use of Abandoned Mines in New Mexico"; J. Scott Altenbach, P.I.; Abandoned Minelands Bureau of New Mexico; July 1, 1992; $5,000. Awarded.

Proposal for a Display on Bats and Bat Biology, "Bats, the Night Shift"; J. Scott Altenbach, P.I.; New Mexico Museum of Natural History; $2,700. Awarded.

BACA

"Phosphatase as a Virulence Factor in Q Fever"; O.G. Baca, P.I.; NIH/USPHS; $438,000 (direct costs), April 1, 1993—March 31, 1997, $150,000 per year.

"Morbidity/Mortality in the Tome-Valancia-Peralta Area, Late 1700s through the 1940s"; O.G. Baca, P.I.; UNM Center for Regional Studies; $8,581, June 1, 1992—May 31, 1993, $8,581 per year.
BARTON

"Biocorrosion and Flocculation Measurements in Waste Studies"; L.L. Barton and T.J. Ross, co-P.I.s; WERC/NMSU/DOE; $60,000 for 1993—94.

"Microbial Reduction of Uranium (VI)"; L.L. Barton and B. Thomson, co-P.I.s; WERC/NMSU/DOE; $120,000 for 1993—95.


CRAWFORD

"An Inventory of Selected Arthropod Taxa for Chihuahuan, Sierra Madrean, Great Plains and Rocky Mountain Habitats in the Southwestern United States"; D.B. Richman (NMSU), P.I., D. Howard (NMSU), C.S. Crawford (UNM) and D.C. Lightfoot (UNM) co-P.I.s; NSF; $367,709, October 1993—October 1996, Year 1—$117,153, Year 2—$122,649, Year 3—$127,579.

DAHM


DUSZYNSKI


EVANS

"Evolutionary Ecophysiology of Adaptations to Low water and Nutrient Availability in the Desert Composite, Townsendia annua"; A.S. Evans, P.I.; NSF; $18,000, August 1993—August 1994, $18,000 per year.

JOHNSON, G.


KODRIC-BROWN

"A Video-imaging Technique for an Experimental Analysis of Mate Choice in Guppies"; NSF; not funded.

LOKER


MARSHALL


MOLLES


NELSON

"Interactive Computer Tutorials for Introductory Genetics"; M.A. Nelson, P.I.; UNM (Provost Paul G. Risser); Total requested $18,592, from May 16, 1992 through August 31, 1993. Awarded: $18,592, began May 16, 1992. Note: As a result of the computer tutorial development that was done with this award, Apple Computer, Inc., donated three
Macintosh LC II computer systems to the Biology Department, as well as a Personal LaserWriter Printer.

**RIEDESEL**


"NASA Specialized Center for Research and Training in Environmental and Integrative Physiology"; S. Wood (Lovelace), P.I., M.L. Riedesel, Co-P.I.; NASA; $1 million per year, beginning 1993.

**STRICKER**

"Subcellular Imaging of Ca2+ Dynamics during Early Development"; S.A. Stricker, P.I.; NSF; $138,137, January 1993—January 1996; Year 1—$50,175.

"Subcellular Imaging of Ca2+ Dynamics during Early Development"; S.A. Stricker, P.I.; NIH; $138,137, April 1993—March 1996; Year 1—$50,175.


**THORNHILL**

"Fluctuating Asymmetry and Sexual Selection"; NSF; $300,000; declined, twice.

**VOGEL**

"Proteoglycan Structure, Metabolism and Role in Tendon"; K.G. Vogel, P.I.; NIH; $1,153,383 total costs, September 1, 1993—August 31, 1998; direct costs first year, $158,788. (competitive renewal application)

"Small Instrumentation Grant"; K.G. Vogel, P.I.; NIH; $20,595.

"Confocal Microscope"; S.A. Stricker, P.I., K. Vogel, Co-PI; NSF.

"Laboratory Education and Research in Biology"; Howard Hughes Medical Institute; Submitted January 3, 1992, $900,000.

**TOOLSON**


"Conservation Genetics of Rio Grande Cutthroat Trout"; T.L. Yates, P.I.; N.M. Department of Game and Fish; $9,000, July 1, 1992—June 30, 1993, $9,000.


**B. AWARDED WITH 1989 INITIAL START DATE.**

**BACA**

"Morbidity/Mortality in the Tome-Valancia-Peralta Area, Late 1700s through the 1940s"; O.G. Baca, P.I.; UNM Center for Regional Studies; $8,581, June 1, 1992—May 31, 1993, $8,581 per year.

**BARTON**

"Application of Biotechnology in Management of Industrial Wastes Containing Toxic Metals"; L.L. Barton and W. Lindemann, co-P.I.s; WERC/NMSU/DOE; $60,000, 1992—93.

"Biocorrosion and Flocculation Measurements in Waste Studies"; L.L. Barton and T.J. Ross, co-P.I.s; WERC/NMSU/DOE; $60,000, 1992—93.


**BROWN**

CRAWFORD


DAHM


A Research Education for Undergraduates (REU) award of $10,000 and a Research Assistantship for Minority High School Students (RAMHSS) award of $6,000 from NSF were received to supplement the stream hyporheic zone project in 1992.

DUSZYNISKI


EVANS


JOHNSON, G.


LOKER

"Laboratory Education and Research in Biology"; Vogel, K.G., Loker, E.S., and several other co-P.I.s; Howard Hughes Medical Institute; $900,000, 1992—96.

"RIMI: Confocal Microscopy Facility"; Stricker, S., Loker, E.S. and several other co-P.I.s; NSF; $178,823, October 1992—March 1996.

"RIMI: Molecular Biology Facility"; Werner-Washburne, M., Loker, E.S. and several other co-P.I.s; NSF; $321,000, October 1992—March 1996.

LOWREY


A-44

"Rare Plant Species Reintroduction"; T.K. Lowrey, P.I.; National Wildflower Research Center, Austin, TX; $2,500, December 1, 1991—December 31, 1992.

MARRSHALL


MILNE


MOLLES


NATVIG

"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; NSF; total requested: $321,000, June 1, 1992—May 31, 1995, Year 1—$244,135, Year 2—$37,290, Year 3—$39,575.

Participated in writing of Hughes Proposal; K. Vogel, P.I.; Hughes Foundation; $1,000,000, 5 years.

Participated as co-user in writing of Confocal Microscope RIMI grant; S. Stricker, P.I.; NSF; approx. $200,000.
NELSON

"Molecular Analysis of Sexual Development in Neurospora"; M.A. Nelson, PI; NSF; total requested: $769,935, from January 1, 1992—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). Approved: $95,000/yr (indirect plus direct costs) for three years (total: $285,000). Not accepted; instead, the NIH grant for the same research project (which was awarded for five years) was accepted.

"Molecular Analysis of Sexual Development in Neurospora"; M.A. Nelson, PI; NIH; total requested: $519,577, from April 1, 1992—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: in full (a five year total of $519,578, indirect plus direct costs), and was accepted, began May 1, 1992.

"Sexual Development in the Filamentous Fungi: Mating-specific Genes of Neurospora and Podospora"; N.L. Glass, M.A. Nelson and M. Picard, Co-Pis; Human Frontier Science Program; total requested $184,710, from 1992 through 1995: Year 1—$58,590, Year 2—$61,550, Year 3—$64,570 (these sums reflect direct plus indirect costs). Awarded at the following levels (direct plus indirect costs), for a total (three year) of $147,000: Year 1—$47,000, Year 2—$50,000, Year 3—$50,000. Accepted, began on September 1, 1992. (All amounts reflect only the portion of the grant awarded to M.A. Nelson; additional sums were awarded to the co-P.I.s at their laboratories in Canada and France.)

"Establishment of a Molecular Biology Facility"; M. Werner-Washburne, M.A. Nelson, D. Marshall, D.O. Natvig and E.S. Loker, co-Pis; NSF; total requested: $321,000, from June 1, 1992 through May 31, 1995: Year 1—$244,135, Year 2—$37,290, Year 3—$39,575 (these sums reflect direct plus indirect costs). Awarded in full, and accepted; began September 15, 1992.

RIEDESEL


SNELL

"Monitoring of Selected Endangered Species in New Mexico"; H.L. Snell, R.D. Jennings and N. Scott, co-P.I.s; New Mexico Game and Fish; $30,000, January 1992—December 1992, approximately $20,000/yr.

STRICKER


"Confocal Microscopy Facility"; S.A. Stricker, P.I.; NSF; $178,000; October 1992—September 1996.

VOGEL

"Laboratory Education and Research in Biology"; K.G. Vogel, Director; Howard Hughes Medical Institute, Undergraduate Biological Sciences Education Initiative; $1,000,000, June 1, 1992-September 31, 1997.


WERNER-WASHBURNE

"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; NSF; Total requested: $321,000, from September 1, 1992—August 31, 1995; Year 1—$244,135; Year 2—$37,290; Year 3—$39,575 (direct and indirect costs).


The above two grants were also supported by the UNM Administration with approximately $350,000 in additional funds for staff support, scholarships, remodelling and some equipment. Total for these two grants: approximately $850,000.

YATES


"Conservation Genetics of Rio Grande Cutthroat Trout"; T.L. Yates. P.I.; N.M. Department of Game and Fish; $9,000, July 1, 1992—June 30, 1993, $9,000.

C. IN FORCE FROM PREVIOUS YEARS.

ALTENBACH

BACA

"Morbidity/Mortality in the Tome-Valancia-Peralta Area, Late 1700s through the 1940s"; O.G. Baca, P.I.; UNM Center for Regional Studies; $8,581, June 1, 1992—May 31, 1993, $8,581 per year.

BROWN

"Long-term Monitoring and Manipulation of the Desert Granivore System"; J.H. Brown; NSF (Grant BSR-8718139); $267,653, 1988—93.

"Spatial and Temporal Variation in Populations and Assemblages of Breeding Birds"; J.H. Brown; NSF (Grant BSR-8807792); $230,000, October 1988—April 1992.

"LTER Project"; J.R. Gosz, P.I., J.H. Brown (one of 16 co-P.I.s); NSF (Grant BSR-8811906); $2,400,000, 1988—94.

CRAWFORD


DAHM


DUSZYNSKI


JOHNSON, G.

"Sevilleta LTER"; one of approximately 15 P.I.s; NFS; $2,400,000; October 1988—October 1994; $400,000/yr.

KERKOF

"Minority Access to Research Centers (MARC)"; A. Atencio and M. Garberina, P.I.s; National Institute of General Medical Science; June 1989—June 1994, $10,500 per year.

LOKER


"The Tseeste-Trypanosome Molecular Interface"; Loker, E.S., P.I.; Fogarty Senior International Fellowship, to work at the Institute for Molecular Parasitology, University of Glasgow; $15,000, January—June, 1992.

LOWREY

"Botanical Inventory of Taiwan"; R. Moran (Missouri Botanical Garden), P.I., T.K. Lowrey (UNM), T. Lammers (Field Museum, Chicago), W. Wagner (Smithsonian Institution); B. Bartholemew (Calif. Acad. Sciences, San Francisco), co-P.I.s; National Geographic Society; $27,000, July 1, 1991—June 30, 1992.
MILNE


"Presidential Young Investigator Award"; B.T. Milne, P.I.; NSF; $262,900. July 15, 1990—July 14, 1995, Year 1—$25,000, Year 2—$50,400, Year 3—$87,500, Year 4—$87,500, Year 5—$87,500.

"Phase Transitions and Critical Phenomena in Woodland Ecotones"; B.T. Milne, P.I.; NSF; $300,00, June 15, 1991—June 14, 1994, Year 1—$100,001, Year 2—$110,102, Year 3—$89,897.

MOLLES


"LTER on Ecological/Climatic Gradients on the Sevilleta"; M.C. Molles, Jr., one of several co-P.I.s; NSF; $2.4 million, 1988—1994.

NATVIG


RIEDESEL

"Glycerol-induced Hyperhydration"; NASA; $78,509 per year, third year (1989-92).

SNELL


STRICKER

"Intranuclear Calcium Dynamics during Fertilization and Early Development"; S.A. Stricker, P.I.; UNM RAC; $1,900; October 1991—October 1992.

TOOLSON

"Thermal Physiology of Cicadas and Regulation of Cuticular Permeability in Insects"; E.C. Toolson, P.I.; NSF (Grant DCB 88-11900); $159,000, February 1, 1989—January 31, 1993.

TRUJILLO

Minority Access Research Career Grant: Dominic Gabaldon; Stipend $500/month plus tuition, books and travel money. Also includes $2,500 per year for supplies, and travel money for P.I.; UNM’s Medical School; not aware of total budget.

VOGEL

"Proteoglycan Structure, Metabolism and Role in Tendon"; K.G. Vogel, P.I.; NIH; Year 8 award: $177,738; total project period, September 23, 1985—August 31, 1993.

WERNER-WASHBURNE

"The Role of Gene Regulation in Starvation-Induced Arrest in the Yeast Saccharomyces cerevisiae"; M. Werner-Washburne. P.I.; NSF; total for this grant: more than $600,000; 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); Years 4 and 5—$99,000 per year (plus supplements).

"The Role of Gene Regulation in Starvation-Induced Arrest in the Yeast Saccharomyces cerevisiae"; M. Werner-Washburne; NSF (PYI); 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 funds; Year 2—$25,000 base plus $45,000 cash, donations, and matching funds; Year 3—$25,000 base; Year 4—$25,000 base; Year 5—$25,000 base.

YATES


"Ichthyological Studies in the Southwest"; S. Platania and T.L. Yates, co-P.I.s; N.M. Department of Game and Fish; $193,645, August 24, 1989—June 30, 1992, $65,000.

"Sevilleta LTER"; J. Gosz et al., co-P.I.s; NSF; $2,400,000, October 1988—September 1994, $400,000.
IV. GRADUATE EDUCATION. Include student's name, title of thesis or dissertation, semester awarded.

A. MASTERS DEGREES AWARDED

**BACA**
Robert Christner, Plan II, Spring.

**BARTON**
Craig R. Vester, "General characteristics of ferric reductase activity in *Rhizobium meliloti* 1021."

. Bernadette L. Saiz, "Characteristics of lead transformation by the bacterial isolate *Moraxella bovis*.

Miette M.S. Huybrechts, "Metal resistance in microorganisms with an emphasis on chromium."

**BROWN**
Lisa Valle, Plan II, Summer.

**DUSZYNSKI**

**JOHNSON, G.**
Maria Alvarado-Zink, Plan II, Spring.

**LOWREY**

**SNELL**
James Stuart, Plan II, N. Scott, co-chair.

**VOGEL**
James R. Robbins, "Expression of mRNA for proteoglycan and collagen genes within regions of the bovine deep flexor tendon subjected to different mechanical forces," Fall.
B. DOCTORS DEGREES AWARDED.

BROWN


CRAWFORD


KODRIC-BROWN

Paul Nicoletto, "Male ornamentation and constitution during mate choice in the guppy, Poecilla reticulata, Spring.

LOWREY


MOLLES

Evelyn Cox, "Interactions between trophic levels on coral reefs: Scleractinian corals and corallivorous butterflyfishes in Hawaii," Fall.

SNELL


YATES


C. BONA FIDE GRADUATE COURSES AND NUMBER OF STUDENTS ENROLLED. INDICATE NEW COURSES (FOR YOU) WITH AN ASTERISK.
**BARTON**

Spring:  Biol. 460L, Microbial Physiology, 13 students.

**BROWN**

Spring  Biology 515, Field Research in Biology, 7 students  
Fall  Biology 511, Community Ecology, 29 students

**CRAWFORD**

Spring:  Biol. 507, Bosque Biology, 5 students  
Fall:  Biol. 502, Terrestrial Arthropod Biology, 2 students  
       Biol. 507, Bosque Biology, 2 students

**DAHM**

Spring  Biol. 495, Limnology, 20 (3 graduate students)  
       Biol. 496L Limnology Lab, 7 (2 graduate students)

**DUSZYNSKI**

Spring:  Biol. 502, Advanced Parasitology, 2 students  
        * Biol. 502, Advanced Marine Biology, 3 students  
Fall:  * Biol. 502, Parasitology Laboratory Techniques, 3 students

**EVANS**

Spring:  * Biol. 518, Ecological Genetics, 15 students  
Fall:  * Biol. 502, Seminar in Ecology and Evolution, 2 students

**KERKOF**

Spring:  Biol. 549, Molecular Cell Biology II, 6 students  
Fall:  Biol. 502, ST/Cell/Molecular Seminar, 5 students

**KODRICK-BROWN**

Spring:  Biol. 515, Field Ecology, 8 students  
Fall:  Biol. 521, Advanced Behavioral Ecology, 6 students

**LOKER**

Fall:  Biology 402/502, Parasites and Hosts, 8 students

**LOWREY**

Spring:  * Biol. 523, Principles of Systematic Biology, 7 students
MILNE
Spring: Biol. 576, Landscape Ecology, 5 students
       Biol. 651, Advanced Field Biology, 1 student

MOLLES
Spring: Biol. 507, Bosque Biology, 4 students
       Fall: Biol. 507, Bosque Biology, 2 students

NATVIG
Spring: Biol. 402/502, Advanced Fungal Genetics, 10 students
       Biol. 507, Bosque Biology, 2 students
Fall:  Biol. 402/502, Advanced Fungal Genetics, 9 students
       Biol. 446/546, Laboratory Methods in Molecular Biology, 9 students

NELSON
Spring: Biol. 402/502, Advanced Fungal Genetics, 10 students
       * Biol. 402/502, Molecular Genetics of Development, 8 students
Fall:  Biol. 402/502, Advanced Fungal Genetics, 9 students
       * Biol. 446/546, Laboratory Methods in Molecular Biology, 9 students

STRICKER
Fall:  Biol. 547, Advanced Techniques in Light Microscopy, 8 students
Spring: Biol. 548, Electron Microscopy, 8 students

TAYLOR
Spring: * Biol. 402/502, Human Evolution, 6 students
Fall:  * Biol. 402/502, Cultural Evolution, 15 students, 2 faculty from Dept. of Psych.
       Biol. 500, New Graduate Student Seminar, 25 students
       Biol. 512, Advanced Population Biology (taught with Anthro. 560, Life History Evolution, Kim Hill), 2 students from Biol. and 10 students and 1 faculty from Anthro.

TRUJILLO
Spring: Biol. 520, Energy and Metabolism, 24 students

VOGEL
Spring: * Biol. 402/502, Cellular Adhesion and Recognition, 8 students
WERNER-WASHBURNE

Spring:  Biol. 402/502, Advanced Yeast Molecular Genetics, 8 students (5 graduate students)
        * Biol. 402/502, Advanced Fungal Genetics, 10 students

Fall: * Biol. 402/502, Advanced Fungal Genetics, 9 students
      Biol. 444 (may be taken for graduate credit), Molecular Biology, 20 students (5 graduate students)

YATES

Fall:  Biol. 489, Mammalogy, 15 students
       Biol. 402/502, Advanced Vertebrate Biology, 8 students

D. NAMES OF 551, 599 AND 699 STUDENTS.

BACA

Spring:  Biol. 551, John E. Buhler, Robert F. Christner
Fall:  Biol. 551, John E. Buhler

BARTON

Spring:  Biol. 551, Miette Huybrechts
        Biol. 599, Miette Huybrechts, Bernadette Saize, Craig Vester
Fall:  Biol. 551, Maria Alvarado-Zink

BROWN

Summer:  Biol. 699, L. Hawkins, M. Skupski
Fall:  Biol. 551, T. Brown, D.W. Mehlman
        Biol. 599, P. Ford

CRAWFORD

Spring:  Biol. 551, S.L. Brantley, V.T. Johnson
Summer:  Biol. 551, M.C. Steuver, T.H. Yong

DAHM

Spring:  Biol. 551, Steve Hofstad
        Biol. 599, Jim Markwiese, John Morrice
Biol. 699, Tad Crocker, Deb Carr
Fall: Biol. 551, Michelle Baker
      Biol. 599, Jim Markwiese, John Morrice
      Biol. 699, Tad Crocker, Deb Carr

**DUSZYNSKI**

Spring: Biol. 551, P.G. Wilber
       Biol. 699, M.J. Patrick
Summer: Biol. 551, P.G. Wilber
Fall: Biol. 551, J.A. Hnida, D.S. Sias, P.G. Wilber
      Biol. 699, M.J. Patrick

**EVANS**

Fall  * Biol. 551, Kenneth Moberg

**JOHNSON, G.**

Spring: Biol. 551, Kristina M. Baker
       Biol. 599, Glen L. Dennis
Fall: Biol. 599, Glen L. Dennis

**KERKOF**

Spring: Biol. 551, Patricia Dolan, Dean Argyres
Fall: Biol. 551, Patricia Dolan, Keith Kerkof
      Biol. 599, Dean Argyres

**KODRIC-BROWN**

Spring: Biol. 599, Debra Tull
       Biol. 699, Pimmy Newalt, Paul Nicholetto, Shawn Nordell
Fall: Biol. 599, Debra Tull
      Biol. 699, Pimmy Newalt, Paul Nicholetto, Shawn Nordell

**LOKER**

Spring: Biol. 551, T. Boyce, G. DeGaffe
Fall: Biol. 599, T. Boyce

**LOWREY**

Spring: Biol. 551, David Bleakly, Raymund Chan, Stephen Reed
       Biol. 559, Patricia Barlow
Summer: Biol. 551, Stephen Reed, Joseph Williams
        Biol. 559, Raymund Chan
MILNE

Spring: Biology 551, Qingfing Guo, Timothy Keitt
        Biology 699, Sterling Grogan
Fall: Biology 551, Timothy Keitt
      Biology 699, Sterling Grogan, Colleen Hatfield and Yorgos Marinakis

MOLLES

Spring: Biol. 559, David L. Bleakly, Nancy S. Cox, James L. Daly
Summer: Biol. 551, Joanne E. Eakin
Fall: Biol. 599, Nancy S. Cox, James L. Daly

NATVIG

Spring: Biol. 551, Ken Sylvester, William Dvorachek
Fall: Biology 551, James Baldwin
      Biol. 699, William Dvorachek, Karen Adams

NELSON

Spring: Biol. 551, William H. Dvorachek
Summer: Biol. 551, Sandra T. Merino
Fall: Biol. 551, James L. Baldwin, Sandra T. Merino

SNELL


STRICKER

Fall: Biol. 551, Kenneth Conwell

TAYLOR

Spring: Biol. 551, Steven Kucera
        Biol. 699, Steven Kucera
Fall: Biol. 551, D. Kraujalis
      Biol. 699, Steven Kucera

TOOLSON

Spring: Biol. 551, John Roach, Patricia Ashby, Todd Campbell
Fall: Biol. 551, John Roach, Patricia Ashby, Todd Campbell
TRUJILLO
Spring: Biol. 699, Karen Adams
Fall: Biol. 551, Lara Hays

VOGEL
Spring: Biol. 599, James Robbins
       Biol. 699, Stephen Evanko
Fall:  Biol. 599, James Robbins
       Biol. 699, Stephen Evanko

WERNER-WASHBURNE
Spring: Biol. 551, Christopher Padilla
       Biol. 599, Patrick Doherty and Christopher Padilla
Fall:  Biol. 511, Ed Braun
       Biol. 599, Christopher Padilla

YATES
Spring: Biol. 551, 4 students
       Biol. 599, 1 student
       Biol. 699, 3 students
Fall:  Biol. 551, Jennifer Miyashiro, Jorge Salazar, Marcello Zalles
       Biol. 599, Travis Perry
       Biol. 699, Forrest Davis, Jennifer Frey, Eduardo Palma

E. YOUR SERVICE ON GRADUATE STUDENT COMMITTEES, NOT AS CHAIR, IN SEMESTER ORAL EXAM WAS GIVEN.

BROWN
Derrick Sugy, Eduardo Palma, Paulette Ford

DAHM
Colleen Hatfield, Oral Prelims., March 2, 1992
Greg Wroblicky, Oral Comprehensive Exam in Geology, February 25, 1992
Jay Jones, Oral Prelims at Arizona State University, April 15, 1992

EVANS
Robert Cabin, Spring 1992
Pablo Marquet, Spring 1992
David Mehlman, Fall 1992
JOHNSON, G.
Patricia Barlow, M.S. I; Craig Vester, M.S. I., Spring
Miette Huybrechts, M.S. I, Summer

KERKOF
Bernadette Saiz, M.S. Final Exam, April 15, 1992
Miette Huybrechts, M.S. Final Exam, July 2, 1992
Karen Adams, Ph.D. Comp. Exam, July 10, 1992

LOWREY
Paulette Ford, Master’s, Fall
Qin-Feng Guo, Ph.D., Fall
Robert Cabin, Ph.D., Spring

MILNE
Pablo Marquet, Summer
Qin-Feng Guo, Dave Mehlman, Fall

NATVIG
Linda Walkup, Doctoral final
Patrick Dougherty, Master’s final
Christopher Padilla, Master’s final

NELSON
Christopher Padilla, M.S., Summer
William Dvorachek, comprehensive exam, Fall

STRICKER
Steve Jett, Cell Biology, Spring
Steve Evanko, Biology, Summer
Robert Christner, Biology, Summer
Angela Welford, Biology, Fall
Jim Robbins, Biology, Fall

TOOLSON
Paul Nicoletto, Ph.D.
Derrick Sugg, Ph.D.

TRUJILLO
Brent Ruby, Exercise Physiology, Comprehensive written and oral examination, Spring
Wendy Wilson, Exercise Physiology, Fall.
Angela Welford, M.S., Fall

Brad Stone, Ph.D., through Los Alamos and the Cancer Center.

F. PROFESSIONAL ACCOMPLISHMENTS AND AWARDS OF YOUR GRADUATE STUDENTS, EXCLUSIVE OF THOSE ON WHICH YOU WERE A CO-AUTHOR OR PARTICIPANT.

ALTENBACH

Grant from the Bureau of Land Management to Mike Balistreri for studying bat populations in caves in the Roswell District. Additional small grants from: Cave Research Foundation, National Speleological Society, Mazanias, American Museum of Natural History and Sigma Chi.

BARTON

Miette Huybrechts received a Fulbright Fellowship to study in Belgium, 1992.

DAHM

Jim Markwiese won best student poster at the Spectrum 1992 Nuclear and Hazardous Waste Management International Topical Meeting, Boise, ID.

Kevin Henry won best student paper at the AWRA meeting, Socorro, NM.

KERKOF

Patricia Dolan, a Ph.D. student in my laboratory, received a $48,000, 3-year award from the UNM Graduate Studies Office.

NATVIG

William Dvorachek: successful completion of doctoral comprehensive exam.


NELSON

Sandra T. Merino: awarded a Patricia Roberts Harris Fellowship (stipend of $10,000/yr., tuition, and additional sums for educational expenses), began September 1, 1992; Presented a talk entitled "Inheritance of the Mating Type Chromosome in Neurospora tetrasperma: A Model for Sex Chromosome Evolution," West Coast Neurospora Conference, University of California, Santa Cruz, Ca, August 21-22, 1992.
Eduardo Gomez Sy: awarded a Patricia Roberts Harris Fellowship (stipend of $10,000/yr., tuition, and additional sums for educational expenses), began September 1, 1992.

SNELL

Paul Stone:


TOOLSON

Patricia Ashby: paper presented to annual meeting of the Southwestern Association of Biology, Camp Tontozona, AZ, October 23, 1992.

VOGEL

James Robbins: Co-author on manuscript selected to receive Kappa Delta Award from the Orthop. Res. Society (with Dr. Linda Sandell; work completed before coming to UNM).

Stephen Evanko: Outstanding Young Investigator Award from the Orthop. Res. Society, $500 prize; Received $300 travel award to present a paper at annual meeting of Society for Complex Carbohydrates.

YATES

Papers presented (with published abstracts)


Frey. Jennifer K. Evolutionary consequences of modes of peripheral isolate formation under alternative modes of speciation. Annual meeting, American Society of Mammalogists, 1992, Salt Lake City, UT.

Frey. Jennifer K. Evolutionary consequences of modes of peripheral isolate formation under alternative modes of speciation and speciation in frogs of the subgenus *Stombus*.
(Leptodactyliidae: genus Ceratophrs). Annual meeting, Southwestern Association of Naturalists, 1992, Junction, TX.

Grants Received:

Eduardo Palma: Evolutionary relationships among taxa of the genus Thylamys in southern South America, Latin American Institute, $1,250, 1992. Also received $375 from Sigma Xi for the same project.


Jennifer Frey - see Arizona grant above.

Marcello Zalles: Received funding for his entire master's program from the US agency for International Development.

Papers Published:


Honors:

Jennifer K. Frey: Received the prestigious "Albert and Alma Shadle Fellowship in Mammalogy" from the Buffalo Foundation. Only one such award is given annually by the American Society of Mammalogists to the most promising Mammalogy graduate student to apply.

Travis Perry: Received the "Distinguished Research Award" from Furman University.

V. UNDERGRADUATE EDUCATION.

A. bona fide undergraduate courses you taught each semester and number of students enrolled. indicate new course (for you) with an asterisk.

ALTENBACH

Spring: Biology 110, Biology for Non-Majors, 90 students
BACA

Spring: Biol. 239L, Microbiology for Health Sciences, 119 students
Fall: Biol. 239L, Microbiology for Health Sciences, 121 students

BARTON

Fall: Biol. 350L, General Microbiology, 96 students

BOURNE

Spring: Biol. 237, Human Anatomy and Physiology I, 193 students
Biol. 238, Human Anatomy and Physiology II, 258 students
Biol. 416, Histology, 41 students
Fall: Biol. 237, Human Anatomy and Physiology I, 405 students
Biol. 238, Human Anatomy and Physiology II, 132 students

CRAWFORD

Spring: Biol. 407, Bosque Biology, 15 students
Biol. 457, Ethology Lab: Animal Behavior, 15 students
Fall: Biol. 402, Terrestrial Arthropod Biology, 5 students
Biol. 407, Bosque Biology, 16 students

DAHM

Spring: Biol. 495 Limnology, 20 students (17 undergraduates)
Biol. 496L Limnology Lab, 7 students (5 undergraduates)

DUSZYNSKI

Spring: * Biol. 402, Advanced Marine Biology, 10 students
Biol. 382L, Parasitology (lecture & lab), 15 students
Fall: * Biol. 402, Parasitology Laboratory Techniques, 3 students
Biol. 404L, Marine Invertebrate Lab, 20 students

EVANS

Spring: * Biol. 418, Ecological Genetics, 8 students
Summer: * Biol. 402, Methods in Ecological Research, 10 students (Although I was not the instructor of record, I organized the course.)
Fall: * Biol. 221, Introductory Genetics, 72 students
* Biol. 402, Seminar in Ecology and Evolution, 10 students

JOHNSON, G.

Spring: Biol. 478, Plant Physiology, 6 students
Biol. 478L, Plant Physiology Lab, 6 students
Fall: Biol. 440, Soil Ecosystem, 13 students

A-64
Biol. 440L, Soil Ecosystem Lab, 13 students

JOHNSON, W.

Spring:  Biol. 221, Introductory Genetics, 105 students
         Biol. 222, Introductory Genetics Problems, 18 students
         Biol. 223, Introductory Genetics Lab, 31 students
         Biol. 428, Human Heredity, 24 students

Fall:    Biol. 123, Biology for Non-Majors, 134 students
         Biol. 221, Introductory Genetics, 111 students
         Biol. 222, Introductory Genetics Problems, 41 students
         Biol. 223, Introductory Genetics Lab, 25 students

KERKOF

Spring:  Biol. 429, Molecular Cell Biology, 116 students
         Biol. 429L, Molecular Cell Biology Lab, 17 students

Fall:    Biol. 449, Molecular Cell Biology, 24 students

KODRIC-BROWN

Spring:  Biol. 455, Ethology/Animal Behavior, 47 students
         Biol. 457L, Ethology/Animal Behavior Lab, 11 students
         Biol. 515, Field Ecology (with J.H. Brown), 8 students

Fall:    Biol. 487L, Ichthyology (with M. Molles), 13 students
         Biol. 521, Advanced Behavioral Ecology, 8 students

LIGON, S.

Fall:    Biol. 110, Biology for Non-Majors, 133 students

LOKER

Fall:    Biol. 371, Invertebrate Zoology, approx. 35 students

LOWREY

Fall:    Biol. 363, Flora of New Mexico, 25 students; lab manual revised

MILNE

Spring:  Biol. 200, Principles of Ecology, 13 students

Fall:    Biol. 260, Introduction to Botany, 23 students

MOLLES

Spring:  Biol. 122, Principles of Biology, 182 students
Biol. 407, Bosque Biology, 15 students
Fall: Biol. 407, Bosque Biology, 15 students
Biol. 487, Ichthyology, 13 students

**NATVIG**

Spring: Biology 121, Principles of Biology, 256 students
Biology 402/502, Advanced Fungal Genetics, 10 students
Fall: Biology 402/502, Advanced Fungal Genetics, 9 students
Biology 446/546, Laboratory Methods in Molecular Biology, 9 students

**NELSON**

Spring: Biol. 402/502, Advanced Fungal Genetics, 10 students
Spring: * Biol. 402/502, Molecular Genetics of Development, 8 students
Fall: Biol. 402/502, Advanced Fungal Genetics, 9 students
Fall: * Biol. 446/546, Laboratory Methods in Molecular Biology, 9 students

**RIEDESEL**

Spring: Biol. 430, Vertebrate Physiology, 45 students
* Biol. 402, Space Physiology, 13 students
Fall: Biol. 430, Vertebrate Physiology, 20 students

**SNELL**

Fall: Biol. 122, Principles of Biology, 160 students
Biol. 379, Conservation Biology, 75 students
Spring: Biol. 379, Conservation Biology, 40 students

**STRICKER**

Fall: * Biol. 412, Developmental Biology, 24 students

**TAYLOR**

Spring: Biol. 122 Lab, Principles of Biology, 25 students
Fall: Biol. 300, Evolution, 56 students

**THORNHILL**

Spring: Biol. 365, The Evolution of Human Sexuality, 85 students
Fall: * Biol. 190, Human Nature: The Darwinian Conception, 50 students

**TOOLSON**

Fall: Biology 435, Animal Physiology, 28 students
Spring: Biology 122, Principles of Biology, 450 students
TRUJILLO

Spring:  * Biol. 121L, Principles of Biology, 326 students  
       Fall:  Biol. 121L, Principles of Biology, 562 students  
             Biol. 412, Developmental Biology, 23 students  
             Nat. Sci. 225 (Honors Program), 10 students

VOGEL

Fall:  Biol. 456, Immunology, 55 students

WERNER-WASHBURN

Spring:  Biol. 402/502, Yeast Molecular Genetics, 8 students (3 undergraduates)  
        Fall:  Biol. 402/502, Advanced Fungal Genetics, 10 students  
        Fall:  Biol. 402/502, Advanced Fungal Genetics, 9 students  
                Biol. 444, Molecular Biology, 20 students (15 undergraduates)

YATES

Fall:  Biology 402, Advanced Vertebrate Biology, 9 students  
       Biology 489, Mammalogy, 15 students

B. NAMES OF BIOLOGY 400 AND 499 STUDENTS YOU SUPERVISED.

BARTON

Spring:  Biol. 400, Mahesh Pant, Robert Yorkin
       Fall:  Biol. 499, Melissa Hankins

BOURNE

Spring:  Biol. 499, Larae G. Enright, George R. Kelley, Mark W. Kiehn

CRAWFORD

Spring:  Biol. 400, F. Heinzelmann
       Fall:  Biol. 400, F. Heinzelmann

DAHM

Spring:  Biol. 400, Michelle Murillo  
        Biol. 499, Kevin Henry
       Fall:  Biol. 499, Christina Noftsker, Kevin Henry

DUSZYNSKI

Spring  Biol. 499, W. Wilson
EVANS
Spring: Biol. 400, Melanie Marshall

JOHNSON, G.
Spring: Biol.499, Mike P. Bradley

KERKOF
Spring: Biol. 499, Melisa Hankins, Ross Waldrip
Fall: Biol. 499, Mark Holmes

LOKER
Spring: Biol. 400, M. Khotani
Fall: Biol. 499, H.E. Coker, W.D. Wilson

MILNE
Spring: Biol. 400, Joran Viers

NELSON
Spring: Biol. 499, Carlos A. Arguelles, Eduardo Gomez Sy
Summer: Biol. 499, Jerinda K. Lobner

SNELL
Spring: Biol. 499 Y.D. Chauvin

STRICKER
Spring: Biol. 499, Marc Bellis, Ken Conwell

RIEDESEL
Fall: Biol. 499, William Fitzpatrick

THORNHILL
Spring: Biol. 499, Kurt McKean
Fall: Biol. 499, Kurt McKean

TRUJILLO
Fall: Biol. 499, Joe Mirabal, Pam Padiila and Ed Weeber
WERNER-WASHBURN

Spring:  Biol. 499, Braeden Butler and April Sherard
Summer: Happy Carmona and Alex Ortega

YATES

Fall:  Biol. 499, John Dunnum

VI. DEPARTMENTAL HIGHLIGHTS.

A. SYMPOSIA, WORKSHOPS, CONFERENCES, ETC., SPONSORED, HOSTED, ORGANIZED.

BROWN

Co-organizer, NSF Workshop, "A National Center for Ecological Synthesis and Analysis."

DAHM

Organizer and host of field trip to Rio Salado at the Sevilleta Long-term Ecological Research site as part of the 50th Annual Meeting of the American Society of Limnology and Oceanography, February 9.

EVANS

Sevilleta Mini-Symposium for REU (Research Experiences for Undergraduates) Program students, Summer.

LOWREY

Organized, co-sponsored, and session chair, Southwest Symposium on Rare and Endangered Plants, Santa Fe, NM, March.

MILNE

Hosted workshop, UNM Main Campus, "Complex Systems."

NELSON

Served as one of the organizers of the First Annual Biology Research Day, UNM Biology Department, April 3.

STRICKER


THORNHILL

Human Behavior and Evolution Society Conference, co-host, Albuquerque.

VOGEL

Organized Department of Biology First Annual Research Day-1992: 46 poster and oral presentation by graduate and undergraduate students, invited speaker, held lunch and reception, April.

Organized student trip to La Jolla Cancer Research Foundation, as prize, February.

YATES

Organized and co-hosted with Don Wilson and William Gannon a symposium in honor of Dr. James S. Findley. Approximately 50 persons attended, with many distinguished visitors from out of town. The symposium lasted two days and numerous papers were presented. A symposium volume in Dr. Findley's honor will be published.

B. INDIVIDUAL HONORS: AWARDS, PRIZES, FELLOWSHIPS, LECTURES, TEACHING DISTINCTION, ETC.

KERKOF

CY 1992, overall "outstanding" ICES teaching evaluations scores:

Biol. 429, 4.96, 78 students
Biol. 439, 5.16, 8 students
Biol. 449, 5.00, 21 students
Biol. 549, 5.05, 5 students

Of the 40 courses taught since Spring 1983 (when ICES evaluations began), a rating of "outstanding" in 38 of those courses (an average of 4.98 out of 5.00 on all relevant items), with the remaining two "excellent."

LIGON

Awarded a Fulbright Research Grant to Madagascar; award declined for personal reasons.

LOKER

Fogarty Senior International Fellowship, National Institutes of Health.

THORNHILL

Professor, Nordic Council Course on Sexual Selection, University of Helsinki, Finland, February.
Fellow, Animal Behavior Society
YATES

Recognized for Outstanding Performance, National Science Foundation.
Recipient of the Leopold Conservation Award, New Mexico Nature Conservancy.

C. DISTINGUISHED DEPARTMENTAL VISITORS YOU HOSTED.

BROWN

Dr. Carl E. Bock, EPO Biology, University of Colorado

DAHM

Dr. Frank Triska, U.S. Geological Survey, Menlo Park, CA
Dr. Mike Allen, San Diego State University, San Diego, CA
Dr. Joe Yavitt, Cornell University, Ithaca, NY
Dr. Alan Knapp, Kansas State University, Manhattan, KS

DUSZYNSKI

Dr. Gheary Pettit, Associate Dean, College of Veterinary Medicine, Washington State University, Pullman WA, September.

Dr. Norman E. Hutton, Associate Dean, College of Veterinary Medicine, Oregon State University, Corvallis OR, October.

Dr. Jack Frenkel, M.D., Ph.D., Professor Emeritus of Oncology (University of Kansas Medical Center) and Adjunct Professor of Biology (UNM), November 24, 1992.

EVANS

Dr. Gary Carmichael, U.S. Fish and Wildlife Service, Spring
Dr. Johanna Schmitt, Brown University, Fall
Dr. Shozo Yokoyama, Syracuse University, Spring

KODRIC-BROWN

Dr. John A. Endler, University of California at Santa Barbara

LOKER

Dr. Jaqueline Fernandez, Department of Biology, Wake Forest University, Winston-Salem, N.C., Fall
LOWREY

Dr. Richard Whitkus, University of California—Riverside
Dr. Meredith Lane, University of Kansas

MILNE

Timothy Allen
S. Bartha

NELSON

Dr. Marjatta Son, September 11, 1992

TOOLSON

Professor J.F.S. Barker, Chair, Animal Science Department, University of New England, Armidale, NSW, Australia.

VOGEL

Dr. Linda Sandell, Associate Professor, University of Washington, Seattle, April
Dr. Carolyn Mold, Professor, UNM School of Medicine, Dept. of Microbiology Seminar, November

WERNER-WASHBURREN

Site review panel for the RIMI grant, July 1992

YATES

Dr. Masayuki Yasuno, Environmental Minister, Japan
Dr. Masao Kamiya, Professor, Hokkaido University, Sapporo, Japan
Dr. Matthew Playford, Hokkaido University, Sapporo, Japan
Dr. Fernando Cervantes, Curator of Mammals, Universidad National Autonoma de Mexico
Ms. Emily Rudin, Program Manager, Latin America, Division of International Programs, National Science Foundation
Dr. Michael Bogan, Chief Biological Survey, National Ecology Research Center, National Fish and Wildlife Service, Fort Collins, CO
Dr. Haruo Kamiya, School of Medicine, Hirosaki, University, Hirosaki, Japan

D. MUSEUM CURATOR, UNDERGRADUATE ADVISOR, ASSISTANT CHAIR, EM DIRECTOR, ETC.

ALTENBACH

Undergraduate Advisor

BARTON

Chair, Committee for Cell and Media Center
CRAWFORD
Curator, Insect Collection, Museum of Southwestern Biology
Associate Chair
Graduate Advisor

DUSZYNISKI
President and Founder, Biological Society of New Mexico

JOHNSON, G.
Undergraduate advisor

JOHNSON, W.
Undergraduate Advisor

LIGON
Departmental Chair
Director, Museum of Southwestern Biology

LOKER
Associate Chair for Graduate Policy and Undergraduate Scheduling, Fall
Graduate Program Advisor

LOWREY
Curator, Herbarium

MOLLES
Curator, Division of Fishes, Museum of Southwestern Biology
Undergraduate Advisor

SNELL
Curator, Herpetology Division, Museum of Southwestern Biology, UNM
Associate Chair, Department of Biology, UNM

STRICKER
Electron Microscopy Director

TRUJILLO
Undergraduate Advisor
VOGEL

Associate Chair for Curriculum, Spring through Summer
Director, Howard Hughes Program in Biology

WERNER-WASHBURN

Undergraduate advisor and mentor to about 30 students

I am in charge of the RIMI Molecular Biology laboratory. In that capacity, I supervise the
director of the laboratory, Dr. Margo Roark, and the Program coordinator, Joseph Miller.
In addition to coordinating the remodelling, equipment buying, and organization of the
laboratory, we are reviewing the Biology Department recruiting material and will be
coordinating retention within the Department.

YATES

Curator, Divisions of Mammals and Birds, Museum of Southwestern Biology

E. COMMITTEE SERVICE.

1. Departmental committees served on in 1992 (indicate chair with asterisk).

ALBENBACH

Graduation Committee

BACA

Department representative to A&S Graduate Policy Committee

BARTON

Graduate Student Selection Committee

BOURNE

Premedical Advisor

CRAWFORD

* Space
* Library Liaison

DAHM

* Biological Modeler Search Committee
DUSZYNSKI

* Biological Society of New Mexico Committee
Graduation Committee
Liaison-Latin American Institute

EVANS

Space Committee
Greenhouse Committee

JOHNSON, G.

Greenhouse Committee
Biology Graduation Committee
Ad-hoc Committee for an undergraduate major in conservation biology

JOHNSON, W.

Media Prep/Culture Collection Committee

KERKOF

Undergraduate Policy Committee

KODRIC-BROWN

Graduate Student Advisor
Departmental Animal Care Committee

LIGON, S.

Graduate Student Teaching Awards
Undergraduate Policy Committee

LOKER

* Graduate Policy Committee
Graduate Student Selection
* Seminar Committee

LOWREY

Seminar Committee, Spring,
Greenhouse Management Committee, Spring and Fall
Graduate Policy Committee, Fall

MILNE

LTER, Principal Investigator, * Chairman of Project Coordinating Panel
* Computer Use Committee
* Biology Computer Pod Coordinator

**MOLLES**

* Teaching Evaluations
* Teaching Awards
* Undergraduate Policy

**NATVIG**

Undergraduate Policy Committee
Tenure and Promotion Committee
Hughes Program Committee
RIMI Committee
Search Committee for Microbiology support person

**NELSON**

Undergraduate Policy Committee
Research Day Planning Committee
Hughes Program Committee
RIMI Committee

**RIEDESEL**

First Annual Research Day
Laboratory Animal Utilization
Tenure/Promotion

**SNELL**

* Biology Department Graduate Student Selection Committee
* Biology Department Commencement Committee
Animal Care and Use Committee

**STRICKER**

Graduate Student Selection Committee

**TAYLOR**

Seminar Committee
Biological Modeller Search Committee, Fall

**THORNHILL**

Seminar Committee
TOOLSON

Graduate Policy Committee
* Undergraduate Policy Committee
Ecological Modeler Search Committee

VOGEL

* Undergraduate Policy Committee
Tenure and Promotion Committee

WERNER-WASHBURN

Graduate Policy Committee

2. College/University committees served on in 1989 (indicate chair with asterisk).

ALTENBACH

UNM Council on Teacher Preparedness

* Arts & Sciences Committee on Teaching Science for Pre-service Elementary School Teachers

BACA

* A&S Tenure/Promotion Committee, Spring
A&S Tenure/Promotion Committee, Fall
* UNM Institutional Biosafety Committee on Recombinant DNA
UNM Athletic Council
Senate Graduate Committee
Legislative Coordinating Committee
Biomedical Research Support Grant Committee
Search Committee for A&S Dean
KUNM Radio Board

BOURNE

University Curricula Committee

DAHM

Committee to review the status and future of the Department of Geography.

DUSZYNISKI

JOHNSON, G.

* Faculty Senate Library Committee, Spring
Faculty Senate Library Committee, Fall
Teaching Enhancement Committee (ex-officio member), Spring

JOHNSON, W.

UNM Health Sciences Advisory Committee
Faculty Senate Undergraduate Committee
UNM Student Standards Committee

KERKOF

* UNM Teaching Allocations Subcommittee, Spring
UNM Teaching Enhancement Committee, Spring
* UNM Teaching Enhancement Committee, Fall
UNM Teaching Allocations Subcommittee, Fall

LIGON

Provost Search Committee

MILNE

High Performance Computing Committee

NATVIG

Core Curriculum Implementation Committee
Reallocations Committee

NELSON

Participated in "One-on-One" Program for new students at UNM: mentored two students.

SNELL

Biology Department Liaison with the Latin American Institute Committee
Latin American Institute Proposal Review Committee

THORNHILL

Faculty Senate

TOOLSON

A & S Curriculum Evaluation Committee
VOGEL

Research Policy Committee, UNM
A & S, Senior Tenure and Promotion Committee
A & S, PNM Scholar Selection Committee
A & S, Women’s Caucus, Steering Committee
Inquiry Committee (confidential)

WERNER-WASHBURN

Selection committee for the Regents Scholars
Steering committee, A&S Women’s faculty caucus
MARC selection committee, Psychology Department
Undergraduate Curriculum Committee

YATES

Member, Council of the Americas
* Environmental Subcommittee, Council of the Americas

F. OTHER.

ALTENBACH

Sabbatical Leave, Fall

BACA

Research Professor of Microbiology, UNM
Member, New Mexico state Recombinant DNA Committee
Associate, UNM’s Southwest Hispanic Research Institute
Judge, State Science Fair, Socorro

BARTON

Advisor, Senior Honors Thesis: Mahesh Pant, Transformation of bismuth salts by bacteria.

CRAWFORD

Member, Review Team of the UNM Geography Department

DUSZYNFSKI

Took Marine Invertebrate Biology class (Biol. 404L) to the Centro de Estudio de Desierto y Oceanos (CEDO, Inc.), Puerto Penasco, Sonora, Mexico on field trip, October 21-27, more than 20 individuals.

Took Advanced Marine Biology class (Biol. 402/502F) to the Hofstra University Marine Laboratory (HUML), St. Ann’s Bay, Jamaica, West Indies on a field trip, March 14-20, 20 individuals.

External Dissertation Examiner, Prof. D. Samuel, Zoology Department, Mar Ivanios College, Kerala, India.

EVANS

Continued to organize and run weekly informal discussions of current topics in ecology and evolution among graduate students and faculty, Spring and Fall 1992.

Served on the Project Coordinating Panel of the department’s LTER program, Fall and Spring 1992.

Participated in a program for mentoring high school students at El Dorado High School, Fall 1992.

Developed the REU program, including meeting weekly with the 10 students during summer 1992, taking the students to a regional meeting in Fall 1992, and requesting and organizing teaching assistance for Summer 1993.

JOHNSON, G.

Judge for poster session, Department of Biology First Annual Research Day, April 10.

KEROF

Accepted a high school student, Andrea Ortiz, into my laboratory and guided her through a research project full-time for nine months.

During the Fall semester as chair of the UNM Teaching Enhancement Committee, wrote an article for the UNM Daily Lobo in response to several pessimistic articles regarding the University’s commitment to increasing the awards for teaching excellence. The response from the Regents, Administration, faculty and students was quite positive.

KODRIC-BROWN

Poster judge, Department of Biology First Annual Research Day, April.

LOKER

Sabbatical Leave: Wellcome Institute for Molecular Parasitology, Institute of Genetics, University of Glasgow, January-June, 1992.
MILNE

Hosted graduate student from Universidad de Sevilla, Spain, José Carlos Muñoz, October-December 1992.

MOLLES

Sabbatical Leave, Spain & Portugal, Fall.

NATVIG

Faculty Senate member

RIEDESEL

Judge, NWNM Regional Science and Engineering Fair, Spring.
Speaker, Pre-Medical Motivational Workshop, UNM Medical School, Spring.

STRICKER

Establishment of the Confocal Microscopy Facility.


Conducted research at the University of Wisconsin, March 1992.

TAYLOR

Supervisor of Biology Honors Program.

TOOLSON


Chief judge (I organized all the other judges) for First Annual Research Day, April, 1992.

TRUJILLO

Evaluate application for degrees in Biology (B.S., B.A. and Minor), Fall and Spring.

WERNER-WASHBURNE

In my laboratory, I currently have three post-doctoral fellows; one has an NSF Minority Post Doctoral Fellowship and one has an NIH Post Doctoral Fellowship. I also have two Ph.D. students and 3-4 undergraduates doing research in the laboratory. One of the undergraduates is a Hughes Fellow.
APPENDIX B

PROGRAM OF THE
SECOND ANNUAL
BIOLOGY RESEARCH DAY
Second Annual Research Day

A Presentation of Graduate & Undergraduate Student Research

Guest Speaker:
DR. MIMI KOEHL
The University of California at Berkeley

"The Fluid Dynamics of Hairy Little Legs: Feeding, Smelling & Swimming"

Friday, April 2, 1993
The Department of Biology
The University of New Mexico
We wish to thank the La Jolla Cancer Research Foundation, La Jolla, CA, for their financial support of this Second 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 Fifteenth Annual Symposium sponsored by the Foundation, to meet with scientists at the Foundation, and to tour the laboratories. This symposium on "Molecular Control of Neural Development" was held March 19, 1993. The two students who attended were:

Marc Bellis, undergraduate student
Dave Braggs, undergraduate student

Special thanks are due Dr. Eva Engvall, La Jolla Cancer Research Foundation, for suggesting and hosting the students' visit.
SCHEDULE OF EVENTS

THURSDAY, APRIL 1

2 p.m.—5 p.m. Student Posters displayed, judges preview.

FRIDAY, APRIL 2

9 a.m.—5 p.m. Student Posters displayed in the main hallway of the Biology Building.

9 a.m.—10:15 a.m. Student Oral Presentations: Session 1, Room 100. Moderators: Dr. Margaret Werner-Washburne, Assistant Professor Patty Wilber, graduate student

10:15 a.m.—12:15 a.m. Judging of Student Posters.

11:45 a.m.—1 p.m. Lunch, Room 83 and adjoining central courtyard.

1:00 p.m.—2:15 p.m. Student Oral Presentations: Session 2, Room 100. Moderators: Dr. J. David Ligon, Chair & Professor Stephen Evanko, graduate student

2:15 p.m.—3:00 p.m. Posters continued.

3 p.m.—4 p.m. Guest Lecture, Dr. Mimi Koehl. "The Fluid Dynamics of Hairy Little Legs: Feeding, Smelling and Swimming," Room 100.

4:00 p.m.—4:30 p.m. Awards Ceremony. Moderator: Dr. Kathryn Vogel, Professor

5:00 p.m.—6:30 p.m. Reception, Maxwell Museum of Anthropology.
COMMITTEE:

Dr. Kathryn Vogel, Professor
Geneva Chong, graduate student
Robyn Cote-Schmader, Admin. Asst., Hughes Program
Dr. Timothy Lowrey, Assistant Professor
Dr. Margo Roark, Director, RIMI Molecular Biology Facility
Patty Wilber, graduate student

JUDGES for ORAL PRESENTATIONS:

Dr. George Stevens, Grants Coordinator
Dr. Ann Evans, Assistant Professor
Dr. Mary Anne Nelson, Assistant Professor
Jim Robbins, graduate student

JUDGES for POSTER PRESENTATIONS:

Dr. Vicki Peck, Research Associate
Dr. Oz Baca, Professor
Tracy Boyce, graduate student
Dr. Dan Caprioglio, Research Associate
Lee Couch, Research Associate
Dr. Cliff Dahm, Associate Professor
Dr. Wendy Fuge, Research Associate
Laura Gonzales, graduate student
Dr. Gordon Johnson, Associate Professor
Mark Jordan, graduate student
Dr. Astrid Kodric-Brown, Associate Professor
Dr. Mimi Koehl, University of California at Berkeley
Dr. Diane Marshall, Associate Professor
Dr. Steve Stricker, Assistant Professor
Dr. Eric Toolson, Professor
Dr. Terry Yates, Associate Professor

Additional thanks are extended to the many students who helped throughout the day, and Anne Rice and Beth Dennis for preparation of this booklet.
ABOUT THE SPEAKER

The invited speaker for the Second Annual Biology Research Day is Dr. Mimi Koehl, Professor, the Department of Integrative Biology at the University of California, Berkeley. Her talk is entitled, "The Fluid Dynamics of Hairy Little Legs: Feeding, Smelling and Swimming."

Dr. Koehl graduated magna cum laude from Gettysburg College with a B.A. in biology, and received her Ph.D. in zoology from Duke University in 1976. Dr. Koehl worked as a post-doctoral fellow at the Friday Harbor Laboratories at the University of Washington, and at the University of York, England, and went on to be an Assistant Professor in the Division of Biology and Medicine at Brown University from 1978 to 1979. She was a Visiting Professor at the Friday Harbor Laboratories in 1979 and 1984, and a Visiting Scholar at the Centre for Mathematical Biology at Oxford University in 1986. She has been a faculty member in the Department of Integrative Biology at the University of California, Berkeley, since 1979, and is the recipient of many grants and fellowships including a Presidential Young Investigator Award in 1983 and the MacArthur Foundation "Genius" Fellowship in 1990.

Dr. Koehl’s research analyzes the structure and function of organisms from a biomechanical perspective and has focused on four major areas: i) the interactions between moving waters and sessile organisms; ii) the morphology and performance of suspension-feeding appendages; iii) aerodynamics, thermoregulation, and the evolution of insect wings; and iv) mechanical aspects of morphogenesis.
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<tr>
<th>Time</th>
<th>Speaker(s)</th>
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<tr>
<td>9:00</td>
<td>ORAL PRESENTATIONS</td>
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<td>9:00</td>
<td>ALLOZYME AND MITOCHONDRIAL DNA VARIATION IN MIGRATORY SANDHILL CRANE (GRUS CANADENSIS).</td>
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<td>Jennifer K. Frey, David J. Hafner, Terry L. Yates and C. Gregory Schmitt</td>
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<td>9:15</td>
<td>POPULATION GENETIC STRUCTURE IN A RARE SPECIES OF ERIGERON (ASTERACEAE) IN WESTERN NEW MEXICO.</td>
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<td>Stephen L. Reed and Timothy K. Lowrey</td>
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<td>9:30</td>
<td>WITHIN POPULATION GENETIC VARIANCE IN TWO SPECIES OF DESERT RODENTS.</td>
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<td>Marian P. Skupski</td>
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<td>9:45</td>
<td>INHERITANCE OF THE MATING TYPE CHROMOSOME IN NEUROSPORA TETRASPERMA: A MODEL OF SEX CHROMOSOME</td>
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<td>EVOLUTION.</td>
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<td>Sandra Merino, Mary Anne Nelson and Donald O. Natvig</td>
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<td>10:00</td>
<td>REGULATION OF TENDON FIBROCARTILAGE DEVELOPMENT BY CYCLIC COMPRESSION AND TRANSFORMING GROWTH</td>
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<td>FACTOR-β.</td>
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<td>Steve Evanko, James Robbins, Michael Joyce and Kathryn Vogel</td>
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<td>1:00</td>
<td>THE PREVALENCE OF THE RODENT BOT FLY (CUTEREBRA SP.) ON THE SEVILLETE NATIONAL WILDLIFE REFUGE.</td>
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<td>Wade D. Wilson and D.W. Duszyński</td>
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<td>1:15</td>
<td>THE USE OF A GEOGRAPHIC INFORMATION SYSTEM (GIS) TO STUDY THE DISTRIBUTION OF THE SCHISTOSOME-</td>
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<td>TRANSMITTING SNAILS IN KENYA.</td>
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<td>Tracy G. Boyce, Eric S. Loker and Douglas D. Rizor</td>
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<td>1:30</td>
<td>LEPIDOPTERAN LEAF ROLLERS ON COTTONWOOD IN THE MIDDLE RIO GRANDE RIPARIAN WOODLAND.</td>
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<td>Tze-Hei Yong and Clifford S. Crawford</td>
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<td>1:45</td>
<td>A SEARCH FOR REVEGETATION METHODS TO REDUCE SOIL EROSION IN PIÑON-JUNIPER WOODLANDS.</td>
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<td>Geneva Chong</td>
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<td>2:00</td>
<td>AN EXAMINATION OF THE GENETIC AND DEMOGRAPHIC RELATIONSHIP BETWEEN LESQUERELLA FENDLERI AND ITS</td>
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<td>SEED BANK.</td>
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<td>Robert Cabin</td>
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POSTER PRESENTATIONS

11 EFFECT OF HYPOTHERMIA ON VENTILATION AND SURVIVAL DURING HYPOXIA IN HOODED RATS.  
R.J. Gonzales, K. Rudolph and S.C. Wood

12 FLUID BALANCE IN HEADDOWN POSITION.  
J. Harrison, W. Fitzpatrick and M.L. Riedesel

13 TSH-INDUCED GENE EXPRESSION IN OVINE THYROID CELLS IN CULTURE.  
D.M. Zamora, C. Carter, J. Shook and P.R. Kerkof

14 ANALYSIS OF PROTEINS SYNTHESIZED IN STATIONARY PHASE YEAST.  
Edward Braun, Edwina Fuge and Margaret Werner-Washburne

15 EXPRESSION OF CARTILAGE SPECIFIC mRNAs IN TENDON.  
James R. Robbins and Kathryn G. Vogel

16 COMPARISON OF COMPLEMENT ACTIVATION BY IgG AND C-REACTIVE PROTEIN (CRP) IMMUNE COMPLEXES.  
D. Otero, B.D. Reilly and C. Mold

17 ANALYSIS OF BCY1 EXPRESSION IN THE YEAST, SACCHAROMYCES CEREVISIAE.  
Braeden Butler and Margaret Werner-Washburne

18 CLONING OF THE REGULATORY ENZYME PHOSPHOFRUCTOKINASE-1 FROM THE HUMAN LIVER INTO AN EXPRESSION VECTOR FOR E. COLI.  
Pamela Padilla and Ed Weeber

19 CHARACTERIZATION OF A NEUROSPORA CRASSA GENE FOR MITOCHONDRIAL SUPEROXIDE DISMUTASE, sod-2, AND CONSTRUCTION OF AN sod-2 NULL MUTANT.  
William H. Dvorachek and Donald O. Natvig

20 TURNOVER OF PROTEOGLYCANS IN CULTURED FETAL AND ADULT BOVINE TENDON.  
Dave Braggs and Kathryn Vogel

21 ISOLATION OF THE spr2 AND spr3 GENES OF S. CEREVISIAE.  
Matthew Crawford, Daniel Caprioglio and Margaret Werner-Washburne

22 PROTEOGLYCANS SYNTHESIZED AND ACCUMULATED IN ADULT AND FETAL BOVINE TENDON: DO BIG ONES KEEP IT FROM BEING SQUASHED?  
Matthew Berenson, Erin Doherty and Kathryn Vogel
POSTER PRESENTATIONS

Continued

23 THE QUEST TO DEFINE STATIONARY PHASE IN SACCHAROMYCES CEREVISIAE.
Jason A. Thomas, Vickie M. Peck and Margaret Werner-Washburne

24 BRAINS AND PLANES (A COMPARATIVE STUDY INVOLVING THE FUNCTION OF THE HUMAN BRAIN AND ARCHITECTURE)
Shirley Holden

25 MECHANISMS OF PARASITE-INDUCED IMMUNOSUPPRESSION IN AN INVERTEBRATE HOST.
Guenet DeGaffe and Eric S. Loker

26 ECTOPARASITES OF MEGACHIROPTERA FROM INDIA.
Michael J. Patrick and Shahroukh Mistry

27 SUSCEPTIBILITY OF BIOMPHARLARIA GLABRATA SNAILS FROM BELO HORIZONTE AND SALVADOR BAHIA, BRAZIL, TO SCHISTOSOMA MANSONI FROM PUERTO RICO.
Jacqueline Miralles-Salazar and Eric S. Loker

28 CAROTENOIDS AND DIMORPHISM: MARKERS FOR GOOD GENES?
David Gray

29 A REASSESSMENT OF HOMOZYGOSITY AND THE CASE FOR INBREEDING DEPRESSION IN THE CHEETAH ACINONYX JUBATUS.
Michele Merola

30 DETERMINATION OF PATERNITY IN TROPIDURUS OF THE GALAPAGOS ISLANDS.
Sandra Andaluz, Mary Anne Nelson and Howard Snell

31 A CHROMOSOMAL SURVEY OF THE BOLIVIAN CAVIIDS, CAVIA APEREA, AND GALEA MUSTEOLOIDES.
Jonathan L. Dunnum, Terry L. Yates and Joseph A. Cook

32 HOW MANY EGGS TO FERTILIZE: A SIMPLE MODEL OF FEMALE SEARCH AND CHOICE.
Shawn E. Nordell and Colleen Hatfield

33 EFFECT OF MACRO-SCALE ABIOTIC FACTORS IN RIPARIAN SPECIES ABUNDANCES.
C.A. Hatfield

6
POSTER PRESENTATIONS
Continued

34 NEST SELECTION IN TWO SYMPATRIC SPECIES OF TROPICAL FALCONS. TIKAL, GUATEMALA. B.J. Enquist, I.S. Cornel, and R. Thorstrom

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9:00 ALLOZYME AND MITOCHONDRIAL DNA VARIATION IN MIGRATORY SANDHILL CRANE (GRUS CANADENSIS). Jennifer K. Frey, David J. Hafner, Terry L. Yates, and C. Gregory Schmitt. Migratory subspecies of Sandhill Crane include the Lesser Sandhill Crane (G. c. canadensis), Greater Sandhill Crane (G. c. tabida), and Canadian Sandhill Crane (G. c. rowani). Allozyme variation at 25 presumptive loci between Lesser and Greater Sandhill Crane included frequency differences at 10 loci. Twenty restriction enzymes were used to survey fragment pattern variation among the three subspecies at four mtDNA regions. The cytochrome B and D-loop region was most variable and was used in further analyses. The restriction fragment patterns for G. c. tabida and G. c. rowani were indistinguishable but distinct from G. c. canadensis.

9:15 POPULATION GENETIC STRUCTURE IN A RARE SPECIES OF ERIGERON (ASTERACEAE) IN WESTERN NEW MEXICO. Stephen L. Reed* and Timothy K. Lowrey. An electrophoretic survey of 17 enzyme loci was used to estimate population genetic structure within a spatially discontinuous population of Erigeron acomanus. This herbaceous perennial is a narrow endemic growing in shallow arroyos beneath sandstone cliffs. The spatial divisions of the population correspond to local geographic barriers, resulting in distinct habitat partitioning. The enzyme study demonstrates widespread fixation (at 12 of 17 loci) and that a high proportion of the existing genetic diversity occurs among, rather than within, the geographic subpopulations. None of the five polymorphic loci was found to have more than two alleles. Four of the five maintain the low frequency allele in the heterozygous condition only. The loss of alleles, high fixation, and low diversity within subpopulations may be attributable to an evolutionary history of genetic bottlenecks following founding events and subsequent genetic drift.
9:30 WITHIN POPULATION GENETIC VARIANCE IN TWO SPECIES OF DESERT RODENTS. Marian P. Skupski

Merrian's kangaroo rat (Dipodomys merriami) and the western harvest mouse (Reithrodontomys megalotis) are sympatric over much of western North America. These two species show large differences in dispersal distances, with harvest mice generally moving much farther than kangaroo rats. They also show considerable differences in population dynamics. These differences lead to the prediction that there should be considerable differences in the genetic variability both within and between populations in each species. I have used recently developed molecular genetic techniques to examine the amount of genetic variation within populations of each species. The analyses show that harvest mice have much more variation within a population, as predicted by the theory. Further analyses of between population variation are also being performed, and preliminary results will be discussed.

9:45 INHERITANCE OF THE MATING TYPE CHROMOSOME IN NEUROSPORA TETRASPERMA: A MODEL OF SEX CHROMOSOME EVOLUTION. Sandra Merino, Mary Anne Nelson and Don O. Natvig.

We are examining the evolution of sex chromosomes using Neurospora tetrasperma, a secondarily homothallic, self-fertile fungus. The purpose of the present investigation was to examine whether recombination is reduced on chromosome 1, which contains the mating type loci. Neurospora tetrasperma spores normally contain nuclei of both mating types (a and A), so that single spores give rise to self-fertile heterokaryons. Occasionally, homokaryotic single-mating type, self-sterile ascospores are produced. Twenty-two homokaryotic a and A mating type strains were resolved from eleven heterokaryotic parents collected from various distant geographical regions. The segregation of markers on four of the seven Neurospora chromosomes was examined using restriction fragment length polymorphisms (RFLPs). Probes specific to the mating type chromosome 1 gave results suggesting the total absence of crossing over on this chromosome. In contrast, results obtained with probes to three other Neurospora chromosomes suggested that recombination occurs freely on those non-mating type chromosomes. Phylogenetic analyses showed that chromosome 1 segregates independently regardless of geographical origin, while the other chromosomes were strictly grouped based on their geographical origin. The results suggest that the chromosome 1 present in the a and A homokaryons diverged due to reduced recombination on chromosome 1; the absence of crossing over on this chromosome would be expected to be beneficial to the organism. Crossovers involving the mating type locus could result in self-sterile ascospores, which would disallow the typical mode of reproduction in Neurospora tetrasperma. The system which we are exploiting should serve as a model for primitive sex chromosome evolution.

10:00 REGULATION OF TENDON FIBROCARTILAGE DEVELOPMENT BY CYCLIC COMPRESSION AND TRANSFORMING GROWTH FACTOR-β. Steve Evanko, James Robbins, Michael Joyce, and Kathryn Vogel.

Fibrocartilaginous tissue develops within tendons in locations where they wrap around bones and experience compressive loads. Compared to normal tensional tendon, which contains primarily decorin, the compressed region also contains large amounts of two other proteoglycans, aggrecan and biglycan. We are testing the hypothesis that mechanical loading in vivo plays a regulatory role in the development of tendon fibrocartilage. Cyclic compressive loading of cultured fetal tendon explants for 3 days selectively stimulated synthesis and sulfation of aggrecan and biglycan and their mRNA expression as measured by metabolic radiolabeling with 35S sulfate and Northern blot analysis. Decorin synthesis was unchanged. The cytokine TGF-β is known to be involved in chondrogenesis. When added to tendon cultures, TGF-β selectively increased aggrecan and biglycan synthesis and sulfation very much like compressive loading. Cells in cultured fetal tendon express mRNA for TGF-β. Immunohistochemical staining of tendon compressed for three days in vitro indicated that intracellular levels of TGF-β were increased by cyclic compressive loading. These data are consistent with the hypothesis that endogenously produced TGF-β mediates the effect of cyclic compression on developing tendon fibrocartilage.
THE PREVALENCE OF THE RODENT BOT FLY (Cuterebra sp.) ON THE SEVILLETM NATIONAL WILDLIFE REFUGE. Wade D. Wilson and D.W. Duszynski.

During the summers of 1991 and 1992, all rodents trapped on 5 trapping webs in each of 3 habitat types (2 replicates each of grassland, creosote bush, juniper woodland) were examined for parasites, with particular attention to those infested with bot fly larvae, Cuterebra sp. Only two mammal species, the pinon mouse (Peromyscus truei) and the white-throated woodrat (Neotoma albicula) harbored bot fly larvae, and the prevalence of infection varied between hosts, habitat type, "season" of collection (May vs. August), and year. Neotoma albicula and P. truei were both caught in all habitat types in both years. In the creosote sites, only 1/17 (5.9%) woodrats was infested in 1991 but this increased to 4/38 (10.5%) infested in 1992. In the grassland sites the incidence of bots in woodrats increased from 2/25 (8%) in 1991 to 26/88 (29.5%) in 1992. Similarly, in juniper woodland, the incidence in woodrats increased from 2/29 (6.9%) in 1991 to 16/65 (24.6%) in 1992. In juniper woodland sites the incidence of bots in P. truei increased from 0/17 (0%) in 1991 to 16/172 (9.3%) in 1992. Peromyscus truei was not infested with bots in either the creosote sites 0/75 (0%) or the grassland sites 0/19 (0%) for either year. Early infestations were prevalent in N. albicula 20/113 (23.9%) whereas late infestations were prevalent in P. truei 15/309 (4.9%).

THE USE OF A GEOGRAPHIC INFORMATION SYSTEM (GIS) TO STUDY THE DISTRIBUTION OF THE SCHISTOSOME-TRANSMITTING SNAILS IN KENYA. Tracy G. Boyce and Eric S. Loker.

To better understand the geographical distribution of the three primary snail species involved in transmitting human schistosomes in Kenya, a Geographic Information System (GIS) has been applied to a recent survey of 218 freshwater sites in the southern half of the country. This computerized technology has been used to map and analyze the distributions of several parasite vectors but, until now, has not been used to study the distribution of the schistosome snail hosts. In addition to the snail data, elevation, rainfall and temperature data for Kenya were incorporated in the GIS. Preliminary results indicate a high degree of overlap with snail distribution and specific temperature, elevation and rainfall ranges.

LEPIDOPTERAN LEAF ROLLERS ON COTTONWOOD IN THE MIDDLE RIO GRANDE RIPARIAN WOODLAND. Tze-Hei Yong and Clifford S. Crawford.

Studies were done to learn about the life cycles, density levels, and mortality levels of two common leaf-rollers on cottonwood at the Rio Grande Nature Center. The results suggest that this system represents the intersection of a non-native, polyphagous species Archips argyrospilus (Walker) and a native, monophagous species Anacampsis innocuella (Zeller) on their common cottonwood host. Mortality studies show an overall mortality of leaf-rolling larvae of 74% for the study year. Density studies indicate an average leaf-roll density of 9% of available leaves, and suggest that most of the larval mortality is due to density-dependant predation that occurs irrespective of species identity. A minimum parasitization level was also estimated at 6% of original leaf-rolling larvae.
1:45 A SEARCH FOR REVEGETATION METHODS TO REDUCE SOIL EROSION IN PINYON-JUNIPER WOODLANDS. Geneva Chong

In July 1992 I began a randomized block experiment to look at treatment effects of both tree thinning and addition of soil amendments on revegetation success using native grass seed at Bandelier National Monument, Los Alamos, NM. The first data set consists of numbers of grass seedlings per treatment. I compare these data (ANOVA) to find which combinations of treatments are most effective in terms of seedling emergence. If analysis of future data sets shows that seedling emergence numbers are indicative of future revegetation success (success measured as seedling establishment and reproduction) then seedling counts will be a useful tool to resource managers for early evaluation of revegetation treatments.

2:00 AN EXAMINATION OF THE GENETIC AND DEMOGRAPHIC RELATIONSHIP BETWEEN LESQUERELLA FENDLERI AND ITS SEED BANK. Robert Cabin.

In many ecosystems plants survive unfavorable periods by persisting as dormant seeds in the soil. The persistence of these seeds can be important for the long-term survival of plant populations. This "seed bank" may also act as a genetic sieve, screening which seed genotypes germinate, remain dormant, or die in the soil. Seed banks may thus affect both the evolutionary and ecological dynamics of plant populations; however, few studies have examined these ideas empirically. I am investigating these issues in a native desert mustard, Lesquerella fendleri. Here I present data comparing the spatial and temporal distribution of Lesquerella and its seed bank in a natural desert ecosystem. In addition, Lesquerella soil seed genotypes are compared with Lesquerella seedling genotypes to test whether a nonrandom subset of seeds is germinating out of the seed bank. The implications of these results for our understanding of the demography and genetic structure of plant populations will be discussed.
EFFECT OF HYPOTHERMIA ON VENTILATION AND SURVIVAL DURING HYPOXIA IN HOODED RATS. R.J. Gonzales, K. Rudolph, and S.C. Wood.

In mammals, hypoxia elicits hypothermia by decreasing heat production and increasing heat loss. To assess the interaction between hypoxia and thermoregulation, awake unrestrained rats were exposed to graded hypoxia (21, 16, 12, 10, and 8% inspired O₂). Two series of experiments were performed. **Experiment 1:** Compared survival rates of hypothermic (core temperature decreasing to 34°C) and temperature clamped (core temperature was maintained at 37°C) rats during exposure to hypoxia. **Experiment 2:** Ventilation was measured using a plethysmographic technique in hypothermic and temperature clamped rats. Results showed that hypothermic rats had significantly higher survival rates when exposed to oxygen concentrations below 10%, as opposed to temperature clamped rats. Furthermore, hypoxia-induced hyperventilation was detected only in temperature clamped rats up to 10% inspired O₂ and hypoventilation occurred at 8%, where survival rate is lowest. The hypothermic individuals maintained constant ventilation. In conclusion, hypothermia is beneficial during severe hypoxia as evidenced by having an increased survival rate and a blunted response to ventilation.

Research supported by NIH Grant HL 40537.

FLUID BALANCE IN HEADDOWN POSITION. J. Harrison, W. Fitzpatrick and M. Riedesel.

Headdown position results in cephalial shift and reduced total body water which is similar to initial responses to microgravity. Oral intake of glycerol solutions is being tested as a method of maintaining fluid balance. Data collected to date describe a 42% and 50% reduction in urine volume of control and hindlimb-suspended rats respectively as a result of glycerol intake. We expect similar improvement in water balance in other models of microgravity when glycerol solutions are ingested.
Primary cultures of ovine thyroid gland cells respond to the addition of thyroid-stimulating hormone (TSH) to the nutrient medium by organizing into microfollicular structures and increasing the various iodine-metabolic functions characteristic of thyroid tissue. The culture conditions resulting in optimum responses to TSH were established based upon iodine metabolism. Under these optimum conditions TSH increased cyclic AMP 35-fold, synthesis of iodinated thyroglobulin 30- to 70-fold, and thyroid peroxidase activity 38- to 55-fold, relative to cells maintained in the absence of TSH. Insulin (1 µg/ml) synergistically increased the TSH responses. A 2-fold increase in mRNA for the proto-oncogenes c-fos and c-jun occurred 30-60 min after TSH addition. A 4- to 5-fold increase in thyroglobulin and thyroid peroxidase mRNA occurred 24-48 hours after TSH addition. Our working hypothesis is that TSH acting via cAMP activates protein kinase-A resulting in phosphorylation of CREB protein releasing its inhibition on transcription of c-fos and c-jun. The translation products of c-fos and c-jun constitute the AP-1 gene activator that in turn activates transcription of the thyroglobulin and thyroid peroxidase genes at the later time interval.

**ANALYSIS OF PROTEINS SYNTHESIZED IN STATIONARY PHASE YEAST.**
Edward Braun, Edwina Fuge, and Margaret Werner-Washburne.

Growth and proliferation in microorganisms, such as the yeast *Saccharomyces cerevisiae*, is controlled in part by the availability of nutrients. A yeast culture grown in rich medium will cease proliferation and enter stationary phase when available nutrients are exhausted. Stationary phase yeast cells are characterized by a cell cycle arrest and a number of physiological, biochemical, and morphological changes. Since starvation is a ubiquitous stress, entry into stationary phase in response nutrient limitation is likely to be conserved in all microorganisms. Analysis of stationary phase in a genetically tractable organism, such as yeast, will allow greater understanding of the control of proliferation in many microorganisms. We are interested in identifying and characterizing genes that are expressed and proteins that are translated during stationary phase, since the identification of these molecules will provide a greater understanding of the regulation of entry into and survival of stationary phase. We have undertaken a systematic survey of proteins that are synthesized when yeast are grown to stationary phase using 2-dimensional gel electrophoresis and will report on the results of this analysis.

**EXPRESSION OF CARTILAGE SPECIFIC mRNAs IN TENDON.** James R. Robbins and Kathryn G. Vogel.

A fibrocartilaginous tissue develops within the bovine deep flexor tendon where it wraps around bone and receives compressive forces. Because the location and timing of development of this tissue is correlated with compression, it has been suggested that mechanical forces may direct the development of cells in this region of the tendon. This study was conducted to define the mRNA expression of matrix macromolecules in the region of this tendon subjected to compressive forces and then to compare this pattern with mRNAs expressed in the region of this tendon subjected to only tensional forces. Northern blot analyses of total RNA demonstrates that both compressed and tensional regions of near-term fetal tendons express primarily type I collagen mRNA. The compressed region of adult tendon, however, expressed mRNA for aggrecan and type II collagen, two molecules typically found only in cartilage. In the tensional region of adult tendon neither of these messages were detected. This study suggests that cells within the compressed region of tendon develop a cartilage phenotype after the birth of the animal when the tendon is subjected to substantial mechanical forces.
Human CRP is an acute phase serum protein believed to be involved in clearance of antigens from damaged tissue. CRP binds to phosphocholine (PC) in the presence of calcium, activates complement, and reacts with receptors on phagocytic cells. We have established a model to compare the pathways of clearance of IgG and CRP complexes with antigen. PC conjugated to bovine serum albumin (PC-BSA) was used as an antigen to prepare complexes with IgG anti-BSA or CRP. Equivalence ratios for the two types of complexes were determined by quantitative precipitation assays. Complement (C) activation was compared for IgG and CRP complexes at equivalence, antigen excess, and antibody or CRP excess by measuring C4 consumption using a hemolytic assay. In normal serum increasing PC-BSA led to increased C activation. C3 binding, determined by ELISA, was greatest for CRP at equivalence. The two types of C4 differ in their covalent binding reactions with C4B forming ester linkages and C4A forming amide linkages. Since CRP is nonglycosylated, it might be expected to react preferentially with C4A. Therefore C activation and binding by CRP and IgG complexes was measured using sera containing only the A or only the B isotype of C4. For IgG and CRP complexes, incubation with either type of serum resulted in similar consumption of C4. CRP complexes also showed similar binding of C4 and C3. Further studies will compare interaction of CRP and IgG complexes with receptors on erythrocytes and phagocytic cells.

Supported by S06 GM 86139.

ANALYSIS OF BCY1 EXPRESSION IN THE YEAST, SACCHAROMYCES CEREVISIAE.

Braeden Butler and Margaret Werner-Washburne.

In the yeast Saccharomyces cerevisiae, the regulatory subunit of cAMP dependent protein kinase is coded by the gene BCY1. The changes of growth rate and metabolic activity when cells are going from exponential growth to stationary phase are believed to be regulated in part, by the activity of cAMP-dependent protein kinase. BCY1 message accumulates at the diauxic shift. Northern analysis of cells grown on glucose and glycerol based media and with or without cAMP indicate that BCY1 accumulation is induced by both a decrease cAMP and growth on a nonfermentable carbon source. \( \beta \)-galactosidase assays of BCY1:LacZ fusions have indicated that the accumulation seen at the diauxic shift is based on an increase in transcription. We are interested in regions of the promoter of BCY1 that are responsible for the increase in expression at the diauxic shift. We have isolated regions of the promoter of BCY1 that have homology to regulatory elements of other genes and have cloned these regions in to a \( \beta \)-gal expression vector. We are attempting to isolate the region of the promoter that is responsible for the unique expression of BCY1. We are also using ribosomal polymerase II mutants (rpb1) to see if BCY1 message stability increases as the cell passes from exponential to stationary phase growth.

CLONING OF THE REGULATORY ENZYME PHOSPHOFRUCTOKINASE-1 FROM THE HUMAN LIVER INTO AN EXPRESSION VECTOR FOR E. COLI.

Pamela Padilla, Ed Weeber

Phosphofructokinase-1 is the key pace-setting enzyme in the Embden-Meyerhof Pathway. A comprehensive understanding of the structure and function of phosphofructokinase-1 (PFK) will facilitate in a better understanding of carbohydrate metabolism. Currently, we are cloning the cDNA of PFK into an expression vector pET3a, and a holding vector Bluescript. The use of the polymerase chain reaction (PCR) facilitated in the incorporation of restriction enzyme sites EcoRI, HindIII, and NdeI. Ligation reaction of the PFK fragment with the expression vector has included the use of cohesive end and blunt end ligations. The plasmid is then transformed into BL21 E. coli host, in which it will be expressed by E. coli. Expression verification will be determined by enzymatic analysis.

Elucidation of the contribution of superoxide dismutases (SODs) to the ability of *Neurospora crassa* to tolerate oxidative stress is a major focus for this laboratory. Previously we cloned and sequenced the gene, *sod-1*, that encodes the *N. crassa* copper-zinc (CuZn) SOD. RIP-mediated disruption of *sod-1* allowed construction of a mutant strain lacking a functional CuZn SOD. To further investigate the function of the superoxide dismutases in *N. crassa*, we have cloned and sequenced a gene that encodes a manganese (Mn) SOD, which we have designated *sod-2*. The encoded polypeptide possesses an apparent mitochondrion-targeting leader peptide, consistent with the expectation that this is a mitochondrial MnSOD. We are currently characterizing strains that appear to carry *sod-2* null alleles created by RIP-mediated gene disruption. Evaluation of the phenotypes of such strains with respect to tolerance of oxidative stress, along with construction and evaluation of *sod-1 sod-2* double-mutant strains, will provide valuable information as to the relative contributions of these SODs to tolerance of oxidative stress in *N. crassa*.

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**TURNOVER OF PROTEOGLYCANS IN CULTURED FETAL AND ADULT BOVINE TENDON.** Dave Braggs and Kathryn Vogel

Fibrocartilage develops in the portion of bovine deep flexor tendon that passes under sesamoid bones of the fetlock joint and is exposed to compressive forces. Proteoglycans (PGs) are important in giving the compressed area its fibrocartilaginous texture. In previous experiments, compressive loads were applied to fetal and adult tendon tissue in culture and a change in PG synthesis was noted. It thus became important to understand the turnover of newly synthesized PGs in this tissue. Pulse-chase experiments were conducted by allowing small segments of fresh fetal and adult tendon to incorporate $^{35}$S-sulfate for 24 h. Tissue samples were taken at day 0, 6, 12 and medium samples at days 1-3, 4-6, 7-9, 10-12. These samples were digested with papain and the glycosaminoglycans (GAGs) isolated by DE-52 ion exchange chromatography. $^{35}$S-labeled GAGs were quantitated with a scintillation counter. About 75% of the newly-synthesized proteoglycan was released from both fetal and adult tendon within 3 days of labeling. Thereafter, proteoglycans were released gradually, and some proteoglycans remained in the tissue after the 12-day incubation period. The type of proteoglycan remaining in each tissue will be determined by Sepharose chromatography.

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**ISOLATION OF THE *spr2* AND *spr3* GENES OF S. *CEREVISIAE*.** Matthew E. Crawford, Daniel Caprioglio, and Margaret Werner-Washburne

We are interested in characterizing genes that regulate yeast's entry into stationary phase. *SSA3* is a gene specifically expressed as yeast approach stationary phase. To find genes that regulate *SSA3*, mutants which expressed *SSA3* before glucose was exhausted were selected. Two of these Stationary Phase Regulatory mutants, *spr2* and *spr3*, were transformed with a plasmid containing the *SSA3* promoter fused to the lacZ gene. Because these strains express β-galactosidase earlier in the culture cycle than control strains, their colonies turn bright blue when treated with XGal, a substrate for β-galactosidase. We are in the process of cloning these genes by transforming a yeast library into these strains and screening for white colonies resulting from complementation of the mutant phenotype. We will extract the complementing library plasmids from these strains, transform them into *E. coli*, and sequence the inserts.
PROTEOGLYCANS SYNTHESIZED AND ACCUMULATED IN ADULT AND FETAL BOVINE TENDON: DO BIG ONES KEEP IT FROM BEING SQUASHED?

Matthew Berenson, Erin Doherty and Kathryn Vogel.

A distinct fibrocartilaginous tissue develops where the bovine deep flexor tendon is subject to compression as the tendon wraps around the sesamoid bone in the metacarpal phalangeal joint. This tissue is quite different histologically from tensional regions of the same tendon. Two studies were performed to characterize and quantify the proteoglycans (PGs) of these regions of tendon. The first experiment analyzed the type of PG synthesized by incubating cultured tissue explants from these regions with \([^{35}S]\)-sulfate on day one and day 12 after removal from the animal. The relative amount of newly-synthesized large and small PG was determined by column chromatography. In the second experiment, PGs were extracted with 7M urea from adult and fetal tendons. These PGs were isolated using ion exchange chromatography and quantified using spectrophotometry. The differences in PG type and amount were visualized by SDS-PAGE. The experiments showed that the compressed region contained and synthesized predominantly large PG; small PGs were predominant in fetal and tensional adult tissue.

THE QUEST TO DEFINE STATIONARY PHASE IN SACCHAROMYCES CEREVISIAE

Jason A. Thomas, Vickie M. Peck, and Margaret Werner-Washburne

Stationary phase is characterized by a low level of mitotic division and the ability to withstand harsh environmental conditions. In contrast exponential phase cells have a high level of mitotic division. To develop an assay to identify when cells are in stationary phase, stationary and exponential cells were starved from zero to fourteen days and the survival was determined by the ability of cells to form colonies. The test lead us to conclude that several conditions affect the ability of cells to survive starvation. The condition that was most interesting was the inability of exponentially growing cells to survive in conditioned medium i.e. medium in which cells had previously grown to stationary phase. Surprisingly, transferring exponentially growing cells to water or buffered saline solutions did not affect viability. We are now trying to determine what causes exponential cells to die under these conditions. One hypothesis to explain these results is that stationary phase cells are secreting something that is toxic to exponentially growing cells. These results may be biologically significant and also provide a convenient assay to identify when cells are in stationary phase.

BRAINS AND PLANES

(A COMPARATIVE STUDY INVOLVING THE FUNCTION OF THE HUMAN BRAIN AND ARCHITECTURE.) SHIRLEY HOLDEN

We have observed that the energy and process required to construct a skyscraper and to maintain it after construction is very similar in comparison to the human brain and the energy and process required to properly form the human body and to help it function. The way we will communicate this phenomena is to illustrate and intertwine the building of a skyscraper from foundation up, and the shaping of the human brain from cell to adulthood. The result is to show the resemblance of both processes, side by side. The conclusion and significance is this: "BRAINS AND PLANES THE MEAT AND CONCRETE, INTERLOCK AND CHURN UNTIL COMPLETE ONE REAL, ONE STEEL BOTH INTRICATELY MADE MAKES YOU WONDER AND THINK, DARE NOT WE BLINK? FOR EVEN IF THE TWO SHALL NEVER MEET, THEIR CONSTRUCTION SO SIMILAR IS BEYOND BELIEF!"
MECHANISMS OF PARASITE-INDUCED IMMUNOSUPPRESSION IN AN INVERTEBRATE HOST.

Guenet DeGaffe and Eric S. Loker

Previous studies have revealed that excretory-secretory products (ESP) of larval stages of the trematode parasite Echinostoma paraensei have adverse effects on the internal defense cells (hemocytes) of the snail host, Biomphalaria glabrata. This effect is manifested in vitro by an inhibition of hemocyte spreading, phagocytic activity and encapsulation of trematode larvae. To assess the in vivo relevance of these effects, the infectivity of different batches of E. paraensei parasites for snails was correlated with the ability of ESP derived from these same parasites to prevent hemocyte spreading. A strong positive correlation between in vivo infectivity and efficacy of ESP in the in vitro assay was found, suggesting trematode-mediated inhibition of hemocyte function is a viable strategy of infectivity. Further studies have compared the vulnerability to ESP of hemocytes from adult and juvenile snails. Our initial results suggest that the refractory status of adult snails to infection stems from quantitative rather than qualitative differences between the internal defense systems of the two groups of snails.

ECTOPARASITES OF MEGACHIROPTERA FROM INDIA.

Michael J. Patrick and Shahroukh Mistry

A total of 62 Megachiropteran bats from India were examined for ectoparasites in the summer of 1990. There were 39 individuals infected with batflies (63%). Altogether there were 92 batflies collected. In one montane forest community in northeast India, 39 bats of the species Rousettus leschenaulti, Eonycteris spelaea, and Cynopterus sphinx were examined for batflies. The infection rate of R. leschenaulti was 96% (22/23), E. spelaea 27% (3/11), and C. sphinx 40% (2/5). The mean number of batflies per bat was 1.95, however the range was greatest for R. leschenaulti (0-6), E. spelaea (0-4), and C. sphinx (0-1). There is a strong relationship between the roosting habits, group size and the number of batflies infecting these bat species. Colonial cave dwelling species, such as R. leschenaulti, exhibit greater numbers of ectoparasites than tree dwelling species like C. sphinx. Eonycteris spelaea exhibited far fewer numbers of ectoparasites than were expected. Most bats of this species did not carry any large ectoparasites and the two individuals that did were pregnant females. This suggests that this colony of Eonycteris may not dwell in caves or be as colonial as one might expect. Further investigation of the roosting habits of this species may help resolve the question of low parasite loads.

SUSCEPTIBILITY OF Biomphalaria glabrata SNAILS FROM BELO HORIZONTE AND SALVADOR BAHIA, BRAZIL, TO Schistosoma mansoni FROM PUERTO RICO.

Jacqueline Miralles-Salazar and Eric S. Loker

Biomphalaria glabrata snails from Belo Horizonte (BH) and Salvador Bahia (SB) were individually exposed to 10 miracidia of Schistosoma mansoni. BH snails became infected, but SB snails did not. Comparative histological studies revealed that parasites readily penetrate both groups of snails, but were more likely to be encapsulated and destroyed in SB snails. Mechanisms underlying this difference are unknown. Total hemocyte counts did differ between BH and SB snails. For both strains, total hemocyte counts/ml for juveniles and adults snails did not differ, but adults snails had more hemocytes that spread normally on glass slides.
28 CAROTENOIDS AND DIMORPHISM: MARKERS FOR GOOD GENES?

David Gray

Analyses of N. American Passerine birds show that the males of sexually dimorphic species have a higher proportion of their plumage coloration derived from carotenoids than do either their paired females or species which are monomorphic. Additionally, the females of the dimorphic species have more carotenoid coloration than do the monomorphic species. The increase in carotenoid coloration in dimorphic species is at the expense of the melamins, while the proportion of structural feather coloration does not differ from monomorphic to dimorphic species. These same relationships hold when the analyses are performed at the generic level. This may imply that females have selected informative condition dependent traits as honest indicators of male quality.

29 A REASSESSMENT OF HOMOZYGOSITY AND THE CASE FOR INBREEDING DEPRESSION IN THE CHEETAH ACINONYX JUBATUS. Michele Merola.

The cheetah Acinonyx jubatus is notorious for its extreme degree of homozygosity (polymorphism 2-4%; heterozygosity .04-1.4%). This lack of genetic differentiation has led to speculation that the cheetah suffers from inbreeding depression, as evidenced by the low reproductive rate of cheetahs in captivity, and that the decline in wild cheetah populations is related to this genetic invariability. I report that there is no evidence for any role of relative homozygosity in the decline of wild populations; instead, the increasing restriction of the cheetah to small habitat islands is more likely the cause of this decline. In addition, I propose that the evidence cited in support of "inbreeding depression" is in actuality an artifact of captivity. Using evidence from published measures of fluctuating asymmetry in the cheetah, analyses of levels of genetic polymorphism in other carnivores, and information on the breeding biology and ecology of the cheetah, I suggest that this low level of genetic variability may actually be normal for the cheetah.

30 DETERMINATION OF PATERNITY IN TROPIDURUS OF THE GALAPAGOS ISLANDS. Sandra Andaluz, Mary Anne Nelson and Howard Snell

We are working out procedures for the determination of parentage in the Tropidurus; lava lizards. The genetic variability of these lizards is being studied, and we hope to eventually carry out phylogenetic analyses. We are using the Random Amplified Polymorphic DNA (RAPD) variation of the Polymerase Chain Reaction (PCR). PCR is basically an in vitro method of amplifying selected genomic target sequences, as directed by oligonucleotide primers. The PCR/RAPD method gives results similar to those obtained using restriction fragment length polymorphisms (RFLPs); however, the PCR/RAPD technique is preferred when small amounts of DNA are to be used, and when little is known about the genetic constitution of the organism. Essentially, various short primers are used to selectively amplify polymorphic regions of the genome. The results allow us to assess genetic variability and relatedness of the lizards.

The DNA we are using is being extracted from Tropidurus toes using two different protocols. The DNA is then analyzed using the PCR/RAPD method, and the amplified DNA fragments are visualized on agarose gels. The results of these analyses will be presented.

Chromosomal variation was assessed within and among two species of Bolivian guinea-pigs, Cavia aperea and Galea musteloides. These data, which represent the first reported karyotype for Bolivian Caviidae, are discussed and compared to published karyotypes of Argentinean individuals from these taxa. Bolivian specimens of Galea musteloides and Cavia aperea were found to have diploid chromosomal numbers of 2N=68 and 2n=64, respectively. These data are identical to published results from individuals from Argentina. Chromosomal morphology, however, as determined by centromere position varied in 6 chromosomes between Bolivian and Argentinean individuals of Cavia aperea. The taxonomic implications of these data will be discussed.

32 HOW MANY EGGS TO FERTILIZE: A SIMPLE MODEL OF FEMALE SEARCH AND CHOICE. Shawn E. Nordell and Colleen Hatfield.

How do females choose which male to mate with? Sexual selection theory includes several models that address the kinds of traits a female should examine and why. But there is also the question of how a female chooses a mate? Previous models addressing this question have included a time frame but not the female internal state. They also usually assume monogamy.

In our model we use linear dynamic programming to determine the optimal mating decision for a polygynous female. In addition, we explore the affect of changes in the variance of the distribution of male quality on female choice. We find that the optimal mating decision for a polygynous female is dependent on the variance of the distribution of male quality.

33 EFFECT OF MACRO-SCALE ABIOTIC FACTORS IN RIPARIAN SPECIES ABUNDANCES. C.A. Hatfield

Stream-side or riparian vegetation communities are influenced by many abiotic and biotic factors in the environment. This study examines the influence of macro-scale abiotic factors such as parent geology, elevation and stream size on riparian species abundance. Four drainage basins, located in the Sangre de Cristo Mountains in northern New Mexico, were selected for study. Abundances were recorded along an elevational-stream size gradient in two parent geologies, crystalline and sedimentary. Results of a canonical discriminant analysis show that species abundance is strongly influenced by elevation/stream-size in the crystalline geology, while in the sedimentary geology these factors are important for species abundance only in the smaller, higher elevation streams. Bootstrap analysis was also used to evaluate the robustness of the canonical discriminant analysis. This study illustrates the interplay of topography and geology which forms the template for riparian communities in the landscape.
NEST SELECTION IN TWO SYMPATRIC SPECIES OF TROPICAL FALCONS. TIkal, GUATEMALA. Enquist, B.J.; Cornell, I.S. and Thorstrom, R. The University of New Mexico, Albuquerque, NM 87131, USA and the Peregrine Fund U.S.A.

Developing management plans for rare and endangered species requires methods for locating critical habitats needed for their continued survival. The Barred Forest-Falcon (Micraster ruficollis), and the Collared Forest-Falcon (M. semitorquatus) are sympatric species inhabiting upland neotropical forest. Little is known of the natural history of the cryptic Micraster genus. In an effort to develop a protocol for identifying nesting habitat, we surveyed the vegetation associated with the known nests of the two falcons near Tikal, Guatemala. A multivariate analysis revealed the two species differed in choice of nesting sites. Nest choice was influenced by slight differences in forest structure and age. Significant forest indicators include height of canopy, canopy cover, topography, vine density and presence of aroids. The analysis technique used was sensitive enough that these differences were not apparent during the survey work. This technique has applications in other types of work where subtle multiple factors, varying separately together, influence the expression of biological traits.


Rhizobium meliloti 1021 and several Tn5 mutants were studied for physiological characteristics regarding siderophore production with a focus on heme production, specifically leghemoglobin. The nitrogen-fixing symbiosis existing between the legume Medicago saliva L. (Alfalfa) and Rhizobium meliloti being presently investigated is a complex relationship demonstrated to be significantly dependent on the presence of leghemoglobin. The study shows a mutual symbiotic mechanism is present with the legume providing apoproteins, and Rhizobium meliloti contributing the heme moiety, in concert, for the formation of leghemoglobin. The evaluation of solubilized membranes of the Rm1021, PRR22, PRR62, and PRR63 strains, demonstrated significant levels of protoporphyrinogen oxidase present under spectrophotometric observation. Ferrochelatase was assayed spectrofluorometrically measuring the rate of protoporphyrin IX disappearance in Rm1021 yielding positive evidence of the enzyme's intactness.

The Relative Compositions of Four Southwest Rodent Communities. Jennifer B.M. Miyashiro.

The compositions of four Southwest rodent communities, at two localities, were investigated. Each locality consisted of a grassland and a creosote (Larrea tridentata) site. The purpose of this study was to determine if rodent communities are similarly structured in each habitat and to determine the degree species partition themselves between each habitat type within a locality.

An ANOVA was performed on the number of each species across each site. Across the two Larrea sites two rodent species had significantly different (p<0.05) overall abundances. All but one species had significantly different (p<0.05) overall abundances across the two grassland sites. The abundance of each heteromyid species at each adjacent site was significantly different; murids did not distinguish between the two habitat types at each locality to such a degree.
DIFFERENCES IN ENVIRONMENT AND POPULATION BIOLOGY OF LESQUERELLA FENDLERI IN TWO MICROHABITATS. Ivan B. Ortiz and Julie A. Knight

Environmental variations among habitats can influence plant growth and reproduction. We examined environmental parameters and growth and reproductive success of Lesquerella fendleri (a short lived perennial mustard) in two contrasting microhabitats: the interspace and sub-canopy of Larrea tridentata (creosote bush). We found a significant difference between microhabitats in that population size and individual size were greater in the sub-canopy. There was no difference in reproductive effort between microhabitats. Total numbers of neighboring plants were assessed as indicators of resource availability. Neighboring plants were more abundant in the sub-canopy. Photosynthetically active radiation, soil temperatures, and soil moisture at 10cm were higher in the interspace, however, no significant difference was found in surface soil moisture. Together these data indicate some correspondence between population biology and environmental variation. However an understanding of the mechanisms awaits further study.

An Evaluation of Experiments Designed to Calibrate Time-Domain Reflectometry and Neutron Probe Techniques for Determining Soil Moisture Content.

Sharon R. Tarbox

Abstract. Two separate experiments were conducted in May 1991 and August 1992 in an effort to construct calibration curves for the determination of soil water content by two methods. The two techniques under investigation were neutron scattering and time-domain reflectometry (TDR). The results achieved by both techniques were to be compared to gravimetric standards of known bulk densities and % volumetric water content. It appears that experimental errors and oversights, induced by the time lag between the two experiments, have precluded the ability to make statistically-relevant conclusions about many of the experimental treatments involved. This evaluation is designed to uncover the measurable sources of variation within and between the two techniques, and concludes with suggestions for the design of an experiment that can more accurately determine soil moisture calibration curves for the instrumentation involved.

BATS FOUND RESPONSIBLE FOR INCREASE IN MIDNIGHT HORROR.
Shahroukh Mistry

The coevolution of plants and their pollinators is an important subject in the study of animal-plant interactions. Yet, there are few examples where the coevolution between a plant and its pollinator is so tight as to exclude any other organism from that interaction. One often cited example of bat-plant interactions is the pollination of Oroxy/um indicum, the midnight horror tree, by the dawn bat, Eonycteris spelaea. In Malaysia this bat is the sole pollinator even when other bats are around, and it is presumed that the flowers have evolved a shape and flowering schedule to suit Eonycteris. This study examined the pollination biology of Oroxy/um in India where the dawn bat is not found. A population of Oroxy/um was observed and bats visiting these trees were caught with mist nets. The pollen from the bats' fur were then identified. All three common fruit bats found in that area had pollen of Oroxy/um on their fur suggesting that they were effectively pollinating this plant species. Thus, while patterns of tight coevolution may appear to be common in one locality, they do not necessarily hold true elsewhere. It is unlikely for a plant such as Oroxy/um, with such a vast distribution to be dependent on a single bat species for its survival. Further work in areas in India where Oroxy/um is sympatric with Eonycteris and the common bats, will help explain whether this plant always has multiple pollinators or if Eonycteris excludes other bats from this resource.
BIODIVERSITY STUDY IN SAN RAMON AREA, SANTA CRUZ - BOLIVIA. Luis Marcelo Zalles. Teresa R. de Centurion.

A biodiversity study of the San Ramon area was conducted by the Museo de Historia Natural "Noel Kempff Mercado". The biodiversity study was conducted between 1990 and 1991 and surveyed three different ecosystems: savannah, semi-deciduous Chiquitano forest, and semi-deciduous forest with Amazonian elements. Specimens recorded included: 188 botanical species (61 families), 54 mammals (18 families), 31 birds species (29 families), 24 anuran species (4 families), 4 saurian species (3 families), 4 snake species (3 families), and one turtle specie (1 family). Endanger, threatened, and rare animal species included: five mammals and two birds listed in CITES I; seven mammals and eight birds listed in CITES II, and three mammals listed in CITES III.

WINTER BROWSE AVAILABILITY AND USE BY WHITE-TAILED DEER. Travis Perry, Wade Worthen, and Craig Prudhomme.

Foraging theory models suggest that wintering deer should forage either as generalists to maximize energy gain or as specialists to optimize the uptake of specific nutrients. We addressed these models by studying browse availability and use by white-tailed deer in the Jonvik deer yard in northeastern Minnesota during January of 1984-1991. Six taxa: (Acer spicatum), (Corylus cornuta), (Rubus parviflorus), (Alnus rugosa), (Lonicer sp.) and (Picea spp.), accounted for 71% of the available browse. The deer foraged as generalists, browsing these taxa in proportion to their average availability. However, deer specialized on 2 other species, (Cornus stolonifera) and (Thuya occidentalis). These species were rare (X < 1 twig/plot), but were consumed at rates of 75 to 100%. Evidently deer are using a mixed foraging strategy; management practices must consider this foraging behavior.

FIELD MONITORING METHODS FOR RECORDING MAMMALIAN VOCALIZATIONS. William L. Gannon, MSB Mammals

Mammalian vocalizations have evoked curious and incidental speculations among naturalists for centuries. More recently, recorded calls have been used by researchers to categorize species, as a basis of field identification, and for alluring mammals during playback experiments. Acoustic "traps" include magnetic tapes, microphones, and tape recorders. "Bait" consists of pre-recorded calls, introduced predators, or simply walking with an audio recorder into a callers' field of sense. Commonly, the field biologist now includes a Uher, Sony, or Marantz among her or his trapping gear, returning with a dozen spent tape cassettes. I describe the equipment and methods needed to monitor acoustically many kinds of mammals that are encountered in the field and how those calls are curated once back in the museum.
MUTATION INDUCTION BY α-PARTICLES OF DIFFERENT ENERGY IN TWO HAMSTER CELL LINES WITH SIMILAR RADIOSensitivity BUT DIFFERENT NUCLEAR CONFIGURATION
M.A Hankins, A Jaberaboansari, R.E. Palmer, D.J. Chen and M.R. Raju
Los Alamos National Laboratory, Los Alamos, NM and ORISE, Oak Ridge, TN.
Studies on cytotoxicity and mutagenicity of α-particles with ranges comparable to or shorter than the dimensions of mammalian cell nuclei are very limited. Our previous studies suggested that α-particle tracks which terminate within the cell nuclei are less efficient in cell killing. However, it is not known how this reduced efficiency in cell killing correlates with the efficiency in producing promutagenic lesions. In order to investigate the mutagenicity of the terminal tracks of α-particles, two Chinese hamster cell lines (CHO-10B and HS-23) which have similar radiosensitivity but different nuclear dimensions were irradiated with ≤ 1 MeV α-particles and 3.5 MeV α-particles. The majority of 3.5 MeV α-particle tracks traverse the nucleus of both cell lines. Tracks of low energy (≤ 1 MeV) α-particles traverse the nucleus of "flat" CHO-10B cells, but >95% of these tracks terminate within the nucleus of the "round" HS-23 cells. Mutations are scored at the hypoxanthine phosphoribosyl transferase (HPRT) locus. (This work is supported by the U.S. Department of Energy).
There are currently 97 graduate students in the Department of Biology, and 703 undergraduate students listing biology as their major or minor area of concentration. B.S., B.A., M.S. and Ph.D. degrees are offered in the areas of Botany, Evolution/Ecology, Microbiology, Molecular/Cellular Biology and Physiology.

With 35 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 have expanded greatly this year. Thanks to funding from the Howard Hughes Medical Institute, the department has been able to initiate a 5-year program which has significantly upgraded laboratory teaching in cell and molecular biology, and also provides summer and year-round opportunity for undergraduate students to do research in faculty laboratories. A 13-week program in Field Ecology is being offered for the second time this summer. Supported by the National Science Foundation, this program allows undergraduate students to carry out individual research projects while living at the Sevilleta National Wildlife Refuge. Applications for these programs are due in February for the following summer.

Additional new facilities for research and teaching in the Department of Biology include the AT&T computer laboratory (Room 118) and the NSF-funded Molecular Biology Laboratory (Rooms 230 & 231) and Confocal Microscopy Facility (Room 239).

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 15 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 C

ANNUAL NEWSLETTER
OF THE
BIOLOGICAL SOCIETY OF NEW MEXICO
VOL. 8, 1992
Greetings!

by J. David Ligon
Professor and Chair

I am now halfway through my second year as Chair and am happy to tell you that the great momentum our department had going last year has continued unabated, and in fact has picked up in a variety of ways. Let me be the first to say that highly motivated individual faculty and staff members are the reason for our continued successes as a department.

Several major new programs have been funded and now are moving into high gear. In addition to the ongoing success of individual faculty in obtaining monies for their personal research, we obtained major awards for the development of laboratories and equipment, including a computer lab, for the teaching of our undergraduate students: a million dollar award from the Howard Hughes Medical Institute, two RIMI awards from the National Science Foundation, and the donation of a roomful of computers from AT&T.

As a result of these major initiatives by faculty and staff, we can meet more fully our responsibilities to our students; the new equipment and labs will allow us to provide them with state-of-the-art learning experiences.

Other noteworthy events of the past year were our First Annual Research Day and the official dedication of the Sevilleta Field Station (described in last year's newsletter). We also have articles on the activities of the Museum of Southwestern Biology; on Dr. Jim Gosz, the first Director of the Sustainable Biological Initiative; on Dr. Loren Potter, Professor Emeritus; and on a few of our current graduate students. This year we also take special note of four of our fine adjunct faculty members, who serve us in many ways.

Let me reiterate that the major advances we have made in 1992 are the result of the hard work by individual faculty members and others, who are financially uncompensated. It is a privilege to serve as Chair of this group of people. On behalf of our Department, I thank each of you for your interest in and support of our Department.
First Annual Research Day

A sunny day last April was devoted to the presentation of graduate and undergraduate student research activities in the Department of Biology. The main entrance and hallways were buzzing as students, faculty and visitors studied 36 posters explaining student research projects conducted during the past year. In addition, 10 students presented their research in 15-minute slide talks. Lunch for all was held in the central courtyard, after which Dr. Margo Haygood, of the Scripps Institution of Oceanography, gave a lecture on "Bioluminescent Symbioses." The day ended with the presentation of awards to students whose research was judged to be of highest quality (a very difficult task for the judges). A reception hosted by UNM's President and his wife, Dr. and Mrs. Richard Peck, followed at the University House. Financial support for our First Annual Research Day was provided by the La Jolla Cancer Research Foundation, La Jolla, California.

The first-place winner of the poster presentations was Melanie Marshall; second place was taken by Greg Farley; third place was shared by three students—Robert Christner, Patrick Doherity and Sandra Brantley.

The day was particularly exciting for students who were presenting their research in a public forum for the first time. For faculty, the day was a reminder of the high quality of graduate and undergraduate student research that is conducted but rarely presented within the department.

Given the success of the event, Research Day 1993 already has been scheduled for Friday, April 2. The speaker will be the MacArthur "Genius Award" winning Dr. Mimi Koehl of the Department of Integrative Biology, University of California at Berkeley. We cordially invite you to attend; as April 2nd approaches and the details are finalized, please call the departmental Main Office (505/277-3411) for updated information.

Cancer Research Symposium

The La Jolla Cancer Research Foundation, which sponsored the Biology Department's First Annual Research Day, has initiated an award specifically for UNM biology students. The Foundation supported the travel of two students to La Jolla for attendance at the Annual Symposium of the Foundation ("Hematopoiesis in Normal and Abnormal Development") and visits to research laboratories. In February 1992, Robert Christner, a graduate student, and Susanna Gonzales, an undergraduate, attended the Symposium.
Sevilleta Field Station Dedication

The newly created UNM Biology Department's Field Station at the Sevilleta National Wildlife Refuge was formally dedicated on Saturday, October 17, 1992. Approximately 120 people attended, including many of the department's faculty, UNM's Provost and Biology Professor, Dr. Paul Risser, and UNM's Associate Provost for Research, Dr. Ellen Goldberg.

Morning activities consisted of a field trip to the various Sevilleta research sites and tours of the Field Station facilities, which were conducted by Dr. Robert Parmenter, Manager of the Field Station, and Dr. James Gosz, a UNM Biology Professor and one of the Principal Investigators of the LTER.

The afternoon's speakers included Theodore M. Stans, the Sevilleta Refuge Manager, and Dr. Clifford S. Crawford, the Field Station Director (introduction remarks); Mrs. Phoebe Knapp-Warren, President of the Campbell Family Foundation (the history of the Sevilleta Land Grant); Mr. Will Murray, of the Nature Conservancy and Director of the western Region Conservation Program (the creation of the Sevilleta National Wildlife Refuge); Dr. Gosz (the research motion pictures, sound and text to produce invigorating illustrated lectures and matching tutorial exercises. Until this year, talk of such teaching innovations was just that . . . talk.

Such talk has become a reality in Room 119 of Castetter Hall (the old Human Anatomy and Physiology Lab) where boxes of ceiling tile, electrical cable and the AT&T award transformed the area into a state-of-the-art computer lab.

While new computer technology is teaching old lessons in new ways, it is also raising the standards for the skill levels we expect our graduates to attain.

The first users will be freshmen and sophomores in introductory biology courses. While hypermedia is still a few years off, students in the Spring semester will try their hand at breeding computerized cats as part of an exercise in Mendelian genetics, counting cells as part of a population growth study, and even exploring fractal geometry as part of an upper-division ecology course.

Several faculty members already are talking about the opportunities to incorporate the learning of supercomputer skills into graduate-level study in biology at UNM. Where once it was enough to demonstrate a knowledge of muscle groups and mammalian physiology to earn a degree in zoology, the computer revolution is changing what we expect of our graduates.

AT&T Donates Computer Lab

Imagine a darkened lecture hall with an animated sequence of images showing muscle movements and skeletal articulations projected onto a large, central screen. Now imagine seeing the same show, overlaid with narration and text . . . as part of a laboratory exercise on a computer screen. Thanks to the efforts of Dr. George Stevens, the Biology Department's Grant Coordinator, AT&T awarded the department a $150,000 equipment package. Students in our introductory laboratory courses are now one step closer to using "hypermedia" as part of their coursework. This new technology will allow instructors to combine still images, motion pictures, sound and text to produce invigorating illustrated lectures and matching tutorial exercises. Until this year, talk of such teaching innovations was just that . . . talk.

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Dr. Kathryn Vogel has long been concerned with the quality and quantity of the laboratory experiences her students receive in upper-division biology courses. Like other faculty members, she has been successful in generating funds for her own research efforts, but finding funds for teaching projects is considerably more difficult. Consequently, during the winter break, Dr. Vogel wrote a grant proposal along these lines and submitted it to the Howard Hughes Medical Institute. A telephone call in May announced that the Department had been awarded $1 million through the Hughes' Undergraduate Biological Sciences Education Program to establish laboratory courses and summer research opportunities for undergraduate students interested in cell and molecular biology. In June, a check for $500,000 arrived.

The celebrations were brief, but not for lack of enthusiasm—the magnitude of the job that lay ahead quickly became apparent. Laboratory space needed to be renovated, new staff had to be hired, and large amounts of laboratory equipment were needed. The first course (Laboratory Methods in Molecular Biology) was taught in Fall 1992 by Drs. Mary Ann Nelson and Donald Natvig.

Detailed plans for a 10-week summer cell/molecular research program have now been completed, which calls for many faculty members besides Dr. Vogel to become involved. Drs. Oswald Baca, Larry Barton, Cliff Dahm, Paul Kerko, Eric Loker, Donald Natvig, Mary Ann Nelson, Marvin Riedesel, Stephen Stricker, Eric Toolson, John Trujillo and Margaret Werner-Washburne will all be supervising students during the first summer. Other faculty members will be involved later during the five-year project. For instance, a laboratory course in molecular cell biology will be taught each spring by Dr. Kerko.

More important than the technical competence these students will acquire, however, is the self-confidence they will develop and the partnerships they will form with other members of our department. We all owe Kate a big THANK YOU for her work in conceiving and initiating this important addition to our Biology Department's undergraduate educational opportunities.

The Museum of Southwestern Biology

All of the Museum of Southwestern Biology (MSB) divisions (vertebrate, invertebrates, and plants) experienced a productive year: virtually all received significant new outside funding, had students, faculty and staff receive awards in research and/or teaching, published and presented numerous scientific papers, and added substantially to their research databases. The Division of Mammals (DOM) had an especially active year. With the retirement of Dr. Jim Findley from the department and the return of Dr. Terry Yates from his two-year appointment at the National Science Foundation (NSF), the DOM has benefitted substantially from several events.

A celebration, known as the "Findley Symposium," was held at the Department's Sevilleta Field Station on October 4-5, 1992. The Symposium brought together many of Findley's 30 Ph.D. and 20 M.S. students for paper presentations and fun, and it was an outstanding success. Jim's earliest students, Drs. Clyde Jones, Art Harris and Eugene Fleharty helped their major professor "remember" events and experiences by sharing their recollections with more than 50 participants at the Saturday banquet. Some of Jim's associates remained into the wee hours of the morning discussing the past, but also helping to plan the museum's future. A book will be produced from the Symposium's proceedings and will be available in Spring 1994. With Jim's retirement, Dr. David Ligon assumed the duties of Museum Director, and Terry was appointed (continued on page 7)
SUMMER RESEARCH OPPORTUNITIES!

The Department of Biology has two summer research programs available for interested undergraduate biology students.

MOLECULAR AND CELL BIOLOGY

10-Week Program, June 7-August 13, 1993

This program provides an opportunity for 15 undergraduate students to carry out individual laboratory research projects under the supervision of a professor in the Department of Biology. Presentations by students and visiting scientists, and trips to local scientific laboratories are part of the program. Projects concerning fungal molecular biology and genetics, cellular endocrinology, microbiology, fertilization and early development, parasitology and other topics can be pursued. Students will have access to new NSF-funded state-of-the-art molecular biology and microscopy laboratories. Applicants should have completed at least two years of college course work in biology and chemistry. Participants in the research program may also enroll in Laboratory Methods in Molecular Biology (Bio. 446), as space permits.

Students receive a stipend of $250/week; additional financial support for living and travel expenses is available on a competitive basis.

For detailed information and an application packet, please contact:

Robyn Cote-Schrader
Department of Biology
The University of New Mexico
Albuquerque, NM 87131-1091
505/277-2905; FAX: 505/277-0304

Support for this program is provided by a grant from the Howard Hughes Medical Institute through the Undergraduate Biological Sciences Education Program.

FIELD ECOLOGY

13-Week Program, Offered May-September 1993
Dates adjusted to fit students' summer schedules

The Sevilleta Long Term Ecological Research Program (LTER) provides field research experiences to 10 undergraduates each summer. Students work one-on-one with UNM Biology Department faculty on LTER field experiments, and conduct independent research projects on the ecology of plants, animals and biogeochemical cycles. Field sites are located in and around the 400 sq. mile Sevilleta National Wildlife Refuge in central New Mexico, an area characterized by mountain peaks, river canyons, forests, grasslands and deserts. Summer students live on the Sevilleta Refuge at the UNM Field Research Station.

Students receive free station lodging, weekly support stipends of $230, and 3 credits of UNM course work (tuition-free).

For detailed information and an application packet, please contact:

Dr. Robert Parmenter
Department of Biology
The University of New Mexico
Albuquerque, NM 87131-1091
505/277-7619; FAX: 505/277-0304
Email: parmentr@sevilleta.unm.edu
Email: PARMENTR@UNMB.BITNET

Support for this program is provided by a grant from the National Science Foundation through the Research Experience for Undergraduates (REU) Program.

APPLICATION DEADLINE FOR BOTH PROGRAMS IS FEBRUARY 13, 1993.

WOMEN AND ETHNIC MINORITIES ARE ENCOURAGED TO APPLY.
UNM Receives Funding as a Minority Research Institute

Minority enrollment at UNM is growing and is currently about 40% at the undergraduate level. Government funds intended to provide research opportunities for minority undergraduate students are available to minority educational institutions, so while there is much discussion within the department about how to best serve minority students, there is no disputing the financial incentives to do so.

UNM has obtained such funding all along without special government support, but until recently, such funding was not specifically directed to the Department of Biology. That has changed as the result of the success of two biologists, Drs. Margaret Werner-Washburne and Stephen Stricker, both have recently obtained UNM's first Research Improvements in Minority Institutions (RIMI) grants.

With the change in UNM's status, the National Science Foundation awarded $500,000 for the two RIMI grants, and the UNM Provost provided an additional $300,000. These funds will be used to produce a major change in how collaborative science is conducted in our Department.

For example: at present, students interested in molecular evolution need to be part-time molecular biologists. Although the steps to tease apart the molecular sequence of proteins are becoming routine, learning those skills is anything but easy. Funds to support minority undergraduate students in their efforts to excel in molecular biology have resulted in the creation of a molecular biology facility or "gene sequence workshop" where students will be able to determine the similarities and differences between fragments of genetic material. A technician will be available to teach students how to do specific molecular techniques. A conference area in which students can discuss their work and other scientific questions will also be part of the facility.

Students involved in this facility will obtain valuable experience in designing research projects of their own. The increased frequency of collaboration between faculty with a wide variety of research interests and students of different skill levels will benefit everyone. It also enables our students to be more competitive both academically and in the job market.

 Funds set aside for training minority students also have been used to establish a confocal microscopy laboratory in the department. This microscope allows three-dimensional reconstructions of an item on the microscope's stage without actually physically disrupting the object. By focusing on several different planes, the whole can be reconstructed from visual slices. This tool also is useful to biologists interested in the microstructure of an organism but who do not need the 3-D visualization techniques it offers. It will be one of only two confocal microscopes in the state of New Mexico, and will be a tremendous addition to the research capabilities of the Biology Department.

Funding for these kinds of collaborative projects are often difficult to obtain since no single faculty member can justify the expense based on their needs alone. When the problem was reformulated such that several research and educational challenges were combined into two initiatives, the federal government was eager to cooperate.
Curator of Birds, adding to his duties of Curator of Mammals and of the Biological Materials Division.

Terry returned to New Mexico in late July. While successfully serving as the head of the Systematics and Population Biology Program at the NSF, Terry also kept his very active research program moving in Bolivia, and an active graduate program going at UNM. He was awarded the Leopold Conservation Award by The Nature Conservancy for his contributions to conservation in New Mexico.

Bill Gannon, the MSB’s Collections Manager, published three papers and was awarded a $10,000 grant to survey the bats of New Mexico. He was also a consultant on a disastrous flood at the Texas A&M University research collections. Bill served as Acting Curator of the DOM while Terry was in Washington, DC, and initiated several new programs. One program, in coordination with Albuquerque Public Schools, brings promising, yet disadvantaged, high school students to the DOM to work during their summer break. With their assistance, the Mammal Museum was able to produce a publications list and install new computerized specimen labels.

The Museum of Southwestern Biology is an internationally recognized research & teaching facility that is an integral part of our Biology Department.

staff and faculty of the DOM published 17 papers, presented 35 papers at meetings, and received $545,000 in outside funding. The DOM also hosted 2,087 visitors (including 1,632 school-aged children) and contributed greatly to the teaching mission of our Department by conducting three departmental courses, helping two UNM courses outside the Department, and loaning material 23 times to at least nine additional biology courses. The strong educational value of the DOM in particular and the MSB as a whole pervades the entire department.

Future plans for the DOM include the normal accessioning of more than 2,500 specimens per year, updating and increasing computing capabilities, seeking further outside collection support, and developing/improving several courses for undergraduate and graduate education. We anticipate that the MSB will continue to play a central role in the UNM Biology Department’s international reputation as a major center for environmental research and teaching. We look forward to the continued support and encouragement of the department and the many alumni who have supported our programs in the past. Please drop us a line!

The DOM is now a depository for all specimens of Mexican wolf and other endangered species such as the Mt. Graham Red squirrel. The Division works cooperatively with the US Fish and Wildlife Service and NM Games and Fish’s endangered species programs. During the last six years, the DOM has hired and trained 82 undergraduate students; not only is this education “on the hoof,” it is also a unique program not available at most universities or museums. During the past year, the students, Future plans for the DOM include the normal accessioning of more than 2,500 specimens per year, updating and increasing computing capabilities, seeking further outside collection support, and developing/improving several courses for undergraduate and graduate education. We anticipate that the MSB will continue to play a central role in the UNM Biology Department’s international reputation as a major center for environmental research and teaching. We look forward to the continued support and encouragement of the department and the many alumni who have supported our programs in the past. Please drop us a line!
FACULTY HIGHLIGHTS

Distinguished Adjunct Faculty

Our department is fortunate, indeed, to have as members of our Adjunct Faculty a number of highly distinguished, internationally recognized scholars. Whether it was a growing awareness of the quality of our program or the wonderful quality of life in northern New Mexico that brought these people here is irrelevant. What matters is that they are members of our faculty and we are very proud to have them here. In this issue of our Newsletter, we would like to highlight three of these individuals.

Dr. Roger Conant, an internationally renowned herpetologist, has been with our department since 1973. Born in Mamaroneck, NY in 1909, his highest formal education consisted of two years of pre-med biology courses at the University of Pennsylvania—his college studies ended prematurely with the economic troubles of the Great Depression. Nonetheless, his impressive and important scholarly and public service contributions to herpetology, conservation and zoo development during his long and distinguished career led to an honorary Doctor of Science from the University of Colorado in 1971.

Roger's interest in reptiles began at the age of 12 and hasn't waned since. His career began in 1929 when he was hired as the Curator of Reptiles of the Toledo Zoological Park in Toledo, Ohio. By 1933, he was promoted to General Curator of the Zoo, and had designed the new reptile house which opened in 1934. In 1935, he became the Curator of Reptiles of the Philadelphia Zoo, a position he held until 1973; during that time he also served as the Public Relations Counsel and Membership Secretary for the Philadelphia Zoo and, beginning in 1967, as the Director of the Philadelphia Zoological Garden. In addition, Roger is well known in Philadelphia for his weekly radio program, “Let’s Visit the Zoo,” which began in 1936 and aired for nearly 34 years. From 1938 to present, he has been a Research Associate of the Academy of Natural Sciences of Philadelphia; from 1948 to present, he has been a Research Associate of the American Museum of Natural History; and from 1988 to present, he has been a Research Associate of our department’s Museum of Southwestern Biology. He is also the Director and Curator of Reptiles Emeritus of the Philadelphia Zoological Garden.

Dr. Conant’s research interests have focused largely on snakes, particularly water snakes. During his career, he has conducted extensive field studies on reptiles and amphibians in the US, Mexico, Africa and Asia. In addition to more than 200 scientific and popular papers, he has authored hundreds of short articles, news items and commentaries promoting zoos as educational and conservation institutions. In 1958, Dr. Conant published his third book, A Field Guide to Reptiles and Amphibians of Eastern and Central North America, as part of the Peterson Field Guide Series; in 1991, the third edition of it was published. He attributes the success of this book to his first wife’s (Isabelle Hunt Conant) photographic and artistic contributions.

In 1989, the Society for the Study of Amphibians and Reptiles, in conjunction with the commemoration of the First World Congress of Herpetology, published Snakes of the Agkistrodon Complex. This 600-page book was written by Dr. Conant and the late Howard K. Gloyd, who worked on it together and separately for 60 years. It contains information about poisonous snakes in America, Asia, India and Sri Lanka and, according to the Society’s announcement of the publication of the book, “represents the culmination of decades of detailed study of more than 6,200 specimens . . . .” Among its extensive illustrations are many fine line drawings done by Beth Dennis.
our Department's talented graphic artist. During his career, Dr. Conant has been a member or fellow of numerous professional and honorary organizations. He is past president of the American Society of Ichthyologists and Herpetologists, and he has been a member of the American Association of Zoological Parks and Aquariums for more than 60 years.

Dr. Conant also has received numerous honors in his lifetime. In 1968, the National Recreation and Park Association awarded him its Distinguished Service Award, and he was the Distinguished Herpetologist Lecturer of the Herpetologists' League in 1983. In recognition of his dedicated service, in September 1989, the American Association of Zoological Parks and Aquariums honored him as the fifth recipient of its prestigious R. Marlin Perkins Award, which is given to distinguished innovators, leaders and contributors in the field of zoo culture. Also in his honor, the Toledo Zoological Society established the Roger Conant Research Fellowship in 1990, which promotes career development in zoo research and management in outstanding undergraduate and graduate students.

Roger has lived in Albuquerque since late 1973. The UNM Department of Biology has been very fortunate to have him as a friend and colleague. The Biological Society of New Mexico is especially indebted to Dr. Conant as he has been a generous and steady financial contributor to the Society over the years.

**DR. JOHN O. CORLISS** has been an Adjunct Professor in our Biology Department since 1988. Born in Kansas in 1922, he received his Ph.D. in Biology (Protozoology) in 1951 from New York University. He later received an Honorary Doctor of Science from the Université de Clermont, Clermont-Ferrand, France, in 1973.

Dr. Corliss has held appointments at Yale University, the University of Illinois, and the University of Maryland, where he served as Chairman of Zoology for 20 years. He has been a Professor Emeritus in the Department of Zoology, University of Maryland, since 1989. His career experience encompasses a wide range of teaching, research, administrative and editorial duties.

John stays very busy—his research areas of special interest are comparative cytology; the systematics, phylogeny and evolution of protozoan species, particularly ciliates; the phylogeny/classification of high-level protistan assemblages; the principles and practices of taxonomic nomenclature; and the history of protistology.

John continues to organize international conferences and symposia in protozoology and protistology, and he is a sought-after lecturer throughout Europe, Asia and Mexico (UNAM). In addition to being a member or president/chairman of numerous professional societies, he has been a consultant to numerous scientific, academic and government organizations. And, of course, he continues to publish his research and to edit scholarly texts on protistology. To date, he has published more than 270 scientific papers, abstracts, reviews and notes, and he is the author or co-author of six books.

Dr. Corliss has received numerous honors in recognition of his untiring and valuable contributions to the field of biology: The Council of Biology Editors Meritorious Award, May 1982; The Achievement Award for Contribution to Science by the University of Maryland's chapter of the Society of the Sigma Xi, May 1985; and "The John O. Corliss Festschrift" in the January-February 1992 issue of the Journal of Parasitology on the occasion of his 70th birthday.

John lives in Albuquerque, and in June of this year married Yue Mei Geng.

**DR. JACOB (JACK) K. FRENKEL** joined our adjunct faculty in 1991. He was born in Dormstadt, Germany, and after immigrating to the US in 1940, he received an M.D. (1946) from the University of California School of Medicine, San Francisco, and a Ph.D. in comparative pathology (1948) from the
University of California, Berkeley. Before moving to Kansas City in 1952, he worked at the Rocky Mountain Laboratory in Hamilton, Montana (1948-50), at NIH in Bethesda (1950-51), and at the University of Tennessee (1951-52).

Jack developed an early interest in protozoa and was awarded a research assistantship with Dr. Harold Kirby, who is famous for his work on flagellates of termites. Studying a blood parasite of a fence lizard (Sceloporus sp.), he decided to compare it with Toxoplasma and obtained an isolate of the R.H. strain in mice from Dr. Albert Sabin. This was long before the complete life cycle of Toxoplasma was known. Later, while at medical school, his interest in Toxoplasma was reinforced when he encountered cases of congenital toxoplasmosis. He devised a diagnostic skin test for the disease and demonstrated a state of premunition in infected mice following treatment with sulphonamides. He also tried to transmit the infection with a number of arthropods, but without success.

In 1968, work in Glasgow directed attention to the importance of cats as hosts of Toxoplasma, and Dr. Frenkel, with Drs. J.P. Dubey and N.L. Miller, were among the first scientists in the world to demonstrate its fecal transmission from cats by means of an oocyst to confirm its coccidial nature. At this point, he began the search for Toxoplasma-like parasites in other hosts, with the possibility of fecal and carnivorous transmission. Dr. Frenkel contributed fundamental work on their nature and life cycles and has three patents regarding the immunization of cats and humans against Toxoplasma. Coccidia are typically host-specific, but Toxoplasma was the first to be recognized as not obeying these rules, mostly through Dr. Frenkel's original early work on the subject. Later, he demonstrated similar multi-host life cycles for a number of other medically important parasitic protozoa of humans and domestic animals.

While at the University of Kansas Medical School, Dr. Frenkel had a distinguished scholarly career, during which he published more than 230 scientific research papers and 40 book chapters. He has been a Fulbright Fellow and a Von Humboldt Senior Research Scientist; he holds three honorary professorships at universities in Columbia, Costa Rica and Peru; and he has won a Tinker Award for his research in Central America. In 1991, he became both Professor Emeritus at the University of Kansas and Adjunct Professor of Biology in our Department.

He is on the editorial boards of numerous American, German and Latin American scientific journals. Similarly, he is a member of numerous world-wide scientific societies concerned with pathology, parasitology, tropical medicine and infectious diseases. He has been appointed to numerous national and international committees and councils. He was a consultant to NASA's Lunar Quarantine Operations Team of the Manned Spacecraft Center (1969-70) and to the World Health Organization (1972-73). His present appointments include the Advisory Committee of the Registry of Comparative Pathology, UAREP (1980-); the Special Review Committee of the National Institutes of Health in Washington, D.C. (1982-); and Foreign Advisor, Argentine Foundation for the Study of Toxoplasmosis (1980-).

After retiring from the University of Kansas Medical Center in 1991, Jack and his wife, Becky, decided to relocate to the Southwest and they now live in Santa Fe. We are fortunate and proud to have Jack associated with Biology at UNM!

Another Adjunct Faculty member of our Department is Dr. John Wiens. Although no longer in Albuquerque, John still interacts with faculty and students in Biology. Dr. Wiens has been an Adjunct Distinguished Professor since 1986. He was hired as a Distinguished Professor of Ecology, with tenure, in 1978. While at UNM, he was instrumental in establishing our Department's Ecology/Evolutionary Biology program. John taught Scientific Publications, Spatial Heterogeneity in Ecological Systems, Advanced Field Biology, Ecology of Natural Communities, and Vicariance Biogeography. Unfortunately, both he and his wife, Dr. Ben Van Horne, were stolen from us in 1986. They are now faculty members in Biology at Colorado State University.

John received a B.S. in Zoology in 1961 from the University of Oklahoma, and his M.S. (1963) and Ph.D. (1966, in Zoology with a minor in Botany) from the University of Wisconsin. From 1975-1978, he was Professor and Acting Chairman of the Department of Zoology, Oregon State University in Corvallis, OR.

Dr. Wiens was awarded an American Australian Fulbright Senior Scholarship in Natural Science in 1984 and was at the University of Sydney, Australia, from September 1984 to June 1985. He is an editor of The Auk, an international bird journal, and is an elected member of the American Ornithologists' Union.
Dr. Gosz & the SBI

Dr. James R. Gosz, Professor of Biology at UNM and a principal investigator of the Sevilleta LTER program, has been the Director of the Sustainable Biosphere Initiative (SBI) Project Office for the past year. The SBI was initiated by the Ecological Society of America in August 1990 and funded by an inter-agency grant from the National Science Foundation, NASA, Environmental Protection Agency, US Forest Service, and US Fish and Wildlife Service. UNM biologist Dr. Paul Risser (Professor and Provost) and Dr. Jane Lubchenco were instrumental in this historic undertaking as the Principal Investigators of this award.

SBI's primary purpose is to identify scientific issues, activities and research priorities that will best promote the important ecological topics of global change, biodiversity and sustainable management of Earth's resources. SBI plans include basic ecological research, applied environmental research, education of the public, and the incorporation of the knowledge gained from these activities into public policy and management decisions.

The SBI office, located in Washington, DC, officially opened on January 15, 1992, when Dr. Gosz began his duties as Director. The first order of business was to promote awareness of the SBI agenda, so the staff of three immediately began participating in and developing various workshops. Consequently, the SBI has been represented at conferences sponsored by the UN, the USDA, the US Forest Service, the NSF, the EPA, and various scientific associations and societies concerned with ecological sustainability issues. Its representation in numerous meetings with federal agencies and programs in Washington, DC, has led to the SBI's research priorities being incorporated into several environmental and scientific agendas.

The SBI's work continues at a feverish pace and if their accomplishments to date are any indication, this Initiative should make a significant global impact on the way we begin to manage the environment of our planet. Once again, UNM biologists lead the way!

Dr. Potter's Recent Work

Dr. Loren D. Potter, Professor Emeritus of Plant Ecology, is currently serving as a project scientist and educator for the United Nations Environment Programme, Damocles Group, which has designed a multi-faceted educational program called Project Earth. An interdisciplinary environmental curriculum will be developed by a group of outstanding scientists and educators for use in grade school and high schools worldwide. The program will develop videos of a series of journeys, or "Earthwalks," through principal ecosystems of the world, including savannah, river, sea, forest, tundra, wetlands, air and space, rainforest, and desert, with an accompanying curriculum for each ecosystem. Dr. Potter is serving as a consultant and advisor for the teachers and writers of the Desert unit.

A Curriculum Development Conference was held in February 1992 in Washington, DC, to draft lesson plans for Project Earth's "An Introduction to Ecosystems" curriculum. Dr. Potter made a presentation at this conference on the variations and ecology of world-wide deserts, causes of desertification, and environmental issues.

Loren has also spent considerable time as an expert witness for the Department of Justice on a precedent-setting case in Colorado, which involves ensuring that an adequate stream flow through National Forest lands maintains the original stream morphology, as opposed to having excessive amounts diverted above the Forest lands for irrigation and development use. Recent, similar ecological studies for the Department of Justice relate to the request of Zion National Park for water rights to the Virgin River.
JAMES H. 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 research interests include reproduction and mating strategies of the spottail darter.

ANN J. BONNELL (B.S. 1959) works as a part-time Visitor Center supervisor at the Roxborough State Park in Colorado. She is a bird census volunteer as well as being a local activist to save wetlands and open space. She volunteers much of her time as a naturalist to the following organizations: Chatfield State Park, Roxborough State Park, Denver Botanic Gardens, Chatfield Arboretum, South Platte Park, Jefferson County Open Space, and Denver Aubudon Society.

HOWARD CAMPBELL (B.S. 1937) is retired and uses his leisure to enjoy reading (biological and general subjects), bird watching and visiting natural history, historical and art museums.

FRANK A. CIACCIO (B.S. 1987) is a graduate student in the MPA program at UNM, while also working as a Senior Deputy Medical Investigator for UNM's OMI. He married Janelle Jaworsk in July, 1991.

JOHN C. DAVIS (B.A., B.S., M.S.) received his D.V.M. degree from Colorado State University in 1980 and currently is a practicing veterinarian in Walsenburg, CO.

PAUL A. FEIL (B.S. 1944), a physician in Deming, NM, retired in May 1992. He is active in the local Lions Club and the Hospital Foundation.

GRAFTON HOUSTON (M.S. 1984) received his D.V.M. from Colorado State University in 1989 and opened a new veterinary practice in San Diego in 1991.

GEORGE F. HOWLETT, JR. (M.A.T. Sci. 1967) received an M.S. degree in Forest Ecology and Limnology from SUNY College's ESF program at Syracuse University. He is a hydrologist and Director of the Environmental Services Department of the Menominee Indian Tribe of Wisconsin in Keshena, WI. He also teaches an evening course in Natural Science for non-science majors at Lakeland College in Sheboygan. In 1991, he became a Certified Consultant of the Ecological Society of America. Additionally, he continues to practice private forestry part-time.

ROY M. JOHNSON (Ph.D. 1955) is now a retired professor from Arizona State University, and spends his leisure time playing tennis and doing wood carvings.

BRUCE KROHN (B.S. 1970) is a computer programmer, and enjoys sailing and studying Victorian-era living history.

JOHN E. LEDER (B.S. 1965) received his M.S. from the University of Washington and works as an environmental scientist in Seattle.

REBECCA LOBB (formerly Feuerherd) (B.S. 1991) is a biochemical technician and is currently working on the Human Genome Project at the Los Alamos National Laboratory.

HARRIET M. OYLER (M.S. 1970) retired in 1989 after working for 19 years in the environmental health field. Upon retirement, she returned to Albuquerque after a 22-year absence. She now volunteers her time at the Rio Grande Nature Center and with "Keep New Mexico Beautiful," which she helped start in 1964.

BRENT PARKER (M.S. 1984) received his D.V.M. degree from Colorado State University in 1988 and currently is working as a veterinarian. His interests include small animal medicine and surgery, avian and exotic medicine and surgery, and emergency medicine. He enjoys mountain biking, music and weight training.

JAMES L. SANDS (B.S. 1953, M.S. 1957) is a past president of the Carrolltown (PA) Municipal Authority. Now retired, he spends his time hunting, fishing and playing golf.

LYMAN B. SPAULDING (M.S. 1972, Ph.D. 1974, M.D.) is a gynecologist in the Obstetrics-Gynecology Department at the Permanente Medical Group in Denver, to where he moved from California in 1990.
THE BIOLOGICAL SOCIETY OF NEW MEXICO

N. THOMAS STEPHENS (B.S. 1955) received a B.S. in Chemical Engineering and an M.S. and Ph.D. in Environmental Engineering. At present he is a professor and Head of the Oceanography, Ocean Engineering and Environmental Science Department of the Florida Institute of Technology in Melbourne, FL. He enjoys spending his leisure time sailing.

MICHAEL H. TRUJILLO (B.S. 1966, M.S. 1970, M.D. 1974) received his M.P.H. in 1984 from the University of Maryland. He is presently the Deputy Area Director and Chief Medical Officer of the USPHS Portland (Oregon) Area, Indian Health Service.

DON E. WILSON (M.S. 1967, Ph.D. 1970) is a zoologist and the Director of the Smithsonian Institute’s Biodiversity Program, which has a number of ongoing projects inventorying the world’s flora and fauna. In 1991, he was elected the President of the Association for Tropical Biology.

TED YAEGER (B.S. 1973) received his M.S. in Anatomy in 1977 and his M.D. in 1981. He was Board Certified in Radiation Oncology in 1986 and in Hyperbaric Medicine in 1988. He works in Radiation Oncology at the Regional Oncology Center in Daytona Beach, FL. He enjoys competitive sailing and is the Race Committee Chairman for the Halifax River Yacht Club. He also enjoys flying and playing the guitar. He also is a member of “The Concerned Citizens for Waterfront Environment.”

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December 1992
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.

Tax-exempt gifts may be given with designation to be used for specific purposes, such as those identified below, as long as the purpose fits the objectives of pursuing excellence in biological education and research at UNM.

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, spring graduation, and awards for teaching excellence. In addition, we have five other accounts that may have special interest to you.

L.D. Potter Endowed Chair in Plant Ecology

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, 1992, the L.D. Potter fund had $130,690. The current holder of the Potter Chair is Dr. Diane Marshall.

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.

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 $3,000. 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.

Presidential Young Investigator Matching Funds

For the next three 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 $965 in this fund—obviously a long way from a meaningful endowment.

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.
Please respond even if you can’t contribute. If you haven’t responded before, we’d really like to hear from you and learn about what you’re doing. If you can help us financially, or with donations in kind, please let us know how you want your contribution used:

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Total Amount Enclosed $_____

Name ______________________ UNM Degree(s) _______ Year(s) _______

Other Degrees __________________ Spouse ____________________________

Complete Current Mailing Address __________________________________

Phone No. _________________ CURRENT OCCUPATION _______________________

Activities and interests: ____________________________________________

THANKS FOR YOUR CONTINUED INTEREST AND SUPPORT!!

Please mail memberships and contributions (by check, payable to “The Biological Society of New Mexico”) to:

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The Biological Society of New Mexico
Department of Biology
The University of New Mexico
Albuquerque, NM 87131-1091

December 1992
THE UNIVERSITY OF NEW MEXICO
THE BIOLOGICAL SOCIETY OF NEW MEXICO
DEPARTMENT OF BIOLOGY
ALBUQUERQUE, NM 87131-1091
Doctor of Philosophy Degrees

FALL 1992

Katelljine Fites (Dr. Crawford) Dissertation: Effects of Plants and Climate on the Biology of a Walking Stick in a Sand Dune Field of Central New Mexico.

SPRING 1993


Stephen Evansko (Dr. Vogel) Dissertation: Factors Influencing Development of Tendon Fibrocartilage.

Lee Fitzgerald (Dr. Snell) Dissertation: The Conservation Biology and Ecology of Tupinambis Lizards.

SUMMER 1993


Steven Kucera (Dr. Taylor) Dissertation: The Genetics of Two Key Traits Critical to the Timing of the Insect Life Cycle: Dispause Induction and Development Time.

Samuel Loftis (Dr. Goza) Dissertation: Rehabilitation of Semi-arid Grasslands: Sewage Sludge Effects on Vegetation Soil and Surface Hydrology.

Pablo Marquet (Dr. Brown) Dissertation: Macroscopic Patterns of Ecological Organization.

Plimmy Niewolt (Dr. Kodric-Brown) Dissertation: The Ecology of Movement and Reproduction in the Western Box Turtle in Central New Mexico.


The Biology Department gratefully acknowledges the cheerful contributions of the following whose help made this ceremony possible: Vivian Kent for organizing the whole event, Laurence Hoess for patiently preparing the diplomas, All of the Staff, Students, and Faculty who contributed their time and effort.

May 15, 1993
GRADUATION PROGRAM
DEPARTMENT OF BIOLOGY

Welcome: Dr. J. David Ligon, Professor and Chairman
Presentation of the Biological Society of New Mexico Award to Outstanding Undergraduate: Dr. Margaret Werner-Washburne
Presentation of Graduates: Dr. J. David Ligon, Professor and Chairman; Dr. Clifford Crawford; Professor and Associate Chairman; Dr. Randy Thornhill, Professor and Associate Chairman

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
Jason S. Burke
Jennifer L. Hansen

Bachelor of Science Degrees
Richard E. Anderson
Lisa D. Apodaca
Kaytie L. Banton
Robert J. Baron
Kari L. Bauer
Jana L. Bordeagaray
Larry E. Bowen
Michael P. Bradley
David Braggs
Ed A. Browne
Braden L. Butler
James Butterbaugh
Randy C. Campbell
Happy E. Carmona
Stacey E. Carr
Derick L. Castillo

Jerinda K. Lobner
Frances C. Olmstead
Pamela J. Lucero
Dennis C. Otero
Mary Marfisee
Pamela A. Padilla
Francella J. Martinez
Melissa Parker
Kurt McKeen
Ryan E. Pembie
Madeline Miller
Sean E. Portman
Charlotte D. Mobarak
Barbara A. Robinson
Akrab M. Monsour
Tommy G. Roe
Michelle L. Murillo
April L. Romero
April R. Nabohe
Daniel M. Sanchez
Pamela E. Noonan
Lyle R. Scott
Robert T. Nowell
Shermann S. Singleton

Undergraduate Honor Students

Braeden L. Butler Senior Project: Analysis of BCI Expression in the Yeast, Saccharomyces cerevisiae

Master of Science Degrees

FALL 1992

Paulle Ford (Drs. Brown & Scott) Thesis: Tidpole Communities in Western Mexico.
Christopher Padilla (Dr. Werner-Washburne) Thesis: Isolation and Characterization of Saccharomyces Cerisiae Genes Involved in Stationary Phase Regulation.
James Robbins (Dr. Vogel) Thesis: Expression of mRNA for Proteoglycan and Collagen Genes Within Regions of Tendon Subjected to Different Mechanical Forces.
James Stuart (Dr. Snell) Thesis: No thesis required.
Angela Welford (Dr. Duszynski) Thesis: No thesis required.

SPRING 1993

Glen Dennis (Dr. G. Johnson) Thesis: Sewage Sludge as an Organic Soil Amendment for Degraded Grasslands: Plant and Microbial Community Response.
Debra Tull (Dr. Kodric-Brown) Thesis: Patterns of Drilling Predation on Gastropods of the Family Turritellidae in the Gulf of California.
Karen Romero (Dr. Riedesel) Thesis: No thesis required.
APPENDIX E

ANNUAL REPORT:
MUSEUM OF SOUTHWESTERN BIOLOGY
This report period has been a busy one for the Division of Birds!

Computerization:
By the end of the period approximately 9500 of the 9800 catalog entries (includes both skins and skeletons) had been entered into the computer (thanks to a series of excellent assistants)! The job will be completed by early fall 1993. Entries will then be sorted by suitable sized taxa, from whole orders to individual species, depending on the numbers of specimens within the group, and then each entry will be checked against the individual specimen labels.

During the next report period, the somewhat "jerry-rigged" program developed for the ornithological collections will be made compatible with the system used in mammalogy.

Collection Activity:
During calendar year 1992, 1265 specimens were catalogued. These included the donations mentioned in the last report, as well as a second group of 60 specimens received via Dr. Dale A. Zimmerman. The New Mexico Department of Game and Fish contributed the largest number of currently collected birds (see below). Major contributors of salvaged birds were: Bitter Lake National Wildlife Refuge, Wildlife Rescue Inc. (Albuquerque), Dr. Kathleen Ramsey (The Wildlife Center, Espanola), and the New Jersey Raptor Trust.

This collection now contains the largest series of Sand Hill Cranes in the world. During this period over 135 flat skins (with one measurable wing and leg) and full skeletons were prepared (but are as yet uncatalogued). The birds were obtained at hunter checkpoints; the preparation was funded by the NMDGF. The skeletons are now slowly being cleaned. This series of skins will provide the only large data base available (for any avian species) for the comparison of measurements taken in the flesh (as for example by bird banders) and dry-skin measurements of the same individuals.

Several inter-institutional loans for research purposes were made, and inter-museum exchanges were carried out during calendar 1992 with: The American Museum of Natural History; North Carolina Museum of Natural History; Museum of Zoology, University of Michigan and the New Mexico Museum of Natural History. During the summer of 1993 RWD brought 107 surplus small trays from the American Museum of Natural History, bringing the total received to date to 361.

Through funds provided by a donor, about 200 specimens of small birds were prepared under an outside contract, thus greatly relieving the work load of collection personnel.
Collection Utilization:
The collection was more heavily used by courses within the university than in previous periods - perhaps in part due to the involvement of the Curatorial Assistants in other courses within the Biology Department. Several loans were made for extension teaching, and although not encouraged due to limited personnel, one high school biology group visited the collection.

The second heaviest use of the collection was by people from "contract archeology."
The MSB co-hosted with the NMDGF the first of two meetings with a broad spectrum of bird watchers. These meetings were successful in developing guidelines for the minimization of conflict between the scientific and popular interest groups. These guidelines are now attached to scientific permits issued by NMDGF.

Personnel:
Dr. Terry Yates, Curator of Mammalogy and Ornithology
Dr. Robert W. Dickerman, Acting Curator, Ornithology

Mr. Gregory H. Farley, Curatorial Assistant
Ms. Michele Merola, Curatorial Assistant
Mr. Patrick Zwartjes, Curatorial Assistant

Mr. Thomas A. Collins, Student Assistant
Ms. Jennifer Miyashiro, Student Assistant
Ms. Debra Tull, Student Assistant

Publications:


To: David Ligon, Chair, Biology

From: Cliff Crawford, Curator, Division of Entomology

Subject: Annual Report

In its first year in Room 5, the Arthropod Collection has continued to grow and to create interest. Carlos Blanco, my curatorial assistant, managed to do his usual good job of juggling collection upkeep and disseminating information to the public—this year while completing his doctoral dissertation. He will be missed in the coming year. Raising his assignment to 20 hours a week was a much-needed move, although the Collection will still be hurting until we get a full-time manager.

I made an attempt to get a collection manager by being a co-principal investigator, with David Richman (the PI) and Dan Howard of New Mexico State University, and David Lightfoot in our department, on a grant to the National Science Foundation. The proposal was for the two universities to join forces in collecting arthropods from representative areas and habitats in the state. The arthropod fauna here is poorly known compared to other parts of the country. We got turned down but will probably try again next spring.

Arthropods were collected routinely by the Sevilleta LTER, by Lightfoot on his contracts with the National Park Service at the El Malpais and Bandelier Monuments, by Sandra Brantley at the Ladrone watershed, by my group at Bosque del Apache National Wildlife Refuge (supported by a cooperative agreement with the Fish and Wildlife Service), by the Bosque Biology class at the Rio Grande Nature Center, by Carlos in Albuquerque turfgrass, and by me in the mountains. Many of the new specimens have been or are being identified to species. Fred Heinzelmann, a new graduate student who works on the flooding project at Bosque del Apache, has become very proficient at keying arthropods; his contributions are important, as are those of Sandy Brantley. Clinton (Cody) Dempsey, a highly motivated undergraduate employed by the LTER, is also doing a great job of arthropod sorting and identifying.

The Collection continues to be valuable in many ways. Three students at Sandia Preparatory School conducted a summer project at the Sevilleta on aquatic arthropods and plants in seeps and ponds. The Collection was very useful to them in terms of identifying and preparing specimens. Sandy Brantley was involved in that study.

There were 16 known visitors to the Collection in the past year. A total of 82 inquiring phone calls were answered. Sandy, Fred, and Cody all helped out with the calls, although Carlos handled most of them—and the visitors. Carlos also showed insects at Bandelier, Lowell, and Los Padillas Elementary Schools, and at Wilson Middle School. He gave three talks at Osuna Elementary
School, two at the Rio Grande Nature Center, and one at Taylor Middle School.

Mary Jean Mundt will be the next assistant curator. She is not the experienced entomologist that Carlos is, so I expect we will be in a "holding pattern" for a year. Meanwhile, I plan to press hard for a full time collection manager. We have a valuable resource in the Arthropod Collection, and it needs proper curation and care.
The vascular plant holdings of the herbarium now exceed 84,460 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 are working toward computerizing our collection holdings and have over 12,250 specimens in our database (15% of the collection).

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 3 field trips this year. The first to the Cook Islands to collect Tetramolopium for an NSF sponsored research project. The second to the Hawaiian Islands in June 1993 sponsored by Colorado State University as part of a federally funded project to study the rare and endangered plants of the Pohakuloa Army Training Base on the Island of Hawaii. Finally a 6 week trip to Papua New Guinea was completed in July 1993. This trip was part of an NSF-funded project on the Evolutionary Genetics of Tetramolopium.

The UNM Herbarium created and maintains the international electronic-mail database, E-mail Directory of Plant Taxonomists (PTO), and Collections Managers (CMO). The PTO database was created by Patricia Barlow and both are maintained by Jane Mygatt. The databases are updated every month and are used by a large number of researchers and collections managers throughout the world.

The assistant curator, Jane Mygatt, attended the Society for the Preservation of Natural History Collections (SPNHC) held in Victoria, British Columbia.

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: 2,520.

2. Numbers of research loans to outside researchers or agencies: 21 loans comprising 574 specimens.

3. Number of specimens borrowed by UNM researchers: 97.

4. Field research: Timothy Lowrey - Cook Islands 1 week; Hawaiian Islands, 2 weeks; New Guinea 6 weeks, New Mexico 2 week; Stephen Reed - New Mexico, 3 weeks; David Bleakly - New Mexico, 10 weeks.

5. New Mexico Plant Recovery Team Membership by Curator.


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, Brian Enquist, Jim Stuart.

9. Undergraduate students utilizing herbarium for research: Joe Williams, Melissa Parker, Yvonne Chauvin, Mary Stuever, Jim McGrath, Pam McBride.


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; Beth Dennis, Graphic Illustrator, UNM Biology Dept.


14. Designation of the UNM Herbarium as the Southwest representative of the National Herbarium Computerization Program.

15. Service and education activities performed by Curator: Lectured to General Botany students on the use of the Herbarium.

16. Site of E-mail database of International Directory of Plant Taxonomists.

17. Curator appointed to Nomination Committee, American Society of Plant Taxonomists.
18. Reprints from researchers using UNM Herbarium specimens:


19. Castetter Ethnobotanical Unit Activities: See attachment.
ANNUAL REPORT OF CASTETTER ETHNOBOTANICAL UNIT OF UNM HERBARIUM
1992/1993

SUMMARY OF WRITTEN REPORTS


337 Dean, G. Pollen analysis of seven samples from a Tajo Phase Pit structure at LA 71726 near Bingham, Socorro County, New Mexico. MS on file, Office of Archaeological Studies, Museum of New Mexico, Santa Fe, NM 87504. D. Levine, Project Director, August 1992. 22p.


340 Holloway, R.G. Pollen and Flotation Analyses of Samples from 16 Archaeological sites, the samll sites project, Fort Bliss Military Reservation, El Paso County Texas, Dona Ana and Otero Counties, New Mexico. MS on file, Environmental Management, Building 1105 (DIS) Fort Bliss Military Reservation Fort Bliss, Texas 79916, Raymond Mauldin, Project Director, September 1992, 15p.


342 Dean G. Zuni N30/31 in progress

343 Holloway, R.G. Pollen analysis of six samples from Animas Playa, Hidalgo County, New Mexico. MS on file, Center Anthropological Research, NMSU, Las Cruces, NM 88003. Dr. Neal Ackerly, Principal Investigator, September 1992, 7p.


346 Dean, G. Pollen Analysis of an Archaeological Soil Sample from site NM:Q:22:40 near Dalton Pass, McKinley County, New Mexico. MS on file, Navajo Nation Archaeology Department, P.O. Box 689, Window Rock, AZ 86515. Mary Francis Project Director, Oct 1992, 16 pages.

348 Dean, G. Pollen Analysis of 5 sediment samples from LA 77861, The Vigil-Torres House near Talpa, Taos County, New Mexico. MS on file, Office of Archaeological Studies, Museum of New Mexico, Santa Fe, NM. Jeffrey L. Boyer, Project Director. Feb 1993, 17 pages.

349 Dean, G. Pollen Analysis of Adobe and Mortar Samples from Pecos National Historical Park, San Miguel County, New Mexico. MS on file, Pecos National Historical Park, P.O. Drawer 418, Pecos, NM 87552. NPS PO 1443PX750092097. Dec 1992, 17 pages.


351 Holloway, R.G. Letter report of two pollen samples from LA 72. Please contact Dr. Eric Blinman, Office Archaeological Studies, Museum of New Mexico for availability of information from this project.


353 Holloway, R.G. Pollen Analysis of Woodrat and Archaeological Materials from site NMSU 1565, Dona Ana County, New Mexico. MS on file, Center for Anthropological Research, New Mexico State University, Las Cruces NM 88003-0001. N. Ackerly, Principal Investigator, January 1993, 17p.

354 Holloway, R.G. Vegetation and pollen analyses of four plant communities from the Hondo Valley and Roswell, New Mexico. MS on file, Office Archaeological Studies, Museum of New Mexico, P.O. Box 2087, Santa Fe NM 87504-2087. R. Wiseman Principal Investigator. Dec 1992, 19 pages

355 Holloway R.G. Analysis of charcoal remains from an isolated hearth, Otero County, New Mexico, HSR Project 9229 SAIC. MS on file Human Systems Research, P.O. Drawer 728, Las Cruces NM 88004-0728, David Kirpatrick Principal Investigator, 2 pages, December 1992.


358 Holloway, R.G. Identification of wood remains from the Married Officers Quarters at Historic Fort Craig, Socorro County, New Mexico. MS on file, Archaeological and Historical Research Institute, Box 300, Corrales NM 87131. Peggy Gerow, Principal Investigator, January 1993, 6 pages.

359 Dean, G. Im Search of the Rare: Pollen evidence of prehistoric Agriculture. Paper presented at Southwestern Agricultural Symposium, New Mexico Archaeological Council Meetings, Oct 2-4 1992, Santa Fe NM. 13 pages


361 Holloway, R.G. Pollen analysis of a sample from LA 98916, San Juan County, New Mexico, SJC Project 92-010. MS on file, San Juan College Cultural Resource Management Program, Farmington ENM 87401, Patricia Hancock, Project Director, March 1993, 6 pages.

362 Holloway, R.G. Pollen analysis of a sample from LA 26271, San Juan County, New Mexico, SJC Project 92-051A. MS on file, San Juan College Cultural Resource Management Program, Farmington NM 87401, Patricia Hancock, Project Director, March 1993, 6 pages.

363 Holloway, R.G. Pollen analysis of a sample from LA 82989, San Juan County, New Mexico, SJC Project 92-054C. MS on file, San Juan College Cultural Resource Management Program, Farmington NM 87401, Steven Dye, Project Director, March 1993, 6 pages.

364 Holloway, R.G. Pollen analysis of samples from LA 88671 and LA 88880, San Juan County, New Mexico, SJC Project 92-012. MS on file, San Juan College Cultural Resource Management Program, Farmington NM 87401, David Skoglund, Project Director, April 1993, 7 pages.

365 Holloway, R.G. Pollen analysis of Three Sites LA 71845, LA 85172, and LA 89961, San Juan County, New Mexico, SJC Project H92-011. MS on file, San Juan College Cultural Resource Management Program, Farmington NM 87401, Steven Dye, Project Director, May 1993, 7 pages.

366 Holloway, R.G. Pollen analysis of Nine Samples from LA 65243, San Juan County, New Mexico, SJC Project 92-042. MS on file, San Juan College Cultural Resource Management Program, Farmington NM 87401, Steven Dye, Project Director, May 1993, 10 pages.


368 Dean, G. Las Companas

369 Holloway, R.G. Results of Charcoal Identification and flotation analyses from site LA 98642, HSR Project 9114: East Potrillo, Dona Ana County, New Mexico. MS on file,

370 Holloway, R.G., Analyses of charcoal and flotation samples from Parcel 19B, Boyd Land Exchange Project, Catron County, New Mexico. MS on file, Office of Contract Archaeology, University of New Mexico, P. Gerow Project Director, May 1993, 7 pages.


372 Holloway, R.G. Flotation Analysis of Two Features from LA 98170, San Juan County, New Mexico. MS on file, Southwest Archaeological Services Inc. 119 North Church Avenue, Aztec NM 87410. Dave Bunker, Project Director, May 1993, 3 pages.

373 Holloway, R.G. Results of Charcoal Identification from site LA 81596, HSR Project 9215: ACTC II, Socorro County, New Mexico. MS on file, Human Systems Research, P.O. Drawer 728, Las Cruces NM 88004-0728. Dr. D. Kirkpatrick, Principal Investigator, June 1993, 2 pages.

374 Holloway, R.G. Preliminary Analysis of Pollen Samples from LA 81694, San Juan County, New Mexico. MS on file, Navajo Nation Archaeology Department. 609 S. Behrend St. Farmington NM 87401, Douglas Dykeman, Principal Investigator. June 1993, 11 pages.

375 Holloway R.G. Analysis of flotation samples from LA 5664 and LA 71580, two Pueblito phase sites from Sandoval County, New Mexico. MS on file, OCA,UNM, Dr. Richard Chapman, Principal Investigator, June 1993, 7 pages.

R.G. Holloway, 31 reports 367 pages
botanical survey field work July 1992-Bernalillo County NM
botanical survey field work September 1992-Reserve NM
botanical survey field work September 1992-Bernalillo County NM
botanical Survey field work October 1992-Farmington NM

G. Dean, 7 reports 336 pages

botanical survey field work July 1992-Bernalillo County NM
botanical survey field work September 1992-Bernalillo County NM
botanical Survey field work October 1992-Farmington NM

ATTENDED 2ND ANNUAL paleoethnobotany conference, pHOENIX az, FEB 6-7 1993.

presented talk at Office Archaeological Studies, Museum of New Mexico, "Frontiers of Archaeological Palynology" Dec 1992

Accessions -- Forty lots, over 1,000 specimens were accessioned in 1992.

Catalog -- One thousand nine hundred specimens were cataloged in 1992, bringing the total collection size to 55,409 specimens.

Loans -- seven loans totaling 99 specimens were made during 1992, including loans to other departments at UNM such as Education and Anthropology.

Guests -- Nineteen guests visited the museum in 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 inquiries from the public regarding museum functions and herpetology were answered in 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 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
Roger Conant, Adj. Prof., Research Associate.
William G. Degenhardt, Curator Emeritus
STUDENT TRAINING:

During 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:


Grants:

Proposals Submitted


Stone, P. Sexual selection in lava lizards (Tropidurus spp.): a pilot study. Animal Behavior Society Research Grant, $1000 (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. 1992. Status survey of the spotted chorus frog (Pseudacris clarkii) in New Mexico. Share With Wildlife Program, New Mexico Department of Game and Fish, Santa Fe.


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.


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. "Ranid frogs of the Southwest;" Project funded by the U.S. Fish and Wildlife Service;


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 arenicolorus 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., 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. Student Resources Allocation Committee, University of New Mexico, $250

**AWARDS, SCHOLARSHIPS, AND FELLOWSHIPS:**


**PAPERS PRESENTED AT MEETINGS:**


**POSTERS PRESENTED AT MEETINGS:**


**MANUSCRIPTS, ABSTRACTS, AND REPORTS:**

Submitted


Jordan, M. A. and G. H. Rodda. Identification of Sex in *Boiga irregularis*. (In agency review, will be submitted to Journal of Herpetology)


*MSB Herpetology Division Annual Report Page 5*


In Press


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.


**Published**


**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 reptiles.

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 --

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.
The most significant events which occurred in our research program in 1993 were the hiring of a full-time collections manager for the fish division (A. M. Snyder), a full-time scientific illustrator (J. P. Sherrod), and the moving of the fish collection from room 53 to 35. We are continuing our work on fishes of the Pecos and San Juan Rivers as well as the Rio Grande in New Mexico and Texas. An additional $91,000 in research funds have been acquired for various projects on the San Juan and Pecos Rivers (discussed in more detail later in the report) bringing the total funds awarded to over $1.6 million.

In December 1992, Alexandra M. Snyder joined the staff of the MSB Division of Fishes. Snyder has over 10 years of experience in collections management of fishes and reptiles and amphibians at major American museums (University of Washington, California Academy of Sciences, and University of Michigan Museum of Zoology) and will be a valuable asset to our program.

Upon her arrival, we immediately began the process of moving the Division of Fishes to its new quarters. This required removal and boxing of all jars (10,000), breakdown of all shelves, and transferring all associated items. We also took this opportunity to inventory the collection, update the phylogenetic order specimens and replace inferior jars. The move required four people to work full-time for three weeks and was accomplished with minimal disturbance to departmental facility and staff.

After the move, Snyder assumed full responsibility for the daily operation of the collection. This involved establishing an accession policy, organizing old files, setting standards for processing expedition collections, computerizing the collections, monitoring growth and use of the fish collection, and initiating a volunteer program. A synopsis of the aforementioned activities is attached.

Division of Fishes personnel attended two professional meetings this year (Desert Fishes Council [November] and American Society of Ichthyologists and Herpetologists [May]) presenting four papers and two posters. One of the presentations (by C. S. Altenbach) received the Carl L. Hubbs best student paper award. In addition to papers, division personnel presided on five committees of the American Society of Ichthyologists and Herpetologists including the collections management and practices committee. This committee is actively involved in making recommendations for policy and procedure of collections management in wet collections (i.e. fish, reptile, and amphibians).
A five-year grant was prepared and submitted to NSF which was designed to link, through a network system, the MSB fish collection with similar collections at the University of Texas at Austin and Texas A&M University. A similar proposal, submitted by several institutions in Mexico, was designed so that we could share American and Mexican fish databases. If funded, this grant would provide money for the purchase of computer hardware for the museum, and salary for data-entry personnel and a collection management assistant. We proposed that the MSB Fish Division collections managers position become a full-time university funded position when the NSF funding terminated. The immediate goal was to computerize the entire MSB fish collection to make it accessible through an on-line system, to outside users. The proposal is currently in review and comments should be back to the principal investigators by the end of the calendar year.

Health and safety issues surfaced again in 1993 in relation to the ventilation of hazardous vapors (formaldehyde). In February 1993, we received an unannounced visit for the New Mexico State offices of OSHA (Occupational Health and Safety Administration). They had received complaints concerning the use of formalin in the ichthyology and herpetology divisions of MSB and were required to assess the problem. The divisions were assessed fines for inadequate ventilation and were required to install a vent system. Additional safety items addressed were the proper use of respirators (masks) and grounding of alcohol containers. Steps are being taken to see that an adequate ventilation system is installed for both the fish and herp divisions.

With the large amount of material that we are currently incorporating into the MSB fish collection and the lack of space for expansion, we are exploring the option of having space-saver compacting units installed in the museum. Space-saver system would double our usable shelf space. We have been in contact with the company representative and have a cost estimate for this project. We are waiting for a response to our prior NSF proposal before submitting an institutional support grant request.

In 1992, we requested a one-time budget increase so that we could purchase a collections dedicated computer on which to store the archives database. Funds were not allocated from the annual museum budget but were instead to be sought from alternative sources. At present, no additional money has been available to purchase a computer for the fish division and another request will be made of MSB curators to allocate money from the general museum budget for a fish division computer.

John P. Sherrod was hired in 1992 as the Fish Division's biological illustrator. John previously worked at the Illinois Natural History Survey where he prepared fish illustrations for the recently released Peterson Field Guide to Freshwater Fishes. His current assignment is to prepare illustrations of developmental series of larval fishes from the Pecos River, New Mexico. In addition, he is working on water-color renditions of the rare and endangered fishes of the Rio Grande basin.
Field research programs during the last years have been intense and required the hiring of several additional employees. At the beginning of the summer, we had a total of 18 individuals working in our program, many of whom were UNM undergraduates. Work on the Rio Grande has centered around the proposed listing of the Rio Grande silvery minnow (*Hybognathus amarus*) as a federally endangered species. The data required for this listing was collected over the last 8 years by MSB fish division personnel. While these biological data regarding listing are sound, there is considerable opposition in regards to the designation of critical habitat. The controversy over the proposed listing of this species will likely worsen during the next year and MSB fish division personnel will be called for their expertise. We are currently conducting Rio Grande silvery minnow population monitoring and life-history studies.

Pecos River field work consisted primarily of larval fish drift studies at two stations in the critical habitat of the Pecos bluntnose shiner. The data from this study will be correlated with flow events in the basins and used to determine potential impacts on the fish community.

We initiated two new studies on the San Juan River. The first was an extensive review of all contaminant studies which have been performed in the basin. This project required the hiring of a full-time individual (Robin A. Abell) and will continue into 1994. The other study is to assess of temporal changes in the fish communities in secondary channels in the San Juan River. Keith B. Gido, a graduate student of Dr. Molles, is undertaking this project for his thesis for a M.S. degree.

Our work on the fishes of the lower Rio Grande basin continued this year with another excursion into Texas. We spent several weeks sampling the mainstem of the Rio Grande between Del Rio and Eagle Pass. These data are going to be extremely important in reference to the upcoming debate on the North American Free Trade Agreement. The fish division at MSB is the only organization actively performing research in the area which has the greatest potential for being impacted if the agreement is approved.

Finally, Dr. William J. Koster, Professor of Biology and Curator of Fishes (1938-1975) died after a year-long illness. Dr. Koster was the first instructor of vertebrate biology in the Department and started the vertebrate collections. The historic material he gathered form the basis for much of what we now know about the fauna of the state of New Mexico. The fish division received all of Dr. Kosters personnel papers, hundreds of photographs, and his field notes covering over 40 years of research in New Mexico.
Museum of Southwestern Biology, Division of Fishes

Records on 1992 collection activity:

ACCESSIONS:

GIFTS: 1,250 LOTS AND 27,685 SPECIMENS
Summary: Gifts received in the form of government voucher collections and ancillary field acquisitions from other MSB divisions.

LOANS: 31 LOTS AND 67 SPECIMENS
Summary: Loans received from USFWS in New Mexico and Colorado for species verification and one loan received from Tulane University for research purposes.

EXPEDITIONS: 1,296 LOTS AND 81,442 SPECIMENS
Summary: Expeditions to collect fishes and larvae of fishes in the San Juan River basin of New Mexico and Utah, Rio Grande in New Mexico and the Pecos River in New Mexico. The above shows cataloged lots and specimens only. The figure is incomplete because collecting and cataloging is ongoing and therefore not complete for this year. Expedition members are employees in the MSB Division of Fishes.

COLLECTION TRANSACTIONS:

GIFTS: 3 LOTS AND 17 SPECIMENS
Summary: Gifts sent by the MSB Division of Fishes include frozen tissues and specimens for mDNA analysis to researchers at the University of Alabama and University of New Orleans. Not included in the above figure is an ongoing donation of old style glass jars to the Sandia Preparatory High School biology program.

EXCHANGES: 0 LOTS AND 0 SPECIMENS
Summary: No exchanges made this year between our collection and others.

LOANS: 17 LOTS AND 3,207 SPECIMENS
Summary: Recipients of loans sent out by the Division of Fishes include UNM Department of Biology classes, Albuquerque Journal reporter, government agency biologists and university researchers.

LOANS RETURNED: 4 LOTS AND 182 SPECIMENS
Summary: Loans of specimens for research in the Division of Fishes were returned to the Smithsonian Institution, American Museum of Natural History, and Colorado State University. All were returned in accordance with the lending policies of each institution.
INFORMATION REQUESTS AND PUBLIC SERVICE:
The Division of Fishes received 16 requests for information from a variety of sources (as listed below):

ACADEMIC: 8
Includes lists of collection holdings sent to researchers at universities, guided tours for local school children and prospective graduate students. Information provided on aquatic systems and natural history to high school biology students and teachers. Advice on preservation of fishes and materials provided to UNM Department of Biology graduate students and other students in organismal biology.

PROFESSIONAL: 5
Information requests received from government biologists with such agencies as the Bureau of Land Management and U.S. Fish and Wildlife Service. Also, hosting meetings for specific government research groups and giving presentations at meetings are included.

PUBLIC: 1
A 2 hour presentation (SPP) was given at the public hearings on the status of the Rio Grande silvery minnow.

INDUSTRY: 4
Species verification for a bait salesperson and aquaria "trouble shooting" for local seafood wholesaler.

VISITORS TO THE DIVISION OF FISHES: 20 TOTAL

ACADEMIC: 8
From UNM Department of Biology, Department of Chemistry and Museum of Southwestern Biology; a fisheries biologist from the University of Massachusetts in Amherst and archeologists from the Museum of New Mexico in Santa Fe.

PROFESSIONAL: 10
Researchers from New Mexico Department of Game and Fish and U.S. Fish and Wildlife Service.

PUBLIC: 1
Reporter for the University of New Mexico public affairs office.

INDUSTRY: 1
Bait fish salesperson needing species identification and references for fish identifications.
VOLUNTEER PROGRAM:

William J. Hudenko, Senior at Albuquerque Academy. Worked 4 weeks (July 1993) as a curatorial assistant in the Division of Fishes. Primary responsibilities were to sort and store fish eggs and larvae from the drift net collections on the Pecos River. Assist in the archives by reorganizing redundant collections into "vial jars" and assist in the field work efforts on the Rio Grande.
The Division of Mammals hosted 2018 people who used the collection for one purpose or another during a total of 288 days; about the same as last years' use. We continued the more efficient system of handling the large number of requests for tours by teachers of school-aged kids. Approximately 1172 kids toured the collection last year (Table 1). Visitation by professionals was comparable with past years (76 in 1989, 184 in 1990, 171 in 1991, and 174 in 1992-3).

Table 1: 1992-1993 visitor statistics.

<table>
<thead>
<tr>
<th>Source</th>
<th># Indiv</th>
<th>Purpose</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNM- Anthro.</td>
<td>21</td>
<td>bone ID</td>
<td>regular use</td>
</tr>
<tr>
<td>UNM- Archael.</td>
<td>87</td>
<td>generally, bone ID</td>
<td>regular use</td>
</tr>
<tr>
<td>News Media</td>
<td>6</td>
<td>article for newspaper</td>
<td>July 1992</td>
</tr>
<tr>
<td>Visitor-1</td>
<td>174</td>
<td>prof. scientists</td>
<td>regular use</td>
</tr>
<tr>
<td>Visitor-2</td>
<td>140</td>
<td>usually prospective student to UNM/Dept</td>
<td>during winter</td>
</tr>
<tr>
<td>Visitor-3</td>
<td>1172</td>
<td>ave. group size = 13.4</td>
<td>planned school tours</td>
</tr>
<tr>
<td>Visitor-4</td>
<td>24</td>
<td>have seen MSB in directory; general</td>
<td>usually expect the NH Museum</td>
</tr>
<tr>
<td>Visitor-5</td>
<td>288</td>
<td>usually organized by UNM Visitor's Center or Biology Department</td>
<td>HS students or recruits</td>
</tr>
<tr>
<td>Artist-1</td>
<td>2</td>
<td>Photograph bats</td>
<td>art student</td>
</tr>
<tr>
<td>Artist-2</td>
<td>24</td>
<td>Photograph other items</td>
<td>Professional and students</td>
</tr>
<tr>
<td>Donor-1</td>
<td>28</td>
<td>NM Dept Game and Fish</td>
<td>regular</td>
</tr>
<tr>
<td>Donor-2</td>
<td>52</td>
<td>bears, weasel, misc</td>
<td>regular</td>
</tr>
</tbody>
</table>

Visitor-1 are researchers using collection for Recent mammal identification, comparison, for evidence (NMDGF), or specific research.  
Visitor-2 are generally students of college age.  
Visitor-3 are school-aged children in an organized pre-arranged tour.  
Visitor-4 are community members or others just passing through and curious about our facility.  
Visitor-5 are general tours that cover the entire Department of Biology.  
Artist-1 consists of photography of Natural History specimens for research or display.  
Artist-2 are photographers using natural history specimens for art exhibits or art "interpretations".  
Donor-1 are federal agencies or other institutions donating specimens for accession into the voucher collection.  
Donor-2 are individuals that come buy to leave specimens they have found; usually road-killed animals.
Visitors represented the countries of Japan, Mexico, Brazil, Bolivia, Poland, France, Italy, and Texas. Common users included ones from the American Museum of Natural History (New York), University of Nebraska, University of Alaska, University of Nevada (Las Vegas), University of California (Davis), Illinois Natural History Survey, and others. Locally eight pueblos, the New Mexico Department of Game and Fish, the New Mexico Museum of Natural History, the Office of Contract Archaeology, the Natural Heritage Program (Nature Conservancy) and users from the Sevilleta LTER were the commonest professional users. We have always had a strong relationship with the Office of Contract Archaeology; 87 OCA scientists used the facility last year. This is the third year that we have maintained a locked door (recommended by the American Association of Museums), but visitors were apparently not too inconvenienced and called ahead. Nearly 150 "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 homecoming, Research Day, and graduation.

YEAR'S HIGHLIGHTS

Where to start? The biggest impacts to the collection continue to be the LTER, NSF sponsored work in Bolivia, and several new projects for the year. Over 600 specimens were collected and deposited into the DOM this year from the 1992 LTER field season. The 1993 season is expected to generate over 800 specimens. The Bolivia expedition netted ca. 600 specimens in 1992, with over 1200 returning from this season's field work. On top of that we were successful in being awarded several other grants that were run through the MSB mammal division. The "Canon APB-Malrose Bombing Range" grant is a project to assess the mammals of that Air Force Base. Another crew was selected for work at the Pecos Monument near Glorietta, NM. A RAMHSS (Research Assistantships for Minority High School Students) grant was funded to bring in three students each from three high schools (one Navajo, another white, and one primarily Hispanic) and their respective teachers for two months this summer (see participant name list at end of this report). Another project was selected at the El Malpais monument near Grants, NM...and then there was the Hanta virus outbreak near Four Corners/Farmington, NM. The impact of this serious disease is still unfolding, but the DOM will continue playing a central role. Some highlights:

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. However, we did have a student, Melissa Chavez, organize and run tours as part of credit earned towards here degree in education.

2) Despite the relief of an answering machine, the Division answers the phone approximately 50 times per day (almost 250 per week!) from the community, University, and within the department.

3) The Research Assistantships for Minority High School Students (RAMHSS) program sponsored by the National Science Foundation recently concluded (13 August). Nine students, three each representing Sandia View Academy, El Dorado High School, and Canoncito High School were provided with hands on experience conducting research on mammals and learning how natural history specimens are acquired and cared for.

4) Next year promises to be one full of changes. It will be especially active with the return of Terry Yates from his two-year appointment at the National Science Foundation and then subsequent return from three months of field work in Bolivia this summer. The challenges are mounting, it should be an exciting year.
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 Autonoma 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 11 groups of specimens, but the DOM cataloged only 1204 (from MSB 67380 to 68584; 3254 specimens were cataloged last year). However the actual number of specimens cataloged was actually 1772 because we spent the time filling in two large gaps. One gap, the Ivey collection consists of specimens from the 1940's in areas that are now developed and their habitat no longer exists. Next years reported number of specimens cataloged ought to double since we accepted almost 3000 specimens this field season alone!

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 2250 specimens. We have logged approximately 800 specimens from this years effort. We have also accepted a similar flood of material (about 1200 specimens) from the 1993 Bolivian expedition.

Computerization

The DOM purchased three Gateway 2000 PCs this year. Two of these machines have 220 MB harddrives and run at 50 mHz. These were purchased to accent the RAMHSS project. The third, a 4DX2-66v with CD-ROM and 360 MB hard drive is now installed for collection management. All machines run under windows and have access to the mammal database. One of the old 80386 machines was placed in the Division of Biological Materials, another was placed as a "loaner" to the Division of Ornithology for its collection use until sources can be found to purchase a PC for that Division. This upgrade was necessary in order to run graphics and data analysis packages for the RAMHSS and other research projects. The older machines (Zenith Z-158, 8088 PC) have been replaced as they were more than ten years old and have been failing occasionally.
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. The course most heavily impacting the DOM this year was mammalogy (taught by Yates last fall). One 10-day field trip to Veracruz, Mexico included 20 participants. A class taught by Gannon on Bats last spring attracted 27 students and included museum work with specimens, field trips, lectures, and independent study.

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
Biology 402/502: Bats 6 loans
Biology 489: Mammalogy 15 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
Biology 502: Advanced vertebrate biology - 15 students
Biology 402/502: Bats - 27 students
Biology 651: Advanced Field Biology - 3 students
Biology 512: Population Biology - 14 students
Biology 554: Mammalian Ecology and Behavior - 14 students


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. Scott Gardner, University of California, Davis
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. Bronstein Yurgovich, National Academy, Poland
Dr. Yuri Krustov, Russia (now in Tel Aviv, Israel)
Dr. Kostia Ternavich, Moscow University, Russia
Dr. Brett Riddle, University of Nevada, Las Vegas
Dr. William Lopez-Ferment, UNAM Mexico City.
Dr. Richard B. Forbes, Portland State University.
Dr. Mike Mares, Oklahoma State Museum.
Dr. Masayuki Yasuno, Dir. Environmental Division, NIE, Japan
Dr. Joe Cook, University of Alaska
AWARDS, GRANTS, AND CONTRACTS:

Awarded in 1990-1992

Terry Yates:


Ithyological Investigations of New Mexico fishes. T.L. Yates and Steve Platania. New Mexico Game and Fish. $37,000, 1 August - 30 June 1992.

REU in Ecosystems Studies: Establishment of an REU site with the Sevilletta LTER Program. J. Gosz et al. NSF. $150,000, May 1, 1991-Nov. 1, 1992, $50,000/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.

Host genetic factors affecting specificity of parasites of small mammals. The NIH, $62,000. 48 months (with D. Duszynski), start date 1/1/87.


Research Experiences for Undergraduates (REU) with Mammalian diversity in Bolivia: The Yungas and Valles. The National Science Foundation. $19,943 for four students (Peurach, Chavez, Seaton, and Dunnum), for 12 months (with Joseph Cook. BSR - 8920617, Start date 6/1/93.


OTHER STAFF AND STUDENTS:

Jennifer Frey
Arizona Game and Fish Department, (with TL Yates) $7,700.00 for Mogollon vole (Microtus moschatus) genetic analysis. 1992-1993


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 1992.

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, 1992-1994).
Division of Mammals (DOM), Annual Report 1992-1993

Eduardo Palma
1992. Student Research Allocation Committee, University of New Mexico ($150.00).

1992. The Vice President's Graduate Research Fund, University of New Mexico ($100.00).

1992. Graduate Research Allocation Committee, Dept. of Biology, University of New Mexico ($250.00).

1992. Latin American Institute, UNM ($1,250).


Jorge Salazar B.
1. The systematics of Bolomys
   Coleccion Study Grant: American Museum of Natural History (1991) $US 450.­
   Latin American Institute, UNM (1991) $US 900.­
   Latin American Institute, UNM (1992) $US 600.­
2. Rodents of the Puna (with P. Marquet) $US 14 000.­
3. Competence among ruminants and Rodents (with S. L. Gardner & M. Ortega) $US 15 000.­

INFORMATION DISSEMINATION
Summary: The Mammal Division supported 20 Ph.D. dissertations and 4 M.S. theses, 14 grants, 37 published papers (12 in 1992, 15 in 1993; 20 more than last years' report). Approximately 31 papers presented at scientific meetings during this time.

PUBLICATIONS:
The Mammal Division supported many types of publications in 1992-3. Among these are included book chapters, refereed journal articles, oral presentations, and published abstracts.

PAPERS PUBLISHED IN 1992


Division of Mammals (DOM), Annual Report 1992-1993


PAPERS PUBLISHED IN 1993


93 - Frey, J. K. 1993. Nocturnal foraging by the Scissor-tailed Flycatcher under artificial illumination. Western Birds: 200


Division of Mammals (DOM), Annual Report 1992-1993


Occasional Papers of the Museum of Southwestern Biology


OP86-4 Cook, J. A. 1986. The mammals of the Animas Mountains and adjacent areas, Hidalgo County, New Mexico. Occasional Papers of the Museum of Southwestern Biology, University of New Mexico No. 4. 45 pp.


Abstracts and Contributed Talks at Professional Meetings:


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.


(approximately 25 additional presentations were made in 1992-1993 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. Board of Directors, American Society of Mammalogists.
Division of Mammals (DOM), Annual Report 1992-1993

Elected.


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.

GRADUATE EDUCATION.

Mammalogy, offered by Terry Yates followed its usual tough syllabus taking 20 students on five field trips including a 10-day field trip to Veracruz, Mexico. This was offered Fall, 1992.

Mammalian ecology (Biology 554; 4 hours) was offered by William Gannon and Richard Forbes Spring 92. 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.

Bats, a course on chiropteran biology was offered to 27 students by Bill Gannon and Mike Balistreri, Spring 1993. Eight published papers are expected from this effort.

Masters degrees awarded:
Lisa A. Valle, Spring 1992 (J. Brown, advisor)

Doctors degrees awarded:

Biol 699 (spring and fall)
Jennifer Frey
Forrest Davis
Eduardo Palma

Biol 699 (Summer)
Jennifer Frey
Forrest Davis

Biol 551 (Fall, Spring, Summer)
Jennifer Frey
Jennifer Miyashiro
Jorge Salazar
Eduardo Palma

Biol 459 (Fall, Spring, Summer)
J.L. Dunnnum
D. Goddu
S. Feurach
S. Davenport
H. Smith
C. McCain
T. McBride
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 she and her dog were sprayed by skunks when she was asked initially if she knew what k-rats ate in the desert; or the community member that 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)
Curatorial Staff, Division of Mammals -- Rooster of employees in the DOM from January 1986 to the present. As of this date roughly 90 students have had training in the Division. Some have lasted only three weeks, other have worked for five years. Most have moved on with a new, positive understanding of biology and museum science. This list is still incomplete.

Terry L. Yates Curator of Mammals and Birds, 1977- present
Jim S. Findley Curator Emeritus, Director, 1955 - present
William L. Gannon Collections Manager, 1986 - present;  
Acting Curator (1990 - 1992)
Robert W. Dickerman Curatorial Associate
William Lopez-Orment 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 Janecek 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, 92, 93)
Marikay Ramsey Curatorial Assistant (89, 90)
Philip J. Glass Programmer, work-study, staff (90-2)
Mariel L. Campbell Head Preparator, work-study (88, 90)
Rosanne L. Humphrey Bolivia REU 1 year; +2 years as PhD student
Suzy C. Peurach Bolivia REU 1 year
Roberto U. Gutierrez Bolivia REU 1 year
Jon L. Dunnum Bolivia REU 1 year
Guy O. Herbert Head Preparator, work-study (89, 90)
Lisa A. Valle Head Preparator, work-study (91, 92)
Kristin Vaitkus Head Preparator, work-study (90)
Colin Campbell Head Preparator, work-study (91)
Steve Davenport Head Preparator, work-study (91-94)
Melissa Chavez Head Preparator, work-study (87, 88)
Matt Brady Head Preparator, work-study (87, 88)
Natalie Derwelis Head Preparator, work-study (89, 90)
Shelly McCaulley Head Preparator, work-study (87, 88)
Brian Frank Head Preparator, work-study (87, 88)
Carol Malcolm Head Preparator, work-study (87, 88)
Jim Saely Head Preparator, work-study (87, 88)
Yvette M. Paroz Head Preparator, work-study (87, 88)
Allison Brody Head Preparator, work-study (87, 88)
Catherine Isbell Head Preparator, work-study (87, 88)
Stacey Hoffmann Head Preparator, work-study (87, 88)
Dave Keller Head Preparator, work-study (87, 88)
Julie Kubler Head Preparator, work-study (87, 88)
Damon Matlock Head Preparator, work-study (87, 88)
Gabrielle Tripp Head Preparator, work-study (87, 88)
Jeff Harmon Head Preparator, work-study (87, 88)
Rachel Montenegro Head Preparator, work-study (87, 88)
Paulate Ford Head Preparator, work-study (87, 88)
Melissa Suarez Head Preparator, work-study (87, 88)
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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-aide, SRAP (90)
Miguel Romero  museum-aide, SRAP (90)
Tom Collins  WS, Fall 91-Fall 92
Bryan Furlow  WS, volunteer, May 92-94
Kurt Shipley  WS, Summer 92-Fall 93
Marcos Sandoval  museum-aide, YDI (92)
Levi Lucero  museum-aide, YDI (92)
Halea Johnson  museum-aide, YDI (92)
Nadine Kemrer  volunteer, Academy HS, 92
Seryl Gwyn  vol Spring, RAMHSS, summer 1993
Vanessa Romillo  RAMHSS Summer 1993
Gary Synder  RAMHSS Summer 1993
Bernadette Wilson  RAMHSS Summer 1993
Renee Secatero  RAMHSS Summer 1993
Stacey Mariano  RAMHSS Summer 1993
Jon Kahn  RAMHSS Summer 1993
Bradley Chapman  RAMHSS Summer 1993
Melissa Saenz  RAMHSS, HS; Summer, Fall 1993
Gaylen Sims  RAMHSS teacher, 1993
Jane Corkern  RAMHSS teacher, 1993
Ken Voorhees  RAMHSS teacher, 1993
Heather Smith  Cannon, 1993
Christy McCain  Cannon, 1993
Toby McBride  Kirtland, Cannon, 1993
Monique Mosher  Cannon, Summer 1993
Jim Stewart  Cannon, 1993
Damien Scott  Preparator, LTER; 1993
Molly McCormick  Preparator; 1993

Other Mammalogists and Professionals Associated With the Division of Mammals

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American Museum of Natural History

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Chiropteran Anatomy and
Physiology

Troy L. Best  Auburn University
Assistant Professor, Biology
Mammalian Morphology and
Systematics; Dinocampus

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 Chironomus, Bolivia

Donald W. Duszenski  MSB Research Associate  
Chair, Department of Biology  
Mammalian hosts of coccidian parasites

James S. Findley  Director of MSB,  
Ecomorphology, Community Ecology  
Curator Emeritus, 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

Gordon Kirkland  Shippensburg State University  
Vertebrate Museum  
Shippensburg, Pennsylvania

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Robert W. Dickerman  Museum of Southwestern Biology

Richard B. Forbes  Department of Biology, Portland State University, Portland Oregon

William Lopez-Forment  UNAM, Mexico (1990)

Research Associates:

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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  Director, Utah State Museum of  
Natural History, Salt Lake, UT
GRADUATE STUDENTS ASSOCIATED WITH THE DIVISION OF MAMMALS

Ph. D.
Forrest W. Davis
Jennifer K. Frey
William L. Gannon
Douglas A. Kelt
Shahroukh Mistry
Eduardo Palma
Michael Patrick
Jorge Salazar Bravo
Marian P. Skupski
Ursula Sheppard
Mike Balistreri
Marcelo Zalles
Jennifer Miyashiro
Pablo Marquet

Masters
Natalie Runyan
Travis Perry
Lisa A. Valle
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National Ecology Research Center
U.S. Fish and Wildlife Service
Museum of Southwestern Biology

Grant and Projects

"Baseline survey for herptiles and mammals at San Andres National Wildlife Refuge;" Project funded by U.S. Fish and Wildlife Service; M.A. Bogan, Principal Investigator.

"Ranid frogs of the Southwest;" 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, Jr., Principal Investigator.

"Studies of the biology of the Sacramento Mountain salamander, Aneides hardii;" Project funded by the U.S. Forest Service; N.J. Scott, Jr., Principal Investigator.

"Use of riparian revegetation sites along the Rio Grande by terrestrial vertebrates;" Project funded by the U.S. Fish and Wildlife Service; N.J. Scott, Jr., J.N. Stuart, and G.H. Farley, Co-principal Investigators.

Publications


Reports and Nonrefereed Publications


**Scientific Meetings, Symposia, and Workshops**


**Committees, Awards, and Other Significant Activities**

Dr. N.J. 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.

Ms. Robino assisted the Middle Rio Grande Bosque Interagency Team in the production of the Middle Rio Grande Bosque Biological Management Plan.

Mr. G.H. Farley performed breeding bird surveys for the U.S. Fish and Wildlife Service Migratory Bird Management Office.

Dr. Scott provided technical assistance to CITES-Paraguayan Office of Scientific Authority, Museo Nacional de Historia Natural, Parques Nacionales y Vida Silvestre for the Ministerio de Agricultura y Ganadería, TRAFFIC-Sudamérica, and "Moises Bertoni" Conservation Organization, Asunción, Paraguay.

Mr. J.N. Stuart and Ms. Robino received special achievement awards for high level performance ratings.

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 G

ANNUAL REPORT:
LONG-TERM ECOLOGICAL RESEARCH PROGRAM

SEVILLETEA
Long-Term Ecological Research Program

National Science Foundation Grant BSR-8811906.

Professor Bruce T. Milne
Department of Biology, University of New Mexico.

1 Introduction

During the 1992-93 fiscal year, the Sevilleta LTER Program has continued to develop its field research programs, educational programs, and inter-agency collaborations. The LTER Core Areas continue to be addressed in the variety of biome types found in central New Mexico, and several studies begun in 1991 (fire ecology, decomposition studies) have been successfully implemented to complement ongoing LTER research. Construction activities on the new NSF-UNM funded Sevilleta Field Station were completed during the fall of 1991, and the station was open and active during the 1992 and 1993 field seasons. Finally, the Sevilleta has continued its role in science education with its site award for the NSF Research Experiences for Undergraduates (REU) Program, and hosting a number of students in the NSF Program for Research Assistantships to Minority High School Students (RAMHSS).

Sevilleta LTER personnel have also collaborated with the development of long-term research initiatives by the U.S. Air Force (via the Department of Defense’s “Legacy Program”) and the U.S. Park Service. These collaborative initiatives will effectively expand LTER-type research efforts in the upper-Rio Grande Basin, promote consistent and comparable experimental protocols among the various research groups, and provide the Sevilleta LTER (and the LTER Network) with computerized data links to other agency research programs.

The following reports by the Sevilleta LTER Principal Investigators summarize the accomplishments to date, and define the goals of the upcoming 1993-94 fiscal year.

2 Geographic Information System (GIS) Development

During the spring, summer and fall of 1992, Sevilleta researchers conducted an extensive month long high-resolution GPS survey. Ten new or established benchmarks were surveyed in a network orientation to provide working points for lower resolution surveys of Sevilleta LTER and related research sites. The survey utilized 3 Trimble 4000st receivers purchased by the network. Following the acquisition of new software to complete the analysis of the collected data, the process of locating all current and historical research sites will begin. This survey will be done using the Trimble Pathfinder units. In addition, the Pathfinder units will be used this year to ground truth satellite data
and begin the process of mapping vegetation on the Sevilleta. All these data are being established as coverages for use with ARC/INFO and other geographic information systems.

The cumulative work on GIS to date has resulted in the completion of the following data layers being established in the Sevilleta GIS ARC-INFO database: (1) digitization of prominent landmarks used for locating ground points in the field, (2) the geology base map for the GIS, (3) the soils base map obtained from the recently published USGS soil survey, (4) composition of a catalogue for all image data, (5) acquisition of a total of 12 TM and 3 MSS Landsat scenes and 1 SPOT scene (with geometric, radiometric, and atmospheric corrections for most scenes), (6) archiving of archaeological data on tape for later use in the GIS, and (7) Digital Elevation Models (DEM’s) for the Sevilleta’s 15 quadrangles. Acquisition of digitized, high-resolution ortho-photos as a GIS layer for the 15 7.5-minute quadrangles of the Sevilleta is currently underway; this data layer will permit visual inspection of vegetation, watersheds and landforms with a resolution of 17 cm on the ground. Additional funding from NSF has been obtained to collaborate with the San Diego Super-Computer Center for the purpose of developing the software and data-processing algorithms necessary for handling the extremely large data sets anticipated from the high-resolution aerial photography. The photographs were taken in June/July 1993, and the photo resolution is extremely good. The photographs are now being annotated and archived, in preparation for scanning and digitization.

Primary data layers that have been developed for the Sevilleta include roads and trails, surface hydrography, soils, precipitation and meteorological stations, and cultural features. Secondary data layers to be included in the GIS will be land use and ownership surrounding the Sevilleta, fence lines, gas pipelines, archeology sites and/or surveys, water basin boundaries, camera locations, daily lightning occurrences, field study sites, transects, and surface geology.

In 1991, the Sevilleta LTER program received a grant from NCAR to get AVHRR data from the satellite receiving dish shared by CCAR and stored on the NCAR mass storage system. These data are being collected weekly using the Internet, and composite images are being produced and analyzed for NDVI and other indices using the satellite image analysis capabilities of the “khoros” system (a product of cooperative grants between EECE, LANL, and LTER investigators).

### 3 Image Acquisition and Processing System for Spatial Analysis of Vegetation (Khoros).

LTER collaborators John Rasure and Donna Peabody (UNM Department of Computer Engineering) have advanced field studies in environmental science by developing an instrument for acquiring and analyzing near ground level (NGL) vegetation image data. Development of the instrument was driven by the growing need for ecologists to analyze large volumes of high resolution (0.05 cm/pixel to 50 cm/pixel) image data. The ground-based methodology developed provides significant improvements in the ability of scientists to study environmental dynamics because it provides an alternative to traditional methods of vegetation analysis.

The NGL system encompasses the acquisition of photographic color slide images for a range of spatial scales. The photographic image is digitized, rectified, and spatial features which best separate vegetation versus non-vegetation regions of the RGB image are calculated. A class detector uses this feature information to automatically produce a binary image defining the regions with vegetation coverage. A detailed analysis of the spatial characteristics of the image is provided, and the data are then archived for future analysis.
In addition to the specific instrument, development has also gone into creating a comprehensive software development, data analysis, and visualization system called Khoros, which is the foundation of the tools implemented in this project. Khoros provides a productive computing environment for prototyping and implementing scientific analytical tools, and is now being used by LTER scientists to analyze data and model ecological systems.

We are also testing the Khoros technology at three LTER network sites, and developing and administering training for users at those sites. This interaction with LTER scientists has provided valuable feedback on how to improve Khoros to promote scientific productivity and collaboration.

The Khoros system is open and freely available to the scientific community via anonymous ftp from pprg.eece.unm.edu (129.24.24.10). Tapes and printed documentation are also available for a distribution fee of $250.

4 Remotely Sensed Data

Remote sensing in the Sevilleta LTER has provided information about the spatial and temporal variation in plant responses to seasonal variation in moisture. Imagery was acquired by both the Thematic Mapper and by the SPOT sensor. Continued studies have been made to relate ground measurements of plant biomass (live and dead) to remotely sensed measures of plant abundance. In addition, we are collaborating with NASA to analyze an SAR image of the Sevilleta taken in June 1993.

To date, we have acquired a total of 14 TM scenes, 3 MSS scenes, and two SPOT scenes. Acquisition of an additional TM scene is scheduled for early October, 1993. All of the MSS scenes and 10 of the TM scenes have been preprocessed (geometric and radiometric correction) through collaboration with the UNM Technology Application Center.

5 Meteorological Studies

Currently, the meteorological stations monitored by the Sevilleta LTER include the following:

- South Gate - East Sevilleta (Jan. 1989), Chihuahua Desert.
- Red Tank - West Sevilleta, Sierra Ladrones (Feb. 1989), Piñon-Juniper Woodland.
- Bronco Well - West Sevilleta (Feb. 1989), Great Basin Grassland.
- Langmuir Labs - Magdalena Mountains (Sept. 1990), Subalpine Forest.
- LTER Field Station - West Sevilleta (Jan. 1992), Shrub-Steppe.

Data being collected at each station include air temperature, relative humidity, mean wind speed, mean vectored wind speed, mean vectored wind direction, maximum and minimum wind speeds, soil temperatures (1 and 10 cm depth), soil moisture (10 and 30 cm), solar flux, and precipitation. All variables are stored on an hourly basis and the data has been recovered monthly.
These data are stored directly on SIMS (Sevilleta Information Management System) so that the data are available to any person having access to SIMS whether at the field station, in Albuquerque, or any terminal around the country having INTERNET connection to SIMS. Radio equipment to upgrade the 6 Sevilleta meteorological stations so that data can be retrieved remotely via radio transmissions has been installed, so that all stations on the Sevilleta are now downloaded daily.

Precipitation Chemistry: A network of 20 collectors for precipitation chemistry has been maintained since February 1989. Each funnel drains into a 4 l bottle equipped with vapor traps to prevent evaporation and preservative to inhibit microbial growth. Precipitation samples are collected after significant rainfall events and are analyzed for Na, K, Ca, Mg, NO₃-N, NH₄-N, SO₄, Cl, conductivity and total Kjeldahl N and P. In the spring of 1990, rings of soft PVC pipe were mounted around the funnels to provide perches for birds that had previously used the funnels as perches and had consequently contaminated the collected precipitation samples. This addition reduced our contamination problems.

A standard NADP wet/dry precipitation collector was added to station 40 at Deep Well in June of 1990. Both wet and dry fractions of the samples are being analyzed for the inorganic constituents listed above. A second wet/dry collector was obtained on semi-permanent loan from USGS and was installed at station 44 in the spring of 1992.

Lightning Location Data identifying location and intensity of all cloud to ground lightning strikes in New Mexico continues to be obtained from New Mexico Institute of Mining and Technology and archived in the Sevilleta data base. We currently are in the process of recovering data from years prior to the establishment of the Sevilleta LTER (1986-1988). During 1992-93, we have continued to test the relationship between lightning and precipitation. To this end we are using all of our array of precipitation gauges. These include the meteorological station, the precipitation chemistry funnels and a set of 10 precipitation gauges placed on a 3 X 5 km grid on McKenzie Flats on the east side of the Sevilleta. These gauges were upgraded this year so that they are now solar powered which has reduced the manpower required to monitor them.

Finally, in conjunction with the LTER watershed studies (see below), a network of 5 dataloggers was sampled in the small watershed study area. These dataloggers monitor soil moisture and temperature in the stream channel and bank at various locations along about a 1.5 km stretch of channel. Precipitation gauges installed with 2 of these dataloggers supplement the precipitation depths and intensities available from the watershed meteorological station.

6 Watershed Studies

The goals of the watershed group are to study the connection between the El Niño/Southern Oscillation (ENSO) phenomenon and climate in central New Mexico and to determine the effects of annual variation in precipitation on surface and groundwater hydrology, and on semi-arid stream ecology. The 1991-1992 period was an El Niño year, thus both extremes of the Southern Oscillation have occurred within the Sevilleta LTER's first funding period (1989-90 was a La Niña year). Therefore, all hydrologic studies described in the previous annual reports are being continued.

Organic matter redistribution and decomposition studies are being completed, and an organic matter storage distribution study was begun during the 1992 summer. Fortunately, soon after the organic matter was sampled throughout the ephemeral stream network, a record flood occurred in response to a locally intense thunderstorm. This provided the opportunity to evaluate the effects of
large floods on organic matter storage and transport. A second round of sampling was completed after the flood. This follows a flood of lesser magnitude the previous summer when researchers were able to sample and analyze ephemeral stream water chemistry. In the long-term, we are gaining a better understanding of organic matter processing, transport and storage, in these flashy stream networks.

Enhanced internal collaborations have proceeded with the meteorology group, the plant group, and with the arthropod component of the animal group. Soil temperature and moisture probes have been installed along key positions within the ephemeral stream network in the Sierra Ladrones Study Basins. Surface hydrology may now be linked with subsurface moisture regimes. This information provides useful data and insights for studies of riparian vegetation and for studies of the dynamics of ground-based and remotely sensed greenness indexes. Permanent plant phenology transects were installed within the basins and we have provided guidance to a new graduate student whose interests include plant physiological ecology along moisture gradients. Studies of spatial and temporal variation in insect communities on riparian vegetation by Sandra Brantley (Ph.D. dissertation project) are placed in the context of the primary riparian shrub (*Falugia paradoxa*) along a longitudinal moisture gradients within the ephemeral stream network in the the Sierra Ladrones Study Basins. Hence, increasing knowledge of the physical/hydrologic functioning of these catchments and streams is proving useful in the association and integration of multidisciplinary studies.

In addition, we are currently involved with the development of the LTER Stream Catalog and are participating in the inter-LTER stream organic matter processing study.

Much of our effort this year is in bringing publications related to M. Tad Crocker’s dissertation research to completion. Data sets related to this research, and which comprise our LTER Watershed studies data, are being processed, maintained, and archived. A list of these data sets with a brief description follows.

1. **Surface runoff occurrence and distribution (paint stripe data):** The occurrence of ephemeral streamflow within the Sierra Ladrones Study Basins is documented by location and time of occurrence at a weekly resolution.

2. **Surface runoff occurrence, distribution, and flow properties (video data):** The occurrence of ephemeral streamflow within the Sierra Ladrones Study Basins and in the Rio Salado is documented by location and time of occurrence at a five minute resolution. Audio/video information in archived on 8mm video tapes and information related to video imaging system operation and to streamflow and wildlife observations are maintained in data logs. These logs are to be transcribed into archived computer files.

3. **Rain volumes:** Weekly measures of total rain volume and calculated depth at 6 to 9 locations within the Sierra Ladrones Study Basins are recorded. Data were collected during the summer monsoon season only. Year-round weather data, including precipitation, are collected continuously by the meteorology group at a weather station at the lower end of the Sierra Ladrones Study Basins.

4. **Particulate organic matter redistribution (dowel data):** initial and final resting positions of individual wooden dowel tracers placed in groups of 25 at 18 locations within the Sierra Ladrones Study Basins.

5. **Particulate organic matter decomposition (leaf pack data):** raw data related to the decomposition of cottonwood (*Populus fremontii*) leaf decomposition at eight sites, representing four classes of hillslope to stream habitats, within the Sierra Ladrones Study Basins.

6. **Benthic organic matter:** benthic organic matter content of sediments along the profiles of the two major ephemeral streams draining the Sierra Ladrones Study Basins. Litter and sediment samples were collected from five sites along each stream. Litter samples were separated by type (wood, root,
leaf (by species), etc.). Sediment samples were sorted into two size classes (X1≤1mm≤X2).

7. Streambed geomorphology: ten monumented transverse profiles are surveyed occasionally at all six permanent study reaches within the Sierra Ladrones Study Basins (data for two additional sites in the La Cueva basin exist for 1989). Profile resolution is 20 cm.

8. Southern Oscillation Index (SOI): SOI data are transcribed monthly from the Climate Diagnostics Bulletin: near real-time analyses, ocean/atmosphere. U.S. Department of Commerce, Climate Analysis Center (National Oceanic and Atmospheric Administration, National Weather Service, National Meteorological Center). World Weather Building, Room 605, 5200 Auth Road, Washington, DC 20233. The period of record is 1882-present. Two files are maintained, differing only in format. One is a year x month format and the second is a complete monthly time series (single column).

9. Lightning distribution within specified basins: This contributes to the development of programs to create lightning occurrence files for specified drainage basins. We plan to develop specific data sets designed for spatio-temporal analysis of thunderstorms within New Mexico and the Sevilleta area.

10. Stream discharge (Rio Puerco): stream discharge data obtained from the USGS for the Rio Puerco near Bernardo (near Sevilleta) and at Arroyo Chico near Guadalupe. Data sets were reformatted and archived.

11. Stream water quality (Rio Puerco): water quality data sets obtained from the USGS (near Sevilleta) and at Arroyo Chico near Guadalupe). Data sets were reformatted and archived.

12. Suspended sediment load (Rio Puerco): suspended sediment discharge (load) for the Rio Puerco near Bernardo. Data were obtained from the USGS, reformatted, and archived.

7 Nutrient Cycling Studies

7.1 Plant Litter Decomposition

In January, 1990, we began monitoring plant litter decomposition on the Sevilleta NWR. These studies were continued in 1991-92. We selected 7 locations that represented a three-way transect crossing latitudinal and elevational boundaries. At each location, we set out litter bags containing 5 g of plant leaf litter. Three species of plants (black grama, rice-grass and juniper) were used at all sites to test for site differences in decomposition processes. In addition, more species were added to selected sites to test for decomposition process differences among litter types. Additional species included blue grama grass, yucca, creosote bush, four-wing saltbush, and piñon pine. In all, 30 litter bags per species were placed at each site, allowing for up to 10 collections (3 bags/collection) over a 2 yr period. Current analyses of the litter are based on total dry mass losses with corrections for ash content; samples are being stored for future chemical composition analyses of N, P, K, Na, Mg, and S.

In the spring of 1992, the decomposition study was reorganized to provide information on this critical process at sites under intensive investigation by other investigators. Two of the original 7 sites were retained (the site with the complete suite of litters and the highest elevation site) and two new sites were added. Each decomposition site is adjacent to a meteorological station, which provides the maximum information on micro-climatic variation. The two new sites are on the west side; one in the creosote/grassland transition in the southern part, and the other at the Watersheds (Red Tank meteorological station). The common litter types have been retained (black grama,
juniper, rice grass; blue grama at original site) and creosote leaf litter has been added at all sites. Sample size and number remain the same. Decomposition studies also include participation in the cross-LTER litter study (LIDET; Long-term Intersite Decomposition Experiment Team). The decomposition site with the complete suite of Sevilleta litter types also is the central location for the cross-LTER study. Replicated samples are collected at 4 locations on an annual basis and sent to a central laboratory for further chemical analyses.

7.2 Carbon and Nitrogen Dynamics

Soil nutrient cycling studies have unified their efforts and are focusing on the Great Plains-Creosote Shrublands ecotone. The objective of these studies is to determine the spatial and temporal patterns of soil microbial activities, especially as they relate to the cycling of C and N. The site contains the grassland and creosote plots on the east side of the Sevilleta used for plant, vertebrate, arthropod, and other studies. Studies on C dynamics are being directed by Co-P.I. Dr. Tom Kieft of New Mexico’s Institute of Mining and Technology, while studies on nitrogen dynamics are directed by Dr. Carl White at UNM with Dr. Gordon Johnson directing the portion on N-fixation.

Sampling at the grassland-creosote transition is performed approximately monthly. Separate samples are randomly collected from open soil between plants and from beneath the canopy of plants. Samples are sieved, mixed, and split into two subsamples: one for soil C analyses at NMIMT, and one for N analyses at UNM. Other studies record the cover by species at both grassland and creosote sites. Coupled with percent cover measurements, we should be able to estimate the C and N dynamics within the soil for each area. Based upon the desertification model presented by Schlesinger et al. (1990), we should be a measure of the heterogeneity of soil nutrient resources in the grassland and creosote areas. Initial results suggest that distribution of nutrients in the creosote area is more heterogeneous, with higher nutrient levels under creosote (islands of fertility) and lower levels in the open areas. Nutrient resources within the grassland area also differ between open and under grass cover, but the differences are smaller than in the creosote site.

Soil N studies include the following measurements performed at UNM: soil moisture (field), water holding capacity, loss-on-ignition, immediately extractable inorganic-N (nitrate and ammonium), and net N mineralization potential. Soil crusts are collected and measured for their N-fixing potential. Methods for measuring nutrient inputs via meteorological events (wet-dry deposition) and gaseous exchange are described in the respective sections.

7.3 Microbiology Studies

Soil microbial studies are being conducted as a collaborative effort by Co-P.I. Dr. Tom Kieft of New Mexico’s Institute of Mining and Technology and Dr. Carl White at UNM. Studies in 1993 have continued a comparison of microbial biomass/activities in grassland and creosote bush habitats on the east side of the Sevilleta. Sampling sites were shifted to existing core research sites. This change in sampling sites was made to improve coordination between efforts at NMIMT and UNM. Samples are collected as described in the previous section. This will help in determining the influence of plants on microbial biomass and activities.

Measurements which we are currently making on soil samples include (1) total organic carbon by the Walkley-Black procedure (Nelson and Sommers 1982), (2) soil biomass measurement by the substrate-induced respiration method (Anderson and Domsch 1978), and (3) soil respiration. These
three measures comprise what has been termed the “soil triangle” (Insam 1990). They are especially useful for the calculation of ratios, i.e., the ratio of biomass carbon to total organic carbon, and the ratio of basal respiration to biomass carbon (metabolic quotient). Values of these ratios have been shown to be correlated with climate (Insam et al. 1989, Insam 1990), agricultural practices (Anderson and Domsch 1989, 1990), plant succession (Insam and Haselwandter 1989), and with reclamation of disturbed soils (Insam and Domsch 1988). In general, disturbance leads to a destabilization of organic matter as evidenced by: (1) decreased organic carbon, (2) decreased microbial biomass, (3) increased microbial biomass carbon to organic carbon ratio, and (4) increased metabolic quotient. Stabilization of organic matter causes a reversal of these trends and leads eventually to constant values.

8 Vegetation Studies

8.1 Plant Communities

The main objective of the vegetation community sampling is to characterize the variation present across ecotones and to monitor for changes in biomass, production, and species composition. Data include Landsat Thematic Mapper imagery, aircraft borne aerial photography, balloon photography, and line intercept transects within ecotonal areas. A nutrient fertilization study is being concluded that examined the interaction between soil moisture conditions and nutrient availability on plant production.

During 1993, sampling was repeated along a 3 x 25 km transect stretching southward from Black Butte at the northern edge of the eastern side of the Sevilleta. Additional sampling locations were established along a similar transect on the west side of the refuge.

8.2 Primary Production

Studies on the production of two major grass communities (short-grass prairie with black and blue grama, C4 grasses; and Great Basin grasslands with shrubs and C3 grasses as dominants) has continued. The study started in the spring of 1989 following a La Niña year. Sampling in the spring and end of summer of 1992 completed half of a cycle; 1992 was a El Niño year. Plots within each grassland site are photographed and then clipped to provide a small scale component to the remote sensing effort. From these images and collections, relative cover and biomass can be determined and compared through time to determine the plant community dynamics progressing from a dry to wet extreme in climate. Soil samples are collected at the time of clipping and determined for extractable and mineralizable nitrogen forms. Net N mineralization has declined from the dry to the wetter years at the Great Basin site, suggesting that plant uptake may deplete the soil N reserves and the availability of N may limit plant production during wet cycles.

8.3 Plant Population and Physiological Ecology

The goal of studies on plant populations and ecophysiology is to understand the mechanisms by which plants might respond to changes in the climate. Our work during 1992-1993 continues to address the following questions:

1. How does environmental change in space and time alter the dynamics of plant populations?
2. How do these effects vary among species? Which species are the strongest and the weakest indicators of change?

**Baseline population monitoring.** We are monitoring the condition of one piñon-juniper population, two creosote bush populations, two populations of the C₃ grass *Oryzopsis hymenoides* and two populations of the C₄ grass *Sporobolus contractus*. All populations have been mapped and individuals have been permanently marked for repeated censusing. Demographic and physiological measurements are made in the spring (pre-monsoon) and fall (post-monsoon). For piñon pine, juniper, and creosote bush, demographic measurements are made at the level of the branch to assess short term changes in condition. We measure size and reproduction of whole grass plants, as number and size of individuals can change rapidly. Physiological measurements include pre-dawn and mid-day xylem potentials, photosynthetic rate and stomatal conductance.

The grass species continue to show dramatic differences in growth and reproduction among seasons and sites. These differences were clearly correlated with differences in rainfall. Species and sites also differed in water potential in a fashion that predicts the demographic shifts. Physiological parameters of grasses are much more variable than those of creosote.

**Common garden experiments:** Our initial common garden sites proved difficult to maintain because of limited access to water. Therefore our pilot experiments have been dismantled and we established a new, more useful common garden near the field station. A recently successful grant proposal to NSF has acquired the funding necessary to establish a desert-plant lath house and an irrigated experimental garden at the Sevilleta Field Station. This facility will be completed during the summer of 1993.

**Phenological patterns of herbaceous plants:** Studies were initiated in Spring, 1991. Transects in several habitats are censused two to four times per month for phenological stages of all herbaceous plant species. Presence of green leaves, flowers and fruits are recorded. This information will provide baseline data for further studies of plant populations and it will allow us to address specific questions about the responses of plant species to rainfall.

**Tree population study in the Magdalena Mountains:** A long-term demographic study of trees in the sub-alpine and montane forests of the Magdalena Mountains was begun in the summer of 1991. Stand sizes and sampling procedures were identical to those of the H. J. Andrews LTER's forest studies. The use of identical sampling methods should make data comparisons among the LTER sites more compatible. All trees and fallen logs on the sites were measured, mapped and marked with aluminum tags. Additional sites were established and sampled in 1992 with the assistance of the RAMHSS and REU students.

### 8.4 Nitrogen fixation by plants:

We have also continued studies to evaluate the contribution of symbiotic nitrogen fixation to the nitrogen economy of several plant communities at the Sevilleta. Leaf, litter, and soil samples have been collected from three legume species (mesquite, broom pea, and rush pea) and two potentially nodulated non-legumes (Russian olive and mountain mahoganey) as well as associated non-nodulating control plants. These samples are being analyzed to determine the abundance of the rare stable isotope ^15N as an indication of the contribution of biological nitrogen fixation to the nitrogen economy of these plants. Based on the results of these analyses, more extensive studies of symbiotic nitrogen fixing plants and appropriate control plants will be conducted using this technique. We have collected Russian olive root nodules for evaluation of seasonal variation in nitrogen fixation.
using the acetylene reduction method. A comparative study of nutrient cycling in the bosque of native cottonwood and two invader species, Russian olive and salt cedar, has been initiated. Tissue, litter and soil samples are being analyzed for nitrogen, phosphorus and selected cations.

9 Animal Studies

9.1 Arthropod Studies

The objectives of the arthropod studies are (1) to survey the 100,000 ha Sevilleta for distributional and relative abundance data on arthropod species, and (2) to establish long-term study sites for the measurement of arthropod communities and population dynamics. The ultimate purpose of these efforts is to correlate long-term climate change with changes in arthropod distributions and abundances.

In March, 1989, we established 30 study areas across the Sevilleta, that represented both common and rare habitats. The sites ranged from the lowest elevation cottonwood forests along the Rio Grande to the piñon forests on top of Cerro Montoso, the highest point on the Sevilleta. Other sites ranged from xeric Chihuahuan desert vegetation to mesic riparian/spring vegetation. Common habitats, such as grasslands, juniper woodlands and creosote shrublands, were also represented, as were rarer local habitats, such as sand dunes, gypsum flats and salt flats. Each site was sampled using six large pitfall traps (no. 10 tin cans with covers) partially filled with ethylene glycol (a preservative). These traps, sampled monthly, were open continuously from March 1989 through April, 1990. Sorting and family-level identification of these specimens was completed in 1990, and species-level identifications are currently in progress.

Ongoing long-term monitoring of arthropod populations has continued at the nine major study sites. These sites represent three “typical” habitats on the Sevilleta: grassland, creosote shrubland and juniper woodland. We are sampling each habitat type on both sides of the Rio Grande; hence, we have an “east” and “west” grassland, creosote and juniper study site. In addition, we are continuing to sample the study sites in the cottonwood riparian forests at Bosque del Apache NWR, the subalpine mixed-conifer/aspen forests of the Magdalena Mountains, and in the subalpine meadows of the Magdalenas. At each site, we have 5 replicate plots on which arthropod populations are sampled. Surface-active arthropods are being sampled using six pitfall traps (again containing ethylene glycol) on each of the replicate plots; hence, the total number of these pitfall traps is 270 (6 traps x 5 reps x 9 sites). Traps are open continuously, and are being sampled monthly year-round for the duration of the LTER project. Data will be used to address hypotheses on climate-related impacts on arthropod population dynamics and community organization.

Most of the collections from these survey traps have been tallied, although certain groups of arthropods are lagging behind others in this regard, owing to difficulties with identification. The data from this collection will be incorporated into the GIS data bank, and will be used to delineate arthropod species distributions, habitat affinities and relative abundances.

To date, over 800 species of meso- and macroarthropods have been trapped. Of these, roughly 550 were insects, somewhat over 100 were spiders, and approximately 30 belonged to smaller groups of arachnids, myriapods and crustaceans. The Coleoptera, with about 180 species, dominated the insects; the greatest beetle biomass was undoubtedly accounted for by the mainly detritivorous Tenebrionidae (34 species). However, the largely carnivorous Carabidae consisted of more species
Other insect groups with large numbers of individuals included the ants (38 species), the detritivorous rhipidophorid "camel" crickets (4 species), and the herbivorous elaterid "click" beetles (8 species).

Dominant spiders, in terms of both species and individuals, were the Gnaphosidae (25 species) and the Lycosidae (16 species). Both families are ground dwellers. Other well represented spider families included the Philodromidae, Agelenidae, Thomisidae, Pholcidae and Clubionidae; collectively, these forage in vegetation as well as on the soil surface. Of the other arachnids, one of the 11 species of Solpugida was particularly abundant during the warmer months, while large predaceous trombidiid mites were extremely common only in December and at only two sites (the 5-Points grassland/creosote bush transition area). Scorpions (3 species) and scolopendromorph centipedes (2 species) were trapped with regularity in most sites between March and October.

As expected from previous work in the Sevilleta (Crawford 1988), assemblages of surface active arthropods appeared to show relatively high levels of habitat specificity – in an organizational sense. For example, among the survey trap sites, the greatest collections of insect species and individuals occurred in a sandy, inter-dune site; in contrast, this site contained comparatively few spiders, low numbers of scorpions and centipedes, and practically no solpugids. In general, grassland sites exhibited lower activity among species and individuals of insects, arachnids and myriapods than other types of habitats; however, this impression remains to be verified by eventual computer analyses of the massive amount of data now being entered. Early results from the recently added riparian woodland (Bosque del Apache NWR) and subalpine forest/meadow sites (Magdalena Mountains) strongly support our observations of ecological uniqueness in habitat-related arthropod assemblages.

Arthropod assemblage organization at any site clearly was influenced by the seasonal activity of major groups; thus, spider activity increased earlier in the higher and cooler sites than it did in the lower grassland and shrubland sites. A direct promotion of activity among surface active arthropods by summer rains was not obvious, again agreeing with earlier findings in the Sevilleta (Crawford 1988). An overall peak in activity appears to take place in early summer, before the rains begin. Moreover, activity does not cease entirely in the cold months: camel crickets and several families of spiders were regularly trapped during the winter. Thus, the first year of pitfall trapping has brought into focus the potential for relating the tremendous diversity of surface active arthropods on the Sevilleta and adjacent lands to the influence of both seasonal and year-to-year climate dynamics.

From 1992 to present, we also sample arthropods on vegetation. Replicated sweep-net samples of grasses, forbs, shrubs, and trees (junipers and pífon pines) were collected in the spring of this year, and a second sampling is scheduled for the late summer. Sorting of these samples is underway, and the specimens will be identified by Dr. David Lightfoot at UNM.

### 9.2 Vertebrate Studies

As in previous years, populations of small mammals are being sampled twice during the summer of 1993 on the six main Sevilleta study sites. Small mammals were trapped in Sherman live-traps arranged in trapping "webs"; density estimates were calculated using Program DISTANCE. At two of five replicates, rodents were removed and taken as specimens for the Museum of Southwestern Biology.

The animals from the removal plots were prepared as standard skin-skeleton vouchers. Electrophoretic tissue (heart, liver, and kidney) were collected and frozen in liquid nitrogen (−70° C). These tissues were catalogued, sorted and stored in ultra-cold freezers. Karyotypes have also been
performed on many specimens for identification purposes; these test slides and some cell suspensions are stored at the Museum.

Establishment of 8 replicated bird sampling stations in three major habitats (piñon-juniper woodland, creosote shrubland, and grassland) was begun in winter, 1990-91, and is being continued. Bird populations are now sampled 4 times annually (winter, spring, summer and fall). Results to date have shown dramatic shifts in species dominance and abundance based on the amount of rain received in each area, and the subsequent production of food resources (berries, seeds, and insects).

In addition, we have been measuring coyote and jackrabbit densities on the grasslands of the Sevilleta. Jackrabbits are sampled quarterly using nocturnal spot-light transects from 22 miles of roads. Indices to coyote abundance are derived from scat counts per mile of road.

The Fish and Wildlife Service continues to provide annual estimates of the pronghorn antelope population based on it's aerial surveys.

9.3 Parasitology Studies

As in the arthropod and mammal studies (above), we have been monitoring parasite populations in all the mammals collected at the six major study sites representing the three “typical” habitats on the Sevilleta: grassland, desert, and piñon-juniper woodland, with one site of each type on either side of the Sevilleta.

The overall goal of the parasite study is to conduct long-term monitoring of both protozoan (coccidia) and helminth (nematodes, cestodes) parasite populations in naturally occurring rodents in the various habitats. We are examining the roles of host abundance, habitat type and climatic change on these parasite populations. Additional questions on host specificity, prevalence, taxonomy (of new parasite species), and host infection locations (especially for helminth parasites) within their hosts are also being addressed. These latter questions very often must be answered on a host-by-host basis, as we recently did for *Reithrodontomys* spp. collected during the first three summers (Duszynski et al., 1992).

During the past four summers, we performed thorough necropsies on all the rodents collected for the Museum of Southwestern Biology at the six collection sites. The necropsies included collection and later scanning of fecal material for presence of coccidian parasites from each rodent. The identification of these parasites has been completed for the first three collecting seasons (summers 1989-91), and is in the process of being completed for the past summer (1992). For helminths, we record their location in each host and the number and sex of worms (nematodes only) for each organ in each host. Unfortunately, due to a lack of resources and trained personnel, identification of worms found and tabulation of all worms collected has only been completed for the *Dipodomys* spp. collected in 1989.

Virtually every vertebrate species examined is documented to have at least one, and usually 4, 5, or more coccidians that are unique to it, and this is also true for all mammals collected during the last four summers on the LTER project. Yet our knowledge of coccidian communities in their normal hosts is non-existent. Several schemes for classifying parasite communities, along with the processes that organize them, have been described, but virtually all the terms and concepts developed are based on helminth populations and communities (Esch et al. 1990). Even our ideas about competition between parasites, both within and between infrapopulations of parasites in any host group(s), are framed in terms of parasitic worms (Price 1990). These definitions and concepts have had a significant impact on the development of theory regarding the evolution of parasite communities, yet
the development of theory in parasite ecology has not been able to use data on protozoan (specifically coccidian) parasite communities because such data are not available.

Recently, Stanton et al. (1992), using eimerian assemblages from ground squirrels, documented the first structured assemblage of protozoan parasites in naturally infected hosts. Of interest is that their eimerian assemblages did not conform to most of the generalities that have been developed about parasite community characteristics. Thus, there are several important components of the data we have collected on the coccidians of LTER mammals during the last four summers. First, the eimerian assemblages in 7 general of rodents (2 families) from 3 ecotonal areas (grassland, creosote-desert, piñon-juniper woodland, 2 replicates of each), over four consecutive years, can be compared for the first time. This differs significantly from most papers that report prevalence of eimerians only as a function of host age and sex, and from the Stanton et al. paper, which reported only a single host species. Second, Price (1990) stressed that trophic systems are driven from below; i.e., the resource base (plants) of a community is likely to be the most critical organizing influence of that community with other interactions (e.g., competition) being of secondary importance to community organization. A complex suite of abiotic factors (temperature, precipitation, etc.) not only impacts the plant communities of any area, but also directly influences the transmission dynamics and survival of both hosts and parasites therein. The results of our work, to date, is demonstrating the integrated aspects of host-parasite ecology and is the first to correlate plant growth and reproduction, various abiotic factors, and fluctuations in protozoan parasite communities in several host groups in different habitats over extended time.

10 Disturbance Experiments

Wildfire/Grazing Experiment: In recent years, the summers have been characterized by several lightning-caused wildfires on the Sevilleta grasslands. Coincidentally, one of these fires burned through an area in which we had previously sampled the vegetation. We have since monitored this site, and have taken balloon aerial photographs of our sample transect. While rangeland fires in the Rio Grande valley have been relatively rare in the last 150 years, the removal of cattle from the Sevilleta 17 years ago has allowed the vegetation (and litter fuel-load) to recover sufficiently to carry a fire. The recent occurrence of multiple natural wildfires on the Sevilleta has prompted us to initiate a series of fire-ecology studies that will eventually include research on plants, nutrient cycling, microbes and animals. These studies will broaden the scope of the Sevilleta LTER, and will elucidate the role of fire as a disturbance factor in these southwestern grasslands.

In addition, the movements and feeding activities of pronghorn antelope in these same grasslands also create ecosystem disturbances at a number of scales, ranging from local, physical trampling disturbances of soils and plants to widespread selective herbivory on grassland plants. For example, on the McKenzie Flats area of the SNWR, one can observe pronghorn hoof-prints over much of the area. Pronghorn antelope, along with smaller numbers of mule deer, have replaced domestic cattle as the dominant ungulate herbivores in this ecosystem. However, the magnitude of influence of pronghorn on the Sevilleta grassland ecosystem remains unknown at this time. In addition, it is unlikely that this grassland system has "stabilized" since the removal of cattle, and that future changes in such ecosystem attributes as soil organic matter and nutrient pools, plant community structure and productivity, and nutrient cycling and energy flows, will continue to be observed as the "restored" system evolves. Throughout this recovery period, pronghorn antelope activity may prove
to have an important influence on the successional trajectory of the Sevilleta NWR grasslands.

We have initiated a major, large scale ecological study on wildfire and antelope activity effects on the Sevilleta's grasslands. We have obtained significant collaboration with, and logistical support by, the U.S. Fish and Wildlife Service (FWS), and the results of the research will be of mutual benefit to both the LTER program and the management strategies of the FWS.

The specific research questions are as follows:

1.) What is the role of wildfire in determining plant species composition, percentage cover, standing-crop biomass, and net annual primary productivity in the grassland ecosystem on the SNWR?

2.) How does wildfire influence the population demographics of dominant grasses, forbs, cacti and shrubs?

3.) To what degree does a wildfire accelerate nutrient cycling in this grassland ecosystem (specifically, C, N, P, Na, K, Mg, and Ca)?

4.) To what extent are soil microbes affected by (a) the heat of the fire, (b) the reduction of soil surface organics, and (c) the flush of nutrients in the post-fire environments?

5.) What are the effects of wildfires on animal populations, including arthropods, small mammals (rodents and rabbits), birds and reptiles?

6.) Do antelope preferentially use burned areas for foraging after vegetation has recovered?

7.) What is the influence of antelope feeding activity on plant species composition, percentage cover, biomass and net annual primary production on both burned and unburned grassland sites?

8.) Does the physical disturbance of the soil by antelope hooves have a significant effect on soil texture, soil organic matter, litter decomposition, and water percolation?

9.) If antelope are excluded from a grassland site, do other components of the biotic community (e.g., rodents, insects, fungi, bacteria, etc.) expand their activities and/or populations to compensate for the absence of large ungulate activity?

10.) Is there an interactive effect between wildfire and antelope activity on the ecosystem attributes listed above?

11.) Over the long-term (several decades), what is the influence of climatic fluctuations on questions 1 - 10?

The research uses a replicated, 2x2 factorial experimental design, in which the factors will be Burn/No Burn and Pronghorn Present/Pronghorn Absent. These factors, in combination, form 4 distinct treatments:

1.) No Burn, Pronghorn Present (= Controls)
2.) No Burn, Pronghorn Absent
3.) Burn, Pronghorn Present
4.) Burn, Pronghorn Absent

Each of these treatments is replicated 4 times, for a total of 16 study plots. Each study plot is be a 300 m x 300 m square (9 ha), separated from other study plots by at least 300 m. Eight of the 16 plots have been fenced with barbed-wire to exclude pronghorn antelope; the other eight plots have been left open. Eight plots (4 open plots, 4 fenced plots) will be subjected to controlled burns in 1993. Our purpose in this experiment is to simulate the natural sequence of wildfire occurrences. As such, controlled burns will take place during the summer, during periods of natural lightning-ignition events. Biotic response variables will be analyzed using Analysis of Variance procedures.

On all 16 study plots, we are sampling the vegetation at a number of scales. At the largest scale, satellite TM data has been acquired as part of the normal LTER program. Because each study
plot contains at least 100 pixels of TM data, we are to evaluate and compare entire plots among treatments. At a medium scale, low-level aerial photography from fixed-wing aircraft (taken during the fall of 1992) provided detailed analyses of shrub/yucca/cactus survivorship and demographics, as well as patterns of wildfire influences. At a small scale, boom-mounted cameras are used to photograph 3 m x 4 m permanent plots, from which we analyze percentage cover of vegetation by species using an image processing program (Khorus). Photographs are taken several times a year during all years, and on burn plots, both immediately before and after the fires. Temporally-sequential images will be used to estimate primary production on the study plots. All plots will be examined in detail to ground-truth the remote imagery. Maps of perennial vegetation on the small, permanent plots will be constructed, allowing a detailed analysis of long-term changes in species composition, percentage cover, biomass, population demographics and survivorship of individuals.

Small mammal community composition, population dynamics and demographics are being sampled using live-trap, mark-recapture techniques. Each 9 ha study plot contains a permanently marked trapping-web of 148 Sherman-type live traps. This trapping-web design is identical to that of the webs currently in use on the Sevilleta LTER project. Mark-recapture data from the webs are used in computing absolute densities (using program DISTANCE) of each species of small mammal (generally, rodents and occasional shrews). Traps are run for 3 consecutive nights during sampling periods. Sampling periods occur twice a year every year on the control and burned unfenced plots, and once every 3 years on the fenced plots. This variation in trapping effort is due to an anticipated slow response of the ecosystem to the removal of pronghorn antelope; hence, frequent sampling is not cost-effective for small mammal populations on these plots.

Birds and lizard populations on the plots are sampled using line-transect observational data. Line transects across all plots have been established and sampled seasonally (birds) or monthly (lizards) in all years. A trained observer walks slowly along each transect in the early morning (birds) and mid-day (lizards), and observe individual animals. Data recorded for each individual will include species, sex (if possible), age (adult/juvenile), perpendicular distance from the transect line, and position along the length of the transect. These data are used in the computer software package DISTANCE to compute absolute density estimates of birds and lizards on all treatments plots.

Arthropod populations are being sampled with sweep nets (for foliage-dwelling species) and pitfall traps (for ground-dwelling species). Sweep samples are taken in late May (end of spring growing season) and in September (end of summer growing season). Pitfall traps were installed in early spring of 1991. These traps are left open continuously, and sampled at 5-6 week intervals. Major groups of arthropods to be examined include spiders, scorpions, centipedes, millipedes, and insects (particularly beetles, grasshoppers, true bugs, leafhoppers and aphids). These data will allow analyses of both arthropod community composition and population dynamics of each species, as well as the arthropod response to the various treatments.

The results of these experiments should be of value to the FWS in formulating both current and future management strategies for the Sevilleta NWR. The wildfire experiments will answer questions concerning the intentional use of fire as a habitat management tool, and combined with the antelope studies, should also address hypotheses put forth by Mr. Alan Savory regarding "Holistic Resource Management" of rangelands. Detailed data of antelope habitat selection and impacts on rangeland vegetation and soil conditions will be useful in managing populations of this species, and in determining the optimal carrying capacity of the eastern grasslands of the SNWR. Results might be extrapolated to western sections of the Sevilleta, and to other grasslands of the southwestern U.S. This study will also delineate the positive or negative influences of wildfires in determining the
abundances, distributions and dispersal capabilities of woody vegetation into the grassland ecosystem.

11 Data Management

11.1 Highlights

- The Sevilleta Research Field Station has been connected to the UNM campus wide-area network via a T-1 link. Operations conducted from the field station are now transparent with computing facilities on-campus.

- Current emphasis within the data management group at the Sevilleta LTER is on the development of data entry-QA/QC programs, and analytical processing programs. Most of these programs are being developed in SAS (Statistical Analysis System) with a few being coded in C and UNIX Shell Languages.

- Trials are being run on an interface to the plant database which allows users to view, print, or extract information from the Sevilleta Plant Database - a similar design is progress for the bibliographic database. These two databases receive the most requests through the year.

- The main Sevilleta IMS server has been upgraded to a DECStation 5000 / 240 to handle increased users and application. The server performed well this summer under loads of 15-20 users at a time.

- Two new Sun computers have been added to our remotely sensed data processing lab. A super high resolution machine was acquired to facilitate the development of a high resolution ortho-photo gis layer described elsewhere in this document.

- A data request tracking mechanism has been put in place to monitor requests to data management and ease the process of filling them. See Below.

11.2 Handling Requests

Requests come to data management in several forms including data, software development, analysis and technical assistance. Each individual working in data management has specific goals for the amount of time allocated to support areas and spends about 25% of their time providing technical assistance and training. First priority is given to the standard support functions like maintenance of long-term data. It is up to that individual, in consultation with the Data Manager and Project Coordinating Panel (PCP), to make decisions about the level of requests that can be handled given his goals and current constraints. It doesn't take many requests for a small data management organization to be overwhelmed. As the project continues to grow, it is necessary to implement procedures to deal with these requests.

A request tracking program has been implemented that helps the data management personnel to deal with requests for information, analysis, etc. This accomplishes two things 1) It relieves the DM personnel of the burden of juggling an enormous number of requests and 2) It allows them to work more productively towards the requests that are assigned. The pilot system of handling requests
doesn't hinder anyone's access to data or analysis tools - it should provide a fair and systematic way to deal with requests and track their progress.

Upon receiving a request an individual can fill the request immediately or if an individual feels that he/she cannot, within his/her current scheduling, fill the request, the request is passed into a “request mill” as documented in the accompanying figure. There the request receives a resource review from the data manager and others to determine how much time and personnel should be required to fill it. The data manager will then carry the request to the PCP for consideration. Upon consideration by the PCP the request will be que’d for scheduling. Feedback will be given to the requestor throughout the process. Determination may be made that to fulfill the request there must be an input of additional resources.

All requests are logged by receiving personnel into a request tracking database.
12 Annual Report – Literature Cited


13 Sevilleta LTER Publications


Titles of prospective publications related to Tad Crocker’s dissertation and the Sevilleta Watershed studies follow.
2. Hydrologic, physical, and chemical properties of an ephemeral flood in a remote, ungrazed, semi-arid basin at the Sevilleta Long Term Ecological Research site in New Mexico.
3. The influence of surface flow heterogeneity and dynamics on the spatial variation in organic matter storage, movement, and decomposition within an upland ephemeral stream network in a semi-arid environment.
4. Lightning distribution dynamics, basin and network geomorphology, short-term climate variability, and responses of ephemeral streams and rivers across the semi-arid landscapes of New Mexico.
APPENDIX H

DEPARTMENTAL SEMINAR SERIES
DEPARTMENTAL SEMINAR SERIES

During the FY 1992-93, we featured the following individuals:

Dr. Adam Asquith, Department of Entomology, University of Hawaii, "Patterns of speciation in continental and island plant bugs."

Dr. Nancy E. Beckage, Department of Entomology, University of California—Riverside, "Games Parasites Play: On Interactions of Insect Parasites with Host Immune and Endocrine Function."

Dr. Carl Bock, Department of EPO Biology, The University of Colorado, "Effects of Long-Term Livestock Exclusion in an Arizona Grassland."

Dr. Steven M. Chambers, Division of Endangered Species, USFWS, Albuquerque, "Genetics and the Management of Wild Populations."

Dr. Sherwin S. Desser, Department of Zoology, University of Toronto, "Frog Blood: A Paradise for Parasites."

Dr. Burt Ensley, Environgen, Inc., Lawrenceville, NJ, "Molecular biology of bacteria which degrade chlorohydrocarbons."

Dr. Jaqueline Fernandez, Department of Biology, Wake Forest University, Winston-Salem, N.C., "Snails and worms—Space and time as factors affecting trematode communities."

Dr. Theodore H. Fleming, Department of Biology, University of Miami, "Bats, Sex and the Single Cardon Cactus."

Dr. Jack Frenkel, Adjunct Professor, Department of Biology, The University of New Mexico, and Professor Emeritus, University of Kansas Medical Center, "Biodiversity in dendrobatid frogs."

Dr. Oren Hasson, The University of Jerusalem, "Providing or Hiding Information: The Evolution of Amplifying and Attenuating Signals."


Dr. Jon Holy, Department of Zoology, University of Wisconsin, "Cytoskeletal and Nucleoskeletal Dynamics during Early Development in Sea Urchins."

Nancy Collins Johnson, Santa Fe, "Plant and Soil Regulation of Mycorrhizae."

Dr. Susan Kalisz, W.K. Kellogg Biological Station, Michigan State University, "Evolution and Demography in Age-Structured Populations: The Role of the Seed Bank."
Dr. Eric Knox, Department of Biology, University of Michigan, "The Evolution of Giant Lobelias and Senecios."
Dr. Meredith Lane, Department of Botany, The University of Kansas, "Reticulate or not: A comparison of evolutionary mode and taxonomic confusion in two genera of Asteraceae (Compositae)."

Dr. Curtis Lively, Department of Biology, Indiana University, "Parasitism and the Production of Variable Progeny."

Dr. Caroline Mold, Department of Microbiology, The University of New Mexico, "Immune complex processing by complement receptors."

Dr. Russell Monson, Department of Environmental, Population and Organismic Biology, University of Colorado, "C-4 Photosynthesis: Physiological Brushstrokes and the Evolutionary Masterpiece."

Dr. Peter Price, Department of Biological Sciences, Northern Arizona University, "Insect-herbivore population dynamics and three-trophic level interactions."

Dr. Johanna M. Schmidt, Graduate Program in Ecology, Brown University, "Genetic differences and phenotypic plasticity in natural plant populations."

Dr. Elba Serrano, New Mexico State University, "Signal Transduction in Plant Guard Cells."

Dr. George Somereau, Department of Zoology, Oregon State University, "When Does Environmental Pain Start to Hurt? Pain Optima and Fine-Scale Adaptation in Biochemical Systems."

Dr. Randy Thornhill, Department of Biology, The University of New Mexico, "Sexual selection, symmetry and beauty."

Dr. Steven Tonsor, W.K. Kellogg Biological Station, Michigan State University, "Causes and Consequences of Population Genetic Structure in Plantago lanceolata."

Dr. Oscar Flores Villela, Department de Biología, Universidad Nacional Autónoma México, "The conservation and biogeography of the herpetofauna of México."

Dr. Richard Whitkus, Department of Botany and Plant Sciences, University of California, "RFLP Mapping of Plant Genomes—A comparison of sorghum and maize."

Dr. Terry Yates, Department of Biology, The University of New Mexico, "Reorganization and Funding Possibilities at the NSF."
APPENDIX I

FACULTY
AND
GRADUATE STUDENTS,
1992-93

Professors (13)

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<thead>
<tr>
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<th>Department/Chair</th>
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<tr>
<td>Altenbach, J. Scott</td>
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<td>Baca, Oswald G.</td>
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<td>Toolson, Eric</td>
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<td>Vogel, Kathryn</td>
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Associate Professors (14)

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Assistant Professors (5)

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Joint Appointments (4)

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APPENDIX J

ANCILLARY

FACULTY
ANCILLARY FACULTY, DEPARTMENT OF BIOLOGY
FY 1992-93

Joint Appointments (with other departments or areas):

Robert Kelley, Prof., Anatomy
Tokio Kogoma, Prof., Cell Biology
Miriam Roman, Assistant Prof., Valencia Campus

Adjuncts (not on UNM payroll):

Richard Aguilar, Asst. Prof., Forest Service
William H. Baltosser, Asst. Prof., NMG&F
Celestyn Brosek, 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
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.
John Trotter, Prof., Anatomy
Robert Waterman, Prof., Anatomy

Research or Visiting Status (usually on UNM payroll):

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.

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.

Emeriti

William Degenhardt
James Findley
Loren D. Potter
William Martin
APPENDIX K

PROFESSIONAL

AND

TECHNICAL

SUPPORT STAFF
## BIOLOGY DEPARTMENT PROFESSIONAL & TECHNICAL SUPPORT STAFF  
(Excluding Temporary/On-Call Personnel)  
FY 1992—1993

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**NOTE:**  
- Freshman Lab Coordinator/T.A. Supervisor  
- Media Prep Supervisor  
- Staff Receptionist (.50 FTE)  
- Staff (.50 FTE)—Artist/Illustrator  
- Postdoc  
- Staff  
- Post-Doc  
- Staff—MSB Collections Manager  
- Staff (.50 FTE)  
- Staff—A.S.A. & Graduate Program Coordinator  
- Staff  
- Staff—Receptionist/Accounting Aide  
- Staff—Computer Mgr./Facility Coordinator  
- Staff (.75 FTE) Payrolls 20 & 40; Billing  
- Staff (.75 FTE)  
- P.T., Permanent  
- Staff—Greenhouse/Herbarium
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APPENDIX L

ALL COURSE OFFERINGS
1992-93
# COURSE OFFERINGS AND SEMESTER CREDIT HOURS, FY 1992-93.

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TOTALS, FY 1992-93: 468 sections, 9,707 students, 21,950 total SCH
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EMNAD (6929)
USSR (S88C)
USSR (G88A)
USSR (688D)
USSR (688)
USSR (688E)
NSF (550C)

Amd.#2"
Amd.#3 ..
Amd.#4''
Amd.#S ••
Am d. #6: LTEA-Sevilleta
Amd. #10 Ecological/Climatic Gradients on Sevilleta
Supp. To LTER (Amd. #11)
Sup pl. Am end. #12,REUIRAMHSS:Ecologicai/Ciimatic G'adients
LTER
Amd.#7: LTER-Sevilleta (Combined Budget Includes I,J, & L)
Amd.#7''
Amd.#7''''
Preaward ApjXoVal- REU/AAMHSS
Natural/Sexual Selection & Cactiphilic Drosophila-Epicut Hyd'ocarb.Sy
Supplement;M:~mm:~li.ln Diveresity In Bolivia-The Yungas & Valles
Continu:~tion; Mammali:~n Diversity In Bolivia-The Yungas & Valles
Mammalian Diversity in Bolwi.l-The Yungas & Valles
Amd.#6 ..
Amd.#3 REU: M.lmmalian Diversity in Boliva- The Yungas & Valles
Amd.#5 REU"
Amd. #9,Mammali:~n Diversity In BoiMa:The Yungas & Valles
Amd.#SAEU''
Yr. 4 -Genetic Variation in Rio Grande Cutthroat Trout
SevU!eta Field Station - Bldg. Construction
PYI - Starvation-Induced Arrest In Yeast
PYI- Yr.3 Base
PYI- Cash Donations - UNM Development Office
PYI- Matching Yr.1
PYI - Yr.2 B.lse
PYI - yr .2 match
Am d. #3: PYI Yr. 4 Base ($25,000) & Yr. 3 M:~tch ($37,500)
UNM Found.ltion Matching Funds For PYI
Presidential Young lnvestig:~tor Aw:~rd
Preaward
"Base Grant ForYr.2
"NSF Match Yr.1
"Foundation Match
PYI4th Yr. B.lse/3rdYr. 1\ibtching: Fractal Analysis Of Landscapes
Galapagos Islands Biosphere Reserves-Analysis Of Bioi. Diversity
Amd.1"
Coop. Ageement: lchthyofaunal Studies Fed. Listed Species, Pecos Rive
Coop. Ageement: lchthyofaunal Studies Fed. Listed Species

GOSZ,JiET AL
GOSZ,J/ET AL
GOSZ,J!ET AL
GOSZ,J/ET AL
GOSZ,J/ET AL
GOSZ,JIET AL
GOSZ,JIET AL
GOSZ,J/ET AL
GOSZ,J/ET. AL
GOSZ,JIET AL
GOSZ.JIET AL
GOSZ,J/ET AL
GOSZ,J/ET AL
TOOLSON,E
YATES,T
YATES,T
YATES,T
DUSZINSKI,D
DUSZINSKI,D
DUSZINSKI,D
YATES,T
YATES,T
YATES,T
CRAWFORD,C
WEANER,M
WEANER,M
WERNER,M
WERNER,M
WERNEA,M
WEANEA,M
WEANEA,M
WEANER,M
MILNE,B
MILNE,B
MILNE,B
MILNE,B
MILNE,B
MILNE,B
SNELL,H
ALTENBACH,S
PLATANIA,S
PLATANIA,S
PLATANIA,S
PLATANIA,S
PLATANIA,S
NATVIG,D

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Coop. Ageement: lchthyobunal Studies Fed. Listed Species
CoopAgeemt: lchthyofaunal Studies - Pecos River, NM
Preaward: Celluklr Responses to Superoxide-Mediated Stress

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Foods Of Sandhill Oanes
PLATANIA,S
PLATANIA,S
NMG&F f777)
San Juan River Larval Fish Studies
USBA (786)
Coop. Mgmt: AG Silvery Minnow
3-25041 PLATANIA,S
NSF (738A)
Env.lnfo./Analysis: Ecosystem To Biosphere Scales
3-25101 BRUNT,J
NSF (746A)
Evol. Genetics Of Adaptwe Radiation In Tetramolopium
3-25121 LOWREY,T
NSF (7460)
3-25121 LOWREY,T
NSF
3-25129 LOWAEY,T
NMWRRI (772)
Quantative Analysis Carbon Amendment On Bioremed
3-25451 DAHM,C
NSF (785)
Preaward: Ecosys. Recovery-livestock Grazing
3-25471 GOSZ,J
Mexican Vole Genetic Analysis
AGFD (798)
3-25841 YATES,T
NSF (761A)
Natural/Sexual Selection-Evolution of Sexual Dimorphism
3-25871 SNELL,H
NSF (761A)
UNM Cost Share
3-25871 SNELL,H
Preaward: Roles Of Natural & St>xual Selection In Evol. Dimorphism
3-25871 SNELL,H
NSF (761B)
Amd.#1:
REU & Regular Award combined: Roles Natural/Sexual Selection
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3-25871 SNELL/MILES
Establishment of a Molecular Biology Facility
3-25931 WERNER,M
NSF f756)
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Amd. #2- RIM!: Establishment Of A Molecular Biology Facility
3-25931 WERNER,M
UNM Cost Share (Dr. E. Padilla -recruitment)
3-25938 WERNER,M
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UNM Cost Share
3-25939
3-25971 BROWN/PARMENTER NSF/KAFB (529P) G"assland BiodiV. aftt>r 50 Yrs. Livestock Exclusion
Sexual Ow. in Filimentous Fungi (Yr.1) .
HFSP (744A)
3-25981 NELSON,M
NSF (757)
Confocal Microscopy Facility
3-26161 STRIO<ER,S
Evolutionary Relationships-Genus Thy!amys
NSF
3-26261 DUZVNSKI!P ALMA
3-26353 STRia<ER,S
SURP (788)
Calcium Wave Propagation in Cells
Sevilleta Field Station: Constr. Of Desert-Plant Lath House/Shop/Stora
3-26431 CRAWFORD ET AL. NSF (767)
Software For Collaboration In Ecological Science
NSF
3-26871 BRUNE/RASURE
Genetic Analysis of Erigeron acemanus & Erigeron hessii
NMEMNR (830)
3-26961 LOWREY/REED
Build & Maintain Database on Rare and Endangered Plants in NM
3-26971 MEHLHOP,P
NMEMNR (829)
Phosphates As A Virulence Factor In Q Fever
NIH (735A)
3-27031 BAC"-0
Bosque Interagency Team
USFWL (828)
3-27041 CRAWFORD,C
Secondary Channel Fish Study
NMG&F (837)
3-27211 PLATANIA,S
Dynamics of Subcolony Size in the Adelie Penquin
NSF (831)
3-27391 MILLER,G
NMG&F (783)
Pecos Bluntnose Shiner
3-27421 PLATANIA,S
NMG&F (782)
Pecos Larval Fish Series
3-27422 PLATANIA,S
USAF/NatCons. (827Survey of Melrose Range, Cannon AFB, NM
3-27431 PARMENTER,R
Diss. tmprv.:Regional Structure Species Assembl. & Conserv.Smi.Animals
3-27591 BROWN!MARQUET NSF
NSF (685B)
REU"-LTER
3-27702 GOSZ,J/ET AL
NSF
Evol Ecophysiology of Adaptations to Low Water/Nutrient Availability
3-27941 EVANS,A
WERC/DOE (627) Appl. Biotech. Mgmt Industrial Wastes Continuing Toxic Metals
3-28131 BARTON,L
WERC/DOE (627A) Appl. Biotech. Mgmt Industrial Wastes Continuing Toxic Metals
3-28131 BARTON,L
WERC/DOE (627A) Appl. Biotech. Mgmt Industrial Wastes Continuing Toxic Metals
3-28131 BARTON,L
Control Of Uranium Migation By Microbial Action
DOE/WERC
3-28391 BARTON,l
TIN<ER FND. (465) Herpetology Of Galap<:~gos Islands, Res. & Conservation
3-34661 SNELL,H
ESA (776)
Sustainable Biosphere lnithtiVe
3-37511 GOSZ,J
SW Regional Developmental Biology Conference
NSF (769)
3-3n21 STRIO<ER,S
US-China Workshop International Data Mgml Training
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3-37871 GOSZ,J!BRUNT
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04/30/92
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**BIOLOGY GRAND TOTALS**

| TOTAL REVENUE ACCOUNTS | 42,699 | 42,699 | 42,699 |
| TOTAL MISCELLANEOUS ACCOUNTS | 97,010 | 51,538 | 97,010 |
| TOTAL CONTRACT/GRANT ACCOUNTS | 13,020,530 | 7,572,707 | 15,607,888 |
APPENDIX N

RESEARCH PROPOSALS

SUBMITTED

1992-93
### BIOLOGY DEPARTMENT
#### 1992—93 FISCAL YEAR

#### PROPOSALS

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<td>AFOSR(110-360)</td>
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<td>Snell/Landwer</td>
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<td>Barton/Thomson</td>
<td>DOE/WERC (110-375)</td>
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<td>Control of Uranium Migration by Microbial Action</td>
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<td>141,730</td>
<td>Cont.—Role of Lectins in Snail-Trematode Assns.</td>
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**January 1993**

**February 1993**

<p>| Brown, J.                 | NSF (496L)           | 05/15/83—08/15/93     | $8,915           | REU: Long-Term Monitoring/Manipulation of Desert Granivory System   |
| Brunt/Rasure              | NSF (113-611A)       | 01/01/93—07/31/95     | 30,000           | Software for Collaboration in Ecological Science                    |
| Dahm/Canapa               | NSF (671A)           | 03/01/93—04/30/93     | 150,246          | Preaward Request—REU: Stream Hyperheic Zones                      |
| Dahm/Canapa               | NSF (671E)           | 05/01/93—04/01/93     | 15,000           | REU: Stream Hyperheic Zones                                       |
| Dahm/Canapa               | NSF (671F)           | 06/01/93—05/31/93     | 6,000            | RAMHSS: Stream Hyperheic Zones                                    |
| Lowrey, T.                | NSF (746C)           | 05/15/93—08/15/93     | 10,000           | REU: Evolutionary Genetics of Adaptive Radiation in Tetramolopium  |
| Nelson, M.                | NIH (732)            | 05/01/93—04/30/94     | 349,884          | Molecular Analysis of Sexual Development in Neurospora             |
| Platania, S.              | NMG&amp;F (999)          | 03/30/93—03/30/96     | 44,825           | Secondary Channel Fish Study                                       |
| Yates, T.                 | NSF (568G)           | 05/01/93—04/30/94     | 19,980           | REU: Mammalian Diversity in Bolivia: The Yungas &amp; Valles           |
| <strong>Total:</strong>                |                      |                       | <strong>$634,850</strong>     |                                                                      |</p>
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*June 1993*
APPENDIX O

UNM BIOLOGISTS
IN THE NEWS
1992-93
Biologist Begins Flooding Wildlife Refuge Forest

Aim Is To Find If New Cottonwoods Will Sprout

By Rene Kimball

University of New Mexico project director Lisa Ellis and Crawford watch as water flows into a barrow ditch that will carry it to the Bosque del Apache National Wildlife Refuge cottonwood forest.

I T'S NOT THE real thing, but water is water and bosque advocates are hoping the cottonwoods won't know the difference.

In the first large-scale artificial flooding on the cottonwood forest that lines the Rio Grande, a University of New Mexico biologist is trying to mimic the natural flood rhythm of the river to find out if it will sprout new cottonwood trees.

It's part of a five-year, $500,000 study at Bosque del Apache National Wildlife Refuge south of Socorro, now finishing up its second year.

UNM biology Professor Clifford Crawford is overseeing it in cooperation with the U.S. Fish and Wildlife Service to document and interpret the effects of flooding on a more-or-less natural cottonwood forest.

For the next month or so, up to 3 million gallons of water will inundate the area, though it will never get deeper than about 18 inches.

On Monday, with a crowd of state officials, congressional staff members and Fish and Wildlife Service representatives looking on, Crawford turned the water into a barrow ditch that will carry it to the mile-long controlled flood area.

He said in an interview that "we're flying by the seat of our britches" in the initial test flood. He expects to be at the refuge daily until early June to see what's happening and adjust water flows as needed.

It will take a day or two for enough water to enter and flow over the side of the barrow ditch to reach the cottonwood stand being flooded, he said.

Last year, the Army Corps of Engineers and Bureau of Reclamation tried some controlled flooding along the bosque between Cochiti and Elephant Butte.

The flooding in Bosque del Apache is on a smaller scale, but over a longer period of time and water levels will be controlled more closely.

The ultimate goal of the Bosque del Apache project is to gather information for maintaining riparian, or streamside, ecosystems in the Southwest. Fish and Wildlife estimates streamside ecosystems have declined up to 95 percent in the West, leading to a loss of habitat for a wide variety of native fish and other wildlife populations.

Scientists have known for years the cottonwoods and willows that have dominated the bosque are on their way out unless a way can be found to help them regenerate or replacements can be planted.

Cottonwoods need floods to germinate seeds on the ground and start new trees growing. Those floods were ended by the dams built along the Rio Grande.
A. Significant Achievements During Academic Year 1992-93

1. Graduate Program Review

The past academic year has been a very busy one for the Department of Chemistry. Perhaps the most significant event was evaluation of the Department by an external review team under the guidance of the Office of Graduate Studies. The team included four eminent chemists, Thomas Mayer, University of North Carolina, Chair of the Committee, Charles Casey, University of Wisconsin, Linda McGown, Duke University, and Charles Parmenter, Indiana University, as well as a UNM internal member, Richard Etulain of the History Department.

In preparation for the review, an extensive self-study was prepared and forwarded to the review team. The team was on campus for three days in late March and submitted its final report a few weeks later. Copies of the report and the self-study are available in the Office of Graduate Studies or the Chemistry Department.
Among the areas discussed by the team were the progress the Department has made in developing its graduate and research programs since it was last reviewed twelve years ago. The team also discussed at some length the fragility of the Department because of the ongoing and impending loss of many of the more senior faculty and of some of the Assistant Professors hired in the course of building the program. Also strongly emphasized was the Department's need for additional high-quality space if the growth is to be continued. The report addresses many more specific aspects of the Department's programs and administration as well.

2. Faculty

Several faculty personnel changes occurred during the course of the past academic year:

Professor Roy Caton retired at the end of June 1993, after 31 years of service to the University. His contributions to the Department and the University during those years are gratefully acknowledged. His contributions to our instructional efforts in General Chemistry and in Quantitative Analysis will be sorely missed. He will continue to work on a set of videotapes to aid students enrolled in Chemistry 121 during the next year or two.

Professor Riley Schaeffer retired in mid-August 1992 after ten years on the UNM faculty. Following his term as Chairman, Professor Schaeffer took an extended leave without pay to conduct research at the University of Colorado, Boulder. Much of the progress the Department has made in developing the
graduate and research programs may be attributed to Riley's leadership during his time as Chairman.

Dr. David J. Keller and Dr. Richard M. Crooks received favorable tenure Code 3 evaluations and entered probationary status. Associate Professor Vince Ortiz was on sabbatical leave during the Spring semester of 1993 conducting research at the University of Utah. Associate Professor Peter Ogilby was on sabbatical leave during the Spring semester of 1993. He stayed at UNM to work on a book concerning solvent effects on photochemistry and photophysics and to complete writing several manuscripts. Professor Su-Moon Park was on sabbatical leave during the entire academic year working on battery chemistry at Sandia National Laboratories.

Assistant Professor Richard Crooks resigned from the department to accept a position as a tenured Associate Professor at Texas A&M University.

At the annual faculty retreat in August 1992, it was determined that, at a minimum, three additional research-active faculty are required: 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 have become involved with administration (Morrow, Holder), carry heavy teaching loads (Papadopoulos), or have retired (Hollstein) so make a limited contribution to our research effort. It was decided to proceed with searches for an Assistant Professor who could teach in the
inorganic chemistry division and for an outstanding faculty member at the Professor level whose teaching interests could be in any division, but who could augment the Department's research thrusts in either materials or bio-related chemistry. The search for the Assistant Professor in inorganic chemistry was conducted by a search committee ably chaired by Assistant Professor Mark Hampden-Smith and culminated in the hiring of Dr. Martin Kirk who will join the faculty in the Fall semester of 1993. Dr. Kirk's research interests are in the magnetic properties of bio-molecules so his principal impact will be in the bio-related chemistry research thrust. The search for a senior faculty member was led by Professor Ed Walters and successfully recruited a number of truly outstanding applicants. At the end of FY 92-93, an offer to Professor Stan Williams, who is currently at UCLA, was pending. Stan would be an exceptional addition to our research thrust in materials chemistry if we can lure him away from UCLA.

During the Spring semester, The Department learned that Professor Chris Enke, who is currently at Michigan State University is very interested in joining the faculty at UNM. Professor Enke is nationally and internationally known for his research in analytical chemistry and for his contributions to the development of a widely-used curriculum for undergraduate courses in instrumental analysis. In contrast with the usual high cost of starting up chemistry faculty, starting up Professor Enke at UNM would be relatively inexpensive. The
possibility of adding him to the faculty is still being explored.

3. Curriculum

During the past year, Dr. Ortiz explored development of a new course intended to introduce students not studying in a field of science to some of the aspects of chemistry. The material was initially offered under the auspices of undergraduate topics in chemistry, Chemistry 325, during Fall 1992. During Spring 1993, the proposed 100-level course underwent the usual review process by a variety of groups, and following their approval has been added to the Fall 1993 schedule as Chemistry 105 with an associated, optional laboratory course, Chemistry 107L. One of the key features of the course is that it will fulfill the Arts and Sciences requirement that students in the College complete at least one semester of a science course having a laboratory.

The demand for chemistry courses continued to grow this past year. Response to this new demand has required the addition of new laboratory sections in General Chemistry, Quantitative Analysis, and Organic Chemistry. A number of the new sections are offered in the evening to make them available to the growing number of non-traditional students who cannot attend the usual daytime sections.

The decrease in the size of the faculty over the past few years has required that the Department's course offerings be reduced and that other measures be taken. At a meeting of the organic chemistry faculty in the spring, it was decided that,
due to Professor Hollstein's retirement, there were no longer adequate faculty to allow us to continue offering Chemistry 307 and 308, which were the last pre-physical chemistry courses designed specifically for chemistry majors, which were still being offered in the Department.

During the Fall semester, the Department was offered the opportunity to apply for a software grant from the Excel Corporation. The proposal was written by Professor Walters, who is responsible for the Junior Laboratory, and was awarded in time for a computer to be bought by the Department so that a new molecular mechanics experiment could be added to the Spring semester for the course, Chem 332. Further incorporation of this software into the curriculum is anticipated.

All classes offered by the Chemistry department are listed in Appendix B.

4. Facilities

The facilities committee has been active this past year, but has continued to be frustrated in its efforts to place the new space required by Chemistry on to the priority list approved by the Regents for submission to the Commission on Higher Education (CHE). Being at the top of the list of capital improvements submitted from A&S and a meeting with Facilities Director Roger Lujan failed to have any impact.

Because of the level of effort in the Department toward upgrading the physical facilities Professor Fritz Allen was appointed to be the Associate Chairman for Facilities during the
past fiscal year. He will continue in the position during the upcoming year as well. This appointment provided a single person to oversee and coordinate the efforts to obtain new facilities, to oversee the current facilities, and to allocate the available space to those who are able to justify needing it. His exceptional contribution the Department through his handling of these matters is gratefully acknowledged.

The remaining problems with the major renovation of the HVAC system in Clark Hall, begun about two years ago, are still being resolved.

Fritz Allen, under the auspices of his position as Associate Chairman for Facilities, submitted a proposal to the National Science Foundation for funds to renovate the Riebsomer wing of the building as well. Funding in the amount of $1.3 million was awarded late in the fiscal year. The matching funds request of $1.7 million required to claim the NSF funds plus an additional amount to improve handicapped accessibility in the building is high on the list submitted to the CHE for funding consideration by the Legislature in January 1994. This renovation will improve the quality and safety of the instructional and research laboratories in that wing and will represent a component of the work called for in phase II of the programming document for Chemistry space that was completed last year. However, it will not provide the additional space required by the Department.

5. Graduate Program
The graduate Recruitment and Selection Committee was again very active under the leadership of Professor Bob Paine, the Associate Chairman for Graduate Recruitment, and succeeded in attracting a well-qualified group of new graduate students to the department for the coming year. Unfortunately, the incoming class was smaller than desirable because fewer students than anticipated were moved from TA to RA positions during the year. Appendix A summarizes the recruiting activities.

A further increase in the sum available for stipend support that was granted by the Dean made it possible for us to offer $11,500 teaching assistantships, for nine months of service, to this group. Dr. Nancy Boldt, the Laboratory Supervisor has continued her efforts to reduce the average number of laboratories each Teaching Assistant must teach from six per year to five per year. We have continued to guarantee the incoming graduate students a position for the summer and the best students are given added inducements in the form of Daub fellowships in the first year. Although our basic offer is still not as competitive as we would like it to be, the changes represent major progress toward building a competitive graduate program. We are grateful to the Dean for his continuing support for our achieving this goal.

In addition to the support of the Dean, this past year, ten Chemistry graduate students received Graduate Assistantships in Areas of National Need (GAANN) through funding obtained by Eligio Padilla, Associate Dean of Graduate Studies from the
Department of Education. 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 was in the form of one-third of a TA position for each student holding a GANN fellowship.

6. Undergraduate Program

We had our fourth annual departmental commencement following the general commencement ceremonies at the Arena, 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.

Our own undergraduate program produced a small but well prepared group of graduating majors this year. Individuals receiving degrees in Chemistry during the 1992-93 academic year are listed below.

**STUDENTS RECEIVING THE B.A. DEGREE IN CHEMISTRY IN 1992-93**

- Dorsey Clement
- Mary E. Cisper
- Kelly Norman
- Robin Lesher

**STUDENTS RECEIVING THE B.S. DEGREE IN CHEMISTRY IN 1992-93**
STUDENTS COMPLETING THE M.S. DEGREE IN CHEMISTRY IN 1992-93

Bryan Johnson
Ronald Meline
Mark H. Wall

STUDENTS COMPLETING THE DOCTOR OF PHILOSOPHY DEGREE IN CHEMISTRY IN 1992-93

Eugenia Brazwell
James T. Clay
Dianela Filos
Bih-Show Lou
Bonsri Wangmaneerat

Pedro Cid-Aguero
Danan Dou
Sally Hoier
Laurie D. Sparks
At our graduation ceremony, we also presented the following awards for academic excellence to our majors for the 1992-93 academic year:

**Graduate Students**

Leda Chang Schnoebelen Award  
James T. Clay Schnoebelen Award  
Kuang-Chiu Ho Outstanding Graduate Student  
Boonsri Wangmaneerat Outstanding Graduate Student

**Undergraduate Awards**

**Seniors:**  
Dale Lee Steele, Mozley Award  $500.00  
Kien L. Huynh, Anna Kahn Award  $500.00  
Jimmy Ray Smith, Jr. Riebsomer Award  $500.00

**Juniors:**  
Michael Trujillo, Dean C. Uhl Award  $500.00  
Ray M. Forrister, Dean C. Uhl Award  $500.00  
Maxim A. Yorgancioglu, Dean C. Uhl Award $500.00

**Sophomores:**  
Arthur Baca, Dean C. Uhl Award  $500.00  
Jonathan E. Pugmire, Dean C. Uhl Award  $500.00  
David W. Jackson, Mike Millican Award  $500.00

Merck Index: Michael Trujillo  
American Institute of Chemists Membership: Dale Lee Steele

The Department, with Assistant Professor Lorraine Deck serving as Principal Investigator, was awarded a competing renewal of the grant from the National Science Foundation under
its Research Experiences for Undergraduates program to host promising undergraduate students for summer research. As in the past, we conducted a national search in the Spring and selected 10 students to work intensively with a faculty member for nine weeks during summer. We will track these students in the future so that we will know how our program ultimately affects their future careers.

7. Seminar Program

Once again, the Department was provided with a strong seminar schedule (Appendix C) under the able guidance of Vince Ortiz.

8. Research Equipment

Major pieces of equipment (more than $10,000 in cost) acquired during the reporting year were:

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<td>Powder Diffractometer</td>
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A former graduate student, Dr. Steve Thornberg, who is now at Sandia National Labs, contacted the Department concerning a surplus Nicolet high resolution mass spectrometer which was available from the analytical chemistry group he directs there. Through a generous contribution from the Dean, the funds were found to have the instrument brought to the Department under a long-term loan arrangement. It has now been installed and,
through the efforts of Professor Walters, is being made available for solving appropriate problems requiring this capability. The Department is sincerely grateful to Dr. Thornberg for making this half-million dollar instrument available to us.

8. Budget

After several years of difficulty in living within its overall budget, followed a year in which we were able to manage the departmental finances within the budget provided by the Dean, then, last year, by a year in which there was a significant overrun, the Department was again able to stay almost within budget this past year. (The overrun was about $2,000.).

9. ChemStores

At the direction of the Vice President for Business and Finance, the Department was required to separate the storeroom operations from those of the rest of the Department because of the large sums being billed against research grants both inside and outside of the Department. The new storeroom, dubbed ChemStores, was set up as an internal service agency which means it must be self supporting and is able to sell chemistry, glassware and other such items throughout the campus and to charge federal funding sources for the items it sells.

Not surprisingly, these changes required a lot of hard work, especially since the process was started rather late. Through an extraordinary effort involving many late nights and weekends, Carl Hilton and his staff brought the new computer system for
handling the inventory on line, entered the required data concerning each of several thousand items, and completed an inventory of the storeroom, including addition of a bar-coding system, before the June 30 deadline.

There were several significant impacts of the changeover. First, the salary lines filled by Mr. Carl Hilton, Manager of the ChemStores, Mr. Kriss Stanley, Laboratory Facilities Coordinator and assistant manager of ChemStores, and Mr. Patrick Martinez, a Staff Assistant who is responsible for ordering stock for Chemstores, were moved entirely onto the ChemStores budget as was one-half of the salary of Barbara Hargis who will serve half-time as the ChemStores Accounting Technician and half-time as the department's Accounting Technician. Second, because in the past the storeroom personnel serviced the teaching laboratories, that function had to be separated out so that it could be retained in the Department. This required creating a new teaching stockroom, room 142, for the organic chemistry, physical chemistry, instrumental analysis, and advanced inorganic/organic laboratory. It was also necessary to create a new staff position, a third Lab Tech III, to operate this stockroom and provide other support services to the Department. Mr. Robert Garcia has moved from the teaching lab stockroom adjacent to room 209, the Chemistry 122 laboratory, into the new stockroom and Mr. James Keith was hired to replace him.
Third, the Department must now pay the same mark-up on goods bought from ChemStores as do all other customers. Through FY 92-93, the Department simply took stock from the storeroom, but that is no longer allowed. Because of the mark-up, Chemistry will be paying about 15-20% more for supplies from ChemStores than in the past. Funds have been promised from the Vice President for Business and Finance to cover most of these additional costs.

Fourth, the Laboratory Facilities Coordinator position held by Kriss Stanley initially included a significant component as a mechanic/machinist in the department's support shop. That position will become entirely state-funded instead of being split between state and storeroom income funds as it was in the past. Permission has been received from the Dean for this position to become the Instrument Maker position for a top quality, highly experienced machinist, that has been needed for many years. It will be filled during the coming year.

10. Personnel and Governance

The Director of Undergraduate Studies and Chair of the Undergraduate Curriculum Committee and the Awards Committee during FY 92-93 was the Associate Chair for Undergraduate Programs, Professor Mark R. Ondrias. The Director of Graduate Studies and Chair of the Graduate Studies Committee was Professor Thomas M. Niemczyk. Other faculty standing committees that were active this year include Executive, Graduate
Recruitment and Selection, Facilities, Safety, Computer, Library and Seminar.

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 1989-90.

B. Significant Plans and Recommendations for the Future

We will continue to use 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 two most important are faculty recruiting and retention and acquisition of new space. 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. Because there is little likelihood that start up funds will be available to bring in any traditional faculty during the coming year, we plan to explore other options, such as Chris Enke, whose situation was detailed above, and seeking a person who will carry heavy undergraduate teaching load over a multi-year commitment, but not be on a tenure track, as has been the case with Visiting Assistant Professor Ken Falkenberg.

We will continue to press the central administration for approval of, and a high priority for, our plans for additional research space. Frustration is high at our inability to have our needs for space met through construction of the already
programmed new wing for Clark Hall. Consequently, other avenues for finding the needed space will be explored during the coming year.

We continue to favor the creation of centers or institutes to mesh with our own research activities. One effort which has progressed significantly during the past year is creation of an institute for the development of bioanalytical systems which is being developed in concert with Los Alamos National laboratory and the School of Medicine. Space for the institute to use during its formative years has been identified and earmarked in a building to be constructed in the research park. Permanent space has been included in the Clark Hall wing when it was programmed. Dr. Richard Keller, the Los Alamos scientist whose availability prompted us to initiate a search for a senior faculty member, has been active in creation of the institute and seems likely to become its director. A plan for creation of the institute has been written and is ready to go through the approval process.

Our 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 many students who enter the first year course but then go to another field. We also want to provide opportunities for early success in chemistry so students will be willing to try the more advanced courses and 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.

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.

C. Appointments to Staff

No new appointments to the staff.

D. Changes to Staff Personnel

Chia Towner was upgraded from Editorial Assistant II to Program Coordinator in January 1993.

E. Separations

No separations from the staff.

E. Sponsored Research

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<td>BRSG = Biomedical Research Support Grant</td>
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APPENDIX A

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1992-93

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DIS - Applications Disapproved
INC - Applications Incomplete
DEC - Applications Approved but Declined

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| September 4, 1992 | Dr. Heinrich Lang               | "Synthesis and 'Destruction' of Main Group Element and Organometallic Complex Compounds."
| September 10, 1992 | Dr. James N. Demas             | "Design and Application of Highly Luminescent Transitional Metal Complexes." |
| September 25, 1992 | Dr. Jerzy Cioslowski            | "Endohedral Complexes: Atoms, Ions, and Molecules Trapped in the $C_{60}$ Cluster." |
| October 2, 1992  | Dr. Gideon Fraenkel             | "Structure and Dynamic Behavior of Organolithium Compounds."         |
| October 9, 1992  | Dr. John Stanton                 | "Coupled Cluster Theory and Stratospheric Ozone Depletion."         |
| November 6, 1992 | Dr. Daniel Buttry                | "Consequences of the Interfacial Environment in Electrochemistry."   |
| November 13, 1992 | Dr. Celeste M. Rohlfing         | "Theoretical Studies of Nonmetallic Clusters."                      |
| November 20, 1992 | Dr. Peter Ogilby                | "Oxygen-Organic Molecule Photophysics."                              |
| December 4, 1992 | Dr. John Bradley                | "A Spectroscopic Investigation of the Surface Chemistry of Small Molecules Absorbed on Transition Metal Colloids." |
| January 29, 1993 | Dr. Rebecca Conry               | "Untitled"                                                           |
| February 2, 1993 | Dr. Bill Buhro                  | "Solution Phase Synthesis of Non-oxide Glasses, Nanoparticles and Nanocomposites." |
| February 19, 1993 | Dr. Alan H. Cowley              | "Main Group Elements in Unusual Environments."                      |
| April 2, 1993    | Professor Yoshiham Kimure       | "A Novel Bioabsorbable Polyester with Biofunctions."                 |


April 23, 1993  Professor John C. Wright  "Four Wave Mixing - A New Family of High Resolution Spectroscopies."

April 30, 1993  Professor John Kenney  "Optical Spectrometry Under Extreme Conditions."

May 7, 1993  Dr. Gregory Kubas  "Dihydrogen and Related Coordination Chemistry."

May 14, 1993  Professor Peter Paetzold  "Synthesis and Properties of Boron Cluster - The Story of NB₁₁H₁₂."

May 26, 1993  Professor Heinrich Noth  "The Tetrahydroborate Group: A Fascinating Ligand."
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 (LWOP)
CATON, Roy D., Ph.D., 1963, Oregon State University
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
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
MCCLAUGHLIN, 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:

HOLLSTEIN, Ulrich, Ph.D., 1956, University of Amsterdam
KAHN, Milton, Ph.D., 1950, Washington University
MALM, Miriam, M.S., 1964, University of New Mexico
SCHAEFFER, Riley, Ph.D., 1967, University of Chicago

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:

BRYANT, Mark A., Ph.D., 1991, University of Arizona
CHOI, Yong-Kook, Ph.D., 1985, Chonbuk National University
FRANKE, Fransiska, Ph.D. 1992, Rensselaer Polytechnic Institute
FRANKE, James E., Ph.D., 1991, Rensselaer Polytechnic Institute
JANIK, Jerzy, Ph.D., 1987, University of New Mexico
KELLER, Rebecca, Ph.D., 1992, University of New Mexico
KRISTIANSEN, Marianne, Ph.D., 1988, Aarhus University, Denmark
Kuriyama, Yasunao, Ph.D., 1989, University of Tsukuba
MARTIRE, Daniel, Ph.D., 1988, Universidad Nacional de La Plata, Buenos Aires, Argentina
MHO, Sun-Il, Ph.D., 1983, University of Wisconsin
MIAO, Lan, Ph.D., 1992, Wake Forest University
ROGER, Christophe, Ph.D., 1989, Universite de Rennes, Rennes, France
ROSS, Claudia, M.S., 1983, University of Monro
SANETRA, Jerzy, Ph.D., 1984, Technical University of Cracow, Poland
SCURLOCK, Rodger, Ph.D., 1988, University of New Mexico
SUN, Li, M.S., 1985 Northwestern University
TAYLOR, Vicki, Ph.D., 1989, Oklahoma State University
Xu, Chuanjing, Ph.D., 1992 University of Illinois
SABRZEWSKI, Vyachslav, Ph.D., 1979, Institute of New Chemical Problems Academy of Sciences
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 Technology
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

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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
KNACK, 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
SALEZMAN, 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, Sc.D., 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-WASHBURN, 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
RESEARCH SCIENTIST:
ALAM, Todd, Ph.D., 1990, University of Washington
Operates NMR facility and trains students to use the instrument.

SCIENTIFIC GLASSBLOWER: (and Part-Time Lecturer III)
CAMPBELL, David R.
Manufactures state-of-the-art glassware, as requested by faculty and graduate students.

JUNIOR SCIENTIFIC GLASSBLOWER:
CAMPBELL, Mike
Assists glassblower in the manufacture of state-of-the-art glassware, as requested by faculty and graduate students.

RESEARCH SCIENTIST:
DUESLER, Eileen, Ph.D., 1973, University of California - Berkeley
Determines structures of materials by using X-ray techniques.

ELECTRONIC FACILITY MANAGER:
HARTSWICK, Lewis
Repairs and maintains instrumentation, as requested by faculty and graduate students.

CHEMICAL ANALYST:
JU, Ruby K.Y, B.S., 1956, University of Illinois
Analyzes chemicals for faculty and graduate students.

RESEARCH ENGINEER I:
SHAHVAR, Hoshang, B.S., 1981, University of New Mexico
Manufactures state-of-the-art electronic equipment, as requested by faculty and graduate students.

LABORATORY SUPERVISOR:
BOLDT, Nancy J., Ph.D. Laboratory Supervisor
Supervises TAs and coordinates undergraduate teaching labs.

OTHER STAFF:
BUSH, Gary, Laboratory Technician III
Services the Freshman teaching laboratories.

GARCIA, Robert C., Laboratory Technician III
Services the Freshman teaching laboratories.
GILLESPIE, Dorothy, Department Secretary
Secretary to Department Chairman.

GREEN, Kathryn, Accounting Technician
Prepares documents relating to grant purchases. Maintains spending records.

HARGIS, Barbara J., Accounting Technician
Prepares documents relating to department purchases. Maintains spending records.

HILTON, Carl, Chemical Stores Operations Manager II
Supervises storerooms and services teaching laboratories.

MARTINEZ, Patrick, Staff Assistant
Orders chemicals and supplies for teaching and research labs. Prepares monthly billing.

MCKEON, Maria Christina, Editorial Assistant II
Prepares manuscripts, proposals, course syllabi, and exams with a Macintosh word processor.

QUESNELL, Eva, Editorial Assistant III
Prepares manuscripts, proposals, course syllabi, and exams with a Macintosh Word Processor. Supervises Editorial Assistants II.

STANLEY, Kriss, Lab Facilities Coordinator
Maintains, repairs, designs, and fabricates mechanical equipment.

TOWNER, Chia, Program Coordinator
Prepares manuscripts, proposals, course syllabi, and exams with a Macintosh word processor.

UTTERBACK, Koelle, Academic Support Aide II
Schedules classes and instructors. Assists Chair with administrative functions. Supervises department staff members.
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<td>YAO, Wenbin</td>
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<td>ZAWODZINSKI, Christine</td>
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<td>ZENG, Dongshui</td>
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<td>ZHANG, Haiyan</td>
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ACHIEVEMENTS

The 1992-93 academic year was the first for the merged Department of Communication and Journalism (see the enclosed History of the Department). The Department offers undergraduate degrees in Journalism and in Communication, and an M.A. degree in Communication.

During Spring, 1993, the Department proposed a doctoral program in Communication, to begin in 1995 with a specialty in intercultural communication. A summary of this proposal is appended. The proposal successfully passed through the University approval process, including approval by the University Board of Regents in June, 1993.

The number of majors in the Department continued to increase, doubling in the past eight years to 515. This total is composed of:

1. 316 Communication BA students
2. 172 Journalism BA students
3. 27 Communication MA students

During 1992-93, a total of 237 degrees were awarded to students majoring in the Department. This number is believed to be a record for the Department, up from an average of about 120 degrees per year over the past five years.
On May 7, 1993, 25 alumni, students, faculty, and media professionals were invited to review the Department's efforts to recruit, train, and place minority students in mass communication. Some 35 percent of the Department's majors are of minority status. This figure is believed to be one of the highest of any school or department of communication or journalism in the U.S. Several activities are planned for the next year to improve the Department's progress in recruiting and teaching minority students, including summer workshops for minority high school students and teachers.

The UNM Forensics Team experienced considerable success during the 1992-93 debate season. One highlight of the year was winning the first and second place speaker finishes at the Yale Invitational Parliamentary Debate Tournament, attended by over three hundred debaters from the United States, Canada, and the British Isles. Sophomore Andrea Roth, a math major from Albuquerque, was awarded a trophy for First Speaker among the three hundred debaters. Junior Robert Stone, from Sunnyside, Washington, was awarded Second Speaker. Tournament officials announced at the awards ceremony that it was unprecedented for two people from the same school to take first and second speaker at this tournament. UNM was the only state-supported school attending the tournament; most of the competition was from Ivy League-type schools.

Other important accomplishments of the Forensics Team during 1992-93 included:

1. Sweepstakes Winner, Arizona State University National Invitational Tournament
2. 1st Place, Parliamentary Debate, Arizona State University.
3. 1st, 2nd, 3rd, 4th (close-out of tournament), Lincoln Douglas Debate, Arizona State University.
4. 1st Place, National Tournament, Western States Parliamentary Debate Association.
5. 3rd Place, CEDA Debate, San Diego State University National Invitational Tournament.
6. 3rd Place, CEDA Junior Varsity, San Diego State University.
7. 3rd Place, Parliamentary, Arizona State University.
8. 5th Place, National Tournament, Western States Parliamentary Debate Association.
9. 13th Place, North American Championship Debate Tournament.

For the 1993-94 season, all debaters will return and several outstanding freshmen and transfer students will be competing for the Team. As a result of the accomplishments of Roth and Stone, UNM has been invited to attend the World Universities Debating Championship which will be held at the University of Melbourne in January, 1994.

During 1992-93, Professor Miguel Gandert was involved in numerous photographic projects and exhibitions. His photographs were included in two exhibitions at the Museum of Fine Arts in Santa Fe, "The View from Here: 75 years at the Museum of Fine Arts" and "The Alcove Show". The National Museum of American History, Smithsonian, included his photographs in their "American Encounters" exhibit and the Whitney Museum of American Art in New York selected 15 photographs by Gandert for inclusion in its prestigious "1993 Show in a Whitney Biennial. The Phoenix Art Museum invited Gandert to exhibit his series: "Good Friday/El Cerro" in "Contemporary Identities: 24 Artists, the 1993 Phoenix Triennial".

Professor Gandert was also a contributing editor and photographer for Nuestras Mujeres, an illustrated history of Hispanics of New Mexico, and collaborated with the Tamarind Institute and two other Native New Mexico artists in the production of a fine art portfolio of lithographs titled: Reflexiones del Corazón. This project was funded through a contract with the New Mexico Arts Division and a grant from the Center for Regional Studies at the University of New Mexico.
PLANS AND RECOMMENDATIONS FOR THE FUTURE

The Department needs (1) a second computer pod for teaching writing skills, and (2) new equipment for our broadcasting studio. Proposals for each need were submitted to the UNM administration during 1993. In addition, plans are moving forward for the doctoral students who are expected to begin their studies in 1995.

APPOINTMENTS, RETIREMENTS, AND RESIGNATIONS

Everett M. Rogers was hired, effective January 1, 1993, as professor and chair. He replaced Dr. Robert Tiemens, who resigned effective June 30, 1992. Jean Civikly served as interim chair from July 1, 1992 to December 31, 1992.

Three new faculty were added to the Department:

1. Diana I. Rios, Assistant Professor, effective July 1, 1993, who joined the Department from the University of Texas at Austin, where she earned her Ph.D. degree.

2. Bradford J. Hall, Assistant Professor, effective August 15, 1993, a Ph.D. from the University of Washington, who came from the faculty of the University of Wisconsin at Milwaukee.

3. Karen A. Foss, Associate Professor, effective January 1, 1994, a Ph.D. from the University of Iowa, who came from the faculty at Humboldt State University.

These additions to the faculty bring it to full strength. Professor Charles Coates was on sabbatical leave during Spring, 1993, and Professor Dianne Lamb was on leave for Spring semester. A roster of all faculty, staff, and teaching assistants for the 1992-93 academic year is enclosed.
Rob Barraclough received funding ($20,000) from the U.S. Department of Energy for research on sexual discrimination. Gill Woodall continued his health communication research with a project on substance abuse prevention on college campuses, funded by the U.S. Department of Education. This project was continued in mid-1993 with additional funding of $108,000. Woodall had two other research proposals funded: (1) a project to extend the substance abuse prevention model (above) through a consortium of New Mexico universities, funded at $37,000 by the U.S. Department of Education, and (2) a project to prevent alcohol and tobacco use by adolescents, funded at $386,000 for two years by the U.S. Department of Education. Ev Rogers received funding from the Rockefeller Foundation ($97,000) and the United Nations’ Fund for Population Activities (about $130,000) for research in Tanzania on the effects of an entertainment-education radio soap opera about family planning and HIV/AIDS prevention. Rogers also obtained a grant of $82,000 from the Agency for Health Care Policy and Research for a two-year study of diffusion strategies used by HIV/AIDS prevention agencies in San Francisco, conducted in collaboration with the Department of Communication at Michigan State University. He also was awarded $97,000 by the Mitsubishi International Corporation for research on technological innovation and technology transfer from Federal Labs to private companies.

During 1992-93, Professor Bob Gassaway carried out, with assistance from Miguel Gandert and several other faculty, a training course for 25 Salvadorean journalists. This work was funded by a grant of $359,000 from the U.S. Agency for International Development.

Several proposals were made to U.S. foundations to assist the Department in projects concerning minority students and mass communication.
The Department of Communication and Journalism at the University of New Mexico resulted from the merger of two previous departments, both of which split off of the Department of English decades ago. The histories of the Departments of Communication and of Journalism reflect, in many ways, the recent history of the overall discipline of Communication. A variety of seemingly disparate research areas, pedagogy, and professional career tracks have converged in the discipline of Communication.

Department of Communication 1949-1990

Although courses in Speech had been offered at the University of New Mexico since the end of World War I, a Department of Speech was not formally established until 1949. At that time, courses in public speaking, forensics, speech and hearing therapy, and others were moved from a division of the English Department and placed in an expanded curriculum in the new department. Shortly thereafter, the curriculum of the new department was revised and broadened, and in 1951 a master's program in Speech was established that covered the curricular areas of public address, speech correction, and radio. In 1955, courses that focused on the new medium of television were developed, and a cooperative training program with local network affiliates was established for students in the department. During the next decade, courses and activities in the areas of public address and radio-TV continued to grow at a rapid rate. Students and faculty interested in forensics established and hosted several large and nationally visible debate tournaments. The department was chosen to train Peace Corps volunteers for educational television work in Columbia in 1963-1966. Much of that training was conducted in conjunction with the Public Television affiliate, KNME.

Reflecting national trends, the department changed its name to the Department of Speech Communication in the early 1970s. New courses that examined the theoretical, interpersonal, and organizational features of communication were added to the curriculum. Also during 1971, faculty who worked in the clinical areas of speech correction and audiology separated from the Department to form their own unit, the Department of Communicative Disorders. As a result of these developments, the Department of Speech Communication organized its curriculum into four areas: (1) interpersonal communication, (2) rhetorical communication, (3) organizational communication, and (4) telemediated communication. In 1984, intercultural communication was adopted as a special overarching emphasis in the Department. In 1988, the department again changed its name to the Department of Communication, a change that reflected the further broadening of the discipline.

In 1990 the Department moved to remodeled facilities in the Communication and Journalism Building. The department commands strong growth in course enrollment and FTE production. The department emphasizes excellence in instruction, with three of its faculty receiving UNM Outstanding Teaching Awards. An external review team that examined the Department in 1984 ranked the Masters program as one of the twenty-seven strongest in the U.S. National surveys during the past twelve years ranked the research productivity of the department as very high. One survey found the Masters program to outrank many Ph.D. programs in terms of research productivity. Department faculty have become increasingly successful in attracting grant funding for research. In the past five years, faculty have served as principal or co-principal investigators on over 1 million dollars of external grants, primarily from Federal agencies.

Department of Journalism 1947-1992

The history of the Department of Journalism has evolved since 1947 when, with a request to UNM President Tom Popejoy, Keen Rafferty established the Department of Journalism at UNM, and became its chair. Organized initially as a semi-autonomous division in the English Department, Journalism achieved department status in 1949. The Department's curriculum endorses the notion that journalists should be broadly trained, with roughly 25 percent of the major's coursework in professional
skills courses in journalism, balanced with 75 percent of the courses in the social sciences and humanities. Students gain valuable practice in journalism by involvement in The Daily Lobo, UNM’s student newspaper. Several noted writers and journalists have joined the Department, including Tony Hillerman, a noted writer of Native American mystery novels, John Hightower, a Pulitzer Prize winning AP special correspondent and Hank Trewhitt, an international and White House correspondent.

As with the Department of Communication, the 1960s brought an emphasis on the electronic media, in the form of courses focusing on broadcast journalism. The Department’s news-editorial and broadcast sequences were accredited in 1985. The impacts of new communication technologies on Journalism have been especially heavy in recent years. The department established a computer pod designed to teach journalism courses by computer, and a second computer pod is now planned. Journalism students and professionals no longer work with typewriter and pencil but rather with keyboard and monitor, fax machines and electronic cameras.

The Department of Communication and Journalism Today

Following a self-study and an external review of the Department of Communication graduate program in 1991, the University of New Mexico merged the former Department of Communication and the Department of Journalism into the Department of Communication and Journalism in 1992. The review committee recommended (1) that a national search be made for a chair of the new Department, and (2) that a Doctoral Program in Communication, specializing in intercultural communication be established. Everett M. Rogers was recruited, effective January 1993.

PROFESSORS:

Jean M. Civikly, Ph.D., Florida State University
John C. Condon, Ph.D., Northwestern University
Kenneth D. Frandsen, Ph.D., Ohio University
Everett M. Rogers, Ph.D., Iowa State University
Janice E. Schuetz, Ph.D., University of Colorado

ASSOCIATE PROFESSORS:

Fred V. Bales, Ph.D., University of Texas
Charles K. Coates, B.A., University of Virginia
Dianne Lamb, M.F.A., University of Iowa
Henry L. Trewthitt, B.A., University of New Mexico
W. Gill Woodall, Ph.D., University of Florida
Estelle M. Zannes, Ph.D., Case Western Reserve U.

ASSISTANT PROFESSORS:

Robert A. Barraclough, Ed.D., West Virginia Univ.
Janis Edwards, Ph.D., Univ. of Mass. (Visiting)
Miguel Gandert, M.A., University of New Mexico
Bob Gassaway, Ph.D., University of Missouri
Diane L. Furno-Lamude, Ph.D., University of Utah
LaVonne Wahl, ABD, Univ. of Nebraska (Visiting)

PROFESSORS EMERITI:

Wayne Eubank
Anthony Hillerman
Robert H. Lawrence

LECTURER III:

Thomas E. Jewell, J.D., Brigham Young University

The Department of Communication and Journalism presently teaches about 5,000 students in its courses per year, and has 415 majors (375 undergraduates and 43 master’s students), up from 267 five years ago. UNM presently is hiring three new faculty members. In 1995, the UNM Department of Communication and Journalism will host the annual conference of the International Communication Association.
SUMMARY OF THE PROPOSAL FOR A PH.D. PROGRAM IN COMMUNICATION

The Department of Communication and Journalism at the University of New Mexico proposes to establish a Ph.D. degree program in Communication, with an initial emphasis in intercultural communication. The proposed Doctoral Program in Communication takes advantage (1) of the unique intellectual strengths of the present faculty in the newly-merged (in 1992) Department of Communication and Journalism, (2) of the Department's response to the University of New Mexico's reallocation process and, more generally, our fit with the vision statement in the document UNM 2000, and the Hemisphere Initiative, and (3) of the strong national demand for new faculty trained for university teaching and research positions in communication. An analysis by Melvin L. DeFleur (1992) found that the number of communication Ph.D.'s produced per year (about 250 at present) must double in order to fill existing demand for the next five years, due to the nationwide trend for sharply increased undergraduate enrollments in all fields of communication. Almost every department of communication offers one or several courses in intercultural communication. The number of communication doctorates produced per year has risen more slowly than increased undergraduate enrollments. The need for Ph.D.-trained scholars in intercultural communication is particularly strong, as very few other doctoral programs in U.S. universities emphasize intercultural communication as their specialty. Finally, there is no existing doctoral program in communication in the State of New Mexico, and there are only 14 (four of which are in California) in the nine-state Southwestern U.S. region. Nationally, there are about 100 U.S. university departments that offer the Ph.D. degree in communication, and 50 of these have very active programs.

The faculty of the UNM Department of Communication and Journalism proposes a small, high-quality Doctoral Program in Communication that will admit about eight to nine doctoral students per year. Thus a total of about 25 doctoral students would be in residence at the University of New Mexico, once the Doctoral Program, scheduled to begin in 1995, has enrolled its first three cohorts, by the 1997-1998 academic year. The objective of the Doctoral Program in Communication is to make the University of New Mexico the place in the world to study intercultural communication. Given the existing intellectual resources of the University of New Mexico, and the strong will to launch a successful doctoral program, we feel this vision is attainable.

The present proposal assumes that adequate resources to establish the Doctoral Program in Communication exist (1) with no increase in tenure-stream faculty positions, and (2) with no increase in the total non-faculty teaching budget, as we expect to convert some of our part-time instructor positions and some of our master's-level teaching assistantships, to doctoral-level teaching assistantships, without interfering with our strong commitment to enhancing our existing undergraduate and master's degree programs. We anticipate (1) that a major increase can be achieved in our externally funded research and training projects by 1997-1998, in order to support our proposed Doctoral Program, and (2) that the number of majors and the number of student enrollments in our courses (about 14,000 per year), may continue to grow in the next five years at approximately the same rate as in the past five years if teaching resources become available. Our number of BA and MA majors increased from 267 in 1986-1987 to 415 in Fall, 1992, an increase of 55 percent. The expanding undergraduate
enrollments in the Department of Communication and Journalism can be taught more effectively if doctoral teaching assistants can be utilized to teach the several large-enrollment introductory courses in interpersonal communication, public speaking, and mass communication.

Thus, establishing a Doctoral Program in Communication at the University of New Mexico will lead (1) to a more effective utilization of present resources, (2) to enhance the quality of our existing undergraduate and master's degree programs, and (3) to an expansion of our present research program.
Department of Communication & Journalism
Roster of Faculty, Staff and Teaching Assistants
1992-93

Full-Time Faculty

Fred V. Bales, Associate Professor and Associate Chair for Undergraduate Studies
Robert A. Barraclough, Assistant Professor
Jean M. Civildy, Professor & Director of Teaching Assistance Resource Center
Charles K. Coates, Associate Professor
John C. Condon, Professor
Janis Edwards, Associate Professor and Associate Chair for Undergraduate Studies
Kenneth D. Frandsen, Assistant Professor
Diane L. Furno-Lamude, Professor & Associate Dean, College of Arts & Sciences
Miguel Gandert, Assistant Professor
Bob M. Gassaway, Associate Professor
Thomas E. Jewell, Lecturer III, Director of Forensics
Dianne M. Lamb, Associate Professor
Everett M. Rogers, Professor and Chair
Janice E. Schuetz, Professor and Associate Chair for Graduate Studies
Henry L. Trewhitt, Associate Professor
LaVonne Wahl, Visiting Assistant Professor
W. Gill Woodall, Associate Professor
Estelle Zannes, Associate Professor

Part-Time and Temporary Faculty

William Buchannan, Visiting Instructor, Summer Session '92
Robert Benz, Visiting Instructor, Fall Semester
Janet Blair, Visiting Instructor, Spring Semester
Joe Day, Visiting Instructor, Spring Semester
William England, Visiting Instructor, Spring Semester
Jamie Green, Visiting Instructor, Fall Semester
Patricia Kroken, Visiting Instructor, Academic Year
Greg Levoy, Visiting Instructor, Summer Session '93
Gaylord Mance, Visiting Instructor, Academic Year
Steve Montoya, Visiting Instructor, Spring Semester
Jeanne Page, Visiting Instructor, Academic Year
Deana Richter, Visiting Instructor, Academic Year
Steve Shapiro, Visiting Instructor, Fall Semester
Richard Silva, Visiting Instructor, Summer Session '92
Carol Cox Smith, Visiting Instructor, Fall Semester
Toby Smith, Visiting Instructor, Spring Semester
Sam Soleyn, Visiting Instructor, Academic Year
Vici Taus, Visiting Instructor, Academic Year

Teaching Assistants

David Beining, Spring Semester
Richard Bakkerud, Academic Year
Wardene Crowley, Fall Semester
Sean Ford, Academic Year
John Griffin, Academic Year
Jennifer Gruenwald, Academic Year

Ron Hidaldo, Academic Year
Kathy Hoag, Academic Year
Jeff Hudson, Academic Year
Joseph Milan, Academic Year
Shara Stone, Fall Semester
Danielle Wierenga, Academic Year

Staff

Theresa Everling, Administrative Assistant
Patrick Kiska, Electronic Technician
Mary Alice Strain, Department/Undergraduate Secretary
Katherine D. Vazquez, Department/Graduate Secretary

Research
An Assistant Professor of Audiology with a strong research record was recruited. A Stuttering Research Laboratory was established. Equipment was acquired for a Language Research Laboratory. Equipment acquisitions included two computers with printers, two video cameras, two video tape machines, three monitors, and splicing equipment. One master's thesis was completed.

Curriculum
The scheduling of courses and clinic was modified so that undergraduate courses are taught primarily on Monday, Wednesday, and Friday mornings with graduate classes offered Monday, Wednesday, and Friday afternoons and Monday, Tuesday, and Wednesday evenings. This schedule allows blocks of clinical practicum experiences to be assigned Monday through Friday mornings and all day on Tuesday and Thursday. This change was needed to provide greater efficiency for both students and faculty in meeting the 1993 ASHA accreditation requirements.

Advisement procedures were modified so that all courses in the Department that are not introductory, are restricted. This control was found necessary to assure appropriate sequencing of courses for maximum educational benefits and clinical preparation as well as compliance with ASHA accreditation requirements and recommendations of the ASHA ad hoc committee on Undergraduate Education.

Cardio-pulmonary Resuscitation (CPR) recertification classes and new certification offerings were scheduled within the department prior to the beginning of clinic each semester with all students required to maintain updated status for clinic participation. This requirement was made because of the many placements of
students in medical settings where the Joint Commission on Hospital Accreditation (JCHA) requires CPR certification.

A program allowing students to view laryngeal surgery at the Veterans Administration Hospital was initiated as a part of the Voice class taught by Dr. Finn. Also, a program allowing students to view dissections in the UNM Anatomy Department of the Medical School was initiated as a part of the Anatomy class taught by Dr. Finn.

**Speech and Hearing Center**
Barbara Rodriguez, M.S., CCC-SLP was named as the clinic coordinator for speech-language pathology. A three ring notebook version of a Policy Manual for the UNM Speech and Hearing Clinic was developed and distributed to all students in clinic and for use in the preclinical classes. A comprehensive evaluation and grading format was developed and implemented.

**The Speech and Hearing Center test and materials library**
The test and materials library was moved to a larger location. Approximately $14,000 in new clinic tests and materials were acquired for the new library. Approximately an equal amount of tests and materials were acquired as donations, yielding an increase in added tests and materials of approximately $25,000 to $30,000.

**Audiology Clinic**
Audiology Clinic revenues supported the addition of a full time audiologist specializing in hearing aids, the conversion of the 3/4 time secretarial position to a full time position, and the hiring of a work study student for 20 hours/week to serve as receptionist. Improvement in efficiency of the office operation was increased through the increased personnel as well as through continued upgrades of the new filing system, the use of a computer, and the general updating of office operations.

An in-house newborn high risk hearing screening program was initiated through equipment provided by the University of New Mexico Hospital (UNMH). Three hundred eighty-two babies were screened with 15% failing the screen. Ninety-eight percent of the babies referred for full diagnostic auditory brainstem evoked response testing (ABR) were identified as hearing impaired or deaf.
UNMH purchased an audiology sound booth and equipment for use by the Audiology Clinic and installed it in the Ear, Nose, and Throat (ENT) clinic. These program developments in hearing aids, newborn screenings, and the ENT clinic provide excellent training opportunities.

**Special Programs**

**Augmentative Communication Program**

The Augmentative Communication Grant was renewed with a design involving outreach training for rural areas in New Mexico. The grant provided training in basic and intermediate augmentative communication skills to 22 master's level students and clinical practicum experience for 6 graduate students who the grant supported as Graduate Teaching Assistants. The 6 Graduate Teaching Assistants also received training and experience as Teachers of Teachers. Eight Outreach Instructors were selected from six Augmentative Communication Centers established through the grant in Farmington/Bloomfield, Taos, Raton, Espanola, Santa Fe, and Albuquerque North Valley/South Valley. Five of the Outreach Instructors began their training (Khalsa, Brook, Fagrelius, Bird and Gaines).

The Augmentative Communication trainer's manual *ACTion Learning* was outlined. The written parts of several lessons were completed and many videos, photos, and diagrams were collected to integrate with written materials that are being translated into Spanish as they are written. Other accomplishments through the grant included

a. a public awareness campaign including the development of a new name, logo, stationery, and brochure for the Elks Cerebral Palsy Program [UNM Augmentative Communication Technologies (ACT) Learning Center; Open House; newspaper, television, and newsletter publicity.]

b. four posters presented at the American Speech-Language-Hearing Association (ASHA) national convention in San Antonio, Texas.

c. a presentation to the New Mexico Technical Assistance Program state convention.

d. the increase of slides in a collection on augmentative communication, from 240 to 480.

e. the addition of over 100 photographs of augmentative communication therapy and training activities.

f. the completion of an inventory of augmentative communication equipment and library holdings.
g. the addition of 25 tapes to our video tape library of commercial and clinical tapes, bringing the total to 75.

h. the creation and organization of Augmentative and Alternative Communication clinical forms and records on computer floppy disks.

i. the translation of clinic forms and tests into Spanish.

j. the outline of modules and one complete module design for a Trainers' Manual.

Mexico City Interdisciplinary Program

The following 18 member team evaluated 18 children at Comunidad Crecer during a 9 day visit to Mexico City in August. Team members included the following:

Samir Roy, M.D., M.A., CCC-SLP  Sharon Hendrickson-Pfeil, M.S., M.A., CCC-SLP
Bobbie Peppers, R.N., B.S.N., M.S.  Rosario Roman, M.S.
Dolores Butt, Ph.D., CCC-SLP  Maryellen Ulibarri, M.A., CCC-SLP
Karen Kurowski, M.A., CCC-A  Linda Riensche, Ph.D., CCC-SLP
Marianne Cramer, M.S., CCC-A  Dora Gomez, B.A.
Marilyn Dumars, M.S., CCC-SLP  Karen Banks, B.A.
Kathleen Taylor, OTR/L  Laurel Vogue, B.A.
Jane Merrill, M.S., PT  Christy Bodmer, B.A.
Linda Ross, M.S., CCC-SLP  Paul Butt, Esq.

Evaluations included speech, language, and hearing evaluations, physical and occupational therapy evaluations, and augmentative communication evaluations. Parent conferences were held at the end of the evaluation period. Presentations to parents and staff continued throughout the program, with team members attending many of the presentations. A list of the presentations follows:


e. Adapted Toys and Cooking and Play Activities. Rosario Roman and Kristie Bodmer.


h. Facilitated Communication with Children having Autistic Behaviors. Sharon Hendrickson-Pfeil.
i. Activities for Children with Behavior and/or Health Problems. Bobbie Pepper.
l. Exercises and Play for Physical Development. Kathleen Taylor and Jane Merrill.

Albuquerque Public Schools Programs

The speech-language pathology program at Jefferson Middle School completed its second year. The program was expanded to include a full time supervisor at Wilson Middle School. Wilson Middle School was selected because of its multicultural population.

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. Both programs were transferred out of the Department August 14, 1992.

Special Events

Annual Picnic

The Department held its second annual picnic on Saturday, September 12 at Holiday Park. Faculty, staff, undergraduate, non-degree, and graduate students were invited. Approximately 85 persons attended, with about 5 or 10 of those being undergraduates.

The American Speech-Language-Hearing Association Convention

All but one full time faculty member attended as well as four students and two part time faculty. Participation by these individuals included the presentation of six poster sessions, the chairing of one session, representation to the Legislative Council, interviewing for three positions, and the honoring of one student at the American Speech-Language-Hearing Foundation breakfast. Four students attended with partial support through the Department and the Graduate Student Association (Dora Gomez, Debra Harbaugh, Mary Howe, and Kate Weinrod).
Augmentative Communication Conference

The Department co-sponsored "Advances in AAC", the New Mexico Association of Augmentative and Alternative Communication (NEWMAAC) Spring Conference with NEWMAAC serving as the other co-sponsor. The organization was founded by Dolores Butt. Sharon Hendrickson, M.S., CCC-SLP served as the featured speaker. She is an augmentative and alternative communication specialist, writer, and lecturer from Tucson, Arizona. The event took place from 8:30 to 4:00 p.m. at the Education Building of the Albuquerque Veterans Administration Hospital. Continuing Education Units (CEU's) were offered.

NSSLIHA Second Annual Conference

The UNM Chapter of the National Student Speech, Language and Hearing Association held its Second Annual Spring Southwest Conference on April 2 and 3, 1993 at the Hyatt Regency Hotel in Albuquerque. A private reception for speakers and students was held at University House on Thursday night, April 1. The conference was opened by UNM President Peck. Approximately 160 persons registered with about 150 attending the all day conference proceedings on April 2 and about 70 attending the two hour panel on April 3. Three conference attendees were from out of state and 23 were from other New Mexico towns or cities. 6 American Speech-Language-Hearing Association Continuing Education Units (CEUs) were offered. Speakers were as follows:

Willard Zemlin  Topic: The voicebox in a Nutshell
Willard Zemlin, Ph.D., Professor Emeritus of Speech and Hearing Science at the school of Basic medical Sciences of the University of Illinois. He is the author of the well-known classic text on anatomy and physiology for speech and hearing, Speech and Hearing Science, first published in the 1960's, and now in its third edition. He is currently developing a unique audio-visual presentation about the anatomy and physiology of the speech mechanism.

Marlene Ochs  Topic: Recent Development in Our Understanding of the Anatomy and Physiology of the Cochlea
Marleeen Ochs, Ph.D., Assistant Professor in the Division of Hearing and Speech Science affiliated with Vanderbilt Medical School. She received her Ph.D. in 1983 from Vanderbilt University and completed a Post Doctoral Fellowship in Sensory Physiology and Cochlear Implants at the University of California-San Francisco.
Fred Minifie  Topic: Preparing for the Future Careers in Speech Language Pathology or Audiology
Fred Minifie, Ph.D., Professor in the Department of Speech and Hearing Sciences at the University of Washington. Dr. Minifie is a 1990 recipient of the ASHA Honors of the Association, the highest recognition awarded by ASHA to its members. He has also served as ASHA President and is currently President of the Board of Trustees for the American Speech and Hearing Foundation.

Stephanie Beasley  Topic: A Primer on Private Practice: Is It For You?
Stephanie Beasley, M.A.,CCC-SLP, is a Speech-Language Pathologist in private practice in Memphis. She received her M.A. from Memphis State University in 1980. She has been in private practice since 1981. Ms. Beasley does primarily contract work and features unique, high technology approaches to client services.

Panel Speakers
Topic: The Need for SLP's in New Mexico
Moderator: UNM Associate Provost Richard Holder

Linda Wilson, Ph.D.
New Mexico State Department of Education
Director of Special Education for the State of New Mexico

Vida Morrison, M.A., SLP
Staff Speech Pathologist
Nova Care, Inc.

Linda A. Lebeau, M.S., CCC-SLP
Speech-Language Pathology Supervisor
Educational Assessment Systems, Inc.

Ruben Cordova, Ph.D.
Director, Northeast Regional Center Cooperative No. 4

Linda Coleman, M.S.
Director of Technical Assistance
Parents Reaching Out

Graduation Luncheon

The Graduation Luncheon was held at Albuquerque Country Club for the fifth consecutive year. The program committee was chaired by Richard Hood and was planned similarly to programs of previous years. Kate Weinrod, a graduating student, served as the speaker. One hundred forty-three graduates, family members, and guests were in attendance. In keeping with established tradition, all graduates were presented with UNM pins.

Richard Hood Retirement Reception

Richard Hood retired at the end of 1992, though he continued teaching a course and advising during the Spring, 1993 semester. On December 1, 1992, a retirement reception was held for him at the Hyatt Regency Hotel. Approximately 65 people attended. A choreographed singing group from Sandia High School presented "I Don't Care". A poem written for Dr. Hood was presented by Kate Weinrod and Debra Harbaugh. A UNM golf bag was given to him by the faculty.

Farewell Potluck for Mary Bolton-Koppenhaver and Judy Williams

Faculty and graduate students gathered together in the department classroom for a potluck held as a farewell for Judy Williams and Mary Bolton-Koppenhaver. Gifts were given and a poem written for Judy was read. Approximately 55 people were present.

Other activities

Organizational efforts continued and included rekeying of all buildings and selected file cabinets and rooms. Clinic accessibility for handicapped clients was improved by modifying our facilities through the addition of an automatic door to the main entry and removal of two walls.

NSSLHA Monthly Meetings

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<tr>
<th>Month</th>
<th>Topic and Speaker</th>
<th>Attendance</th>
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<tr>
<td>September</td>
<td>&quot;Changes in our Profession&quot;</td>
<td>24</td>
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<tr>
<td></td>
<td>Judy Barnes, M.S., CCC-SLP</td>
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<td>Private Practitioner and</td>
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<td></td>
<td>President, New Mexico Speech, Language</td>
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October

"The Contributions of QUOTA Club to Speech and Hearing"
Korkye Purviance
President of Quota Club of Albuquerque

November

"Counseling the Family in Crisis"
Mary Helen Synder, Ph.D.

February

"The ASHA Convention--What was it like?"
Debra Harbaugh, Kate Weinrod, and Dora Gomez
Communicative Disorders Graduate Students

March

"New Research in Patient Competence Measures"
Bruce Porch, Ph.D., CCC-SLP
Associate Professor, Department of Communicative Disorders

Other NSSLHA Activities

NSSLHA received $2,200 in support from the Graduate Student Association for the Second Annual Spring Southwest Conference.

NSSLHA contributed $1,000 in therapy materials to the test and materials library.

The NSSLHA Newsletter was expanded to 7 pages in the Fall semester and distributed among students, alumni, and others interested in the department including prospective students. The Spring semester of the NSSLHA Newsletter was expanded to 8 pages with smaller print and distributed to the same groups.

NSSLHA acquired a number of books which were housed in the 915 Vassar, NE annex.

NSSLHA developed monthly flyers for their meetings as well as a listing of sites for posting of these flyers.
Grand Rounds

A series of Grand Rounds was initiated to stimulate interest in special areas and to allow those involved in educating our students to meet, interact, and learn about the academic and professional work of one another while gaining continuing education units. Following is a summary:

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<th>Month</th>
<th>Topic and Speakers</th>
<th>Attendance</th>
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<tr>
<td>January</td>
<td>&quot;Clinical Rating of Aphasic Patients' Ability&quot;</td>
<td>27</td>
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<tr>
<td></td>
<td>Bruce Porch, Ph.D., CCC-SLP</td>
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<td>Mary Howe, M.A.</td>
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<td>Sandy Mayne, Graduate Student</td>
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<tr>
<td>February</td>
<td>&quot;Spontaneous Recovery from Stuttering: Methodological and Conceptual Considerations&quot;</td>
<td>24</td>
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<td>Patrick Finn, Ph.D., CCC-SLP</td>
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<tr>
<td>March</td>
<td>&quot;Augmentative Communication in Other Countries&quot;</td>
<td>12</td>
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<tr>
<td></td>
<td>Dolores Butt, Ph.D., CCC-SLP</td>
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<tr>
<td>April</td>
<td>&quot;Geriatric Rehabilitation in Long-Term Care&quot;</td>
<td>12</td>
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<td>Danielle Koury-Parker, Ph.D., CCC-SLP</td>
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<td>Nova Care, Inc.</td>
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<td>King of Prussia, PA</td>
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Attendance at the March and April Grand Rounds was presumed to be lower because faculty had conflicting commitments related to recruitment of new faculty and other professional activities. The January, February, and March Grand Rounds offered .1 CEUs. The April Grand Rounds offered .2 CEUs.

Public Information

A department bulletin board was developed for display of information relating to current activities, honors, and events.

Program information and flyers were developed for the audiology program and individual introductory courses including 302 Introduction to Communication Disorders, 350 Anatomy and Physiology of the Speech Mechanism, 321 Introduction to Audiology, and 430 Language Development. Additionally, approximately 1,000 American Speech-Language-Hearing brochures (5 different kinds) on the professions of speech-language pathology and audiology were acquired and labeled with our department name. These materials, along with those developed near the end of 1991-1992 were displayed in the department's advisement area and distributed.
about the campus (Arts and Sciences, the College of Education, University College, Continuing Education, Registration, Career Counseling, Hispanic Services Center, and the Student Union Multicultural Center) as well as Technical-Vocational Institute. Bulk mailing and computer labeling procedures were implemented. Continuing Education flyers were mailed to individual speech-language pathologists in the public schools and the members of the New Mexico Speech-Language-Hearing Association. The "Let's Talk" series on speech, language, and hearing disorders were mailed to other administrative units beginning in the spring semester.

A display board was acquired and colored pictures were taken for display. Program information, course flyers, and ASHA brochures were included with the display. Displays were provided during Welcome Back Days at UNM, at the New Mexico Speech-Language-Hearing Association Convention, at the UNM Finding a Major Exhibition, and at (May) Better Speech and Hearing Month displays at Coronado Center.

Twelve sets of American Speech-Language-Hearing Association brochures on specific disorders and populations (voice, stuttering, otitis media, assistive listening devices, aphasia, articulation problems, noise induced hearing loss, tinnitus, aging, language development and disorders, and health coverage) were acquired along with a display rack to provide information to the public. The information was labeled with our clinic name and displayed in our clinic reception area.

Listings of our department and clinic were added to the UNM Phone Directory, Wellness Center, and the Yellow Pages of the U. S. West phone directory. Business cards were acquired for faculty and professional staff. The UNM Calendar also included listings of NSSLHA meetings and the Annual Spring Southwest Conference.

The Campus News carried an article on Dolores Butt's Mexico City project, 3 articles in the Notables Column, one on Ann Marquis's book, one on therapy materials (Unisets) by Ann Marquis and Theresa Blog, an alum, and one on Mary Bolton-Koppenhaver being awarded the Honors of the New Mexico Speech-Language-Hearing Association. A Campus News article on new retirees mentioned Lloyd Lamb and Richard Hood as new retirees and one on UNM Teaching Allocation Subcommittee grants mentioned Janet Patterson and Linda Riensche as recipients. The Albuquerque Tribune carried an article on Dolores Butt's augmentative communication grant and Mexico City augmentative communication project, an article on Ann Marquis' book and therapy
materials, and an article on Dolores Butt's involvement in the Internation Coupe de Tech program by AppleWorks Computers. The United States Society for Augmentative and Alternative Communication (USSAAC) newsletter carried an article on the Mexico City augmentative communication project. The Mirage included an article on Dolores Butt's Mexico City project and her outreach grant. The American Speech-Language-Hearing Association magazine carried an article and picture of Dora Gomez, our graduate student who won the American Speech and Hearing Foundation Young Minority Scholar's Award. The New Mexico Speech, Language, and Hearing Association Newsletter included columns on the happenings at UNM in both Fall and Spring issues.

Alumni names and addresses were located for graduates of the master's program from 1982 to the present. Mailings to alumni(ae) were initiated.

2. Significant plans and recommendations for the near future.
   a. The Department will add a master's level audiology position and a master's level speech-language pathology position.
   b. The Department will successfully complete those faculty searches it is permitted to initiate.
   c. Chris Brown will apply for a UNM Teaching Allocation grant.
   d. Dolores Butt will apply for a multicultural education grant.
   e. Dolores Butt will play a major role in an international educational event in Mexico City.
   f. Dolores Butt will retire from her full time position at UNM in May.
   g. Patrick Finn will publish 2 articles in refereed journals.
   h. Patrick Finn will submit 3 additional articles to refereed journals.
   i. Patrick Finn will direct 1 master's thesis.
   j. Patrick Finn will apply for his permanent work permit which will allow a future application for a National Institutes of Health Grant.
   k. Patrick Finn will submit a paper to the American Speech-Language-Hearing Association for presentation at the national convention.
   l. Patrick Finn will apply for a UNM Teaching Allocation Grant.
   m. Teri Hamill will establish a hearing research laboratory.
   n. Teri Hamill will submit 4 manuscripts for publication in refereed journals.
   o. Teri Hamill will publish at least 1 article in a refereed journal.
p. Teri Hamill will submit an instructional software package on auditory evoked potentials for publication.
q. Teri Hamill will explore collaborative grant applications with the Veteran's Administration and Indian Health/Otolaryngology faculty.
r. Teri Hamill will develop audiometric screening protocols, implement systematic audiometer calibration procedures, and provide "continuing education" to clinic staff on latest diagnostic procedures and advanced hearing aid fitting techniques.
s. Teri Hamill will participate in the Grand Rounds activities of the UNMH ENT Department.
t. Teri Hamill will apply for a UNM Teaching Allocation Grant.
u. Karen Kurowski will take full responsibility for teaching two classes. (Previously, she served only as a teaching assistant for one class.)
w. Ann Marquis will publish a book on developing narrative skills through story telling.
x. Ann Marquis will apply for a UNM Teaching Allocation grant.
y. Janet Patterson will establish a Language Research Laboratory.
z. Janet Patterson will publish a book chapter and a refereed article.
aa. Janet Patterson will submit 2 articles to refereed journals.
bb. Janet Patterson will apply for a grant to support the collection of normative data on bilingual language development.
cc. Janet Patterson will initiate the collection of longitudinal data on a social linguistic variable in young children.
dd. Bruce Porch will publish a book chapter.
ee. Bruce Porch will publish a book.
ff. The clinical audiologists (Karen Kurowski, Susan Rush, and Joe Lobato) will become involved in 1 clinical research project.
gg. Linda Riensche will publish 1 article in a refereed journal.
hh. Linda Riensche will submit 1 article to a refereed journal.
ii. Linda Riensche will complete a book chapter.
jj. Barbara Rodriguez will publish her first therapy materials.
kk. All faculty and professional staff will attend a national level continuing education event.
II. The Department will undergo the first UNM Graduate Unit Review since 1983. This review is scheduled for October. It was requested by the Department in lieu of the Graduate School accepting the American Speech-Language-Hearing Association (ASHA) Educational Standards Board (ESB) accreditation process and report. It was the opinion of the department members that the ASHA ESB process does not address some of the important issues that the Graduate Unit Review addresses.

mm. The Department will revise its curriculum by changing the sequence of graduate courses to include a medical block of classes and a clinical block of classes. The accompanying clinical training class will be restructured to include medical information and clinic report writing for insurance purposes during the respective academic blocks. The new course sequence will provide the opportunity for the clinic to implement a clinical block plan in which students will gain experience through a public school block (2 mornings or 2 afternoons a week), a medical block (2 hours each morning for 4 mornings a week), a diagnostic (all day Tuesday or Thursday) and speech clinic block (primarily Monday, Wednesday, Friday mornings), and a hearing clinic block.

nn. The audiology curriculum will be reviewed and modified as necessary.

oo. The comprehensive examination format will be reviewed and revised to facilitate student acquisition of a broader professional knowledge base.

pp. A computer program will be implemented to manage student clinical hours and interface clinical assignments with completion of curricular blocks.

qq. Scheduling and procedures at the UNM Speech and Hearing Center will be revised to allow for medicaid billing and an increase in the fee schedule.

rr. Additional tests and therapy materials will be acquired for the Test and Materials Library with particular emphasis on items for use with Spanish speaking clients, aphasic and head injured patients, voice clients, and language disordered children.

ss. The Grand Rounds Program will begin in the Fall semester and include 6 meetings (an increase of 2). In addition to being open to all those who supervise our students, they will be opened to all speech-language pathologists in Albuquerque Public Schools (APS) in response to a request from APS administration.

tt. The Mexico City Program will include the involvement of a larger number of students as well as a cultural orientation class before the trip.

uu. The Department will collaborate with The New Mexico Association of Augmentative and Alternative Communicative to provide 2 continuing education (CEU) events.
vv. The Department will focus its energies on acquiring additional computers for student use with tutorial programs and video equipment for student training.
ww. A source book of services for head injured patients will be published as a part of grant related activities.
xx. Students on the Augmentative Communication Grant will assist Outreach Instructors to give AC training workshops to approximately 40 trainees in Northern and Central New Mexico.
yy. Three Augmentative Communication Outreach Instructors will begin training five trainees at nearby towns.
zz. Attendance at NSSLHA meetings will be increased through increased publicity and the scheduling of meetings in a larger room at another location on campus.
aaa. The number of speakers at the NSSLHA Spring Southwest Conference will be increased as well as the number in attendance.
bbb. NSSLHA will sponsor 2 fund raising, social projects.
ccc. NSSLHA Speakers at monthly meetings will have stronger qualifications.
ddd. The Public Information program described above will continue as set forth above. A hearing aid newsletter will be added.

3. Appointments to staff.
   a. Barbara Rodriguez was added to the staff as a full time clinical supervisor in August, 1992. She was appointed to the position of Coordinator of Speech-Language Pathology in December, 1992.
   b. Joe Lobato was added to the staff as a Clinical Fellowship Year Audiologist in January, 1993.
   c. Teri Hamill, Assistant Professor of Audiology, was successfully recruited with a start date in July, 1993.
   d. Joleen Rebaudo-Adams was added to the secretarial staff at the UNMH Audiology Clinic at 1.0 FTE in Spring, 1993.

4. Separations from staff.
   a. Richard B. Hood, Associate Professor and former Department Chair, retired December, 1992. He continued as a part time instructor during the Spring, 1993 semester.
   b. Judy Williams, speech-language pathology clinic coordinator took a leave of absence in December, 1992 and resigned at the end of the spring semester.

d. Heather Sessink, Secretary for the Audiology Clinic, was changed from .75 FTE to 1.0 FTE through clinic funds and later separated from the department.

e. Brenda Logsdon, .50 FTE Secretarial Assistant.

f. HITOS grant personnel separated from the Department on August 16, 1992.
   i. Carol Westby (.10 FTE)
   ii. Mary Bolton-Koppenhaver (.50 FTE)
   iii. Pat Lilley (.30 FTE)

g. Multicultural Grant Personnel separated from the Department on August 16, 1992.
   i. Carol Westby (.10 FTE)
   ii. Geri Rouse (.50 FTE)
   iii. Rose Montgomery (.25 FTE)
   iv. Maryellen Ulibarri (.25 FTE)

5. Publications, either of division or of individuals on staff, not elsewhere mentioned.

6. Outside professional activities of staff members.

   Presentations
   d. Dolores Butt, "Developing Countries Seminar", Invited panel presentation to the Fifth International Conference of the International Society for Alternative and Augmentative Communication (ISAAC), August, Philadelphia.


Professional Memberships and Leaderships

a. Karen Banks served on the executive board of the New Mexico Association for Augmentative and Alternative Communication (NEWMAAC) as the Student Representative.

b. Chris Brown served as consultant for Augmentative Communication for the Leaving Tree Special Preschool, Hobbs, NM; Naaka Airi and Aztec Elementary Schools in Bloomfield; Santa Fe Public Schools and Santa Fe Special Preschool; and Espanola High School.

c. Chris Brown served on the executive board of the New Mexico Association for Augmentative and Alternative Communication (NEWMAAC) as the Continuing Education Officer. This organization was founded in 1992.

d. Chris Brown served on the CAMA Road Tour Committee sponsored by NEWMAAC.

e. Dolores S. Butt served on the New Mexico State-wide Planning for Assistive Technology-Advisory Board.

f. Dolores S. Butt served on the New Mexico Association for Alternative and Augmentative Communication (NEWMAAC), Board of Directors.

g. Dolores Butt served on the UNM Campus Planning Committee.

h. Dolores Butt served on the UNM Community Education Committee.

i. Patrick Finn served as Session Chair for The Annual Convention of the American Speech-Language-Hearing Association.

j. Patrick Finn served as Guest Reviewer for the Journal of Applied Behavior Analysis.

k. Patrick Finn was named Guest Reviewer for The Journal of Speech and Hearing Research.

l. Patrick Finn submitted an application for the American Speech-Language-Hearing Association New Investigator's Award.

m. Patrick Finn was included as a consultant on a National Institute of Health grant application.

n. Janet Patterson served as first author of a book chapter that has been submitted.

o. Karen Kurowski served as a member of the Rehabilitation Council at UNM Medical Center.

p. Karen Kurowski served on the New Mexico Speech, Language, and Hearing Association Ad Hoc Committee on New Mexico's Position regarding the Au.D.
q. 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.

r. Linda Riensche chaired the American Speech-Language-Hearing Association Educational Standards Board Accreditation Site Visit Team for the Department of Communication Sciences and Disorders at the University of Oklahoma Health Sciences Center, Oklahoma City, OK.

s. Linda Riensche served as the UNM team member of the Graduate Unit Review of the Health Promotion, Physical Education, and Leisure Programs in the College of Education.

t. Linda Riensche served as Peer Reviewer for American Speech-Language-Hearing Association Ad Hoc Committee on Clinical Issues in Substance Abuse.

u. Barbara Rodriguez served as a member of the Albuquerque Audiology and Speech Professionals.

v. Judy Williams served on the executive board of the New Mexico Association for Augmentative and Alternative Communication (NEWMAAC) as a Director-at-Large.

Continuing Education


f. Dolores Butt, Patrick Finn, Richard Hood, Karen Kurowski, Joe Lobato, Ann Marquis, Janet Patterson, Linda Riensche, and Barbara Rodriguez attended the Southwest Conference on Communicative Disorders Spring Conference presented by
the UNM Chapter of the National Student Speech, Language, and Hearing Association.
April, Albuquerque.
g. Dolores Butt attended "Coup de Tech", Worldwide Disability Solutions Group of
Apple Computer, Inc. January, Cupertino, CA.
h. Patrick Finn participated in a research project in San Antonio, TX and
continued his collaboration with researchers from the University of California-Santa
Barbara and the University of Illinois.
i. Patrick Finn attended "Research Mentorship and Training in Communication
Sciences and Disorders", National Institutes of Health and the American Speech-
Language-Hearing Foundation. May, Bethesda, Maryland.
j. Susan Karasik-Rush attended "Digital Programmable Hearing Aids", Starkey
k. Susan Karasik-Rush attended "Real Ear Measurement Model: The 2nd Decade",
Starkey Laboratories. March, Denver.
l. Susan Karasik-Rush attended "Reaching Your Fitting Potential: Selection of
m. Susan Karasik-Rush attended the American Academy of Audiology. April,
Phoenix.
n. Susan Karasik-Rush attended "Newborn Hearing Screening: Contemporary
Status and Practice" American Academy of Audiology Preconvention workshop.
April, Phoenix.
o. Susan Karasik-Rush was awarded the American Speech-Language-Hearing
Association's Certificate of Clinical Competence in Audiology.
July, Vanderbilt University, Nashville.
q. Karen Kurowski attended "Real Ear Measurement Mode: The Second Decade".
January, Starkey Laboratories, Denver.
r. Karen Kurowski attended "Reaching Your Fitting Potential: Selection of
Circuit Options. March, Starkey Laboratories, Albuquerque.
s. Karen Kurowski attended Annual Conference of The Council of Graduate
Programs in Communication Sciences and Disorders. April, Charleston.
t. Karen Kurowski received the American Speech-Language-Hearing
Association Award for Continuing Education (ACE), January.
u. Joe Lobato attended "Real Ear Measurement Mode: The Second Decade",
January, Starkey Laboratories, Santa Fe.
x. Barbara Rodriguez attended the Attention Deficis Disorder Conference at UNM Law School.

Internal Fundings
a. Patrick Finn acquired a UNM Research Allocations Committee grant of $2,400.
b. Janet Patterson acquired a UNM Teaching Allocations Subcommittee grant of $1,800.
c. Linda Riensche acquired a UNM Teaching Allocations Subcommittee grant of $2,500.
d. Barbara Rodriguez acquired a UNM Teaching Allocations Subcommittee grant of $1,200.

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.
c. The Albuquerque Public Schools contract provided $51,285. The contract provides training opportunities for speech-language pathology graduate students placed within the public school setting while providing supervised services to children.
d. The Augmentative Communication Technologies Center income was $29,000. These incomes are obtained through the process of our supervisors and students in training offering services to multiply handicapped clients.
e. The Audiology Clinic income was $14,777. Services provided with supervised training experiences for our students.
f. The Hearing Aid income was estimated at $15,000. Services are provided with supervised training experiences for our students.
g. Richard Hood. Herzstein Project, Summer. $1,729.

h. Richard Hood. Herzstein Project, Fall. $4,481

i. Educational Assessment Systems, Inc. increased its scholarship to $2,500 in return for a one year work commitment and $5,000 in return for a two year work commitment.

j. Veterans Administration Hospital provided traineeships to 2 graduate students.

k. HITOS provided stipends to 4 graduate students and 4 undergraduate students.

l. MEP provided stipends to 4 graduate students and 4 undergraduate students.

m. The American Speech and Hearing Foundation provided a $2,000 stipend.

8. Honors.

a. Mary Bolton-Koppenhaver was awarded the Honors of the New Mexico Speech, Language, Hearing Association.

b. Desiree Coon was awarded the Honors of the National Student Speech, Language, and Hearing Association.

c. Desiree Coon was awarded the Honors of the UNM Chapter of the National Student Speech, Language, and Hearing Association.

d. Courtenay Frazier was nominated by the College of Arts and Sciences to be honored at the December 1992 commencement as Outstanding Undergraduate Student.

e. Dora Gomez was the recipient of the 1992 American Speech-Language-Hearing Foundation Young Scholars Award for Minority Students. This award included a $2,000 prize and was awarded at the American Speech-Language-Hearing Association Convention in San Antonio, Texas in November, 1992.

f. Florence Gonzales was nominated to the UNM People at Work award (Paw Prints), July, 1992.

g. Mary Howe was nominated by the College of Arts and Sciences to be honored at the December 1992 commencement as Outstanding Graduate Student.

h. Bruce Porch was presented the "Toady" award, a departmental recognition for excellence in teaching. This was the first year for the award and the recipient was chosen by the UNM NSSLHA chapter.

i. Courtenay Joan Frazier, Pamela Hutter, and Shelley Austin Kastler-Davis were awarded the Bachelor of Arts with Distinction.

j. Allyson Teeter received her Bachelor of Arts as a Presidential Scholar.

k. Megan Besselievre and Jan Allyson Teeter were elected to Phi Beta Kappa.

l. Megan Besselievre was awarded membership in Phi Kappa Phi.
### Appendices

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<th>Fall 1992 Major Listing</th>
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### Master of Science Program

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<td>** All attended</td>
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Percentile Scores on CCC (National) Examination by Semester of Exam Taken.

- **Summer 92** = 33%, 48%, 69%, 69%, 79%, 87%, 93%, 98%  
  Mean = 72%

- **Fall 92** = None taken  
  Mean = None taken

- **Spring 93** = 63%, 68%, 83%, 87%;  
  Mean = 75%

### Master's Theses Completed

**Fall Semester, 1992**

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<td>Bruce Porch</td>
<td>Mary Howe</td>
<td>Quantifying Psychosocial Problems in the Families of Head Injured Patients</td>
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23
Enrollment Statistics
Summer 1992

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## Enrollment Statistics

**Fall 1992**

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**GRAND TOTALS**

|                    | 1,631;25| 3,657;26| 2,785;44|

**ANNUAL TOTAL FOR Speech-Language Pathology**

8,074 hrs.; 35 min.

**ANNUAL TOTAL FOR UNMH Audiology Clinic**

1,791 hrs.
THE ANNUAL REPORT
OF THE
DEPARTMENT OF EARTH AND
PLANETARY SCIENCES

July 1, 1992 to June 30, 1993
Department of Earth and Planetary Sciences

Annual Report

July 1, 1992 - June 30, 1993

Barry S. Kues, Chair
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APPENDIX - DEPARTMENTAL REVIEW REPORT AND FIVE-YEAR PLAN ...........
I. GENERAL DEPARTMENTAL INFORMATION
FACULTY AND STAFF

PROFESSORS:

Roger A. Anderson, Ph.D., Stanford University, 1960.
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.
Barry S. Kues, Ph.D., Indiana University, 1974.
James J. Papike, Ph.D., University of Minnesota, 1964.

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.
Leslie D. McFadden, Ph.D., University of Arizona, 1982.
Gary Smith, Ph.D., Oregon State, 1986.
Crayton J. Yapp, Ph.D., California Institute of Technology, 1980.

ASSISTANT PROFESSOR:

Maya Elrick, Ph.D., Virginia Tech., 1990.

RESEARCH PROFESSOR

Wolfgang E. Elston, Ph.D., Columbia University, 1953.

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. Wengerd, 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.
Graham D. Layne, Senior Research Associate, (Institute of Meteoritics), Ph.D., University of Toronto, 1988.
Mark L. Miller, Senior Research Associate, Ph.D., University of New Mexico, 1992.
Roberto S. Molina-Garza, Senior Research Associate, Ph.D., University of Michigan, 1991.
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.
Katerina Petronotis, Senior Research Associate, Ph.D., Northwestern University, 1991.
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.
David B. Ward, Research Associate, M.S., University of New Mexico, 1986.

ADJUNCT PROFESSORS:

Warren S. Baldrige, Ph.D., Caltech University, 1978.
Michael Fehler, Ph.D., Massachusetts Institute of Technology.
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.
Elizabeth Larson, Ph.D., Arizona State University, 1985.
A. William Laughlin, Ph.D., University of Arizona, 1969
Spencer G. Lucas, Ph.D., Yale University, 1983.
Christopher K. Mawer, Ph.D., Monash University, 1981.
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. Wohletz, Ph.D., Arizona State University, 1980.

STAFF:

George Carnako, Building Systems Mechanic
Mabel T. Chavez, Editorial Assistant II
Sara Coulie, Clerk Specialist V, Institute of Meteoritics
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
Robert Macy, Electronics 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
Debra A. Spilde, Administrative Assistant, Institute of Meteoritics.

VISITING SCIENTISTS (in residence, 1992-1993):

Dr. Weiliang Gong, Institute of Geochemistry, Chinese Academy of Sciences, visiting scientist working with R. Ewing.
Dr. Zeke Snow, California Technical Institute, visiting scientist working with J. Geissman.
Dr. Charles Landis, Otaga University, New Zealand, visiting scientist working with G. Smith.
Dr. Maria-Theresa Menager, French Atomic Energy Commission, visiting scholar working with R. Ewing.
Dr. Eduardo Ladeira, Federal University of Minas Gerais, Belo Horizonte, Brazil, visiting scientist working with C. Klein.
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<th>DEPARTMENTAL COMMITTEES, 1992-93</th>
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<tr>
<td><strong>GRADUATE COMMITTEE</strong></td>
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<tr>
<td>J. Geissman</td>
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<td>M. Campana</td>
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<td>K. Karlstrom</td>
</tr>
<tr>
<td>J. Papike</td>
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<tr>
<td>G. Smith</td>
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<td><strong>COLLECTIONS COMMITTEE</strong></td>
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<tr>
<td>G. Smith</td>
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<tr>
<td>R. Ewing</td>
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<tr>
<td>C. Klein</td>
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<tr>
<td><strong>UNDERGRADUATE COMMITTEE</strong></td>
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<td>C. Klein</td>
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<tr>
<td>L. Crossey</td>
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<td>S. Huestis</td>
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<td>L. Woodward</td>
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<td><strong>SCHOLARSHIP COMMITTEE</strong></td>
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<td>W. Elston</td>
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VEHICLE COMMITTEE

G. Carnako
A. Quattrocchi
(Student Representative)

LIBRARY LIAISON

S. Huestis

THIN SECTION LAB

J. Grambling

DEPARTMENTAL PUBLICATIONS

B. Kudo
A. Quattrocchi
APPOINTMENTS AND SEPARATIONS

APPOINTMENTS TO FACULTY

Gary Smith, Associate Professor, August, 1992.

SEPARATIONS FROM FACULTY


APPOINTMENTS TO STAFF

Mark Miller, Senior Research Associate.
Nicole Bordes, Senior Research Associate.
Katerina Petronotis, Senior Research Associate.
Robert Macy, Electronics Technician
Roberto Molina-Garza, Senior Research Associate.

SEPARATIONS FROM STAFF

Mohammed Ghweir, Thin Section Preparator.
Dagoberto Lopez, Drafting Technician.
Thomas Servilla, Expert Technician II, Institute of Meteoritics.
Mary L. Sherman, Editorial Assistant II.
II. SIGNIFICANT DEVELOPMENTS, ACCOMPLISHMENTS, AND PLANS
ACHIEVEMENTS AND ACTIVITIES

INTRODUCTION

This annual report summarizes the activities, accomplishments and goals of the Department of Earth and Planetary Sciences (EPS), including the Institute of Meteoritics (IOM), during the 1992-93 academic year, from July 1, 1992 to June 30, 1993. Most details of faculty activities (Part III) are derived from biographical supplements for calendar year 1992, whereas the general discussions and information on other aspects of the Department include the period from July 1, 1992 to June 30, 1993. 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 that comprehensively summarizes the Department's history during the past year, and will be "used as a working document by the President and other administrative officers" (memo from A. Brown, June 24, 1992), we have endeavored to make it as complete as possible.

During the 1992-93 academic year, the Department of Earth and Planetary Sciences included 17 regular tenured or tenure-stream faculty, and the Caswell Silver Research Professor, an endowed Chair. In addition, 14 Ph.D. - level scientists (5 in IOM) fill a variety of non-faculty positions within the Department. Most are scientific staff with specific responsibilities relating to our analytical laboratories and departmental research endeavors, but several are research scientists supported entirely by external funding (Barger, Perry, Petronotis, Rietmeijer). One post-doctoral fellow (Bordes) and one person (Molina-Garza) supported by a Ford Foundation minority post-doctoral fellowship were also in residence in the Department in 1992-93. The Departmental faculty is thus augmented by a significant number of other Ph.D. - level geoscientists, who in some cases participate in teaching and advising of graduate students, and add to the research capability and scholarly reputation of the Department.

Permanent scientific staff also include several Master's level technician/scientists, and the office and administrative clerical and support staff also contribute vitally to the functioning of the Department.
other geoscientists were in residence in the Department for periods ranging from a couple weeks to the entire year, conducting research as visiting scientists and working closely with faculty and staff members. The names of all these departmental personnel are included in Part I of this report.

FACULTY AND STAFF ACTIVITIES

Position Changes in Faculty

Both Full Professor positions vacated in 1991 (S. Wells, D. Brookins) remained vacant through the 1992-93 academic year. However, in early Fall the Department received authorization to search for new faculty at the Assistant Professor level to fill these positions, and successful searches were completed by the end of the Spring semester (see below).

Beginning in August 1992, Dr. Gary A. Smith assumed a position as Associate Professor on the faculty. Previously, he had been a Caswell Silver Research Professor and then Curator/Senior Research Associate within the Department. Dr. Smith's research interests are in the areas of volcanology and clastic sedimentology, and in his new role has strengthened the faculty's expertise and endeavors in both fields. Even before conversion to the faculty, Dr. Smith had played an important role in establishing the joint Earth and Planetary Sciences/Los Alamos National Lab program in volcanology, in supervising graduate students, teaching, and in a variety of other activities.

Dr. Roger Y. Anderson retired from the regular faculty at the end of June 1993. Roger came to UNM as an Instructor in 1956, and rose through the professorial ranks to Full Professor during his 37 years in the department. During his time here, he brought recognition to the Department and University through his studies in palynology, cyclic sedimentary processes and paleoclimatology, taught popular undergraduate courses in ancient environments and climates, and guided the studies of 17 Master's and 11 Ph.D. students. He obtained the first significant externally funded research grant (from NSF) awarded to a departmental faculty member (in 1961), for study of varved Permian Basin evaporite sediments, and supported the first post-doctoral research fellow in the Department. The quality and significance of his scientific research were recognized by his selection
to give the UNM Annual Research Lecture for 1993. He spoke on “Climates of the Future: a retrospective,” on April 29, 1993, and is the third Department faculty member to be honored with this annual lectureship, the highest award UNM bestows on its faculty for research accomplishments. He also gave the annual John Wesley Powell Memorial lecture at the 1993 meeting of the Southwest Division of the AAAS in May. Although Roger is retiring from active teaching and other faculty duties, he will continue to conduct ongoing research projects within the Department as a Senior Research Professor.

Other Position Changes

Personnel support for departmental analytical laboratories increased significantly in 1992-93. Dr. Mark Miller (Ph.D., UNM, 1992) assumed the position of Senior Research Associate in charge of the X-ray diffraction laboratory on July 1, 1992, a continuation of his previously entirely grant-supported duties. At the same time, Dr. Graham Layne (Ph.D., Toronto, 1988) began an appointment as Senior Research Associate with the Institute of Meteoritics. He is manager of the IOM/Sandia Labs Secondary Ion Mass Spectrometry Laboratory at UNM’s Advanced Materials Laboratory. Following a search during Spring and Summer 1992, Robert Macy became our full-time electronics technician in early August, with responsibilities in maintaining, trouble-shooting and repairing the Department’s analytical instruments. Dr. Roberto Molina-Garza (Ph.D., Michigan, 1991) began an appointment in the Department in July 1992 as a Ford Foundation minority post-doctoral fellow, working with J. Geissman on paleomagnetism research. Dr. Nicole Bordes (Ph.D., Toulouse, France, 1986) joined R. Ewing’s research group as a post-doctoral scientist in December, 1992.

In April and May, 1993, Mohammed Ghweir (thin-section preparator) and Mary Sherman (editorial assistant), resigned from their positions within the Department. Stacy Kaser (research technician) is on leave of absence through December. The Department will seek replacements early in the 1993-94 year.

Faculty Advancement

The Senior Faculty reviewed and recommended Associate Professors John Geissman and Crayton Yapp for promotion to Full Professor during the 1992-93 year, and both received their promotions in summer 1993.
Maya Elrick's Code 3 review was favorable and she will begin a second 3-year probationary period prior to a tenure decision. J. Geissman joined L. McFadden as Assistant Chair of the Department in July 1992.

**Sabbatical Activities**

C. Klein was on sabbatical leave during the Spring 1993 semester. He completed a very active and successful sabbatical during the spring semester of 1993. In January he completed the last editorial work for the latest edition of his mineralogy textbook with C.S. Hurlbut, Jr., of Harvard University; the 21st edition of the *Manual of Mineralogy*, John Wiley, New York, 681 pp. was published in May, 1993. He continued research and writing, jointly with Professor Eduardo A. Ladeira of the Federal University of Minas Gerais, Belo Horizonte, Brazil, on three manuscripts dealing with three different Precambrian iron-formation sequences in Brazil (Professor Ladeira was a visiting scientist to our department in August, 1992). This NSF-supported research is continuing this summer, when Kase returns to Brazil for more field work and sampling. In early March he spent some time at UCLA researching the large Precambrian rock collections of the Precambrian Paleobiology Research Group of which he is a member. In May, 1993 J. William Schopf (of UCLA) and Klein received an award for Excellence in Professional and Scholarly Publishing (in Geography and Earth Science) from the Association of American Publishers for the *Proterozoic Biosphere: A Multidisciplinary Study*, edited by Schopf and Klein, Cambridge Univ. Press, 1992, 1348 pp. Kase also completed a revision of his book entitled *Minerals and Rocks: Exercises in Crystallography, Mineralogy, and Hand Specimen Petrology*, first published in 1989, John Wiley, New York, 402 pp.; this revision will be available by the beginning of the fall semester. He also compiled subject matter for a 35-mm slide set (134 slides) for instructors to accompany the 21st edition of the *Manual of Mineralogy*. This slide set is now in production at John Wiley, New York. He was invited by the Mineralogical Society of America (MSA) to contribute the first chapter (which he by now has completed) entitled "Rocks, Minerals, and a Dusty World" for *Reviews in Mineralogy* on the subject of *Health Effects of Mineral Dusts*. This will be part of an MSA short course prior to the fall, 1993 Boston Annual GSA meetings. He was also invited by the MSA to submit an abstract entitled "What are some of the Fundamental and Essential
Subjects to be Covered in a two semester Mineralogy-Petrology sequence?” for the MSA theme session Teaching Mineralogy at the Boston GSA.

He also found time to aid the S.M. Stoller Corporation of Albuquerque, New Mexico, in the development of a possible computer-based tutorial module in mineralogy. This is a highly interactive PC-based software module for individualized instruction and review. The aim is to exhibit such a module for mineralogy instruction at the GSA in Boston. In addition, he continued as departmental undergraduate advisor to our majors and minors while on sabbatical.

Teaching

Student enrollments in Department of Earth and Planetary Sciences courses during the 1992-93 academic year, as indicated by total student credit hours (SCH), was 8,058, an increase of 6.1% from the 7,595 SCH of 1991-92. This was the highest academic year enrollment in the Department since 1982-83. True departmental enrollments are actually somewhat higher each year than the academic-year totals indicate, because three core field courses, two of them required for the B.S. degree, are conducted during the summer and are not included in the AY figures.

Again this year, the Department had two vacant faculty positions, in geochemistry and geomorphology, which decreased course availability to some extent. However, to satisfy the needs of students in those fields, the Department offered EPS-481 (geomorphology), taught by finishing Ph.D. student Grant Meyer, and EPS-504 (geochronology). The geochronology course was coordinated by K. Karlstrom, and involved numerous visiting lecturers speaking on geochronological techniques with which they are especially familiar. The list of speakers was distinguished, and included people from Los Alamos National Lab, New Mexico Tech, M.I.T., and the U.S. Geological Survey, as well as members of the departmental faculty and research staff. Both courses were very successful; enrollment in EPS-481 was 15, and in EPS-504 was 18, the highest of any graduate course this year.

Several new courses were taught for the first time this past year. Silver Research Professor G. Acton, with S. Huestis, offered a graduate seminar on plate tectonics, and S. Huestis taught a course for non-majors (G-115) on geological disasters. W. Elston developed and taught EPS-252 (volcanoes; benign and malign) as
part of the volcanology program. The faculty discussed the creation of a 400-level course on tectonics that would be team-taught; J. Geissman, K. Karlstrom and L. Woodward are in the process of developing this course.

As in the past, most faculty members taught at least one 100- or 200-level course during the year in addition to higher-level undergraduate and graduate courses. Except for laboratory sections, a section of EPS-101 taught by a doctoral student (D. Larsen), and a small number of other courses like those mentioned above, Earth and Planetary Sciences faculty teach all of the courses offered by the Department. Use of non-faculty, part-time instructors is among the lowest of all departments in the College.

According to University records, there were 65 declared Earth and Planetary Sciences majors in 1992-93, up 20% from the previous year. The Department's records showed 59 Earth and Planetary Sciences undergraduate majors in 1992-93.

Additional information concerning courses and teaching by individual faculty members is presented in Part III-1 of this report. Graduate student activities and information are discussed later in a separate chapter (Part VI).

Research and Publication

The faculty, research staff and students of the Department continued their high level of productivity in research in 1992-93. Research--contributing to human knowledge in one's discipline--is an essential and fundamental function of the Department of Earth and Planetary Sciences 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 stature 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 also about how knowledge is gained, and (especially with graduate students) providing support for thesis/dissertation work and in the mentoring process of future geoscientists.

During 1992, members of the Department of Earth and Planetary Sciences and the Institute of Meteoritics, including faculty, research staff and some students, produced more than 230 publications. This includes three edited books, 55 papers in refereed journals, 44 refereed papers in symposium/conference
proceedings volumes, 15 book chapters, two published geologic maps, one book review, 11 nonrefereed publications, 12 technical reports, and 88 abstracts. A few highlights of the Department's 1992 publication efforts are worth mentioning. Both R. Anderson and C. Yapp (with H. Poths) published papers in the prestigious international journal, Nature. Anderson discussed a possible connection between surface winds, solar activity, and the earth's magnetic field, and Yapp and Poths reported on the determination of ancient atmospheric CO$_2$ pressures from stable isotope studies of the iron mineral goethite. J. Papike's address as president of the Geochemical Society, concerning geochemical work on volcanism in the Valley of Ten Thousand Smokes, Alaska, was published in Geochimica et Cosmochimica Acta. K. Klein coedited and contributed several papers to a 1350-page book, The Proterozoic Biosphere, the definitive work on the geology and environments of the early earth. And R. Ewing's research group published more than 20 papers, mainly analytical studies of various natural and artificial materials to determine their characteristics and in some cases, suitability as radioactive waste repositories.

Of the 119 major publications (edited books through geologic maps) by the Department, 31 had student coauthors; and of the 88 abstracts, 30 had student coauthors, some of whom made the professional presentations on which the abstract was based. These figures indicate the great effort made by the faculty in involving graduate students in research, and the close interaction between faculty and graduate students in collaborative research efforts. 1992 publications by faculty and others are listed by category in Part III-2 of this report.

Faculty and research staff also continued to attract a large number of grants and contracts to the Department and University in support of their research. About 70 different grants/contracts supported the research of departmental personnel in 1992 (see Part III-3 for a detailed list); total value of all grants/contracts in effect during some part of 1992 was approximately $5 million. Of this total, new awards in 1992 comprised 33 grants/contracts valued at $1.638 million, virtually the same as in 1991. Of the 1992 new grant funding, 84% was from Federal agencies, mainly the National Science Foundation ( = 61%), but also from DOE/National labs, NASA, and the National Park Service. Competition with colleagues for these awards is always rigorous. Only about 2% of the external funding was derived from the State of New Mexico or the University. The amount of new external research funding received each year by members of the Department regularly exceeds by 20% or
more the entire annual state-supported departmental budget. Overhead returned to the University on the portion of departmental grant/contract funds actually expended during 1992 was approximately $300,000. In addition, the Institute of Meteoritics (not included in these figures), was supported by 11 grants/contracts in 1992-93, from which about $365,000 was expended during that year.

Not only do these grant and 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, Earth and Planetary Sciences graduate students are becoming increasingly successful in attracting awards supporting their thesis/dissertation research, from institutions like the Geological Society of America, Sigma Xi and NASA (see Part IV).

In addition to publications and grant/contract-supported research, the faculty and research staff also pursued a wide variety of other research projects during 1992 that were not externally funded or published upon during the year (see Part III-4).

Other Scholarly Activities

Most of the 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, and other professional activities are listed in Part III-6.

The total involvement in professional activities is too lengthy to adequately survey here, but some of the faculty's contributions are significant nationally and internationally, and deserve brief mention. Participation on various National Science Foundation panels has become more common among the faculty and research staff in recent years; important in the context that the greatest percentage of the Department's external funding comes from NSF. L. Cressey began a three year term on the NSF Advisory Committee for Earth Sciences early in 1993; J. Geissman is a member of the Division of Earth Sciences Instrumentation and Facilities Panel; R. Jones
participates as a panel reviewer for the Instrumentation and Laboratory Improvement Program; and K. Karlstrom is a panelist for both the Post-Doctoral Earth Science and Tectonics Programs. F. Rietmeijer is a reviewer for several NASA panels. R. Ewing is a member of National Academy of Sciences and National Research Council Panels on the Waste Isolation Pilot Project and on the Remediation of Buried and Tank Wastes, as well as beginning a second term as Secretary of the International Union of Materials Research Societies, and participating on several committees of the Materials Research Society itself. Several other faculty members are officers in national professional organizations: J. Geissman is Secretary of the Geomagnetic/Paleomagnetic Section of the American Geophysical Union; J. Papike is a member of the Council of the Geochemical Society as Past-President, and a Councilor for the Society of Economic Geologists; and G. Smith is Secretary of the International Commission on Volcanogenic Sediments.

Participation by the faculty and research staff as Associate Editors or on the editorial boards of international, refereed journals is substantial. L. Crosse (Geology), R. Ewing (Journal of Nuclear Materials), J. Geissman (Geological Society of America Bulletin, Geology, Journal of Geophysical Research), J. Grambling (Geology, Journal of Metamorphic Geology), R. Jones (Meteoritics), K. Karlstrom (Precambrian Research), K. Klein (Precambrian Research, McGraw-Hill Encyclopedia of Science and Technology), H. Newsom (Geochimica et Cosmochimica Acta), and G. Smith (Journal of Sedimentary Petrology) all contribute their time and effort in assisting the dissemination of new knowledge through these varied journals.

From May 22 to 28, 1993, the annual meeting of the American Crystallographic Society was held in Albuquerque; the Department's M. Miller was a member of the organizing committee for the meeting.

*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 J. Geissman served on the Faculty Senate during the spring of 1993 semester. The faculty also 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 museums, 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 about 1,445 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.

DEPARTMENT ENDEAVORS, PLANS AND DEVELOPMENTS

Introduction

The Department operated at less than full strength during the 1992-93, with two faculty vacancies that have existed since mid-1991 (positions formerly filled by Brookins and Wells). However, authorization to search for two new assistant professors to fill these positions was received early in Fall 1992, and these searches were concluded successfully during the year (see below). During the past academic year, the Department made progress on several other issues relating to its operation and advancement, and these, as well as noteworthy events and occurrences in 1992-93, are summarized below.
Name Change

More than a year after the faculty, in 1991, decided to change the name of the Department from "Geology" to "Earth and Planetary Sciences," the necessary University approvals had been obtained, and the new name officially was adopted on January 1, 1993.

New Faculty

During Fall 1992 the Department began searches for two new faculty members in the areas of geomorphology and geochemistry. The two searches were successfully concluded with position offers to the Department's top choices for each position by late Spring, 1993. The two search committees contributed substantially in this process and deserve much of the credit for the smooth searches and their favorable outcomes. L. McFadden chaired the geomorphology search committee, which also included R. Anderson, M. Elrick, K. Karlstrom, G. Smith and graduate student E. McDonald. L. Cressey chaired the geochemistry search committee, which included M. Campana, J. Grambling, S. Huestis, C. Yapp and graduate student D. Larsen.

Dr. Yemane Asmerom will arrive in Fall, 1993 as our new geochemist. Yemane received his doctoral degree in 1988 from Arizona State, and since then has had postdoctoral appointments at Harvard and Minnesota. His main research interests are in the application of uranium-series isotopes to the study of geological processes and the environment, and of the distribution and cycling patterns of several isotopes to provide information about continental and crust-mantle dynamics, magma processes, and the isotopic evolution of seawater. With broad interests in several isotope systems and their applications to both environmental and more traditional geological problems, Dr. Asmerom will complement the research efforts of several faculty in different areas as well as pursue his own innovative isotope studies. He will also assume responsibility for the Department's isotope/mass spectrometer laboratory, which will be completely renovated under his supervision to produce a high-class, clean-room environment during the 1993-94 year. The Department is grateful to Associate Provost for Research Ellen Goldberg for committing the major share of the funding required to establish this new laboratory.

Dr. Frank Pazzaglia will join the faculty as geomorphologist in Fall, 1994, following a one-year postdoctoral appointment at Yale. Frank recently received his doctorate from Penn State University, with a
dissertation concerning the tectonic geomorphology and late Cenozoic geology of the U.S. Atlantic coast passive margin. He will bring to the Department broad interests and expertise in a wide variety of geomorphic/neotectonic processes, an excellent background in field geology and geomorphology, and a synthetic viewpoint. On the faculty, he will play a central role in the Department’s Quaternary Studies Program and guide some of the numerous graduate students who are each year attracted into this program. Frank is no stranger to southwestern geology, having received his M.S. degree from this department in 1989.

We look forward to the arrival of both of these new additions to the faculty.

**Future Vacant Faculty Position**

With Roger Anderson retiring from the regular faculty in June, 1993, the Department discussed in general terms the nature of this position and in what area it could best be filled. The faculty decided to fill this position with someone in the area of paleoclimatology/paleoenvironmental reconstruction, with a research emphasis on interpretation and reconstruction of late Cenozoic climates and environments, based primarily on records in continental sediments. Knowledge of earth science processes and field-based methods would be essential, and familiarity with aspects of climate modeling would be desirable. Addition of a faculty member in this area will maintain the Department’s traditional faculty strength in paleoenvironmental/paleoclimatological studies. With Anderson continuing his research in the Department after retirement, a new faculty member in this area will effectively enhance the Department’s activities in environment-related research. This is especially important now and in the future, as more students enter the field of environmental geology, more attention is given by society to the causes and consequences of environmental change, and changes in the Geography Department open the possibility of more interdisciplinary interactions between several departments at UNM in the area of environmental studies.

The Department expects to conduct a search to fill this position during the 1993-94 year, with the new faculty member beginning in Fall, 1994.
Geography Department Interactions

R. Anderson participated in a comprehensive review of the UNM Geography Department in October 1992. As a result of that and earlier reviews, and other considerations, it appears that the Geography Department will gradually be built up with the addition of a new chair and other faculty over the next few years. A change in the Department's emphasis, towards environmental studies and geographic information technology, may open up the possibility of increased interactions between our Quaternary Studies Program and environmentally-oriented geographers. R. Anderson has proposed the exciting vision of a UNM interdisciplinary program in Earth Systems Science, which would involve members of the Earth and Planetary Sciences, Geography and Biology Departments participating within a formalized structure in research and educational activities relating to past, present and future environments (see Appendix I).

Teaching Loads

For several years, concern about course teaching loads has been a topic of discussion within the Department. Despite being highly productive in terms of research, publications, grant/contract activity, other professional endeavors, and in guidance of graduate students in their research, the Earth and Planetary Sciences faculty at UNM has historically borne a greater teaching load than faculty in most comparable geoscience departments at peer institutions, who typically teach three courses per year. Salaries at UNM are also significantly lower than salaries for geoscience faculty at peer institutions. Further, traditional departmental policies relating to course assignments, which mandated more or less equal loads for all faculty, had become increasingly less realistic for some faculty who were heavily involved with graduate student supervision and numerous research projects.

In an effort to more equitably and objectively determine appropriate teaching loads within the Department, the Chair proposed and the faculty discussed and approved a plan to reduce slightly the average teaching load and to index faculty course teaching loads to a level of activity in several important areas of scholarly endeavor. These areas include previous teaching loads, advisement and mentoring of graduate students, research activity, as determined by publications and grant/contract success, and service to the Department,
University and the profession. Individual teaching loads will be adjusted in the future with reduced loads for those working at above-average levels in the areas noted above, and somewhat higher-than-average loads for those whose activities overall in the other areas are below the departmental average. The necessity of teaching all undergraduate courses required for majors, and of offering reasonable numbers of undergraduate elective and graduate-level courses was also factored into the load determinations. The new plan will be implemented during the 1993-94 academic year.

Changes in Graduate Student Exams

The Graduate Committee proposed changes in both Ph.D. exams (currently consisting of a qualifying exam and comprehensive exam) and in the Master's comprehensive exam. The nature and desirability of various possible changes were discussed during the year. No action was taken to change the Ph.D. exams because alternatives agreeable to most of the faculty were not advanced; discussions will continue next year.

At the end of the Spring semester the faculty reached consensus on changes in the Master's exam, and the revised exam procedures will become effective for students entering the program in Fall, 1993. Under the present system, the student was examined in detail in specialty areas by two faculty chosen by the student, and was examined on general geology and basic principles by two faculty chosen by the Chair. In the new format, emphasis is placed on the student presenting a proposed M.S. thesis project, and being questioned by his/her thesis committee and one additional faculty member selected by the Chair. Questions asked by this committee will focus on areas encompassed by the student's proposed research, but can range into general areas of the geosciences that the student should be familiar with in order to complete the thesis research. The rationale behind the new exam procedure is to encourage the student to focus on thesis research early and be ready to begin the research during the first summer in residence, and to reduce the often considerable amount of time some students spend (in addition to coursework, teaching, etc.) in preparing specifically for the exam. The new exam procedures will be evaluated after two years, and a decision made on whether to continue with them.
Computer Facilities Upgrades

The Department surveyed and evaluated its computing facilities early in the year. As in many other fields, computers are becoming essential tools for geoscientists in conducting many kinds of research (especially involving modelling of geologic processes), in facilitating the production of research papers and graphics, and in training students for future careers in the geosciences. Currently, many faculty and some graduate students have their own personal computers, and computers are a standard component of the analytical labs. However, few computers are available routinely to all students, and only a few of the Department's computers are connected to the campus ethernet system.

Accordingly, the Department pursued two initiatives, designed to increase the availability and sophistication of hardware, and to strengthen internal networking capabilities and connections with the university ethernet system. A departmental proposal, mainly written by G. Acton, was submitted to NSF in December 1992. It was successful, and with some matching funds from the Department and College, will provide the Department with more than $100,000 for upgrading its computer facilities, especially in adding a file server and additional hardware and software. A second proposal, compiled by M. Miller and the department's computer committee, was submitted to the Dean in February 1993, as part of a College package that went to a University Committee examining computing needs campus-wide. This proposal emphasized additional connections to the campus ethernet system and enhancement of internal and external networking capabilities.

The Department also supported the connection of some personal computers on the second and third floors of Northrop Hall to the ethernet system via the acquisition of a multiport repeater, and provided some funding towards an upgrade of computer facilities in the paleomagnetism laboratory, which will mainly be funded by a J. Geissman NSF grant. Next year, the Department will continue discussions of its computer needs, particularly with respect to allocation of the equipment that will be obtained with the NSF grant. In addition, the Department's capabilities will soon be sufficiently complex so that designation of some faculty or staff member to oversee these facilities will become necessary.
Library Journal Cutbacks

During Fall, 1992, the Library announced the necessity of significantly cutting back on the number of journals it subscribes to, because of an inadequate budget for such acquisitions, coupled with a large rise in journal subscription prices over the past few years. Together with other departments, the Department of Earth and Planetary Sciences went through the somewhat agonizing process of determining which journals it should recommend for cancellation, to attain an approximately $7,000 savings in subscription costs. All geosciences and many related journals were evaluated to determine the degree of usage they receive and their importance to faculty/student research. By the end of the Spring semester a list of proposed cancellations was forwarded to the Science/Engineering Library by S. Huestis, the Department's library liaison. The exercises was useful in allowing us to identify journals that were not receiving much use, and will be helpful when (and if) we can add new and more important journals in place of the low-use titles that could be cancelled with little negative effect on the department's programs.

During summer, 1993, the Library announced a one-year reprieve in cancellations because of additional funding from the New Mexico Legislature. Nevertheless, the spectre of diminished library support for departmental research activities remains.

Capital Improvements

No major or minor capital improvements to Northrop Hall occurred in 1992-93. For several years the Department has requested the enclosure of the exterior lightwell along the north side of the basement, in order to create additional secure and protected storage space, and to replace the present unsightly clutter of exposed specimens and dilapidated storage sheds in that area. This project has appeared on College priority lists for several years, but as yet no action has been taken.

A proposal for an addition of a new wing to Northrop Hall was submitted to the Dean this year. Space for such an addition is available around the building; it could project west into the parking lot or east across the lawn towards Yale Mall, and could be from two to four stories high. There is ample justification for the addition of a new wing. At present, Northrop Hall contains very little unused space. In recent years, the number of
scientific staff, visiting scientists on extended stays within the Department, and analytical instruments has grown considerably. This reflects the faculty's success in obtaining external funding and its scientific reputation, which attracts other scientists here to collaborate on research and to use the analytical facilities. Also, faculty research each year increases the volume of specimens and samples that must be stored indefinitely because they represent data upon which publications and reports are based, and must be available to other workers if needed. As of July 1993, we will have two former faculty (now Emeritus Research Professors) in the Department, who maintain active, externally funded research programs and retain office and laboratory space. The number of graduate students is nearly at an all-time high, and office space, even in small cubicles in a room in the basement, is becoming very limited. And the Department of Earth and Planetary Sciences shares Northrop Hall with the Institute of Meteoritics, which also has experienced increased space needs in recent years. Additional space to accommodate this growth is one of the Department's highest priorities.

Two small, internal renovations to increase useful space in the building were accomplished over the past year. Most of Room 110 (near the southwest loading dock), which had been used for storage, has been modified and renovated for use as a sample preparation area. It will accommodate a jaw crusher and shatterbox (for the reduction of rock samples to fine grains suitable for mineralogical and geochemical analysis) as well as other sample preparation equipment. The major pieces of equipment, valued at more than $27,000, are on indefinite loan from Sandia Laboratories for use in studies of the Yucca Mountain, Nevada, radioactive waste repository site.

An additional room (B-94) on the stairwell landing between the basement and first floor, was created by walling off unused landing space. It will serve as a small conference/gathering room for R. Ewing's mineralogy/materials science research group.

Analytical Facilities

Two major additions to UNM's complement of large analytical instruments were made in 1992-93 through the efforts of departmental faculty and research staff. Installation of a secondary ion mass spectrometry (SIMS) instrument in the UNM-Sandia-Los Alamos Advanced Materials Laboratory on the south campus was
completed in late summer, 1992, and the Advanced Materials Lab was officially dedicated on August 27. The SIMS instrument, purchased at a cost of $1.3 million by Sandia in 1989, is jointly operated by the Institute of Meteoritics and Sandia Labs, and is managed by Dr. Graham Layne, Senior Research Associate with IOM. It is partially funded by NSF for use as a national SIMS facility, one of five in the U.S.

Progress was made on selecting a high-resolution analytical electron microscope this past year. This instrument is being acquired with $230,000 from NSF (based on a proposal submitted by R. Ewing and L-M. Wang, Department of Earth and Planetary Sciences, and A.K. Datye, Department of Chemical and Nuclear Engineering), matched by an equal amount from UNM (Research Administration Office, College of Arts and Sciences, Department of Earth and Planetary Sciences, and the Centers for Microengineered Ceramics and High-technology Materials). Ewing and Wang spent considerable time evaluating and selecting the instrument and negotiating with several potential vendors concerning its purchase. Installation of the microscope in the Earth and Planetary Sciences Department is anticipated in September, 1993. Acquisition of this instrument forms an instructive paradigm for how the University and several units within it can combine efforts and resources to obtain a multi-user facility that will benefit researchers and students across departmental and college lines, and augment the University's array of advanced analytical facilities.

Also, during the past year the departmental facilities committee, chaired by J. Papike, completed its review of all of the Department's labs and analytical facilities. From this review has come a much clearer understanding of the uses, primary users, economics, problems and needs of these facilities and of the people who manage them. This will aid the Department in planning for the future and in prioritizing for future support of the analytical labs.

At present, most of the major analytical facilities that are utilized significantly by other UNM departments and/or researchers and students at other institutions (in addition to Earth and Planetary Sciences departmental users) have adequate technical support. The only multi-user major research facility within the Department that is without a staff technician or scientist assigned to it is the paleomagnetism lab. Annual funding of the operation of the Department's analytical laboratories is mainly subsidized by faculty grants and user fees. These facilities would benefit from some additional University support, particularly in subsidizing the
instructional uses of these labs. The Department regularly offers graduate courses providing students (mainly from other departments) training in the use of these instruments necessary for completion of thesis and dissertation work, but the expenses of offering this training are generally not supported adequately by the University.

**Volcanology Program**

The joint Department/Los Alamos National Lab volcanology program, which began in 1991-92, completed its second successful year in 1992-93. During the summer, 1992, G. Heiken (LANL) taught Earth and Planetary Sciences-300 (volcanoes and human affairs), and the inaugural field volcanology course (EPS-451) was held in late summer. The course was based at UNM’s Young Ranch facility near Cochiti, which, through the efforts of G. Smith, the Facility Planning Office, and Physical Plant, was partially remodeled to serve as a field station in time for the beginning of the course on July 25.

The course attracted 14 students, six of whom were from other countries (Italy, Austria, Scotland, Canada (two), and Czechoslovakia); U.S. students represented seven different states. During the three weeks of the course, students worked on several projects in the spectacular and varied volcanic terrains of the Jemez-Cochiti area, and observed the geology of the large calderas in southwestern New Mexico on a three-day field trip. G. Smith assumed the main role in designing and instructing the course, but nearly all of the UNM (Smith, Elston) and LANL (Heiken, Baldridge, Goff, Wohletz) volcanologists in the program participated in the field course to some extent. This course is virtually unique in the country as a rigorous, field-based introduction to volcanic rocks and processes, and represents, in our view, an outstanding joint effort between UNM and a national laboratory. Last summer’s course was nicely profiled in a story in the Winter 1993 issue of **Mirage**, the UNM alumni magazine.

Additional volcanology courses, including Earth and Planetary Sciences 550 (advanced volcanology), E&PS-252 (volcanoes, benign and malign), and E&PS-450 (volcanology) were taught during the 1992-93 academic year. The second field volcanology course, with a preliminary enrollment of 16, will be held in late summer, 1993.
During 1992-93 the Basin Studies Program was linked more firmly with the Energy, Exploration, Education (EEE) Fund, which is managed for the Department by the UNM Foundation. EEE was originally established in the late 1970s to support the Department's involvement in training students for careers in the energy-extraction industries. Over the years, it has periodically allowed the Department to bring to UNM a distinguished visiting professor of petroleum geology, and to facilitate other interactions between students and the petroleum industry. The faculty agreed this past year that some of the revenue generated by the EEE fund should be utilized to support the Basin Studies Program, as the disciplines encompassed by the program include the geological environments in which petroleum forms and concentrates. Progress was made in establishing a Basin Studies Laboratory in room B-14, and equipping it with a microscope, computer and automated point counter. In addition, several dozen petroleum geology and related books and maps, donated to the Department by the American Association of Petroleum Geologists at its annual meeting in April, 1993, have been placed in the Basin Studies Laboratory.

Possibly the most memorable (and disruptive) event occurring in the Department during the past year was the visit of presidential candidate Bill Clinton on September 18, 1992. Clinton used the Chair's office in the Department before and after his speech to the University community on Yale Mall, in front of Northrop Hall. A break-down in coordination between UNM and Clinton’s security team led to B. Kudo's 10 a.m. physical geology class being booted out of the lecture hall in the middle of an exam, and most other morning classes and laboratory sessions had to be cancelled as well. A. Quattrocchi was invited to be in his motorcade, and made use of an opportunity to present him with an official Department of Earth and Planetary Sciences tee-shirt, which, according to knowledgeable observers, Clinton is said to treasure. Political pundits are nearly unanimous in viewing his visit in the Department as perhaps the most critical factor in his successful election to the presidency.
The Department is very fortunate in being supported by a large group of active and enthusiastic alumni. Individually and collectively these graduates provide generous financial, advisory and moral support for many departmental activities, which contribute significantly to our success in our educational and research missions.

First among sources of alumni support is the Caswell Silver Foundation. Funds generated by the investments of the Foundation in 1992-93 supported Dr. Gary Acton, the current Caswell Silver Research Professor (an endowed chair), who began a two-year appointment in January 1992. The Foundation also provided generous stipends fully supporting two Caswell Silver/Vincent Kelley graduate student Fellows (Tracey Cascadden and Brad Ilg), and subsidized the bulk of faculty travel to scientific meetings the past year. In addition, the Foundation supported the visits of two distinguished geoscientists as Caswell Silver Distinguished Lecturers during Spring 1993. The first, Dr. Gerald Wasserburg (Caltech) was on campus January 27-30, and the second Dr. William Dickinson (Arizona) visited April 14-17. Both are members of the National Academy of Sciences. Each presented two lectures and talked with faculty and students extensively while they were here. The Department benefitted greatly from its interactions with these two Distinguished Lecturers.

The Silver Foundation also made possible, as it does each year, two $500 Caswell Silver Meritorious Staff Awards, presented to two outstanding, non-academic staff members. These awards are a tangible way the faculty expresses its deep appreciation to the Department staff for its efforts in contributing to the operation and advancement of the Department. This year's recipients were Sally Hayes (Accounting Technician) and Alice Quattrocchi (Administrative Coordinator).

Donations and contributions from alumni, faculty and friends of the Department support about a dozen scholarship funds, mostly managed by the UNM Foundation. The interest generated by these funds annually is utilized to award scholarships to undergraduate and graduate students. Such scholarships are augmented by other scholarships awarded by the Department, and scholarships from institutions outside the University and occasionally fellowship funds from the University. A full summary of scholarships and fellowships received by Earth and Planetary Sciences students is presented in Part VII of this report. Here we note that in 1992-93
scholarships derived from alumni-supported funds amounted to $9,245 awarded to nine undergraduate students (Leonard, Campbell and Pfeiffer Scholarships), plus $15,820 awarded to 19 graduate students (Alumni Fellowship, Miossec, Rhodes, Vann and Wengerd Scholarships).

The Department also maintains contact with its alumni through gatherings at professional meetings, newsletters, and quite a lot of personal and professional contacts. In April 1993, the second edition of the Department's newsletter, Geologic Tracks, was mailed to nearly 1,000 alumni and friends. This 21-page newsletter was compiled and organized by L. Cressey, and will become an annual publication in the future. In addition, a reception for current and past members of the Department was held at the annual American Association of Petroleum Geologists meeting in New Orleans on April 16, 1993. The UNM reception has traditionally included alumni of geoscience departments at other universities along the Rio Grande (N.M. Tech, N.M. State and Texas-El Paso); this year's reception was attended by about 50 people, 27 from UNM. Alumni Pat Gratton and Charles Dodge, with eight other sponsors, helped to organize and support this year's event. Our alumni and the Department have been arranging such gatherings for more than 10 years, and they are always an excellent opportunity for alumni and present members of the Department to get together and compare notes. Christine Kozojet, the College of Arts and Sciences development officer, also attended, and she has been helpful throughout the year in suggesting and facilitating additional contacts with departmental alumni.
III. ACTIVITIES OF THE FACULTY AND RESEARCH SCIENTISTS
(Calendar Year 1992)
1. TEACHING ACCOMPLISHMENTS

Gary Acton

Fall 1992: Geol. 551 - Problems Course in Geological and Geophysical Data Analysis: (1 enrolled)

Graduate Students Supervised

Supervised Stephen Vasas, a Ph.D. candidate from Northwestern University

Supervised Llewelyn Moose, a Masters of Science candidate
Llew has been learning to operate the paleomagnetism laboratory and, depending on his progress, may begin a thesis this summer on the paleomagnetism of the Absaroka Volcanics in Wyoming.

Member of Cathy Ratcliff’s thesis committee

Graduate Students Supported

Steve Hayden: Supported one month of his summer research assistantship
Rick Livaccari: Supported 20% of his research assistantship for the Fall 1992 semester

Roger Y. Anderson

Spring 1992: Geol. 209, Earth Environment (47 enrolled)
Geol. 439, Paleoclimatology (27 enrolled)

Fall 1992: Geol. 209, Environment (44 enrolled)
Geol. 101, Physical Geology (121 enrolled)

Adrian Brearley

Spring, 1992: Geol. 513, "Meteoritics and Cosmochemistry" (6 enrolled).


Graduate Students

Advisor for Jordi Llorca and served on Ph.D qualifying exam committee.
Served on PhD. examination committee for Steve Harlan.
Michael Campana

Spring, 1992:
- Geol. 566, Selected Topics in Hydrogeology-Geological Fluid Mechanics (19 enrolled)
- Geol. 492, Problems (2 enrolled)

Fall, 1992:
- Geol. 462, Hydrogeology (30 enrolled)
- Geol. 566, (with Dr. Robert J. Glass) Special Topics in Hydrogeology - Spatial Variability in Hydrogeology (6 enrolled)

Graduate Students

Student Advisement/Thesis Supervision (*indicates support provided)

Rhawn Denniston, Samantha King, Sharman Carpenter*, J.S. Raugust, Franz Lauffer, Armando Groffman, John Appel and Gregory Wroblicky* (all M.S. in Geology)

Service on Thesis/Dissertation Committees

- Dana Baer (M.S. in Civil Engineering)
- Drew Baird (Ph.D. in Civil Engineering)
- Kathleen Bower (Ph.D. in Civil Engineering)
- Judy Stoopes (M.S. in Geology)
- David Ward (Ph.D. in Geology)
- Eric McDonald (Ph.D. in Geology)
- Paul Tashjian (Ph.D. in Geology)

Service on Examination Committees

- Paul Tashjian (Ph.D.)
- Bruce Allen (Ph.D.)
- Gregory Wroblicky (M.S.)
- Tracey Cascadden (Ph.D.)
- Ann Sasahara (MWRA)

New Course Developed

Geol. 566, Selected Topics in Hydrogeology (Geological Fluid Mechanics)

Laura Crossey

Spring 1992:
- Geol. 101.003, Physical Geology (86 students)
- Geol. 492.005, Problems (1 student)
- Geol. 548.002, Aqueous Geochemistry (11 students)

Fall 1992:
- Geol. 304, Sedimentology/Stratigraphy (9 students)
- Geol. 501, Sedimentary Geochemistry (10 students)
- Geol. 699, Dissertation (1 student)

Genhon 221*, Introduction to Science (10 students)

* co-taught with C. Chandler (physics), R. Ewing (geol.), V. Ortiz (chem.), and A. Trujillo (biol.)
Student Advising/committees:

**PhD Committees:**
- Paul Eberly (co-chair)
- Daniel Larsen (chair)
- Jennifer Loomis (chair)
- David Ward (committee member)
- Carol Treadwell (exam committee)
- Paula Watt (exam committee)
- Bruce Allen (committee member)
- Brad Ilg (exam committee)
- Bob Finch (committee member)

**MS Committees:**
- Peter McCarville (chair)
- Rhawn Denniston (exam committee)

Student Grant Support:

<table>
<thead>
<tr>
<th>Graduate</th>
<th>Undergraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Larsen (full)</td>
<td>David Schwarting (partial)</td>
</tr>
<tr>
<td>Jennifer Loomis (partial)</td>
<td></td>
</tr>
<tr>
<td>Peter McCarville (full)</td>
<td></td>
</tr>
</tbody>
</table>

**Maya Elrick**

**Spring, 1992:**
- EPS 102 Historical Geology (60 enrolled)
- EPS 441 Advanced Sedimentology (9 enrolled)

**Fall, 1992:**
- EPS 304 Stratigraphy-Sedimentology (10 enrolled)
- EPS 540 Carbonate Sedimentology (5 enrolled)

**Graduate Students**

**Advisement:**
- T. Lamaskin, M.S. (major advisor)

**Thesis Committees:**
- J. Loomis, T. Williamson, A. Hunt - Ph.D. Committee
- T. Wieberg, T. Goodspeed, L. Davidek - M.S. Committee

**Wolfgang E. Elston**

**Spring 1992:**
- Geol: 203, Earth Resources and Man (32 enrolled)
- Geol: 548, Volcanology seminar (4 enrolled)
- Geol: 552, Problems (1 enrolled)
- Geol: 599, Dissertation (1 enrolled)

**Fall 1992:**
- (Not teaching scheduled classes)
- Geol: 552, Problems (1 enrolled)
- Geol: 599, Thesis (1 enrolled)
- Geol: 699, Dissertation (1 enrolled)
Graduate Student Committees

Chairman

Ph.D. Candidate: Charles Bryan
M.S. Candidate: Kevin McKeown
Ph.D. Candidate in absentia: Charles W. Criswell

Committees Member

M.S. Candidates: Kyle Gay, Judy Stoopes
Ph.D. Candidates: Dan Larsen, Tom Williamson

External Examiner, Ph.D.

Joachim Schweitzer, University of Pretoria, South Africa
Jonathan Davis, The Open University, U.K.

Curriculum Development

Coordinator of a new Volcanology Program, jointly between UNM and Los Alamos National Laboratory (LANL). Los Alamos members of the Program (Drs. W.S. Baldridge, M. Fehler, F. Goff, G. Heiken, K.H. Wohletz) were appointed Adjunct Professors, UNM approval was obtained for the following courses:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Cr.</th>
<th>Course Title</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology 252</td>
<td>3</td>
<td>Volcanoes, Benign and Malign</td>
<td>Kudo, Elston</td>
</tr>
<tr>
<td>Geology 450L</td>
<td>4</td>
<td>Volcanology</td>
<td>Smith, staff</td>
</tr>
<tr>
<td>Geology 451L</td>
<td>4</td>
<td>Field Volcanology</td>
<td>Smith (Director of field camp)</td>
</tr>
<tr>
<td>Geology 550</td>
<td>3</td>
<td>Advanced Volcanology</td>
<td>Staff</td>
</tr>
</tbody>
</table>

Prior to approval of the above courses, the following were taught in 1992:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Cr.</th>
<th>Course Title</th>
<th>Instructor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology 548</td>
<td>3</td>
<td>Seminar-Volcanology</td>
<td>Elston, Goff, Wohletz</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Spring, 1992)</td>
<td></td>
</tr>
<tr>
<td>Geology 300</td>
<td>3</td>
<td>Problems in Geology</td>
<td>Heiken</td>
</tr>
<tr>
<td></td>
<td></td>
<td>was taught as Volcanoes and Human Affairs.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Summer, 1992).</td>
<td></td>
</tr>
</tbody>
</table>

In 1992-93, the new courses are being taught in the following sequence:

Summer, 1992: Geology 451L

This course was taught at the Young Ranch near Cochiti.
Instructors: Smith, Goff, Baldridge, Heiken, Wohletz, Elston.
Smith coordinated renovation of the property and the logistics of the course. Smith and Goff were the principal instructors.

Fall, 1992: Geology 550

Magmatic and Geothermal Systems, Wohletz, Goff
Flyers announcing the Volcanology Program and Geology 451L (Field Volcanology) were distributed to all American colleges and universities. A flyer announcing the Volcanology Program in Spanish is being distributed throughout Latin America.

The following graduate students are enrolled in Volcanology and related fields:

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Advisor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dana Bahar</td>
<td>Ph.D.</td>
<td>Smith</td>
</tr>
<tr>
<td>Charles Bryan</td>
<td>Ph.D.</td>
<td>Elston</td>
</tr>
<tr>
<td>Tracy Cascadden</td>
<td>Ph.D.</td>
<td>Kudo</td>
</tr>
<tr>
<td>Charles Criswell (in absentia)</td>
<td>Ph.D.</td>
<td>Elston</td>
</tr>
<tr>
<td>Kyle Gay</td>
<td>M.S.</td>
<td>Smith</td>
</tr>
<tr>
<td>Michael Grubensky</td>
<td>Ph.D.</td>
<td>Smith</td>
</tr>
<tr>
<td>Daniel Larsen</td>
<td>Ph.D.</td>
<td>Crossey</td>
</tr>
<tr>
<td>Glenn McLaughlin</td>
<td>M.S.</td>
<td>Smith</td>
</tr>
<tr>
<td>Kevin McKeown</td>
<td>M.S.</td>
<td>Elston</td>
</tr>
<tr>
<td>Llewellyn Moose</td>
<td>M.S.</td>
<td></td>
</tr>
<tr>
<td>Mark Servilla</td>
<td>M.S.</td>
<td>Papike</td>
</tr>
<tr>
<td>Judy Stoopes</td>
<td>M.S.</td>
<td>Smith</td>
</tr>
</tbody>
</table>

Undergraduate Honors Thesis:

Joan Lotosky

Guest Lecturer


R.C. Ewing

Spring, 1992:

Geol. 101, Physical Geology (48 enrolled)
Geol. 492, Problems (1 enrolled)
Geol. 552, Problems (1 enrolled)
Geol. 699, Dissertation (3 enrolled)

Fall, 1992:

Geol. 301, Mineralogy I (28 enrolled)
Geol. 311, Mineralogy I Laboratory (13 enrolled - Bob Finch, TA)
Geol. 311, Mineralogy I Laboratory (13 enrolled - Amy Thompson, TA)
Geol. 486, X-Ray Mineralogy (12 enrolled)
Geol. 699, Dissertation (1 enrolled)

General Honors 221 (Introduction to the Sciences) was taught in conjunction with five other instructors. Laura Crossey and I organized the three week section on earth sciences.
Graduate Students

Ph.D. Candidates:

M.L. Miller (supported by BES/DOE, graduated in May, 1992) "Image Simulation of Partially Amorphous Zircon, ZrSiO4: Implications for the Interpretation of HRTEM Images"

R. Eby (supported by BES/DOE, graduated in May, 1992) "The Amorphization of Silicates by Ion-Beam Irradiation." He received the "Outstanding Dissertation Award" from Sigma Xi.

R. Finch (supported by SKB)

Paul Eberly (supported by NRC) Les McFadden is co-advisor
Shixin Wang (supported by BES) Lu-Min Wang is co-advisor

Senior Honors Thesis in General Honors Program:

Cecilia N. Weisch, "Waste Isolation Pilot Plant the Continuing Debate"

Ph.D. Committee:

Bill Fahrenholtz (CMEC, Dept. of Chem. & Nucl. Eng.) defended his thesis in the fall semester of 1991

Ph.D. Examination Committee:

Bruce Allen, Jordi Llorca

John W. Geissman

Spring, 1992: Non-credit paleomagnetism seminar (no official classes)
Geol. 490 - (8 enrolled)

Summer, 1992: Geol. 319L - Field Geology (12 students)

Fall, 1992: Geol. 101 - Physical Geology (80 students);
Geol. 548 - Advanced Paleomagnetism (8 students)

Graduate Students Supervised

Steve Harlan, Ph.D
Richard Livaccari, Ph.D (supported through NSF)
James Callian, Ph.D
Steve Hayden, Ph.D
Hope Mulally, M.S (supported through DOE)
Cathy Ratcliff, M.S (supported through DOE)
Mike Grubensky, Ph.D (co-advised) (supported through NSF)
Dana Bahar, Ph.D, (co-advised)
John Byrd, Ph.D, Univ. Utah
Daniel Holm, Ph.D, Harvard Univ. (supported through NSF)
Suzanne Meuret, M.S (supported through USGS)
Eileen Romano, M.S
Gregory Overtoom, MS, Univ. Utah
Graduate Students Completing

Steve Harlan, Ph.D, December, 1992 (Paleomagnetism and 40Ar/39Ar Geochronology of Selected Proterozoic Intrusions, Southwest Montana, Southeastern Wyoming, and Central Arizona)

Daniel Holm, PhD, Harvard University, May, 1992, (Structural, Thermal, and Paleomagnetic Constraints on the Tectonic Evolution of the Black Mountains Crystalline Terrane, Death Valley, Region, California, and Implications for Extensional Tectonism) paleomagnetism component supervised by me

Chris Daniel, M.S, December, 1992, Metamorphic P-T Paths from the Aluminum Silicate Triple-point Rocks of North-Central New Mexico) reader

Thesis Committee Activities

Dana Bahar, PhD comprehensive exam
Tracey Cascadden, PhD qualifying exam
Sean Mullally, PhD comprehensive exam
Aurora Pun, PhD comprehensive exam
Richard Livaccari, PhD comprehensive exam
John Rogers, MS comprehensive exam
Cathy Ratcliff, MS comprehensive exam
Brad Ilg, PhD qualifying exam
Jennifer Loomis, PhD qualifying exam

Students Supported

Richard Livaccari
Hope Mullally
Suzanne Meuret
Cathy Ratcliff

Course Development

Continue to modify/improve undergraduate Field Geology program; introduced two new projects.

Taught for the first time an Advanced Paleomagnetism course.

Undergraduate Advising

Brian Horton
David Schwarting

Jeffrey A. Grambling

Spring 1992: Geol. 302, Mineralogy II (8 enrolled)
Geol. 312L, Mineralogy II Lab (8 enrolled)
Geol. 548, Proterozoic geology of southwestern North America (8 enrolled)

Fall 1992: Geol. 303, Igneous & Metamorphic Petrology (8 enrolled)
Geol. 313L, Igneous & Metamorphic Petrology Lab (8 enrolled)
Geol. 514, Precambrian geology (4 enrolled)
New curriculum developed: Geology 548 (new course); curriculum extensively revised for Geology 514.

Undergraduate student supervised: Christopher Andronicus*, B.S. Program. Support provided: $2,000 in salary and research expenses.

Graduate students supervised and support provided:

Christopher G. Daniel*, M.S. thesis completed, "Metamorphic P-T paths from the aluminum silicate triple-point rocks of north-central New Mexico", 71 p.; Spring, 1992; also currently enrolled in Ph.D. program. Support provided: $7,400 in salary.


Jane N. Pedrick*, Ph.D., Ph.D. in progress. Support provided: $5,630 in salary.

Amy G. Thompson*, Ph.D. in progress.


* Research expenses supported by my NSF grants.

Exam committees

Christopher G. Daniel (Chairman, M.S. thesis defense and Ph.D. qualifying exam)
Laurel Shastri (Chairman, M.S. thesis defense)
Sean Mullally (Chairman, Ph.D. qualifying and comprehensive exams)
Grant Fowler (Member, Ph.D. comprehensive exam)
Brad Ilg (Member, Ph.D. comprehensive exam)
Suzanne Meuret (Chairman, M.S. comprehensive exam)
Cathy Ratcliff (Member, M.S. comprehensive exam)
Paul Tashjian (Member, Ph.D. comprehensive exam)
Greg Wroblicky (Member, M.S. comprehensive exam)

Stephen P. Huestis

Spring 1992: Geol. 101 - Physical Geology (59 enrolled)
Geol. 427 - Solid Earth Geophysics (11 enrolled)

Fall 1992: Geol. 225 - Oceanography (86 enrolled)
Geol. 318 - Applications of Mathematics in Earth Science (14 enrolled)

New course development:
Geol. 115 - Geological Disasters (to be first offered Spring 1993)

Examination Committees:

Paul Tashjian
Robert Finch
Dana Bahar
Richard Livaccari
Chris Daniel

38
John Hosler

Instruction on required safety information and Right to Know law to new faculty, staff and students.

Rhian Jones

Spring, 1992: Geol. 513 - Meteoritics and Cosmochemistry (6 students enrolled)
Fall, 1992: Geol. 265 - Planetary Geology. Guest lecture, October 27.
Geol. 492 - Problems (1 student enrolled)

Advisor for Jordi Llorca, PhD student.

Karl E. Karlstrom

Spring 1992: Geol. 307 - Structural Geology (23 enrolled)
Geol. 317 - Structural Geology Lab (23 enrolled)
Geol. 548 - Proterozoic Tectonic History of the southwest (8 enrolled)
(co-taught with J.A. Grambling)
Summer 1992: Geol. 420 - Advanced Field Geology (13 enrolled)
Fall 1992: Geol. 417 - Advanced Structural Geology (7 enrolled)
Geol. 101 - Introduction to Geology (88 enrolled)

Undergraduate students supervised:

Thomas Wickam - REU Research, $2,000 NSF support
Andrew Smith - REU Research, $2,000 NSF support
Karen Holmes - Research Assistant, $2,000 NSF support

Graduate students supervised:

<table>
<thead>
<tr>
<th>Chair or co-chair *</th>
<th>Committee member</th>
<th>Exam committee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brad Ilg (Ph.D.)</td>
<td>Amy Thompson, NSF support</td>
<td>Jennifer Loomis</td>
</tr>
<tr>
<td>Kelly Silver</td>
<td>Jane Pedrick, NSF support</td>
<td>Steve Harlan</td>
</tr>
<tr>
<td>* Chris Daniel (Ph.D.)</td>
<td>Steve Hayden</td>
<td>Sean Mullally</td>
</tr>
<tr>
<td>NSF support</td>
<td>Laurel Shastri</td>
<td></td>
</tr>
<tr>
<td>Sean Mullally (Ph.D.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eric Kirby (M.S.)</td>
<td>NSF support</td>
<td></td>
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<tr>
<td>NSF support</td>
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<td></td>
</tr>
<tr>
<td>Jimmie Hutcheson (M.S.) - partial NSF support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anita Villalovos (M.S.) at NAU - partial NSF grant</td>
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<tr>
<td>Matt Owens (M.S.) at NAU - NSF support</td>
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<tr>
<td>Tom Ring (M.S.) at NAU - NSF support</td>
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</tbody>
</table>
Cornelis Klein

Spring 1992:  
Geol. 302 - Mineralogy II (9 students)  
Geol. 312 - Laboratory (9 students)  
Geol. 322L - Introduction to Petrology (11 students)  
Geol. 105L - Physical Geology Lab (Faculty Coordinator)

Fall 1992:  
Geol. 321L - Introductory Mineralogy (21 students)  
Geol. 105L - Physical Geology Labs (Faculty Coordinator)

Course development

The Geol. 321L and Geol. 322L courses were first introduced by me in the fall of 1990 and spring of 1991, as part of our required core in the new A.B. program. The new A.B. program and the course sequence therein were listed for the first time in the 1991-1993 course catalog. Quite clearly there is a rapidly increasing demand for these courses and the A.B. program in general.

The global core items for the three courses taught are (in 1992):

- Geol. 302: 5.9 - 6.0 - 6.0.
- Geol. 321L: 5.4 - 6.0 - 5.6.
- Geol. 322L: 5.6 - 6.0 - 5.7.

Since the beginning of the fall of 1991, I have been the faculty coordinator of all of our Geol. 105 laboratories. Over these three semesters the curriculum in these laboratories has now pretty much settled to what we (graduate instructors and I) consider optimal in terms of quality and learning experience. My role as a coordinator, however, has not only been one of directing better instruction in Geol. 105 but also of inducing a professional attitude in the graduate instructors with respect to their teaching duties. In all, the final result of all these efforts, in terms of students' and graduate instructors' responses has been most gratifying.

Graduate Students

- M.S. Committee Chair: Kevin McKeown
- M.S. Comprehensive Examination Committee: Grey Wroblicky
- Ph.D. Comprehensive Examination Committee: Carol J. Treadwell and Raymond Eby
- Ph.D. Qualifying Committee: Jennifer Loomis and Jane Pedrick
- Ph.D. Dissertation Committee Member: Robert Finch and Susan Foltz (Ph.D. in Physics)

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 1992:  
Geol. 225, Oceanography - (110 students enrolled).  
Geol. 263, National Parks - (51 enrolled).  
Geol. 491, Problems - (1 enrolled).
Summer 1992: Geol. 225, Oceanography - (33 enrolled).

Fall 1992: Geol. 101, Physical Geology - (210 enrolled).
        Geol. 303, Igneous and Metamorphic Petrology - (7 enrolled).
        Geol. 313L, Laboratory for 303 - (7 enrolled).
        Geol. 531L, Igneous Petrology - (7 enrolled).
        Geol. 551, Problems - (3 enrolled).
        Geol. 491, Problems - (2 enrolled).
        Geol. 493, Independent Study (1 enrolled).

Substitute lecturer for Geology 101, Physical Geology, (Crossey), spring semester (2 classes).

Students:

Graduate students supervised: D.W. Erskine, Tracey Cascadden.
Senior thesis student supervised: Tom Wickham
Ph.D. comprehensive exam committee: Dana Bahar, Aurora Pun, Mark Servilla.
Ph.D. qualifying exam committee: Llewellan Moose.
M.S. comprehensive exam committee: Cathy Ratcliff.

Barry S. Kues

Spring, 1992: Geol. 101, (98 enrolled)
        Geol. 699 (2 enrolled)

Fall, 1992: Geol. 411 (10 enrolled)
        Geol. 599 (1 enrolled)
        Geol. 699 (2 enrolled)

Graduate Students Supervised:

Adrian Hunt, Thomas Williamson (Ph.D.).
Thomas Goodspeed (M.S.).

Reader:

Thomas Wiberg (M.S. thesis).

Exam committees:

Rick Livaccari (Ph.D.).
Christopher Daniel (Ph.D.).
Catherine Ratcliff (M.S.).

Les D. McFadden

Spring, 1992: Geol. 101 - Physical Geology (99 enrolled)
        Geol. 516 - Soil Morphology seminar (10 enrolled)

Fall, 1992: Geol. 101 - Physical Geology (115 enrolled)
        Geol. 484 - Soil Genesis (14 enrolled)
Graduate Students Supervised

Paula Watt (Ph.D., Funded L.A.N.L.)
Paul Eberly (Ph.D., Funded L.A.N.L.)
Eric McDonald (Ph.D., Funded R.A., NASA)
Janet Hurley (M.S.)
Christy Terhune (M.S.)
Katherine Kendrick (M.S.)
Karen Shaffran (M.S.)

Supervised Theses Completed

Katherine Kendrick: "Soil development in the northern part of the San Timoteo Badlands, California (M.S.)
Bruce Harrison: "Temporal and spatial variability of soils in two Cajon Pass chronosequence" (Ph.D.)

Thesis Committees

John Appel
Grant Meyer
Mark Gonzales
John Rogers

Horton Newsom

Research advisor for the following students:

Ph.D. student, Phillip Noll, Jr.
Undergraduates, Stephanie Maehr

Students supported by grants

Ph.D. student: Phillip Noll, Jr., NSF supported
Undergraduate students: Stephanie Maehr, Mitch Schneider, NSF supported

Other teaching

Guest lecture, Geol. 517, April 29, 1992, "Neutron Activation Analysis".
Guest lecture, Geol. 265, August 23, 1992, "The origin of the Moon".
Lecture, Institute of Meteoritics Achondrite Seminar, October 19, 1992, "Siderophile elements in achondrites".
Directed research activities of one undergraduate student.
James Papike

Spring 1992: Geol 513 - Meteoritics and Cosmochemistry (7 enrolled)

Fall 1992: Geol 265 - Exploring the Solar System (30 enrolled)

Ph.D. Graduate Advisor for Jordi Llorca, Aurora Pun, Mark Servilla.
Support provided by NASA 9-497(Llorca), and NGT-70223(Pun) and by DOE DE-FG04-90ER14149 (Servilla).
M.S. Graduate Advisor for Grant Fowler. Support provided by NASA 9-497.
M.S. exam committees served on: Aurora Pun, Grant Fowler, Thomas Goodspeed, Hope Jacunski.
Ph.D. exam committees served on: Aurora Pun, Mike Grubensky, Brad Ilg, Jordi Llorca, Mark Servilla.
Thesis/Dissertation Committees served on, in addition to those chaired: Charles Bryan, Ray Eby, Phil Noll, Jane Pedrick, Tracey Cascadden.

Frank Perry

Graduate Students Supported

Cathy Ratcliff, Hope Mullally, Carol Treadwell, supported by Los Alamos National Laboratory Yucca Mountain Project.

Frans Rietmeijer

Guest Lecturer

"Interplanetary Dust Particles - IDPs", GEOL 265, Exploring the Solar System

Charles Shearer

Spring, 1992: Geol 513 - Meteoritics and Cosmochemistry (7 enrolled)
Geol 517L - Instrumental Methods in Geochemistry (5 enrolled)

M.S. Thesis committees served on Grant Fowler, Laurel Shastri

Thesis/Dissertation Committees served on, Sean Mullally, Phil Noll, Aurora Pun, Mark Servilla, Amy Thompson, David Ward

Gary Smith

Summer, 1992: Geol. 451L - Field Studies in Volcanology (14 enrolled)

Fall, 1992: Geol. 490 - Geologic Presentations (8 enrolled)

Provided guest lecture in Geology 304
Graduate Students Supervised:

Mark Gonzales (Ph.D., co-advisor)  
John Rogers (M.S., co-advisor)  
Grant Meyer (Ph.D., co-advisor)  
Lon Davidk (M.S.)  
Thomas Wiberg (M.S.)  
Kyle Gay (M.S.)  
Judith Stoopes (M.S.)  
Mike Grubensky (Ph.D.)  
Dana Bahar (Ph.D.)

Graduate Students' thesis completed:

Thomas Wiberg: "Stratigraphy and Transgressive-Regressive Cyclicity of the Lower Madera Limestone, Sandia Mountains, North-Central New Mexico".

Graduate students supported with external funds:


Reader on thesis/dissertation committees:

Bruce Harrison (Ph.D.)  
Katherine Kendrick-Harms (M.S.)  
James Callian (Ph.D.)  
Carol Treadwell (Ph.D.)  
Tracey Cascadden (Ph.D.)  
Thomas Bullard (Ph.D.)  
Steve Hayden (Ph.D.)  
Paul Eberly (Ph.D.)

M.S./Ph.D. Examination Committees:

Dana Bahar (Ph.D.)  
Carol Treadwell (Ph.D.)  
Llewyn Moose (M.S.)  
Tracey Cascadden (Ph.D.)

Michael N. Spilde

Spring, 1992:  
Geol. 551, (1 student problem).

Fall, 1992:  
Geol. 265, Guest lecture on Electron Microbeam Analytical Techniques.  
Geol. 265, Conducted Microprobe and SEM lab tours and demonstrations.

Tutorial Training

Training on scanning electron microscope for graduate student, February, 1992.  
Training on electron microprobe for 2 graduate students, June-July, 1992.  
Training on scanning electron microscope for graduate student, October, 1992.
Lee A. Woodward

Spring 1992:  
Geol. 101, Physical Geology (60 enrolled)  
Geol. 255L, Field Geology (13 enrolled)

Fall 1992:  
Geol. 255L, Field Geology (21 enrolled)  
Geol. 493, Problem (1 enrolled)  
Geol. 599, Thesis, (1 enrolled)

Sallyann Paschall, M.S. student advisee.

Crayton Yapp

Spring, 1992:  
Geol. 405, Thermodynamic and Physical Foundations of Geochemistry (7 enrolled)  
Geol. 410, Fundamentals of Geochemistry (9 enrolled)  
Geol. 699, Dissertation (1 enrolled)

Fall, 1992:  
Geol. 101, Physical Geology (43 enrolled)  
Geol. 502, High Temperature Geochemistry (6 enrolled)  
Geol. 699, Dissertation (1 enrolled)

Graduate Students

Ph.D. co-supervisor for Dave Ward  
Trained Chris White in use of silicate fluorination vacuum line.  
NSF R.A. support for Charles Bryan - Spring, 1992

M.S. exam committee:  
J. Rogers

Ph.D. exam committees:  
R. Finch  
J. Loomis  
A. Pun  
M. Servilla

Ph.D. thesis committees:

Dave Ward (co-chair)  
Dan Larsen (Reader)  
Jennifer Loomis (Reader)  
Robert Finch (Reader)  
Charles Bryan (Reader)  
Bruce Allen (Reader)
2. 1992 PUBLICATIONS

**Books Edited**

Scientific Basis for Nuclear Waste Management XV  
R.C. Ewing and others (eds.)  

San Juan Basin IV  
S.G. Lucas, B.S. Kues, T.E. William* and A.P. Hunt* (eds.)  

The Proterozoic Biosphere: a multidisciplinary study  
J.W. Schopf and C. Klein (eds.)  

**Articles in Refereed Journals**

Possible connection between surface winds, solar activity, and the earth's magnetic field  
R.Y. Anderson  

Climate change in Yellowstone National Park: is the drought-related risk of wildfires increasing?  
R.C. Balling Jr., G.A. Meyer* and S.G. Wells  
Climatic change, v. 22, p. 34-35 (1992)

Relation of surface climate and burned area in Yellowstone National Park  
R.C. Balling Jr., G.A. Meyer and S.G. Wells  

The Chaparral Shear Zone: deformation partitioning and heterogeneous bulk crustal shortening during Proterozoic orogeny in central Arizona  
S.G. Bergh and K.E. Karlstrom  

CI-like clasts in the Nilpena polymict urteillite: implications for aqueous alteration processes in CI chondrites  
A.J. Brearley** and M. Prinz  

Mechanisms of the transformations between the α, β and γ polymorphs of Mg₂SiO₄ at 15 Gpa  
A.J. Brearley**, D.C. Rubie and E. Ito  

Faculty authors underlined; ** = research staff; * = students
Background radiation in the Albuquerque, New Mexico, U.S.A. area
D.G. Brookins

Geochemical considerations for disposal facilities: waste disposal in desert playas
D.G. Brookins and B.M. Thomson
Deserts as Dumps? Albuquerque, University of New Mexico Press, p. 199-228 (1992)

Geochemical and detrital mode evidence for two sources of Early Proterozoic Sedimentary rocks from the Tonto Basin Supergroup, central Arizona
K.C. Condie, P.D. Noll Jr.,* and C.M. Conway
Sedimentary Geology, v. 77, p. 51-76 (1992)

Crustal versus mantle sources of granitic magmas: a two-parameter model based on Nd Isotope studies
D.J. DePaolo, F.V. Perry** and W. Scott Baldridge

Geochemistry of a boron-rich peraluminous granite pluton: the Calamity Peak layered granite-pegmatite complex, Black Hills, South Dakota
E.F. Duke, J.J. Papike and J.C. Laul

The amorphization of complex silicates by ion-beam irradiation
R.K. Eby*, R.C. Ewing and R.C. Birtcher

Implications of paleomagnetic data from crystalline basement rocks and mid-Miocene volcanic rocks for Miocene extension along a major accommodation zone, northwest Arizona and southern Nevada
J.E. Faulds, J.W. Geissman and M. Shafiquallah
Tectonics, v. 11, p. 204-227 (1992)

The corrosion of uraninite under oxidizing conditions
R.J. Finch* and R.C. Ewing

Weathering of natural uranyl oxide hydrates: schoepite polytypes and dehydration effects
R.J. Finch*, M.L. Miller** and R.C. Ewing
Deformation and age of the Red Mountain intrusive system (Urad-Henderson molybdenum deposits), Colorado: evidence from paleomagnetic and 40Ar/39Ar data
J.W. Geissman, L.W. Snee, G.W. Graaskamp, R.B. Carten and E.P. Geraghty

Synthesis of fullerene/rhodium nanocomposites via aerosol decomposition

New stratigraphic subdivisions and redefinitions of Late Archean and Early Proterozoic metasedimentary and metavolcanic rocks of the Sierra Madre and Medicine Bow Mountains, southern Wyoming
R.S. Houston, K.E. Karlstrom, P.J. Graff and A.J. Flurkey

Optimum kernels for oversampled signals
S.P. Huestis

Interpolation formulas for oversampled band-limited functions
S.P. Huestis

The Backus-Gilbert problem for sampled band-limited functions
S.P Huestis

New Mexico Fossils
A.P. Hunt* and B.S. Kues

Alteration of uranium minerals in the Koongarra deposit, Australia: unweathered zone
H. Isobe, T. Murakami and R.C. Ewing

Structural formula of uraninite
J. Janeczek** and R.C. Ewing

Dissolution and alteration of uraninite under reducing conditions
J. Janeczek** and R.C. Ewing

Petrogenetic relationships between pegmatite and granite based on geochemistry of muscovite in pegmatite wall zones, Black Hills, South Dakota
B.L. Jolliff, J.J. Papike and C.K. Shearer**

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.L. Farmer, J.D. Walker, D.S. Coleman, L.W. McKenna and F.V. Perry**
Tectonophysics, v. 213, p. 57-96 (1992)
On the relationship between isolated and chondrule olivine grains in the carbonaceous chondrite ALH A77037
R.H. Jones

New Mexico Geology
B.S. Kues

Morphology of a post-glacial fault scarp across the Yellowstone (Wyoming) caldera margin and its implications
W.W. Locke, G.A. Meyer* and J.C. Pings

Geochemical alteration of pyrochlore group minerals: microlite subgroup
G.R. Lumpkin and R.C. Ewing
American Mineralogist, v. 77, p. 179-188 (1992)

Nanophase oxide formation by intraparticle reaction
S.W. Lyons, L.M. Wang** and T.T. Kodas

Soil genesis on beach ridges of pluvial Lake Mojave: implications for Holocene lacustrine and eolian events in
the Mojave Desert
L.D. McFadden, S.G. Wells, W.J. Brown and Y. Enzel
Catena, v. 19, p. 77-97 (1992)

Calibration of the latest Eocene-Oligocene geomagnetic polarity time scale using 40Ar/39Ar dated ignimbrites
W.C. McIntosh, J.W. Geissman, C.E. Chapin, M.J. Kunk and C.D. Henry

Response of alluvial systems to fire and climate change in Yellowstone National Park
G.A. Meyer*, S.G. Wells, R.C. Balling, Jr., and A.J.T. Jull

Image simulation of partially amorphous materials
M.L. Miller** and R.C. Ewing

Presidential address: The Valley of Ten Thousand Smokes, Katmai, Alaska: a unique geochemistry laboratory
J.J. Papike

Under the volcano
J.J. Papike and J. Eichelberger
New Scientist, no. 1829, p. 34-37 (1992)

Determining paleomagnetic poles and anomalous skewness from marine magnetic anomaly skewness data from
a single plate
K.E. Petronotis**, R.G. Gordon and G.A. Acton
Morphology and genesis of carbonate soils on the Kyle Canyon fan, Nevada, U.S.A.

Pregraphitic and poorly graphitised carbons in porous chondritic micrometeorites
F.J.M. Rietmeijer**

Nonequilibrium iron oxide formation in some low-mass post-asymptotic giant branch stars
F.J.M. Rietmeijer**

To see the world in a speck of dust
F.J.M. Rietmeijer**

Petrogenetic links among granites and pegmatites in the Harvey Peak rare-element granite-pegmatite system,
Black Hills, South Dakota
C.K. Shearer**, J.J. Papike and B.L. Joliff

Pliocene and Pleistocene geologic and climatic evolution in the San Luis Valley of south-central Colorado
G.A. Smith (among 11 other authors)

A comparison of tantalum-niobium oxide assemblages in two mineralogically distinct rare-element granitic
pegmatites, Black Hills, South Dakota
M.N. Spilde** and C.K. Shearer**
Canadian Mineralogist, v. 30, p. 719-737 (1992)

Detailed in situ study of ion beam-induced amorphization of zircon
L.M. Wang** and R.C. Ewing

Ion-beam-induced amorphization of complex ceramic materials-minerals
L.M. Wang** and R.C. Ewing

Technical comment-measuring the age of the Lathrop Wells volcanic center at Yucca Mountain
S.G. Wells, B.M. Crowe and L.D. McFadden

Manganese, ferric iron, and the equilibrium between garnet and biotite: erratum
M.L. Williams and J.A. Grambling
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Smallest nonnegative solutions to linear inverse problems
S.P. Huestis
Ancient atmospheric CO\textsubscript{2} pressures inferred from natural goethites
C.J. Yapp and H. Poths**

Articles In Conference and Symposium Proceedings

A general mathematical model for tracer data analysis
I.E. Amin and M.E. Campana

Stability of uranium silicides during high energy ion irradiation
R.C. Bürlicher and L.M. Wang**

HRTEM observations on electron irradiation damage in F-apatite
M. Cameron, L.M. Wang**, K.D. Crowley and R.C. Ewing

The Lathrop Wells volcanic center: status of field and geochronology studies

Recurrence models of volcanic events: applications to volcanic risk assessment
B.M. Crowe, R. Picard, G. Valentine and F.V. Perry**

Does the Bushveld-Vredefort system (south Africa) record the largest known terrestrial impact catastrophe?
W.E. Elston

The role of natural analogues in performance assessment: applications and limitations
R.C. Ewing

Material properties: the use of natural materials to predict the long-term behavior of nuclear waste forms
R.C. Ewing and T. Murakami

Alteration of natural uranyl oxide hydrates in Si-rich groundwaters: implications for uranium solubility
R.J. Finch* and R.C. Ewing
Uranyl oxide hydrates and uraninite corrosion: relevance to "Natural Analogue" studies of spent fuel corrosion
R.J. Finch* and R.C. Ewing

Late Pennsylvanian coprolites from the Kinney Brick Quarry, central New Mexico, with notes on the classification and utility of coprolites
A.P. Hunt*

Sedimentology of a fossiliferous fluvial system, Fruitland and Kirtland Formations (Late Cretaceous) Fossil Forest area, San Juan County, New Mexico
A.P. Hunt*

The paleoflora of the lower Cutler Formation (Pennsylvanian, Desmoinesian?) in El Cobre Canyon, New Mexico, and its biochronological significance
A.P. Hunt* and S.G. Lucas

Stratigraphy, paleontology and age of the Fruitland and Kirtland Formations (Upper Cretaceous), San Juan Basin, New Mexico
A.P. Hunt* and S.G. Lucas

The Late Pennsylvanian amphibian fauna of the Kinney Quarry, central New Mexico
A.P. Hunt*, S.G. Lucas and D.S. Berman

Charles H. Sternberg and the collection of Late Cretaceous vertebrate fossils from the San Juan Basin, New Mexico
A.P. Hunt*, S.G. Lucas and N.J. Mateer

Coffinization - a possible mechanism for the alteration of spent fuel under reducing conditions
J. Janeczek** and R.C. Ewing

Preliminary report on Late Pennsylvanian Conchostraca from the Kinney Brick Quarry, Monzanita Mountains, New Mexico
H. Kozer, S.G. Lucas and A.P. Hunt*

A Late Pennsylvanian restricted-marine fauna from the Kinney Quarry, Manzanita Mountains, New Mexico
B.S. Kues
The bivalve *Dunbarella* in marine and nonmarine facies of the Upper Pennsylvanian sequence at the Kinney Quarry, Manzanita Mountains, New Mexico

B.S. Kues


James Hervey Simpson and the first record of San Juan Basin geology

B.S. Kues


Overview of Upper Pennsylvanian stratigraphy and paleontology, Kinney Quarry, Manzanita Mountains, New Mexico

B.S. Kues and S.G. Lucas


Sedimentation patterns in Pennsylvanian strata at the Kinney Brick Company Quarry, Bernalillo County, New Mexico

J.C. Lorenz, G.A. Smith and S.G. Lucas


Triassic stratigraphy and paleontology, Chama Basin and adjacent areas, north-central New Mexico

S.G. Lucas and A.P. Hunt


Fossil mammals and the early Eocene age of the San Jose Formation, San Juan Basin, New Mexico

S.G. Lucas and T.E. Williamson

New Mexico Geological Society, Guidebook 43, p. 311-316 (1992)

Comparison of in-situ and laboratory corrosion experiments with borosilicates nuclear waste glass

W. Lutz and R.C. Ewing


Multicomponent ceramic powder generation by spray pyrolysis


Geochemical evidence for warning magmatism and polycyclic volcanism at crater Flat, Nevada

F.V. Perry and B.M. Crowe


A detailed petrological analysis of hydrated, low-nickel, nonchondritic stratospheric dust particles

F.J.M. Rietmeijer


Carbon petrology in cometary dust

F.J.M. Rietmeijer

Design of an intermediate-scale experiment to validate unsaturated-zone transport models
M.D. Siegel, P.L. Hopkins, R.J. Glass and D.B. Ward*

Development of a multi-site model for adsorption of metals by mixtures of minerals 1, Overview and Preliminary Studies
M.D. Siegel, V.S. Tripathi, M.G. Rao and D.B. Ward*

Physical processes and effects of magmatism in the Yucca Mountain region
G.A. Valentine, B.M. Crowe and F.V. Perry**

Ion beam-induced amorphization of (Mg, Fe) 2SiO 4 olivine series: an in situ transmission electron microscope study
L.M. Wang** and R.C. Ewing

Analytical electron microscope study of reacted surface layer of borosilicate nuclear waste glasses

Amorphization of bulk and thin film PLZT materials by 1.5 MeV krypton ion irradiation with in situ TEM observation
L.M. Wang* and A.Y. Wu

Amorphization of PLZT material by 1.5 MeV krypton ion irradiation with in situ TEM observation
L.M. Wang**, A.Y. Wu and R.C. Ewing

Silcretes of the Paleocene Nacimiento Formation
T.E. Williamson*, L.J. Crossev and S.G. Lucas

Selachian fauna from the Upper Cretaceous (Coniacian) El Vado Sandstone Member of the Mancos Shale, San Juan Basin, New Mexico
T.E. Williamson* and S.G. Lucas

Vertebrate fauna from the Upper Cretaceous (Campanian) Pictured Cliffs Sandstone, Mesa Portales, New Mexico
T.E. Williamson* and S.G. Lucas

Stratigraphy and mammalian biostratigraphy of the Paleocene Nacimiento Formation, southern San Juan Basin, New Mexico
T.E. Williamson* and S.G. Lucas
Tectonic setting of Au-Ag deposits hosted by Proterozoic strata along the Lewis and Clark line, west-central Montana
LA. Woodward
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Geometry of Nacimiento-Gallina fault system, northern New Mexico
LA. Woodward, M.C. Hultgren, D.L. Crouse and M.A. Merrick

Highly oriented (Pb, La) (Zr, Ti)O₃ Thin films on amorphous substrates
A.Y. Wu, D.M. Huang and L.M. Wang

Book Chapters

Long-term changes in the frequency of occurrences of El Niño events
R.Y. Anderson

Long-term changes in El Niño/Southern Oscillation: evidence from marine and lacustrine sediments
R.Y. Anderson, A. Soutar and T.C. Johnson

Models for iron-formation deposition
N.J. Beukes and C. Klein

Nuclear waste disposal
D.G. Brookins

Authigenic mineralogy of sandstones intercalated with organic-rich mudstones: integrating diagenesis and burial history of the Mesa Verde Group, Piceance Basin, northwestern Colorado
L.J. Crossey and D. Larsen
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Mesozoic volcanism in the Transantarctic Mountains: depositional environment and tectonic setting
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Paleomagnetism
J.W. Geissman
Corrosion of geological and archaeological glasses
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Minerals and rocks: introduction and the nature of minerals
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Encyclopedia Britannica (Macropedia), v. 24, p. 162-184 (1992)

Mineral
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Time distribution, stratigraphy and sedimentologic setting, and geochemistry of Precambrian banded iron-formations
C. Klein and N.J. Beukes

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C. Klein, N.J. Beukes, H.D. Holland, J.F. Kasting, L.R. Kump and D.R. Lowe

Minerals and rocks: Igneous rocks
A.M. Kudo

Proterozoic mineral deposits through time
I.B. Lambert, N.J. Beukes, C. Klein and J. Vezier

Glossary of technical terms
J.W. Schopf and C. Klein

Geologic/Maps

Geology of French Mesa quadrangle, Rio Arriba County, New Mexico
D.L. Crouse, M.C. Hultgren and L.A. Woodward

Geologic map of Precambrian metasedimentary rocks of the Medicine Bow Mountains, Albany and Carbon Counties, Wyoming
R.S. Houston and K.E. Karlstrom

Book Reviews

Review of "Origin of the Earth" (H.E. Newsom and J.H. Jones, eds.)
F.J.M. Rietmeijer**
Technical Reports

Pressure of alkali monitor for vacuum drying applications; and Modified dip for photocathode preparation and methods for storage and transport of photocathodes
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Weathering and its effects on distribution of uranium
R.C. Ewing (among 12 others)

Panel on the Waste Isolation Pilot Plant
R.C. Ewing (among others)

Technical support program for DOE environmental restoration and waste management
R.C. Ewing and L.M. Wang** (among 11 others)

Chemistry and alteration of uraninite at Cigar Lake, Canada
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Nature and genesis of clay minerals of the rustler Formation in the vicinity of the Waste Isolation Pilot Plant in southeastern New Mexico
T. Sowards, A.J. Brearley**, R. Glenn, I.D.R. Mackinnon and M.D. Siegel

Technical review of analytical electron microscopy of glass reaction for ANL technical support program for DOE environmental restoration and waste management
L.M. Wang**

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Timing of Proterozoic regional deformation in the Southern Manzano Mountains, central New Mexico
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A.J. Brearley**

Phyllosilicates in the matrix of the unusual carbonaceous chondrite, LEW 85332 and possible affinities to CI chondrites
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The transition of San Carlos olivine to β-phase and spinel at high pressure
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A.J. Brearley** and D.C. Rubie

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C.G. Daniel*, A.G. Thompson* and J.A. Grambling

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M.L. Dennis and K.E. Karlstrom

Crystal chemistry controls on the metamictization of silicates
R.K. Eby* and R.C. Ewing

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Katmai project: the NEPA phase
J. Eichelberger, A. Settler, C. Neal, W. Hildreth and J.J. Papike

Cyclostratigraphy of dolomitized carbonate ramp deposits in the Middle Devonian simonson formation, eastern Great Basin
M. Elrick

The long-term performance of nuclear waste forms: natural materials - three case studies
R.C. Ewing*
Abstracts, Fall Meeting, Materials Research Society, p. 609 (1992)

The effect of nuclear radiation on the structure of zircon
R.C. Ewing and T. Murakomi

Long-term prediction of materials' properties: the use of natural materials to predict the long-term behavior of nuclear waste forms
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Long-term prediction of materials' properties: the use of natural materials to predict the long-term behavior of nuclear waste forms
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The alteration of uraninite to clarkeite
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Rock fabric control on the acquisition of a late Paleozoic chemical remanence in Proterozoic metamorphic rocks, Front Range, Colorado
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Widespread late Paleozoic remagnetization of the Great Basin miogeoclone: implications for Basin and Range tectonism
J.W. Geissman, S.L. Gillett and J.M. Bartley

Early Cretaceous (Aptian) ammonites from the central Peloncillo Mountains, southwestern New Mexico
T. Goodspeed* and S.G. Lucas
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Mylonization events bracketing a granitoid intrusion - a Proterozoic example from the Manzano Mountains
L. Goodwin, S. Raiser, P.W. Bauer and K.E. Karlstrom

Middle Proterozoic cooling ages in the Cimarron Mountains, northern New Mexico = U-Pb and 40Ar/39Ar constraints
J.A. Grambling, S.A. Bowring and R.D. Dallmeyer

Middle Proterozoic thrusting in central New Mexico
J.A. Grambling, A.G. Thompson* and R.D. Dallmeyer

The type locality of Typothorax, Upper Triassic of Rio Arriba County, New Mexico
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Actosaurs from the Bull Canyon Formation (Late Triassic: Norian) of east-central New Mexico and their biochronological significance
A.P. Hunt*

Early Proterozoic geology of Upper Granite Gorge, Grand Canyon, Arizona
B.R. Ilg* and K.E. Karlstrom

Classification of porphyritic, pyroxene-rich chondrules in the Semarkora ordinary meteorite
R.J. Jones*
Petrology of FeO-poor, porphyritic pyroxene chondrules in the Semarkora ordinary chondrite
R.H. Jones**

An experimental and TEM investigation of the effect of cooling rate on the proto-to-ortho transition in enstatite
R.H. Jones** and A.J. Brearley**

Evaluation of Proterozoic tectonic boundaries in the Southwest: speculations using plate tectonic models
K.E. Karlstrom and S.A. Bowring

Synchronous magmatism and compressional deformation, Piute Mountains, SE California
K.E. Karlstrom, C.F. Miller, J.A. Kingsburg and J.L. Wooden

An evaluation of a nonlinear diffusion equation as a model for determining the rate of scarp degradation in
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K.J. Kendrick*, J.B.J. Harrison*, L.D. McFadden and R.J. Weldon
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Argo copper belt of the Helena embayment, Montana: remobilized from Belt Supergroup (Middle Proterozoic)
sulfide deposits?
I.M. Lange, L.A. Woodward and H.R. Krause

Alteration of chondrules in ALH 84034, an unusual CM2 carbonaceous chondrite
J. Llora* and A.J. Brearley**

A 12,000-year record of vertical deformation across the Yellowstone (Wyoming) Caldera margin
W.W. Locke and G.A. Meyer*
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fans
E.V. McDonald*, L.D. McFadden, and S.G. Wells

Updated ignimbrite-based calibration of the latest Eocene-Oligocene geomagnetic polarity time scale
W.C. McIntosh and J.W. Geissman
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Fire, climate, and alluvial system dynamics: a Holocene record from Yellowstone National Park
G.A. Meyer*, S.G. Wells and A.J.T. Jull
Chemical transport during formation and alteration of Martian impact and volcanic deposits
H.E. Newsom**

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Siderophile element abundances and behavior

Chemical fractionation in the continental crust: clues from As, Sb, W, Mo and Pb in lower crustal xenoliths
H.E. Newsom** and K.W.W. Sims

Chemical fractional in the continental crust: Archean crust versus lower crustal xenoliths
H.E. Newsom** and K.W.W. Sims
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P.O. Noll*, H.E. Newsom**, and W.P. Leeman

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EOS, v. 73, p. 342-343 (1992)

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M.W. Owens and K.E. Karlstrom
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J.J. Papike and C.K. Shearer**

Clasts in Kaopta: implications for the regolith evolution of the HED parent body
A. Pun*, K. Keil, G.J. Taylor, R. Wielder and E.A. King

A comparison between a "unique" enclitic clast from the Kaopta howardite and the Pasamonte eucrite
A. Pun*, C.K. Shearer** and J.J. Papike

A comparison of the trace element chemistries of pyroxene between two unequilibrated eucrite clasts: a eucrite
from the Kaopta howardite and the Pasamonte eucrite
A. Pun*, C.K. Shearer** and J.J. Papike
Meteoritics, v. 27, p. 279 (1992)
High-frequency sea-level fluctuations through time: their imprint on parasequence and sequence boundaries and their diagenesis
J.F. Read, M. Elrick, A.D. Horbury and D.A. Osleger

Endothermic reactions constrain dynamic pyrometamorphic temperatures in two iron-rich interplanetary dust particles
F.J.M. Rietmeijer**

Interplanetary dust particle L2005T12 directly linked to type CM chondrite petrogenesis
F.J.M. Rietmeijer**

Bromine in interplanetary dust particles: evidence for stratospheric contamination
F.J.M. Rietmeijer**
Meteoritics, v. 27, p. 280-281 (1992)

Ion microprobe trace element chemistries of garnet types from a mica schist unit, Black Hills, South Dakota
C.S. Schwardt, J.J. Papike and C.K. Shearer**

Trace element zoning and subsolidus microstructure of pigeonite in the Zagami shergottite
C.K. Shearer and A.J. Brearley**

Intra-crystalline behavior of trace element in pyroxene from Mare basalts with different FO crystallization histories
C.K. Shearer** and J.J. Papike

Origin of olivine diogenites and their relationship to basaltic magmatism on the eucrite parent body
C.K. Shearer** and J.J. Papike

Relationship between Apollo 12 high-Ti, red-picritic glass and high-Ti basaltic magmatism
C.K. Shearer** and J.J. Papike

Melting processes on the eucrite parent body: evidence from trace element chemistry of orthopyroxene from olivine diogenites
C.K. Shearer** and J.J. Papike

A comparison between Lunar and Terrestrial picritic magmas
C.K. Shearer** and J.J. Papike
EOS, v. 73, p. 326 (1992)

Use of carbonate morphology and clay content to determine paleosol genesis in the Plio-Pleistocene St. David Formation, Southeastern Arizona
J.L. Slate and G.A. Smith
Sedimentology of Missoula-flood slackwater deposits on the Columbia Plateau, Washington: constraints on flood dynamics and magnitude in the channeled slabs
G.A. Smith
Geological Society of America, Abstracts with Programs, v. 24, no. 6, p. 82 (1992)

Implications of the sedimentology and isotope geochemistry of calcic horizons in the Pliocene-early Pleistocene St. David Formation, Arizona
G.A. Smith, Y. Wang and T.E. Cerling

Structural analysis of the Early Proterozoic northern shylock shear zone, central Arizona
A.J. Villalovos and K.E. Karlstrom

Ion irradiation-induced nano-scale polycrystallization of single intermetallic and ceramic materials
L.M. Wang**, R.C. Birtcher and R.C. Ewing

TEM study of ion beam induced amorphization of minerals
L.M. Wang** and R.C. Ewing

Temperature dependence of amorphization dose for ion beam irradiated zircon
Abstracts, Fall Meeting, Materials Research Society, p. 58 (1992)

Ion-beam-induced amorphization of orthosilicates: zircon and olivine
L.M. Wang**, R.C. Ewing and H.R. Westrich
EOS, v. 73, p. 581 (1992)

HRTEM study of collision cascade damage in ion irradiated silicate minerals

Measurement and modeling of Ni adsorption on sand and limonite for a large-scale column test
D.B. Ward* and M.D. Siegel
EOS, v. 73, p. 126 (1992)

Irradiation-induced amorphization of \( \text{Ca}_2\text{La}_2(\text{SiO}_4)_6\text{O}_2 \) single crystals
W.J. Weber and L.M. Wang**

Abstracts

Late Quaternary geology of small basaltic volcanic centers, SW USA: disparity amorpt dating methods and implications for volcanic geomorphic studies
S.G. Wells, J.D. McFadden, F. Perry*, S. Forman, J. Poths, B. Crowe and C. Ollinger
Mineralogical, petrological, and stable isotope evidence for fluid infiltration during metamorphism of pelitic schist and quartzite, Rio Mora, New Mexico
C.A. White*, J.A. Grambling and C.J. Yapp

Tectonics vs. enstasy: Mid-Pennsylvanian carbonate-ramp cycles, ancestral Rocky Mountains, north-central New Mexico
T.L. Wiberg* and G.A. Smith

Maganic ³He/⁴He signatures, ³He surface exposure dating and paleomagnetism of Quaternary volcanics in the Rio Grande Rift, New Mexico
W.J. Williams, J. Poths, E. Anthony, C.T. Olinger, M. Whitelaw and J.W. Geissman

Stratigraphy of the Paleocene Nacimiento Formation, southern San Juan Basin, New Mexico
T.E. Williamson* and S.G. Lucas

Middle Member of Mt. Shields Formation as host for base- and precious-metal mineralization in southwestern Montana
L.A. Woodward

Regional tectonic analysis as a guide in orientation of horizontal drill holes to explore fracture reservoirs in hydrocarbon source rocks unaffected by local folding and faulting
L.A. Woodward

Effects of radiation exposure on glass alteration in a steam environment

Oxidation of organic matter recorded by α-FeOOH
C.J. Yapp

A weathering profile constraint on the lower limit of atmospheric oxygen partial pressure in the early Paleozoic
C.J. Yapp
3. RESEARCH GRANTS AND CONTRACTS

NEW AWARDS 1992

Nature of the paleomagnetic field from an analysis of marine magnetic anomalies 1-3R
G. Acton and H. Schouten
National Science Foundation
$53,475; June 10, 1992 to July 1, 1993

Adobe research
M.S. Barger** and E. Crochen
Getty Conservation Institute
$7,000; December, 1992 to March, 1993

Yucca Mountain Project
M.E. Campana
Sandia National Labs - Department of Energy
$82,328; October 1, 1992 to September 30, 1993

RAMHSS supplement to stream hypothermic zones award
M.E. Campana and C.N. Dahm
National Science Foundation
$6,000; June 1, 1992 to May 31, 1993

REU supplement to stream hyporheic zones award
M.E. Campana and C.N. Dahm
National Science Foundation
$10,000; May 1, 1991 - April 30, 1993

Evaluation of unsaturated zone contaminant transport models for waste management
M.E. Campana and T.W. Sammis (NMSU)
Waste Management Education and Research Consortium
$27,499; February 20, 1992 - February 19, 1993

Paleomagnetic and rock magnetic investigation of New Mexico rocks
J.W. Geissman
New Mexico Bureau of Mines and Mineral Resources
$850; May 1, 1992 to April 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
$1,450; May 15, 1992 to June 30, 1992

Proposal to upgrade an electron microprobe X-ray analysis system
J.J. Papike, A.J. Brearley** and M.N. Spilde** (IOM)
National Science Foundation
$40,000; March 1, 1992 to August 31, 1994
Trace element studies of pyroxenes in rocks of the HED Association
JJ. Papike and A. Pun
National Aeronautics and Space Administration
$22,000; August 1, 1992 - August 1, 1993

High-resolution Transmission Electron Microscope
R.C. Ewing, L.M. Wang** and A.K. Datye
National Science Foundation
$229,000 (+230,000 match from UNM), 1992-1993

Paleomagnetic assessment of footwall deformation, South Mountains metamorphic core complex, southern Arizona
J.W. Geissman
National Science Foundation
$62,414; June 1, 1992 to May 30, 1994

Paleomagnetic, rock magnetic, and stable isotope investigation of late Paleozoic remagnetization of Precambrian basement and immediately overlying strata, control and southern Rocky Mountains, including a $3,000 supplement for undergraduate support
J.W. Geissman and J.R. Bowman (University of Utah)
American Chemical Society/Petroleum Research Fund
$43,000; January 1, 1992 to August 31, 1994

Geologic support for Sandia National Lab activities for the Yucca Mountain site characterization project
J. Connolly** *(IOM)
Sandia
$39,198; June 1, 1992 to May 31, 1995

Sedimentation and diagenesis of the Creed Formation, CO: subsurface evaluation and correlation with outcrop studies
L.J. Crossey
National Science Foundation
$79,200; January 1, 1992 to December 31, 1993

Impact structures at the Manson impact structure: diagenesis and post-impact thermal history
L.J. Crossey
Department of Energy/Basic Energy Sciences
$43,408; August 15, 1992 to August 14, 1993

Millennial-scale paleoclimatic cycles expressed in Paleozoic basinal marine sequences
M. Elrick
National Science Foundation
$18,000; June, 1992 to June, 1994

Cyclostratigraphy and dolomitization of Middle Devonian carbonate deposits, eastern Great Basin
M. Elrick
American Chemical Society
$18,000; June 1, 1992 to August 31, 1994
Detecting millennial-scale paleoclimate fluctuations in Paleozoic (-540-300 m.y.) deep marine sedimentary rock

M. Elrick
UNM Research Allocation Committee
$4,300; April, 1992 to April, 1993

The Proterozoic Bushveld catastrophe, South Africa

W.E. Elston
National Science Foundation
$53,200; January 1, 1992 to 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

Characterization of alteration products and processes in nature UO$_2$

R.C. Ewing
Svensk Karnbranslehantering AB, Sweden
$153,000; September 1, 1992 to August 31, 1994

Uraninite from Oklo, Gabon: alteration of spent fuel

R.C. Ewing
Nuclear Regulatory Commission
$100,000; January 30, 1992 to 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 to 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 to July 31, 1994

Modern chronologic and geochemical techniques applied to a young volcanic field in an active continental rift, Potrillo Volcanic Field, NM

J.W. Geissman
National Science Foundation
$20,710; January 15, 1992 to July 31, 1994

Determination of the Fe-Mg interdiffusion coefficient in olivine: a comparison of electron microprobe and SIMS analytical techniques

R. Jones** (IOM)
National Science Foundation
$18,000; July 11, 1992 to June 30, 1994

Collaborative research: evaluating tectonic boundaries: continues transect in the Grand Canyon

K. Karlstrom
National Science Foundation
$99,444; June 3, 1992 to June 30, 1994
Geologic investigations at El Malpais National Monument
A.M. Kudo and T. Cascadden*
National Park Service
$27,869; September 1, 1992 - August 31, 1995

Sm/Nd isotope analysis of rocks from El Pico de Orizaba, Mexico
A.M. Kudo
UNM Research Allocation Committee
$2,500; May 1, 1992 to August 31, 1992

Relative influences of climatic change, 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 to June 30, 1993

Geochemical and mineralogical characterization of selected soils of the Pajarito Plateau, LANL, New Mexico
L.D. McFadden
Los Alamos National Lab
$28,889; May 26, 1992 to September 30, 1992

Geochemical and mineralogical characterization of selected soils of the Pajarito Plateau, LANL, New Mexico - supplement
L.D. McFadden
Los Alamos National Lab
$10,010; May 26, 1992 to November 30, 1992

Accretion and core formation in the Earth: Siderophile and chalcophile trace elements
H. Newsom** (IOM)
National Science Foundation
$27,000; July 15, 1992 to December 31, 1993

Microbeam studies of planetary materials
J.J. Papike (IOM)
NASA
$196,730; December 15, 1992 to December 14, 1993

High resolution apparent polar wander of the Pacific plate during the Eocene
K. Petronotis**
National Science Foundation
$61,721; June 1, 1992 to January 31, 1995

Layer silicates and carbonates materials in chondritic porous interplanetary dust
F.J.M. Rietmeijer**
NASA
$80,000; April 1, 1992 to March 31, 1993

Supplement
G.A. Smith
National Science Foundation
$3,500; December 18, 1991 to August 31, 1994
Ancient atmospheric $P_{CO_2}$ paleoclimates and the stable isotope geochemistry of low-temperature iron oxides

C.J. Yapp
National Science Foundation
$224,758; July 1, 1992 to December 31, 1995

AWARDS CONTINUING FROM PREVIOUS YEAR

Nature of the paleomagnetic field from an analysis of marine magnetic anomalies 1-3R
G.D. Acton
National Science Foundation
$78,470; January 1, 1991 to July 1, 1993

High resolution stratigraphy: application to hydroclimatic reconstruction in southwestern United States
R.Y. Anderson
National Science Foundation
$55,132; 1991 to 1993

Investigation into new methods for preservation of adobe plasters based on indigenous technologies
Susan Barger**
Albuquerque Community Foundation
$1,400; September 25, 1991 to September 24, 1992

Mechanisms of high pressure phase transformations between the $\alpha$, $\beta$ and $\gamma$ polymorphs of MgSiO$_4$ and (Mg, Fe)$_2$SiO$_4$
A.J. Brearley** (IOM)
National Science Foundation
$56,811; July 15, 1991 to December 31, 1993

Stream hyporheic zones: hydrology, biogeochemistry, and links to surface waters and plant riparian communities
M.E. Campana and C.M. Dahm (Biology Department)
National Science Foundation
$568,909; March 1, 1991 to February 28, 1994

RAMHSS supplement to stream hyporheic zones award
M.E. Campana and C.M. Dahm
National Science Foundation
$6,000; June 1, 1991 to May 31, 1992

REU supplement to stream hyporheic zones award
M.E. Campana and C.N. Dahm
National Science Foundation
$10,000; May 1, 1991 to April 30, 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 to February 15, 1992
Environments of sedimentation and controls on diagenesis of the Creed Formation, Colorado

L.J. Crossey
National Science Foundation
$73,157; June 1, 1990 to December 31, 1992

Research supplement to environments of sedimentation and controls on diagenesis of the Creed Formation, Colorado

L.J. Crossey
National Science Foundation
$4,071; August 6, 1991 - December 31, 1992

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

Low temperature alteration of natural uraninite

R.C. Ewing
Swedish Nuclear Power and Waste Management Company
$87,970; September 1, 1991 - August 30, 1992

Radiation effects and annealing kinetics in crystalline silicates, complex oxides and phosphates

R.C. Ewing
DOE- Office of Energy Sciences
$279,129; 1990-1993

Characterization of alteration products and processes in natural UO₂

R.C. Ewing
Svensk Kärnbränslehantering AB, Sweden
$131,500; September 1, 1990 to August 30, 1992

Radiation effects and annealing kinetics in crystalline complex Nb-Ta-Ti oxides, phosphates and silicates

R.C. Ewing
DOE - Office of Basic Energy Sciences
$78,081; August 1, 1991 to July 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 to April 30, 1992

Research experiences for undergraduates

J.W. Geissman
National Science Foundation
$5,000; April 15, 1991 - September 30, 1992
Infiltration pathways during the regional metamorphism of pelitic schists and quartzites
J.A. Grambling
National Science Foundation
$83,953; June 1, 1991 - November 30, 1993

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

Interactions in time and space of thermal and mechanical processes during orogeny: the Old Woman Mountains area, southeastern California
K.E. Karlstrom
National Science Foundation
$57,674; 1989 to 1992

Processes of crustal assembly and growth: the Proterozoic of Arizona
K.E. Karlstrom
National Science Foundation
$40,831; 1990 to 1992

Research experience for undergraduates, supplement for NSF Grant, evaluating early and Middle Proterozoic evolution of southwestern North America
K. Karlstrom
National Science Foundation
$4,00; November 25, 1991 to June 30, 1993

Geochemistry, petrology and geologic setting of selected Precambrian banded iron-formations in the Quadrilatero Ferrifero, Minas Gerais, Brazil
C. Klein
National Science Foundation
$119,600 to May 30, 1993

Minority Student Support
B.S. Kues
National Science Foundation
$20,000; August 1991 - March 1993

Regional patterns of soil formation and paleoclimatic inferences from remotely sensed images
L.D. McFadden
National Aeronautics and Space Administration
$40,600; July, 1989 to December 31, 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

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
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 to November 30, 1992

Direct observation of a young igneous system: Katmai, Alaska
J.J. Papike (IOM)
National Science Foundation
$42,320; July 11, 1990 - August 31, 1994

Mineralogical characterization of mechanical test samples
J.J. Papike (IOM)
Sandia National Laboratories
$110,239; October 1, 1990 to May 31, 1992

Microbeam studies of planetary materials
J.J. Papike (IOM)
National Aeronautics and Space Administration
$234,707; March 1, 1991 to February 28, 1994

Proposal to upgrade an electron microprobe X-ray analysis system
J.J. Papike, A.J. Brearley** and M.N. Spilde** (IOM)
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. Pan
National Aeronautics and Space Administration
$20,000; August 1, 1991 to August 1, 1992

Petrologic and geochemical studies of volcanic rocks in support of the Nevada nuclear waste storage investigations
F.V. Perry**, L.D. McFadden and J.W. Geissman
DOE - Los Alamos National Labs
$250,000; October 1, 1991 - September 30, 1993

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, 1190 to September 30, 1993

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

Non-tectonic influences on continental basin-fill sedimentation and post-orogenic sedimentation in a late Cenozoic extensional basin
G.A. Smith**
National Science Foundation
$99,902; February, 1990 to January, 1992
Volcanic breccias: evaluation of fragment and deposit origins and distribution within small-volume composite volcanoes
G.A. Smith
National Science Foundation
$71,950; 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

Ion irradiation effects in Ca$_7$La$_5$O$_{12}$
L.M. Wang**
Battelle Pacific Northwest Laboratories
$60,000; December 23, 1991 to September 30, 1993

Holocene and modern geomorphic response to wildfires and climate change in northeastern Yellowstone National Park
S.G. Wells and C. Meyer*
National Science Foundation
$71,640; July 1, 1990 to June 30, 1992

Ore deposits of the Judith Mountains, Montana
L.A. Woodward
$550; October 1, 1991 to September 30, 1992

The stable isotope and minor element geochemistry of iron-rich chemical sediments
C.J. Yanu
National Science Foundation
$110,013; June 15, 1990 to November 30, 1992
4. RESEARCH PROJECTS IN PROGRESS

Gary Acton

Manuscripts in preparation

The Brunhes paleomagnetic field inferred from the skewnesses and amplitudes of marine magnetic anomalies

Paleomagnetic tests of the plate motion circuits and the geocentric axial dipole hypothesis over the past 73 million years with implications for circum-Pacific plate motions and motions between hotspots
G.D. Acton and R. G. Gordon

Unsuccessful proposals for grants

Kinematics of the Rio Grande Rift: A Joint GPS and Paleomagnetic Study
Submitted to Petroleum Research Fund of the American Chemical Society and
and National Science Foundation

Thermal Evolution of Oceanic Lithosphere and Implications for Ocean Chemistry
Submitted to NASA

Earth's Gravity, Geoid, and Topography Spectra, and Their Implications in Geodynamics
Submitted to the National Science Foundation

Roger Y. Anderson

Grants Submitted

High-resolution stratigraphy: Application hydroclimatic reconstruction in southwestern United States
R.Y. Anderson, PI
National Science Foundation
$55,132, 1993-1996 (RENEWAL)

Isolation of Maunder-scale Climatic Deviations from Human-induced Climate Change
R.Y. Anderson, PI
National Institute for Global Environmental Change
$120,700, 1993-1994

Manuscripts in Press

Filling the Delaware Basin: Hydrologic and climatic controls on the Permian Castile evaporite
R.Y. Anderson and W.E. Dean
in Scholle and Peryt (eds), The Permian of the Northern Continents: Facies, Faunas, and
Paleogeography: Springer-Verlag

76
Evidence from western North America for rapid shifts in climate during the last glacial maximum
B.D. Allen and R.Y. Anderson
Science

The varve chronometer in Elk Lake, Minnesota: Record of climatic variability and evidence for a
solar/geomagnetic climate connection
R.Y. Anderson
in W.E. Dean and J.P. Bradbury (eds.), Evidence for Rapid Climate Change in the North-Central

Elk Lake in Perspective
R.Y. Anderson, J.P. Bradbury and W.E. Dean
in J.P. Bradbury and W.E. Dean (eds.), Evidence for Rapid Climatic Change in the North-Central

Chronology of Elk Lake sediments: Coring, sampling, and time-series construction
in J.P. Bradbury and W.E. Dean (eds.), Evidence for Rapid Climatic Change in the North-Central

Holocene climatic history of the north central United States as recorded in varved sediments of Elk
Lake, Minnesota - a synthesis
J.P. Bradbury, W.E. Dean and R.Y. Anderson
in J.P. Bradbury and W.E. Dean (eds.), Evidence for Rapid Climatic Change in the North-Central

Modern sedimentation in Elk Lake, Clearwater County, Minnesota
E.B. Nuhfer, R.Y. Anderson, J.P. Bradbury and W.E. Dean
in J.P. Bradbury and W.E. Dean (eds.), Evidence for Rapid Climatic Change in the North-Central

Manuscripts Submitted

Evidence for enhanced preservation of organic matter in oxygen minimum zone of the continental
margin of northern California during the late Pleistocene
W.E. Dean, J.V. Gardner and R.Y. Anderson
AAPG

Unsupported Research Projects

Measurement of sediment Flux in Monterey Bay, California: Collaborative research with C. Pilska, Monterey Bay Aquarium Research Institute, Monterey, California

Susan Barger

Manuscripts (submitted 1992):

Daguerreotype Corrosion Cycle Initiated by the Use of Thiourea Silver Dip Cleaners
Susan M. Garger and Dirk Kurth
Nature
Articles in Conference Proceedings:

The Examination, Surface Analysis, and Retreatment of Eight Daguerreotypes Which were Thiourea Cleaned in 1977
Thomas M. Edmondson and Susan M. Garger
Topics in Photographic Conservation (in press)

Other Proposals:

Building Assessment and Materials Analysis of Nuestra Senora de Guadalup Mission, Zuni, New Mexico With Nw Mexico Community Foundation
Submitted to the James Marston Fitch Charitable Trust August 1992, $21,178, not funded.

Adrian Brearley

Papers in press

Matrix and fine-grained rims in the unequilibrated CO3 chondrite, ALH A77307: Origins and evidence for diverse, primitive nebular dust components. A.J. Brearley**

Crystal chemical control on REE incorporation in garnets from the Broken Hill Pb-Zn-Ag orebodies, Australia.
Canadian Mineralogist (in press).

Papers submitted or in review

Alteration of plagioclase and pyroxene phenocrysts in a fissure fumarole, Valley of Ten Thousand Smokes, Alaska.
American Mineralogist (submitted).

Manuscripts in preparation

Ti-oxides in carbonaceous chondrites: possible interstellar grains and carriers of 50Ti isotopic anomalies. A.J. Brearley**

Kinetics of partial melting of muscovite + quartz and rates of multicomponent diffusion in H2O-saturated granitic liquid at 1 kbar.
D.C. Rubie and A.J. Brearley**

The effect of cooling rate on the protoenstatite to orthoenstatite inversion: and experimental and transmission electron microscope study.
A.J. Brearley** and R. H. Jones.

Synthesis of almandine garnet and characterization by 57Fe Mossbauer and single crystal FTIR spectroscopy, powder X-ray refinement and transmission electron microscopy: the role of defects. C.A. Geiger, A.J. Brearley**, A. Amthauer and C.R. Ross II.
Michael E. Campana

Proposals Submitted

Characterization of ground-water flow between the Estancia and Tularosa Basins, New Mexico
M.E. Campana
New Mexico Water Resources Research Institute
$24,993; unfunded

Manuscripts in Review

A general mathematical model for the interpretation of tracer data and transit time calculation in hydrologic systems.
I.E. Amin and M.E. Campana
Submitted to Water Resources Research

Groundwater flow, ages and recharge rates, Yucca Mountain-Nevada Test Site regional flow system, Nevada-California, USA
Robert M. Byers, Jr. and M.E. Campana
Submitted to Journal of Hydrology

Manuscript in Preparation

A deuterium-calibrated numerical model of the regional groundwater flow system, Nevada Test Site and vicinity
M.E. Campana, W.R. Sadler, N.L. Ingraham and R.L. Jacobson
To be submitted to Journal of Hydrology

Laura J. Crossey

Proposals Submitted in 1992

Early Cementation of Cyclic Coastal Clastic Sequences: Point Lookout Sandstone, San Juan Basin, NM and CO
L.J. Crossey
American Chemical Society/Petroleum Research Fund
$75,000 (1/1/93 - 8/31/96)

Unsponsored Research

Sediment Alteration Beneath Lava Flows: the Santa Fe Group, North-Central NM
(L. Crossey, A. Kudo, L. McFadden)

Maya Elrick

Manuscript in preparation

Cyclostratigraphy and sequence stratigraphy of Middle Devonian carbonates, eastern Great Basin
Elrick, M.Elston
Manuscripts in Press

Basic and intermediate volcanism of the Mogollon Datil volcanic field; implications for the mid-Tertiary tectonic and magmatic transitions in southwestern New Mexico, U.S.A.
J.M. Davis, W.E. Elston, C.J. Hawkesworth
Geological Society of London (U.K.), Special Publication

Memorial to Douglas G. Brookins
W.E. Elston
American Mineralogist

Memorial to Vincent C. Kelley
W.E. Elston
Geological Society of America

Manuscripts in Preparation

Volcanic Centers as guides to mineral exploration
W.E. Elston, G.S. Plumlee (editors)
Economic Geology, Special Issue

High-temperature quartz-tridymite inversion in siliciclastic sedimentary rocks beneath Rooiberg Felsite: clue to a 2.05 Bushveld-Vredefort impact (?) catastrophe, South Africa
W.E. Elston, J. Sadow

What is The Bushveld Complex?
W.E. Elston

Unsponsored Research

Volcanic and tectonic evolution, southwestern New Mexico
Association of mineral deposits and volcanic centers
Volcanism on Io (satellite of Jupiter)

R.C. Ewing

Proposals submitted or pending in 1992:

Investigations into Durability of Natural Adobe Plasters. Part I. Initial Materials Characterizations and Correlation with Oral Tradition
M.S. Barger, Principal Investigator; R.C. Ewing, Co-Principal Investigator
National Endowment for the Arts, 1993 (funded), $30,000.00

Microstructural Damage in Glass Induced by Ionizing Radiations
Y. Enzel (Technion Un., Haifa, Israel) and R.C. Ewing
United States Israel Binational Science Foundation
October 1, 1993 to September 30, 1996 (pending), $225,600.00
Computer upgrade for the Department of Earth and Planetary Sciences
G.D. Action, Principal Investigator; R.C. Ewing and many others, Co-Principal Investigators, National Science Foundation (pending), $65,000.00

Participation in International Working Groups:
Cigar Lake, Canada: Natural Analogue Study sponsored by AECL, Canada
Oklo, Gabon: Natural Nuclear Reactor Study sponsored by the CEA, France, and the CED, Brussels
Alligator River, Australia: Natural Analogue Study sponsored by ANSTO, Australia

Unsponsored Research:
Pegmatite mineralogy and genesis
Corrosion and hydration of natural and synthetic glasses

John W. Geissman

Proposals in review
The relationship of textures and depositional structures in pyroclastic-flow deposits to paleomagnetically determined emplacement temperatures
G.A. Smith and J.W. Geissman
National Science Foundation
$126,485.61, 1 June, 1993 to 30 May, 1996

Paleomagnetic investigations of tectonostratigraphic terranes in NW Mexico: Further evaluation of the Mojave-Sonora megashear hypothesis
R.S. Molina-Garza, J.W. Geissman and K.E. Karlstrom
National Science Foundation
$84,079, 1 July, 1993 to 31 June, 1995

Computer upgrade for the Department of Earth and Planetary Sciences at the University of New Mexico (ACCEPTED)
National Science Foundation
G. Acton, J.W. Geissman, K. Petronotis, L. Crossey, R.C. Ewing
$65,000, 1 June, 1993 to 30 May, 1995

Upgrading of Equipment in the Paleomagnetism and Rock Magnetism Laboratory, University of New Mexico (ACCEPTED)
National Science Foundation
$14,477, 1 June, 1993 to 30 May, 1995

Manuscripts in Review
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
Topographic signal of a long-lived active normal fault: An example from the Teton Fault, northwest Wyoming
J.O.D. Byrd, J.W. Geissman, and R.B. Smith

Manuscripts in Preparation

Late Paleozoic remagnetization of Precambrian crystalline rocks along the Precambrian/Carboniferous nonconformity, Central Rocky Mountains, western USA
J.W. Geissman and S.S. Harlan
Earth and Planetary Science letters

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
Tectonics

Paleomagnetism and rock magnetism 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. Baldridge, J.N. Gardner, J.W. Geissman, and S. Reneau

Paleointensity of the Earth's magnetic field at ca 2.7 Ga: Data from the Stillwater Complex, Montana, U.S.A.
C.J. Hale and J.W. Geissman
Physics of the Earth and Planetary Interiors

Paleomagnetism and Rock Magnetism of the Quaternary volcanic section, Valles Caldera Drilling Project VC-2A, New Mexico
J.W. Geissman
Journal of Volcanology and Geothermal Research

Non-sponsored Research

"Generic" paleomagnetic and rock magnetic investigations of: Cenozoic volcanic rocks (Arizona, Nevada, California, New Mexico)
Early 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, Russia)
Cenozoic intrusions (Utah, Nevada, New Mexico)
Mesozoic intrusions (Nevada, Colorado, California)

Jeffrey A. Grambling

Manuscripts in press

"Tectonic evolution of Proterozoic rocks in the Cimarron Mountains, northern New Mexico, USA"
(J.A. Grambling and R.D. Dallmeyer)
Journal of Metamorphic Geology, 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 review

"Geological map of Proterozoic rocks in parts of the Truchas Peak, Pecos Falls, and Gascon 7½ - minute quadrangles, Sangre de Cristo Mountains, northern New Mexico"
(J.A. Grambling)
New Mexico Bureau of Mines and Mineral Resources

"Garnet thermobarometry in rocks containing staurolite, biotite and chlorite"
(J.A. Grambling and A.G. Thompson*)
Contributions to Mineralogy and Petrology, in review

Manuscripts in preparation

"Metamorphism, deformation and thermochronology of Middle Proterozoic tectonism in central New Mexico"
(A.G. Thompson*, J.A. Grambling and R.D. Dallmeyer)
Journal of Metamorphic Geology

Abstracts in press

"Nature and probable age of metamorphism in northern New Mexico"
(J.A. Grambling, C.G. Daniel*, R.D. Dallmeyer and S.A. Bowring)
Geological Society of America Abstracts with Programs, v. 25.

Stephen P. Huestis

Papers in press:

Exploring complex-base logarithms
S.P. Huestis
Mathematics Magazine
Recursively laminar primes
S.P. Huestis
Journal of Recreational Mathematics

Nonnegative solutions and positive resolving kernels with negative solution averages in linear inverse theory
S.P. Huestis

Unsupported research in progress
Geomagnetic time scale and spreading rate functions from marine magnetic anomalies, with Gary Acton

Rhian Jones

Manuscripts in press
Effect of metamorphism on isolated olivine grains in CO3 chondrites.
R.H. Jones**
Geochimica et Cosmochimica Acta, in press

Manuscripts in review
A comparison of FeO-rich, porphyritic olivine chondrules in unequilibrated chondrites and experimental analogues.
R.H. Jones** and G.E. Lofgren
Meteoritics, in review

Manuscripts in preparation
Textural classification of porphyritic chondrules in ordinary chondrites
R.H. Jones**
Basin and Range Geophysical Experiment (BARGE)
B.P. Wernicke and J.W. Geissman
National Science Foundation (subcontract through Harvard University)
$42,000, July 1, 1990 to June 30, 1992.

Karl E. Karlstrom

Other research projects
Pluton emplacement along an active ductile thrust zone, Piute Mountains, southeastern California:
Interaction between deformational and solidification processes
K.E. Karlstrom, C.F. Miller, J.A. Kingsbury and J.L. Wooden

The case for simultaneous deformation, metamorphism, and plutonism: an example from Proterozoic rocks in central Arizona
K.E. Karlstrom and M.L. Williams
Journal of Structural Geology, in press
Proterozoic orogenic history in Arizona, in W.R. Van Schmus and M.E. Bickford (editors) 
K.E. Karlstrom and S.A. Bowring
Transcontinental Proterozoic Provinces, Chapter 4: Precambrian of the Conterminous U.S.: 

Precambrian geology of the Wyoming Province: in W.R. Van Schmus and M.E. Bickford (editors) 
S.R. Houston, K.E. Karlstrom, E. Erslev, G.L. Snyder and Z.E. Peterman
Transcontinental Proterozoic Provinces, Chapter 4: Precambrian of the Conterminous U.S.: 
Geological Society of America, The Geology of North America (DNAG), in press

Deformation within a syntectonic granitoid pluton in the Old Woman Mountains, southeastern California 
K.J.W. McCaffrey, C.F. Miller, K.E. Karlstrom and C. Simpson
Submitted to Journal of Structural Geology

Determination of synkinematic plutonism from fluid infiltrated rocks, central Old Woman Mountains, California 
D.A. Rothstein, K.E. Karlstrom and T.D. Hoisch
Submitted to Journal of Metamorphic Geology

Restoration of Laramide right lateral strike slip in northern New Mexico using Proterozoic piercing points: Tectonic implications from the Proterozoic to the Cenozoic 
K.E. Karlstrom and C.G. Daniel
Geology, in review

Unsuccessful proposals:

Research experiences for undergraduate: Undergraduate field geology, research in northern of New Mexico: National Science Foundation, three years, $155,040 (will be resubmitted Fall, 1993).

Cornells Klein

Proposal in Review:

Geochemistry, petrology, and geologic setting of the Precambrian Urucum and Carajás iron-formations, Brazil; data critical to global Precambrian hydrosphere-atmosphere models 
C. Klein
National Science Foundation Grant EAR-9303869
$149,853.00 for a two-year period beginning June 1, 1993; under review.

Manuscripts in press

Sedimentology and geochemistry of glaciogenic Late Proterozoic Rapitan iron-formation in Canada 
C. Klein and N.J. Beukes 
Economic Geology, in press. (1993)

Rocks, minerals and a dusty world 
C. Klein
Manuscripts in preparation

Gem minerals and gems
C. Klein

Geology and geochemistry of Archean banded iron-formations and metacherts in the Morro Velho and Raposos gold deposits, Minas Gerais, Quadrilátero Ferrífero, Brazil
C. Klein and E.A. Ladeira
In preparation.

Petrology and geochemistry of high-grade metamorphic Archean banded iron-formations of the Guanhães region, Minas Gerais, Brazil
C. Klein and E.A. Ladeira
In preparation.

Albert M. Kudo

Manuscripts submitted:

Petrogenesis of shoshonites and related rocks, Absaroka Volcanic Field, northwestern Wyoming
D.W. Erskine* and A.M. Kudo
Contributions to Mineralogy and Petrology

Manuscripts in preparation:

Assimilation-fractional crystallization of andesite and dacite lavas from El Pico de Orizaba, Mexico
A.M. Kudo, E.M. Calvin* and B.S. Singer*

Unsupported Research Projects:

Petrological evidence in support of the continuous allochthon model, Heart Mountain fault, northwestern Wyoming.

Barry S. Kues

Manuscripts submitted

Paleontology of the Upper Cretaceous Cabullona Group, northeastern Sonora, Mexico
S.G. Lucas, B.S. Kues and C. Gonzalez-Leon
Submitted to Geological Society of America, Special Paper on geology of northern Mexico

Manuscripts in Preparation

New species of early Wolfcampian gastropods from central New Mexico (Journal of Paleontology)

New species of Middle Pennsylvanian gastropods from New Mexico and West Texas (Journal of Paleontology).
Stratigraphy and Paleontology of Cretaceous outliers in southeastern New Mexico (with S.G. Lucas; New Mexico Geological Society 1993 Guidebook)

Paleontology of Early Cretaceous outliers, southeastern New Mexico (Journal of Paleontology)

Bibliography of New Mexico vertebrate paleontology (with S.G. Lucas; Symposium volume for Society of Vertebrate Paleontology annual meeting, October, 1993)

Bibliographic catalog of New Mexico vertebrate fossil taxa (Symposium volume for Society of Vertebrate Paleontology annual meeting, 1993)

The geology of New Mexico (BOOK, with S.G. Lucas, UNM Press)

Leslie D. McFadden

Manuscripts in press

Spatial and temporal variation in terrace riser catena in the Transverse Ranges, southern California
J.B.J. Harrison, K.A. Kendrick, L.D. McFadden and R.J. Weldon III
Catena, in press

The influence of fan deposition on rates on soil development in Cajon Pass, southern California
J.B.J. Harrison, L.D. McFadden and R.J. Weldon III
Ran Gerson Memorial Volume, Catena Special Publication, in press

Late Quaternary history of pluvial lake Mojave, Silver Lake, and Soda Lake basins, southern California
W.J. Brown, S.G. Wells, Y. Enzel, R.Y. Anderson and L.D. McFadden
Quaternary Research, in press

Manuscripts submitted or in review

Late Quaternary Soil and Landscape Evolution and Archaic Settle Patterns, Bolack, Land Exchange Area
L.D. McFadden, P. Hogan and J. Elyea
Northern San Juan Basin, New Mexico, submitted to Geohydrology

Manuscripts in Preparation

Predicted and observed responses of calcic soil development to Late Holocene neoglacial changes in climate

The influence of incorporation of eolian dust on the chemical composition of desert soils: A simple assimilation-mass balance model

Horton Newsom

Papers in Press

Mineralogy and geochemistry of metal in aubrites: constraints on core formation in their parent body.
Casanova, I., Keil, K. and Newsom, H.E.**

Pressure-Temperature Regimes and Core Formation in the Accreting Earth.
Newsom, H.E.**, and Slane, F.A.*

Manuscripts in preparation

The Origin of Dark Clasts in the Khor Temiki Aubrite.
Newsom, H.E.**, Ntaflos, T. and Keil, K.

Element Transfer within Subduction Zones: Evidence from As, Sb, Pb, B, W and Mo.

Chemical Fractionation in the Continental Crust: Clues from As, Sb, W, Mo, Pb and Cs in Lower Crustal Xenoliths and Archean High Grade Terrains.
Newsom, H.E.**, and Sims, K.W.W.

Composition of the Solar System, Planets, Meteorites, and Major Terrestrial Reservoirs.
Newsom, H.E.**
Submitted to American Geophysical Union Handbook of Physical Constants (T.J. Ahrens ed.).

Origin of Earth
Newsom, H.E.**
MacMillan Encyclopedia of Earth Sciences (E.J. Dasch ed.).

Proposals submitted

The formation of the continental crust: evidence from siderophile and chalcophile trace elements in volcanic arcs
H.E. Newsom
National Science Foundation
$190,312 July 1, 1993 - June 30, 1996

Geochemical Characterization of the Uppermost Oceanic Crust: An assessment of the Contributions to Volcanic Arc Magmas from Altered Subducted Oceanic Crust
H.E. Newsom
National Science Foundation
$145,602 July 1, 1993 - June 30, 1995

Unsuccessful proposals

Siderophile and chalcophile trace elements in the earth's oldest rocks
H.E. Newsom
National Science Foundation
$191,872 Dec. 1, 1992 - Nov. 30 1995
Siderophile and chalcophile trace element standard characterization for secondary ion mass spectrometry (SIMS)
H.E. Newsom
National Science Foundation
$155,141 Dec. 1, 1992 - Nov. 31, 1993

Siderophile element abundances and behavior: clues to planetary origins and evolution
H.E. Newsom
NASA
$211,448 Dec. 16, 1992 - Dec. 15, 1995

James P. Papike

Manuscripts in press

A Secondary Ion Mass Spectrometry Investigation of Garnet REE Chemistry. Garnetites associated with the Broken Hill Pb-Zn-Ag Orebodies, Australia:

Manuscripts submitted or in review

Alteration of Plagioclase and Pyroxene Phenocrysts in a Fissure Fumarole, Valley of Ten Thousand Smokes, Alaska.
M.N. Spilde**, A.J. Brearley** and J.J. Papike
American Mineralogist, in review (1993)

Rhyolitic Intrusions in the Intracaldera Bishop Tuff, Long Valley, California.

Basaltic Magmatism on the Moon: A perspective from volcanic, picritic glass beads.
C.K. Shearer** and J.J. Papike
GCA, in review (1993)

Manuscripts in preparation

Comparisons between lunar and terrestrial picritic magmas.
C.K. Shearer and J.J. Papike
To be submitted to Geology.

Evolution of the eucrite parent body. Evidence from the trace element signatures of orthopyroxene diogenites.
C.K. Shearer**, G. Layne** and J.J. Papike
To be submitted to GCA as a letter.

Unsuccessful proposals for grants and contracts submitted

DOE Microbeam Studies of Mineral/Melt and Mineral/Fluid Interactions
NASA Facilities Support for UNM/SNL SIMS Facility
Katerina E. Petronotis

Other Research:

A paleomagnetic pole and estimated age for Lo-En guyot, Republic of the Marshall Islands, from magnetic data collected during Moana Wave cruise MW88-05
AGU monograph, in press.

Pacific plate paleomagnetic pole determined from shape analysis of marine magnetic anomalies, in preparation
Demagnetized mesozoic rocks collected in Greece.
Submitted a proposal to the National Science Foundation to fund a paleomagnetic study of Greek mesozoic rocks

Harald Poths

Collaborator with Los Alamos National Laboratory, Group INC-6: Development of highly sensitive ionization methods for TIMS.

Frans Rietmeijer

Manuscripts in press

Volcanic dust in the stratosphere between 34 and 36 km altitude during May, 1985
F.J.M. Rietmeijer
J. Vol. Geothermal Res. 55, in press

The bromine content of micrometeorites: arguments for stratospheric contamination
F.J.M. Rietmeijer
J. Geophys. Res., in press

Microscopy and Microchemistry
F.J.M. Rietmeijer
In ROSETTA, the NASA/ESA Comet Nucleus Sample Return Mission Document, in press

Cometary evolution: Clues on physical properties from chondritic interplanetary dust particles
F.J.M. Rietmeijer (co-author: I.D.R. MacKinnon)
In The Comet Nucleus Sample Return Mission

Manuscripts submitted

The bromine content of micrometeorites: Arguments for stratospheric contamination
F.J.M. Rietmeijer
J. Geophys. Res. - Planets

Are crystalline C-(H-O-N) carbons the elusive meteorite carbynes?
F.J.M. Rietmeijer
Meteoritics
Size distributions in two porous chondritic micrometeorites
F.J.M. Rietmeijer
Earth Planet. Sci. Lett.

Unique tropical - extratropical transport of volcanic ash particles in the lower stratosphere
F.J.M. Rietmeijer

Manuscripts in preparation
Dynamic Pyrometamorphism: (Mg,Fe)-silicates and (Fe,Ni)-sulfides
F.J.M. Rietmeijer

Unsuccessful Grant Proposals
Gravity-related Chemical Domain Formation in Vapor-condensed Nanocomposites
F.J.M. Rietmeijer (Principal Investigator)
National Aeronautics and Space Administration Program on Microgravity Fluid Dynamics and Transport
Phenomena: Research and Flight Opportunities
Energy Balance Analyses for Hypervelocity Impacted Micrometeoroid Analogs
F.J.M. Rietmeijer (Principal Investigator)
National Aeronautics and Space Administration Planetary Instrument Definition and Development Program

Unsupported Research
Transmission Electron Microscope characterization of condensed carbons, cooperation with Dr. John R. Stephens, Los Alamos National Laboratory, Los Alamos, New Mexico

Charles Shearer

Manuscripts in press
A Secondary Ion Mass Spectrometry Investigation of Garnet REE Chemistry. Garnetites associated with the Broken Hill Pb-Zn-Ag Orebodies, Australia:
C.S. Schwandt*, J.J. Papike, C. K. Shearer** and A.J. Brearley**
Canadian Mineralogist, in press (1993)

Manuscripts submitted or in review
Rhyolitic Intrusions in the Intracaldera Bishop Tuff, Long Valley, California.
Basaltic Magmatism on the Moon: A perspective from volcanic, picritic glass beads.
C.K. Shearer**, and J.J. Papike
GCA, in review (1993)

Sector Zoned Aegirine from the Ilimaussaq Alkaline Intrusion, South Greenland. Implications for trace element behavior in pyroxene.
C.K. Shearer** and L.M. Larsen
American Mineralogist, in press
Manuscripts in preparation

Comparisons between lunar and terrestrial picritic magmas.
C.K. Shearer and J.J. Papike
To be submitted to Geology.

Evolution of the eucrite parent body. Evidence from the trace element signatures of orthopyroxene diogenites.
C.K. Shearer**, G. Layne** and J.J. Papike
To be submitted to GCA as a letter.

Unsuccessful proposals for grants and contracts submitted

DOE Microbeam Studies of Mineral/Melt and Mineral/Fluid Interactions
NASA Facilities Support for UNM/SNL SIMS Facility
NSF Nature and Style of Fluid Evolution in the Continental Crust. A SIMS Study of S and Pb Isotope Systematics in Sulfides from the KTB Hole

Gary Smith

Manuscripts in press:

Missoula flood dynamics and magnitudes inferred from sedimentology of slackwater deposits on the Columbia Plateau, Washington.
G.A. Smith

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 and J. Bowman
Continental isotopic records of climatic change: American Geophysical Union Monograph.

Reconstruction of the petrologic evolution of volcanic centers from geochemical and mineralogical analyses of volcaniclastic sediments: An example from the Oligocene of north-central New Mexico.
D.W. Erskine* and G.A. Smith

Manuscripts submitted or in review:

Intra-arc basins
G.A. Smith

Comparison of a paleosol-carbonate isotope record to other records of Pliocene-early Pleistocene climate in the western United States.
G.A. Smith, Y. Wang, T.E. Cerling and J.W. Geissman
Geology
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 and J.E. Lotosky*
To be submitted to Journal of Sedimentary Petrology.

Sedimentology of Glacial Lake Missoula varve sequences: Constraints on the number and magnitude of Late Wisconsin jokulhlaups.
W.J. Fritz and G.A. Smith
To be submitted to Geology.

Post-tectonic sedimentation in the San Pedro Valley, Arizona, and the problem of distinguishing climatic from tectonic influences on continental sedimentation.
G.A. Smith
To be submitted to Geological Society of America Bulletin.

The importance of depositional setting and water table on the sedimentological and geochemical characteristics of paleosols: An example from the Plio-Pleistocene of southeastern Arizona.
J.L. Slate and G.A. Smith
To be submitted to Journal of Sedimentary Petrology.

Magnetostratigraphy and rock magnetic properties of the Pliocene-early Pleistocene St. David Formation, Arizona.
J.W. Geissman, G.A. Smith and R. Livaccari
To be submitted to Journal of Geology.

Michael Spilde

Manuscripts in Review

Alteration of plagioclase and pyroxene phenocrysts in a fissure fumarole, Valley of Ten Thousand Smokes, Alaska.
M.N. Spilde, A.J. Brearley and J.J. Papike
Submitted to American Mineralogist.

Lumin Wang

Manuscripts in press:

HRTEM study of collision cascade damage in ion irradiated silicate minerals
Ultramicroscopy (1993), in press.
Ion irradiation induced nano-scale polycrystallization of single crystal intermetallic and ceramic materials
Nuclear Instrument and Method in Physical Research B: Beam Interactions with Materials and Atoms, in press.

Palladium metal and palladium oxide particle production by spray pyrolysis
Materials Letters, in press

Temperature dependence of amorphization dose for ion beam irradiated zircon
L.M. Wang** & R.C. Ewing
Material Research Society Symposium Proceedings, v. 270, in press

Irradiation-induced amorphization of Ca₂La₃(SiO₄)₂O₂ Single crystals
W.J. Weber & L.M. Wang**
Material Research Society Symposium Proceedings, v. 270, in press

Effects of radiation exposure on glass alteration in a steam environment

Manuscripts submitted or in review:

New 1223-type high Tc cuprite (Tl,Cr)(Sr,Ba)₂Ca₄Cu₇O₁₉
J. Applied Physics, in review

Synthesis and Characterization of 2234 Phase T₂Ba₂Ca₄Cu₁₂ prepared near and at melting point
Superconductor Science & Technology, in review

Solid silver particle generated by spray pyrolysis
J. Aerosol Science, in review

Lee A. Woodward

Other Research Projects

Structural control of lode-gold deposits in the Pony Mining District, Tobacco Root Mountains, Montana.

Crayton Yapp

Manuscripts in press

The stable isotope geochemistry of low temperature Fe(III) and Al oxides with implications for continental paleoclimates

Crayton J. Yapp
AGU Monograph, Continental Isotopic Indicators of Climate
Paleoenvironment and the oxygen isotope geochemistry of the Upper Ordovician Neda Formation ironstone

Crayton J. Yapp
Geochimica et Cosmochimica Acta

The carbon isotope geochemistry of goethite (α-FeOOH) in the Upper Ordovician Neda Formation ironstone: implications for Early Paleozoic continental environments

Crayton J. Yapp and Harald Poths**
Geochimica et Cosmochimica Acta
5. ACTIVITIES IN PROFESSIONAL SOCIETIES

Gary Acton

Attended the field trip to the San Juan Basin, New Mexico
New Mexico Geological Society. September 30, 1992 to October 3, 1992

Presented talk, "The Brunhes paleomagnetic field inferred from the skewnesses and amplitudes of marine magnetic anomalies"
Fall 1992 American Geophysical Union Meeting, San Francisco. December 10, 1992

Chaired a session, "Polarity Transitions: How They Happen"
Fall 1992 American Geophysical Union Meeting, San Francisco, December 10, 1992

Served on the committee that selected the "Best Student Paper in Geomagnetism & Paleomagnetism"
Fall 1992 American Geophysical Union Meeting, San Francisco, December 7-11, 1992

Papers Reviewed

Reviewed two papers for the Geological Society of America
Reviewed two papers for American Geophysical Union journals
Reviewed one paper for Nature
Reviewed one paper for Marine Geophysical Researches

Roger Y. Anderson

Memberships, etc.
Geological Society America
American Geophysical Union
AAAS: Chairperson, Electorate Nominating Committee, Section on Geology and Geography

Susan Barger

Meetings Attended:


Professional Papers Read:

Invited Presentations:

"Daguerreotypes," American Chemical Society Visiting Lecturer Series, Northern New Mexico Chapter, April 1992.


International Institute of Conservation: Abstractor, Arts and Archaeology Technical Abstracts (1992-).

**Adrian Brearley**


Presented talk on "Phyllosilicates in the matrix of the unusual carbonaceous chondrite, LEW 85332 and possible affinities to CI chondrites". 23rd Lunar and Planetary Science Conference, Houston, Texas, March 16-20.

Presented poster on "Mechanisms of the transformations of modified spinel to spinel at high pressure". Annual GSA meeting, Cincinnati, Ohio. 26-29 October, 1992.


Presented talk on "High Pressure Experimental Studies of the Mechanism of the $\beta$ to $\gamma$ phase transition in $\text{Mg}_2\text{SiO}_4$" Fall AGU meeting, San Francisco, California, December 7-11.

**Professional meeting attended**


**Michael E. Campana**

President-elect, New Mexico Section, American Water Resources Association (1992)

Member, U.S. National Committee, International Association of Hydrogeologists

Member, Technical Committee, Second International Conference on Ground Water Ecology

Chair, Fifth Annual Conference, NM Section, American Water Reso. Assn., Socorro, October 6-7, 1992

General Chair, Rocky Mountain Ground Water Conference, Albuquerque, NM, Fall 1993

Presented talk, "Hyporheic zone hydrodynamics in first-order montane catchments", First International Conference on Ground Water Ecology, Tampa, FL, April 27, 1992

Presented poster, "A general mathematical model for tracer data analysis", Sixth International Symposium on Water Tracing, Karlsruhe, Germany, September 21-26, 1992


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Laura J. Crossey

Meetings Attended/Talks Presented


Society Committees

American Association of Petroleum Geologists, Membership Committee (since 1989)
Association for Women Geoscientists (lecturer (since 1989)
Clay Minerals Society, Ad Hoc Committee on Legal Issues (since 1991)
Society for Sedimentary Geology, Academic Liaison (since 1991)
Society for Sedimentary Geology, Membership Committee (since 1990)
Society for Sedimentary Geology, Nominating Committee (1992)

National Committees

National Science Foundation, Advisory Committee on Earth Sciences (1992-1995)
National Science Foundation, ACES Liaison to Ocean Sciences (1992-1995)

Editorial Boards


Maya Elrick

Activities in learned and professional societies

American Association of Petroleum Geologists Annual Meeting, 1992 Calgary, Canada, poster presentation

American Association of Petroleum Geologists Field Trip to Canadian Rockies (4 days), June 1992

S.E.P.M. Rocky Mountain Section Scholarship committee, awards M.S. and Ph.D. grants

Wolfgang Elston

Member, American Geological Institute Minorities Participation Committee. Mentor to six Minority students

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
R.C. Ewing

Materials Research Society

Nominated for election to the MRS Council
External Affairs Committee, 1987-1992
International Relations Subcommittee, 1987-1992
MRS Outstanding Young Investigator Medal Selection Committee (chair), 1993
Program committee (member) for the Scientific Basis for Nuclear Waste Management XVI symposium sponsored by MRS in 1992, Boston, MA
Program committee for the Scientific Basis for Nuclear Waste Management XVIII symposium to be sponsored by MRS and MRS-Japan in 1994, Kyoto, Japan

International Union of Materials Research Societies

Secretary (one of four officers) of the International Union of Materials Research Societies, elected to a second term 1993-1994

Journal of Nuclear Materials

Advisory Editorial Board (member)

Invited Presentations

"Heterogeneity and Alteration of Uraninite from the Natural Fission Reactor 10 at Oklo, Gabon": at the 2nd Joint CEC-CEA OKLO Working Group Meeting, Brussels, Belgium, April 7, 1992
"The Role of Natural Analogues in Performance Assessment: Applications and Limitations": at the Third International Conference on High Level Radioactive Waste Management, Las Vegas, Nevada, April 15, 1992
"The Effect of Nuclear Radiation on the Structure of Zircon": at Symposium in Honor of H.D. Holland held in conjunction with the V.M. Goldschmidt Conference, Reston, Virginia, May 9, 1992
"Applications of Natural Analogue Studies to Performance Assessment: Oklo Natural Reactors": at the Nuclear Regulatory Commission, Washington, D.C., May 11, 1992
"Ion-Beam Induced Amorphization of Complex Ceramic Materials--Minerals": Gordon Conference, Holderness, New Hampshire, July 6, 1992 (poster presentation)
"Materials Properties: The Use of Natural Materials to Predict the Long-Term Behavior of Nuclear Waste Forms": Workshop WC-1, Nuclear Waste Disposal and Geology, International Geological Congress, Kyoto, September 2, and Tokyo, September 5, 1992
"The Long-Term Performance of Nuclear Waste Forms: The Use of Natural Materials - Three Case Studies": Scientific Basis for Nuclear Waste Management XVI, Materials Research Society Fall meeting, Boston, Massachusetts, December 2, 1992

John W. Geissman

Talks Given

Presented Talk, "Widespread late Paleozoic remagnetization of the Great Basin miogeocline: Implications for Basin and Range Tectonism"
Annual Meeting, Geological Society of America, Cincinnati, October 28.
Presented Talk, "Rock fabric control on the acquisition of a late Paleozoic chemical remanence in Proterozoic metamorphic rocks, Front Range, Colorado"
Fall Meeting, American Geophysical Union, San Francisco, CA, Dec. 12.
Presented Talk, "Updated ignimbrite-based calibration of the latest Eocene-Oligocene geomagnetic polarity time scale"
Fall Meeting, American Geophysical Union, San Francisco, Dec. 10.
Associate Editor, Bulletin, Geological Society of America
Secretary, Geomagnetism and Paleomagnetism Section, American Geophysical Union
Associate Editor, Journal of Geophysical Research
Member, American Geophysical Union Public Information Committee
American Geophysical Union Sullivan Award panel
Associate Editor, Geology
Nominated for Fellow, Geological Society of America
National Science Foundation Division of Earth Sciences Continental Dynamics Panel Member, Manson Impact Drilling Study
National Science Foundation Division of Earth Sciences Instrumentation and Facilities Panel Member
Member, American Geophysical Union "Committee of 50"
University of New Mexico representative, DOSECC, Inc.
Member, Board of Directors, DOSECC, Inc.
Geoscience "consultant", Albuquerque Petroglyphs

Jeffrey A. Grambling

Editorial activities

Associate Editor, Geology
Associate Editor, Journal of Metamorphic Geology
Member of Steering Committee, Proterozoic Orogenesis and Metallogenesis Project

Other activities (in chronological order)

Led field trip for Geology 548 class, to Picuris Mountains, New Mexico; March 13-16.
Led field trip for Geology 548 class, to Tijeras Canyon, New Mexico, April 22, 1992.
Led field trip for Geology 514 class, to Santa Fe Range, New Mexico, September 27, 1992.
Presented talk on "Middle Proterozoic cooling ages in the Cimarron Mountains, northern New Mexico: U-Pb and \(^{40}Ar/^{39}Ar\) constraints", Geological Society of America 24th Annual Meeting, Cincinnati, Ohio, October 26, 1992.


John Husler

Member: American Chemical Society.
Member: Geostandards International Working Group.
Presently involved in characterization of Geostandards high lithium mica (Zinnwaldite).


Rhian Jones

Talks and posters given


Professional meetings attended

American Geophysical Union Fall Meeting, San Francisco, California, December 7-11.

Other

Associate Editor, "Meteoritics".

Karl E. Karlstrom

Convened a symposium for the Spring American Geophysical Union Meeting (Montreal) entitled "Early and Middle Proterozoic Evolution of Laurentia-Baltica."

Papers Presented at Meetings

Karlstrom and others, 1992 - EOS, v. 73, no. 14, p. 276 (see abstracts)
Karlstrom and Bowring, 1992 - EOS, v. 73, no. 14, p. 332 (see abstracts)

Member of Editorial board of "Precambrian Research", 1990-1993

Cornelis Klein

Invited participant of GSA Penrose Conference on "Late Precambrian Tectonics", Death Valley, California, October 18-23, 1992. Title of lecture presentation "Origin of banded iron-formation associated with glacial deposits in the Neoproterozoic".

United States Representative to the International Commission on "History and Teaching" 1985 to present.

Associate Editor, Precambrian Research, a journal of Elsevier Science Publishers, Amsterdam.

Member of the Board of Director, Economic Publishing Company, 1990-1993.

Reviewed journal manuscripts for *Geochimica et Cosmochimica Acta*, *Precambrian Research* and *Economic Geology*.

Reviewed research projects for the National Science Foundation.


**Albert M. Kudo**


**Barry S. Kaes**

New Mexico Geological Society: attended fall field conference, September 30 - October 2; continuing Managing Editor of yearly guidebooks

**Leslie D. McFadden**

**Talks given**


"Soils and Paleoenvironments"; East Mojave Desert Symposium/Workshop, University of California, Riverside, Riverside, California, November 8, 1992

**Field Trip Attendance**


**Professional Meetings Attended**

Geological Society of America National Meeting, Cincinnati, Ohio, October 25-29, 1992

**Horton Newsom**

**Meetings Attended**


V.M. Goldschmidt conference for the Advancement of Geochemistry, May 8-10, 1992.

American Geophysical Union Annual Spring Meeting, Montreal, Canada, May 12-15, 1992.


Professional papers read


Offices held


James J. Paplke

Symposium Organized and Chaired at Goldschmidt Conference
Attended Geological Society of America Convention
Attended Fall and Spring American Geophysical Union Meetings
Councilor, Society of Economic Geologists.
Member, Lunar and Planetary Sample Team (LAPST).
Member, Organizing Committee for the FORUM for Continental Scientific Drilling.
Member, Council of the Geochemical Society as past president
Member, Advisory Committee for the Institute of Geophysics and Planetary Physics, Los Alamos National Laboratory and University of California

Frans Rietmeijer

Professional Papers Read


"Amorphous and crystalline materials in chondritic interplanetary dust," Institute of Planetology, University Munster, Munster (Germany), June 23.

"What we may learn from chondritic interplanetary dust about comets," Department of Nuclear Chemistry, University of Cologne (Germany), June 24.

Professional Meetings Attended

23rd Lunar and Planetary Science Conference, Houston, Texas, March 16-20
Workshop Attended

National Aeronautics and Space Administration, Gas-Grain Simulation Facility, Las Vegas (Nevada), May 4-6

Gary A. Smith


Presented talk, "Implications of the sedimentology and isotope geochemistry of calcic horizons in the Pliocene-early Pleistocene St. David Formation, Arizona" at the Geological Society of America Annual Meeting, Cincinnati, Ohio, October 27.

Field Trip Leader, Geological Society of America, Cordilleran Meeting, Eugene, Oregon.

Publications Committee, SEPM (The Society for Sedimentary Geology)

Associate Editor, Journal of Sedimentary Petrology.


Attended, New Mexico Geological Society Annual Meeting, Socorro, New Mexico, April 3.

Michael Spilde

Attended Spring and Fall Meetings of New Mexico Microbeam Users Group, Albuquerque, New Mexico, June and November, 1992.

Lumin Wang


Presented poster, "Ion irradiation induced nano-scale polycrystallization of single crystal intermetallic and ceramic materials", 8th International Conference on Ion Beam Modification of Materials, Heidelberg, Germany, Sept. 10
Presented talk, "TEM study of ion beam induced amorphization of minerals", Geological Society of America 1992 Annual Meeting, Cincinnati, OH, October 26

Lee A. Woodward


Crayton J. Yapp

Talks presented

Oxidation of organic matter recorded by $\alpha$-FeOOH
1992 Spring Meeting of the American Geophysical Union
Montreal, Quebec, Canada, May 12, 1992

A weathering profile constraint on the lower limit of atmospheric oxygen partial pressure in the Early Paleozoic
1992 Geological Society of America National Meeting
Cincinnati, OH, October 28, 1992
6. OTHER PROFESSIONAL ACTIVITIES

Roger Y. Anderson

Scientific Review Panel, NOAA, Paleoclimate Program
Silver Spring, Maryland, February, 1992
Review of Journal Manuscripts
Review of Research Proposals for NSF, PRF

Adrian Brearley

Reviewed scientific papers submitted to Geochimica et Cosmochimica Acta.
Reviewed one proposal submitted to the National Science Foundation Geophysics Program.
Reviewed 13 proposals submitted to NASA Planetary Materials and Geochemistry and Planetary Geology programs.
Acted as abstractor for Mineralogical Abstracts, abstracted papers from Analytical Chemistry.

Susan M. Barger

National Advisory Board for Joint Bureau of Engraving and Printing and National Science Foundation Research project on the Role of Melamine Formaldehyde in Currency Paper, National Science Foundation Engineering Directorate, (1990-).

Proposal reviews:
Conservation related grants for Smithsonian Institution (2) and for Smithsonian Institution Press (1)
History of Technology and Science grants for Smithsonian Institution Office of Research and Fellowship (1).
Materials Science related grants for Sigma Delta Epsilon/Graduate Women in Science: Eloise Gerry Fellowship (1).

Consultancies:
The Museum of New Mexico, Palace of the Governors, History Museum Photographic Archives.
The Museum of New Mexico, Conservation Department.
Dr. Michael Mattis and Judith Hochberg Photographic Collection, Los Alamos, NM.
William L. Schaeffer, Dealer in Fine Photographs, Chester, CT.
Industrial Partnerships Center, Los Alamos National Laboratory (Los Alamos, NM) with SAGE Management Partners, Albuquerque, NM.
Michael Campana

Member, U.S. Environment Protection Agency's Strategic Workgroup on Ground Water Ecology
Reviewed manuscripts for Applied Hydrogeology, Hydrological Processes and Science
Reviewed 2 proposals for the National Science Foundation
Reviewed four chapters of physical geology textbook, Worth Publishers, Inc.

Invited Talks

Presented talk, "Regional groundwater flow in the Nevada Test Site - Yucca Mountain vicinity", IT Corporation Hydrology Seminar, February 1992

Laura Crossey

Off-campus Talks

Thermal Stability of Water-Soluble Organic Compounds in Sedimentary Basins
February 13, 1992
Los Alamos National Laboratory
Los Alamos, NM

Organic-Inorganic Interactions in Sedimentary Basins
February 27, 1992
New Mexico Institute of Mining and Technology
Socorro, NM

Thermal Stability of Organic Compounds During Diagenesis
March 23, 1992
Indiana University
Bloomington, IN

Reviews

Manuscripts

American Association of Petroleum Geologists Bulletin (1)
Clays and Clay Minerals (2)
Geochimica et Cosmochimica Acta (1)
Geology (2)
United States Geological Survey (1)

Proposals

American Chemical Society/Petroleum Research Fund (1)
National Science Foundation (2)
United States Geological Survey (Gilbert Fellowship) (1)
Journal reviews

Journal of Sedimentary Petrology (2)
Geological Society of America Bulletin (2)
S.E.P.M. Special Publications (1)

Proposal reviews

National Science Foundation (2)
American Chemical Society - Petroleum Research Fund (2)
S.E.P.M. Rocky Mountain Section - Graduate Student Scholarships (25)

Guest Lecturer
University of Nevada-Las Vegas, 12/92

Wolfgang Elston

Off-campus Talks

"The Bushveld-Vredefort event: A 2-billion year old geologic catastrophe", New Mexico State University, Las Cruces, New Mexico, February 22, 1992

"The Proterozoic Bushveld-Vredefort catastrophe: Was it Earth's greatest impact event?" University of Hawaii at Manoa, September 25, 1992

Proposal Reviews

Reviewed four proposals for the National Science Foundation

Manuscript Reviews

Reviewed and edited 12 manuscripts for Economic Geology, Special Issue on Volcanic Centers as Guides to Mineral Exploration

Reviewed article for Contributions to Mineralogy and Petrology

R.C. Ewing

Reviewed manuscripts, texts and proposals for the following (#in parenthesis)

Nature (1)
American Mineralogist (1)
Chemical Geology (1)
Lithos (1)
Journal of Nuclear Materials (23)
Scientific Basis for Nuclear Waste Disposal XVI (6)
Served as a panel or committee member for

National Academy of Sciences and National Research Council Panel on the Waste Isolation Pilot Plant
(Professor Charles Fairhurst, chair)

National Academy of Sciences and National Research Council Panel on the "Remediation of Buried and Tank Wastes" (Dr. R. Budnitz, chair)

U.S. Department of Energy Selection Committee for the "Distinguished Postdoctoral Research Program". The panel selected twelve finalists from over 200 applicants in all disciplines of the physical sciences.

Steering Committee (member) for the "Nuclear Waste Glass Compendium", Argonne National Laboratory

**John W. Geissman**

Professional talks


Presented Talk, "Late Paleozoic remagnetization of Precambrian crystalline rocks, central and southern Rocky Mountains: A relationship to Ancestral Rocky Mountain deformation?", University of Arizona, Tucson, January 24.

Reviews of manuscripts and proposals

Reviewed proposals for National Science Foundation (7), American Chemical Society (5), Department of Energy (1), The Third World Academy of Sciences (2).


Consultancies

Volcanism Project, Los Alamos National Laboratory, November, 1990-

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 thesis committee for Mr. Greg Overtoom, University of Utah.
Other

Technician, UNM Paleomagnetism and Rock Magnetism Laboratory

Jeffrey A. Grambling

Manuscripts reviewed

American Journal of Science (1)
American Mineralogist (1)
Canadian Mineralogist (2)
Contributions to Mineralogy and Petrology (2)
European Journal of Mineralogy (1)
Geological Society of America (1)
Geology (5)
Journal of Geology (1)
Journal of Metamorphic Geology (3)
Journal of Petrology (1)

Proposals reviewed

National Science Foundation: Tectonics program (2)
National Science Foundation: Petrology and Geochemistry Program (1)
MONTS (a Montana-focused division of NSF) (1)

Tenure/Promotion files reviewed

New Mexico Bureau of Mines and Mineral Resources (1 tenure)
North Carolina State University, Geology (1 promotion, tenure)
University of Wisconsin (2; promotion, teaching accreditation)

Stephen P. Huestis

Manuscripts reviewed for:

Geophysical Journal of International
Geophysical Research Letters

Geophysics
Inverse Problems

Rhian Jones

Served as a panel reviewer for the National Science Foundation program, Instrumentation and Laboratory Improvement. Reviewed 20 proposals.
Reviewed 1 manuscript for Geochimica et Cosmochimica Acta, 1 for Earth and Planetary Science Letters and 1 for Meteoritics.
Abstractor of Meteoritics for Mineralogical Abstracts.
Karl E. Karlstrom

Member of Editorial board of "Precambrian Research", 1990-1993

Panelist for NSF post-doctoral program, Earth Science, (January meeting - 80 proposals)

Panelist for NSF tectonics program, Earth Science Division, (September meeting - 130 proposals)

Steering Committee member for "POMP" - Proterozoic Orogenesis and Metallogenesis Project of U.S. Geological Survey


Unpaid adjunct professor - Northern Arizona University

Cornelis Klein

Adjunct Curator of Mineralogy, New Mexico Museum of Natural History, Albuquerque, New Mexico.

Professional evaluator of promotion (to full professor) dossiers for candidates at: King Saud University, Riyadh, Saudi Arabia and New Mexico Tech, Socorro, New Mexico.

Talks presented off-campus:


Albert M. Kudo

Reviewed manuscripts on Physical Geology for Mosby Publications.
Interview by Bill Eisenhood, Channel 4 News, on Albuquerque volcanoes.
Interview by writer about the Petroglyphs National Monument for paper she is working on for the National Park Service and edited her writing on it.
Described rock samples of Native American artifacts for archeologist working for the State.

Barry S. Kues

Advised J. Dewell (Governor's speechwriter) on spectacular geological and paleontological features of New Mexico (for a Governor King speech to environmental groups)

Reviewed a proposal to establish a New Mexico earthquake preparedness program, for the Middle Rio Grande Council of Governments

Reviewed a progress report on studies of a Permian trackway site in the Robledo Mountains, for Bureau of Land Management

Reviewed five papers for New Mexico Geological Society San Juan Basin IV guidebook
Reviewed one NSF proposal

Adjunct Curator, New Mexico Museum of Natural History

Leslie D. McFadden

Off-Campus Talks


Presented talk, "Utilization of Soils in Archeological Investigations", presented at Ghost Ranch Conference Center, New Mexico, August 17, 1992

Peer Reviews of Articles and Proposals

Reviewed 2 papers for Catena
Reviewed 1 paper for Soil Science Society of America Journal
Reviewed 1 paper for the Geological Society of America Bulletin
Reviewed 1 paper for Quaternary Research
Reviewed 1 paper for Material Research
Reviewed 1 paper for Science
Reviewed 1 NASA Graduate Fellowship Program Proposal
Reviewed Proposal to NASA Earth Surface Processes Group
Reviewed 1 proposal submitted to WERC
Reviewed 2 proposals submitted to the National Science Foundation
Reviewed proposed Second Edition of Fluvial Geomorphology textbook by M. Morisawa

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 Newsom

Reviewed two grant proposals submitted to NASA and five proposals submitted to the National Science Foundation.
James P. Papike

Reviewed: 20 Proposals, 15 Manuscripts

Harold Poths

Reviewed twice a paper for Nature
Reviewed 3 papers for a publication of papers given at the Alfred O. Nier Symposium on inorganic mass spectrometry, Durango, Colorado, 1991.

Frans Rietmeijer

Peer Review Scientific Papers

Nature (2)
Earth Planetary Science Letter (1)

Panel Reviews

National Aeronautics and Space Administration, Planetary Geosciences Program (2)
National Aeronautics and Space Administration, Exobiology Program (2)
National Aeronautics and Space Administration, Planetary Instrument and Development Program (3)
Acting Member of the National Aeronautics and Space Administration, Johnson Space Center Cosmic Dust Review Panel

Charles Shearer

Reviewed: 10 Proposals, 12 Manuscripts

Gary A. Smith

Adjunct Curator, New Mexico Museum of Natural History.
Secretary, International Commission on Volcanogenic Sediments.


Presented talk, "Climatic influences on alluvial sedimentation: The Plio-Pleistocene St. David Formation, SE Arizona", at the Department of Geosciences, University of Arizona, Tucson, Arizona, March 5.

Presented talk, "Establishing the climatic controls on continental sedimentation: An example from southeastern Arizona", at the Department of Geology, Arizona State University, Tempe, Arizona, September 9.

Presented talk, "Volcaniclastic sediments as the key to reconstructing the petrology of long-gone volcanoes", at the Department of Geology, Arizona State University, Tempe, Arizona, September 10.

Reviewed proposals for American Chemical Society Petroleum Research Fund (1), National Science Foundation (2).

Michael M. Spilde

Consultant on pegmatite geology to Pacer Corporation, Custer, South Dakota.

Lumin Wang

Presented talk, "TEM study of irradiation effects in solids", at the Department of Nuclear Engineering, University of California-Berkeley, March 18

Evaluated new transmission electron microscope at the Philips Electron Optics Center in Eindhoven, the Netherlands (invited by Philips Corporation), September 15-17

Evaluated new transmission electron microscopes at the demonstration centers of Hitachi, JEOL and Topcon Corporations in Tokyo and Mito, Japan (invited by these corporations), Dec. 7-16

Reviewed one proposal for National Science Foundation and two papers for Journal of Applied Physics

Lee A. Woodward

Reviewed manuscript for Geology.

Crayton J. Yapp

Presented invited talk at the California Institute of Technology, January 21, 1992
Gave interview reported in the "Dallas Morning News"
Reviewed NSF proposals - 5
Manuscript reviews:
  - AGU monograph - 1
  - Applied Geochemistry - 1
  - Geochimica et Cosmochimica Acta - 3
7. NON-TEACHING UNIVERSITY SERVICE

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. Arranged long term loan of the Navajo meteorite to the Institute of Meteoritics and arranged display for Meteorite Museum. 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. Arranged purchase of new computer and image analysis system for electron microprobe with Mike Spilde. Supervisor of thin section laboratory in the Institute of Meteoritics. Member, Geology Department and Institute of Meteoritics Facilities Committee Member, Search Committee for Department of Geology Electronic Technician position.

Other University Service


Michael E. Campana

University

Interdisciplinary Water Curriculum Committee, Master of Water Resources Administration Program Steering Committee, Master of Water Resources Administration Program

Department

Committees:

Graduate Committee
Lecture and Colloquium Series Committee
Low-Temperature Geochemist Search Committee

Other:

Hosted three G401 speakers: Drs. George Hornberger, Scott Tyler and Shirley Dreiss

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Laura J. Crossey

Department Committees

- Alumni Relations
- Lectures
- Scholarship
- Sigma Gamma Epsilon (National Honorary Geological Society) - Faculty Advisor
- Undergraduate
  - Undergraduate Geology Club - Faculty Advisor

College
- Undergraduate Committee

University
- Ad Hoc Committee on Natural Science Courses
- Core Curriculum Committee

Maya Elrick

Departmental committees

- Microscope committee
- Undergraduate committee
- Scholarship committee
- Search committee for geomorphology faculty position

University committees

- Undergraduate curriculum committee, College of Arts and Sciences

Wolfgang E. Elston

University (Spring semester only)

- Core Curriculum Committee and Faculty Senate discussions on proposed core curriculum
- Long-Range Planning Committee and Subcommittee on Planning Processes and Policies

College of Arts and Sciences (Spring semester only)

- Graduate Committee
Geology Department

Graduate Committee (Spring semester only)

Coordinator, UNM-LANL Volcanology Program, chaired meetings of the UNM-LANL Volcanology Program faculty at UNM, April 1, 1992 and at LANL, August 19, 1992.

R.C. Ewing

University Committees

Honors Task Force (1992)
Advisory Board for Waste Management Education & Research Consortium, UNM

Department

Honors Advisor
Collections Committee: Member
Facilities Committee: Member
Undergraduate Committee: Member
Long-Range Planning 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 Barker, John Hopkins University, as an Adjunct Associate Professor at UNM
Dr. Hiroshi Isobe, Japan Atomic Energy Research Institute, as a Visiting Scientist
Dr. Elizabeth M. Larson as an Adjunct Association Professor at UNM
Dr. Nicole Borde, Post-Doctoral Fellow

John W. Gelssman

University service and activities

Member, Faculty Senate, 1991-1992
Arts and Sciences Graduate Committee
Responded positively to solicitations to serve on faculty committees, yet have not been contacted
Volunteer, UNM One on One program
Departmental service

Department Graduate Committee; Chair, Fall, 89-
Department Computer Use Committee
Department Assistant Chair
Department Facilities Committee

Administrative Positions

Chair, Graduate Committee
Assistant Chair

Jeffrey A. Grambling

Chair, committee to evaluate Geology Research Scientists
Supervisor, Geology thin-section laboratory
Chair, UNM Geology microscope committee

Member, Graduate Committee
Member, Search committee for Low-Temperature Geochemist (faculty search)
Host for two departmental visitors and seminar speakers (C. Chapin and M. O'Neill)

Stephen P. Huestis

University

One-on-One Program - volunteer

Department Committee

Undergraduate
Computer
Geochemistry position search
Library liaison

Rhian Jones

University service

Meteorite Museum host for President and Mrs. Peck's Museum Crawl for new faculty. April 26.
Presented a display at the opening ceremony of the Advanced Materials Laboratory. August 3.
Represented Institute of Meteoritics with a display for the Popejoy Society reception, Popejoy Hall. October 15.
Participated in One-on-One program as staff volunteer.

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Departmental service

Manager of Experimental Petrology Laboratory.
Assistant Curator of the Meteorite Collection and Museum.
Member of Chemical Hygiene Committee.
Attended several meetings of the Chairs of Arts and Sciences as representative of the Institute of Meteoritics.
Compiled Institute of Meteoritics Annual Report.
Senior Research Associate representative at faculty meetings, Spring semester.
Hosted visit of Dr Richard Ash and Mr Jason Newton, Open University, U.K. March 23-25.

Karl E. Karlstrom

Departmental Committees

Graduate Committee
Search Committee - Geomorphology position

Cornelis Klein

Since August 1989, Chairman of the Undergraduate Committee in Geology
Undergraduate advisor in Geology
Member, Senior Faculty Promotion and Tenure Committee for 1991-92, College of Arts and Sciences

Geology Department host to:

Professor Mike Lesher, University of Alabama
Geol. 401 speaker, April 23, 1992.

Dr. Ian MacGregor, NSF Earth Science Director
August 12, 1992.

Albert M. Kudo

University:

Chair of UNM/Sandia Colloquium Committee.
Chair of UNM Science Colloquium Committee.
Member of Leisure Services Advisory Council.

Department:

Chair of Scholarship Committee.
Chair of Publications Committee.
Chair of Colloquium Committee.
Member of Microscope Committee.
Barry S. Kues

Member of University Long-range Planning Committee (from August on)

Chair, Department of Earth and Planetary Sciences; member (ex officio) of numerous departmental committees

Leslie D. McFadden

Served as Session Chair, AmerEcology Conference on the Consequences of Economic Development on the Environment for the Americas, at the University of New Mexico, April 24-25, 1992

Chairman, Department of Earth and Planetary Sciences Long-Range Planning Committee

Assistant Chairman, Department of Geology

Chairman, Geomorphology Position search, Department of Earth and Planetary Sciences

Hosted visit to UNM Campus of Scott Engle, Finalist for Development of Geology Silver-Kelley Fellowship

Horton Newsom

Executive Officer of the Institute of Meteoritics until January 31, 1992.

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 the following scholars:

Valerie Hilgren, Doctoral Candidate, University of Arizona, September 23, 1992.
Interviewed by Renee Sanchez, KOB radio, July 13, 1992.
Faculty advisor, student club: Students for the Exploration and Development of Space.
Member, New Mexico Space Grant Faculty Advisory Board.
Research Staff Representative to Department Faculty Meetings, Fall 1992.

James P. Papike

University: Established SIMS Laboratory at Advanced Materials Laboratory

Departmental: Chaired Facilities Committee
Member of Graduate Committee
Member of the Long Range Planning Committee
Organized 401 Seminar
Hosted four speakers for 401 Seminar
Harold Poths

Member of the Laboratory Hygiene Committee

Charles Shearer

University

Committee to established SIMS Laboratory at Advanced Materials Laboratory

Departmental

Manager, ICP-MS Laboratory

Michael M. Spilde


Gary Smith

Geology Department Collections Committee (Chair)
Geology Department Graduate Committee

Lumin Wang

Responsible for the operation of the Analytical Electron Microscopy Laboratory which is open to the entire campus

Lee A. Woodward

Member of undergraduate committee.
Member of EEE committee.
Departmental service

Standing Committees:
- Facilities Committee
- Scholarship Committee

Ad hoc Committees:
- Geochemist Search Committee
- Search Committee for Electronics Technician

Caswell Silver Foundation Board of Directors

Department Representative at the Albuquerque Petroleum Association annual scholarship awards ceremony and dinner, December 6, 1992.

Supervisor of stable isotope laboratory
8. SCHOLASTIC HONORS AND FELLOWSHIPS

Wolfgang E. Elston

Appointed Research Professor of Geology, November 24, 1992.

Delivered commencement address "Eyewitness to the Golden Age", departmental commencement exercises, May 16, 1992.

Re-listed in Who's Who in Science and Engineering

Jeffrey A. Grambling

Nominated to "Who will be who in the 21st century"
Accepted for "Two thousand notable American Man, 1st Edition"
Accepted for "Man of Achievement: 15th Edition"
Accepted for "Who's who of Emerging Leaders in America, 4th Edition"

Horton Newsom

Seminar: Department training on sexual harassment issues, February 5, 1992
Red Cross Course: First aid and CPR, October 22, 1992.

Michael M. Spilde

9. SABBATICALS AND TRAVEL

Gary Acton

Field work in the Rio Grande Rift, New Mexico: Collected paleomagnetic samples from Cenozoic age sediments to examine the possibility of using these sediments for tectonic and magnetostratigraphic studies. April 11, 1992 to April 13, 1992.


Field work in Colorado: Collected paleomagnetic samples from Late Cretaceous rocks from the Colorado Plateau to examine the amount of rotational deformation the plateau had sustained. June 8, 1992 to June 25, 1992.


Field work in the Afar triangle of Ethiopia, Africa: Conducted a Global Positioning System geodetic survey and collected paleomagnetic samples from 0-5 million year old rocks to examine the nature of rifting in Afar and to assess the seismic and volcanic hazards. October 23, 1992 to November 15, 1992.

Adrian Brearley

Travel to Madison, Wisconsin for demonstration of Voyager X-ray Microanalysis system at Noran, February 5-6, 1992.


Travel to Hueston Woods, Ohio for MSA Short Course on transmission electron microscopy, October 23-25, 1992.

Travel to Cincinnati, Ohio to attend Annual GSA meeting, October 25-29, 1992.

Travel to Socorro, New Mexico to attend 13th New Mexico Gem and Mineral Symposium, November 13-14, 1992.

Travel to San Francisco, CA to attend Fall American Geophysical Union Meeting, December 6-11, 1992.

Michael E. Campana


Sixth International Symposium on Water Tracing, Karlsruhe, Germany, September 21-26, 1992.


American Geophysical Union Fall Annual Meeting, San Francisco, December 7-9, 1992.
Wolfgang E. Elston

Travel


Visited University of Hawaii at Hilo, discussed UNM-LANL Volcanology Program, January 16, 1992

Visited New Mexico State University, Las Cruces, New Mexico, February 26, 1992, discussed UNM-LANL Volcanology Program, gave talk on "The Bushveld-Vredefort event: A 2-billion year old geologic catastrophe"

Visited University of Hawaii at Manoa, September 25, 1992, discussed UNM-LANL Volcanology Program. Gave talk on "The Proterozoic Bushveld-Vredefort catastrophe: Was it Earth's greatest impact ever?"

Leader, geological field trips

April 3-5, 1992: Southwestern New Mexico, for UNM-LANL Volcanology Group and Geology 548

May 3, 1992: Jemez Mountains (Valles Caldera) for Geology 548

August 13-16, 1992: Southwestern New Mexico for Geology 451L

September 11, 1992: Observed and survived Hurricane Iniki, Kauai, Hawaii

R.C. Ewing

January 1-9: Berlin, Germany
April 1-2: Washington, DC, NAS/WIPP Panel
April 3-8: Brussels, Belgium, CEC Workshop on Oklo
April 14-15: Reno, NV, Am. Nuclear Society
April 18: Field Trip - Sandia Peak for Geology 101
May 7-9: Reston, VA, Goldschmidt Conference
May 11: Washington, DC, NRC
May 18-19: Reno, NV, University of Nevada-Reno
June 1-5: Strasbourg, France, European-MRS Spring
June 6-10: Barcelona, Spain, MBT research meeting
June 16-18: Argonne, IL, Argonne National Laboratory
July 5-10: Plymouth, NH, Gordon Conference
Aug. 27-Sept. 7: Kyoto, Japan, International Geological Congress
Sept. 21-26: Visby, Gotland, Spent Fuel Workshop
Sept. 27-29: Nashville, TN, DOE Postdoctoral Fellow Selection Panel
Oct. 5-9: Toldeo, Spain, Natural Analogue Working Group
Oct. 17: Field Trip: Harding Pegmatite, Geology 301
Oct. 20-21: Albuquerque, NM, NAS/WIPP Panel
Nov. 30-Dec. 4: Boston, MA, Materials Research Society Fall
Dec. 7-9: Irvine, CA, NAS/WIPP Panel Meeting
Dec. 10-12: San Francisco, CA, American Geophysical Union

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John W. Geissman

Summer teaching

University of Michigan Camp Davis, Geological Sciences 440, Advanced Field Geology, July 3-August 16.

Travel

January 6-14, central Arizona, field sampling
January 23-24, University of Arizona
February 6-8, southern New Mexico, northern Mexico, field sampling
February 26, central New Mexico, field sampling
February 29, central New Mexico, field sampling
March 7-12, southern California, field sampling
April 25, central New Mexico, field sampling
April 29-May 1, Washington D.C., NSF panel
May 10-13, southern Nevada, field sampling
May 15, Los Alamos
May 18-June 6, central New Mexico, southwest Colorado, UNM Introductory Field Geology course.
June 11, central New Mexico, field sampling
June 16-20, eastern Nevada, field sampling
June 30-July 4, Wyoming, Michigan Field Camp
July 25-August 6, Wyoming, Utah, central Colorado, field sampling
August 7-August 14, Wyoming, Michigan Field Camp
August 28-30, Butte, Montana, field sampling
September 14-15, Las Vegas, Nevada, DOE meeting
October 24-28, Cincinnati, Ohio, Geological Society of America Annual Meeting
November 5-6, Washington, D.C., American Geophysical Union, Public Information Committee meeting
November 9-10, southern Nevada, field sampling.
November 22-24, southern Nevada, field sampling.
December 15-19, southern California, field sampling

Jeff Grambling

January 29, 1992: Field work in Manzano Mountains, New Mexico with Ph.D. student, Amy Thompson.
February 7, 1992: Field work in Manzano Mountains, New Mexico with Ph.D. student, Amy Thompson.
February 23, 1992: Led field trip to Manzano Mountains, New Mexico with Geology 548 class.
March 5, 1992: Field work in Los Pinos Mountains, New Mexico, with M.S. student, Laurel Shastri.
March 14-16, 1992: Led field trip to Picuris Range, New Mexico with Geology 548 Class.
March 26, 1992: Field work in Manzano Mountains, New Mexico with Ph.D. student, Amy Thompson.
April 9-12, 1992: Attended field trip in southeastern California with Proterozoic Metallogenesis and Orogenesis Project.
April 22, 1992: Led field trip to Tijeras Canyon, New Mexico with Geology 548 class.
May 15, 1992: Field work in Sandia Mountains, New Mexico.
May 18 - June 11, 1992: Field work in Truchas and Rincon Ranges, New Mexico.
September 5-9, 1992: Field work in Cimarron Mountains, New Mexico.
September 18-20, 1992: Field work in Rincon Range, New Mexico.
September 27, 1992: Led field trip to Santa Fe Range, New Mexico, for Geology 514 class.
October 19-21, 1992: Trip to Dallas, Texas.

Rhian Jones

January 22-25. Travel to Washington, D.C. to National Science Foundation, Instrumentation and Laboratory Improvement Program, review panel meeting.
December 6-11. Travel to San Francisco, California, to attend American Geophysical Union Fall Meeting.

Cornelis Klein

September 30 - October 3, 1992, New Mexico Geological Society field trip.
October 18-23, 1992, Invited participant at GSA Penrose Conference, "Late Precambrian Tectonics, Death Valley, California.

Albert M. Kudo

Led National Parks class on weekend field trip to see Bandelier, Chaco Canyon, and El Malpais National Monuments, March 6-8, 1992.
Led National Parks class on weekend field trip to White Sands and Carlsbad Caverns on April 10-12, 1992.
Led Geology 303 and 531 classes on weekend field trip to see Jemez Volcanic field and El Malpais National Monument, September 23 - 25, 1992.

Barry S. Kues

Professional travel

Holman area, Sangre de Cristo Mountains, field research, Pennsylvanian fossils, June 24, 1992.
Cornudas Mountains, New Mexico-Texas, field research, Cretaceous stratigraphy and paleontology, June 29-30, 1992.
Jemez Springs area, field research, Pennsylvanian fossils, October 11, 1992.
Mesa Portales-Cuba area, field research, Cretaceous fossils, November 1, 1992.

Leslie D. McFadden

Travel:

Jan. 7-10 Participation in Meeting of Research Investigators in NASA Soil/Remote Sensing program Washington, D.C.
Jan. 14-15 Field trip to NE Arizona to overview research in erosion, plant community restoration
March 17-20 Fieldwork, Cima volcanic field, southern California
May 11-14  Fieldwork, northeastern Arizona  
June 22-26  Fieldwork, Mojave Desert, Southern California  
June 29-July 3  Fieldwork, northeastern Arizona  
August 17, 18  Travel to Ghost Ranch Conference Center to present talk, review of soils erosion, Coyote Ranch Forest Service Office district  
Sept. 1-2  Travel to Las Vegas Nevada, to discuss Yucca Mountain Project related research to DOE group  
Sept. 14-16  Participation in U.S. Nuclear Waste Review Board Meeting, Las Vegas, Nevada, to present soils-geomorphic studies related to Site Characterization of the proposed High Level Waste Repository  
Oct. 25-29  Participation in Geological Society of America National Meeting, Cincinnati, Ohio  
Nov. 2-4  Participation in Hazardous Waste Operations Course, Los Alamos National Laboratory  
Nov. 7, 8  Present Talk at East Mojave Desert Symposium/Workshop, University of California, Riverside  
Nov. 15, 16  Fieldwork, Yucca Mountain Area, Nevada  

Horton Newsom

V.M. Goldschmidt conference for the Advancement of Geochemistry, presented one talk, May 8-10, 1992, Reston, Virginia.  
Attended the American Geophysical Union Spring Meeting, presented one talk, May 12-15, 1992, Montreal, Canada.  
Attended the Workshop on Chemical Weathering on Mars, and presented one talk, September 10-12, 1992, Cocoa Beach, Florida.  
Attended the American Geophysical Union Fall Meeting, presented one talk, and chaired one session, December 7-17, 1992, San Francisco, California.  

Gary Smith

February 11-12:  Field excursion in southeastern Arizona with Dr. W.R. Dickinson, University of Arizona.  
March 18-23:  Field research in southeastern California with Dr. E.H. Lindsay (University of Arizona) and Dr. T.E. Cerling (University of Utah).  
September 11-16:  Field research in south-central Colorado with graduate student Michael Grubensky.  

Michael M. Spilde

Elected to Vice President of Programs, Albuquerque Gem and Mineral Club, November,  

Lumin Wang

Traveled to Argonne National Laboratory at Chicago, IL to use the HVEM-Tandem Facility for in situ ion irradiation/TEM experiment during Feb. 29 to March 5
Presented talk, "TEM study of irradiation effects in solids", at the Department of Nuclear Engineering, University of California-Berkeley, March 18

Attended the 4th Conference on the Frontiers of Electron Microscopy of Materials, Oakland, CA, April 20-24

Attended the Materials Research Society 1992 Spring Meeting, San Francisco, CA, April 28 to May 1

Traveled to Argonne National Laboratory at Chicago, IL to use the HVEM-Tandem Facility for in situ ion irradiation/TEM experiment during June 9-14

Attended the 50th Annual Meeting of the Electron Microscopy Society of America, Boston, MA, Aug. 17-21

Attended the 8th International Conference on Ion Beam Modification of Materials, Heidelberg, Germany, Sept. 6-11

Evaluated a new transmission electron microscope at the Philips Electron Optics Center in Eindhoven, the Netherlands (invited by Philips Corporation), Sept. 15-17

Attended the Geological Society of America 1992 Annual Meeting, Cincinnati, OH, Oct. 22-28

Evaluated new transmission electron microscopes at the demonstration centers of Hibachi, ), and Topcon Corporations in Tokyo and Mito, Japan (invited by these corporations), Dec. 7-16.

Frans Rietmeijer

Travel to 23rd Lunar and Planetary Science Conference, Houston (TX), March 16-30
Institute of Planetology, University of Munster, Munster (Germany), June 22-23
Department of Nuclear Chemistry, University of Cologne (Germany), June 24
Institute of Earth Sciences, Rijksuniversiteit-Utrecht, Utrecht, the Netherlands, June 26-28.

Lee A. Woodward

Travel to California for field work, January, 1992.
Travel to Montana for field work, May, June and July, 1992.
Travel to Pennsylvania for field work, September, 1992.

Crayton Yapp

Pasadena, California
California Institute of Technology
January 20-21, 1992

Montreal, Quebec, Canada
1992 Spring AGU Meeting
May 12-13, 1992

Cincinnati, Ohio
1992 GSA National Meeting
October 25-29, 1992
10. PUBLIC SERVICE

Gary Acton

Judged a science fair at Menaul Middle School
Provided information to Applied Research Associates about the use of geodesy in studying deformation.

Adrian Brearley

Program broadcast 7, April, 1992.
Devised, organized and set up meteorite display for Albuquerque Gem and Mineral Club Show, March 6-8, 1992.
Presented talk to the Bear Canyon Senior Citizens Camera Club on photographing meteorites and rocks, 1, October, 1992.
Identified numerous suspect meteorites and provided information on meteorites for members of the public from both within and outside New Mexico.
Acted as consultant for author Madelyn Carlisle on a children's book about meteorites to be published in Fall, 1992.

Michael E. Campana

Pro bono publico consulting for Volunteers in Technical Assistance: hydrogeologic aspects of the Lake Assal power plant project, Djibouti
Pro bono publico consulting for the New Mexico Environmental Law Center: New Mexico Solid Waste Management regulations
Provided water resources and related information to the general public

Laura J. Crossey

Judge, Regional Science Fair
Coach, Albuquerque Youth Soccer Organization (Div. VI)

Jim Connolly

Gave numerous introductory talks on Geology to elementary and secondary school students attending YWCA Science/Environment Camp program at Pinyon Canyon Center, Tijeras, New Mexico, March through May and September through November, 1992. Acted as outside resource person and organizer for St. Charles elementary school computer club, Spring, 1992.

Wolfgang E. Elston

Information

Responded to numerous requests for information on mineral resources, geology, environmental problems, earthquakes, volcanic eruptions, and other geological hazards, etc.; identified rocks, minerals, and fossils for the public.

Interview

Interviewed by TV Channel 4 on California earthquakes, June 28, 1992.

R.C. Ewing

Rotary International
Amnesty International

John W. Geissman

Geoscience Advisor, Albuquerque Petroglyphs National Monument committee
Geologic field excursion leader, miscellaneous Girl Scout groups

Jeffrey A. Grambling

Presented talk on "Geological processes" to preschool class from Sweetheart Nursery School.
Presented talk on "Volcanoes" to second-grade class, Bandelier Elementary School.
Presented talk on "Glaciers and landforms" to third-grade class, Bandelier Elementary School.
Readings and discussions with kindergarten class, Bandelier Elementary School.
Identified rocks and minerals for the public.
Supervisor of portion of funding drive for First Presbyterian Church.

John Husler

Judge, Manaul School Science Fair.
Judge, East San Jose Science Fair.
Judge, Northwest Regional Science Fair.
Helped three students with science projects.
Gave two museum tours.
Gave one chemical demonstration.
Wrote letters to state and federal officials concerning manganese and silver limits in present or proposed environmental standards.
Analyzed rock, mineral and ore samples for prospectors, miners, potters, etc.
Analyzed of metal contamination, General Mills.
Humate analyzed - Mesa Verde Resources.

**Horton Newsom**

Provided tours and information for members of the general public.

**Stephen P. Huestis**

Non-Professional

Life-long friends program - volunteer

Virginia Creepers Stringband
1) benefit performance at St. Michael and All Angels Episcopal Church
2) 2 radio performances - KUNM
3) demonstration in English Department Course - 520 "Writing About Place"

**Karl E. Karlstrom**

Guest lectures at Bandelier Elementary School


**Cornelia Klein**

Member of Rotary Club of Albuquerque
Member, speaker selection committee for the Albuquerque Rotary Club

**Albert M. Kudo**

Gave geology and origami talks to students in class at Sandia Base Elementary School.
Member of the Northwest Regional Science Fair Advisory Board.
Master Judge Chair and Member of the Judge Chair Committee for the Northwest Regional Science Fair.
Member of Judge Chair Committee in selection of winners, awards, best of fair, scholarships in NW Regional Fair, March 19, 1992.
Barry Kues

Identified rocks and fossils for public, answered inquiries about geology and the UNM geology program, all year.

Leslie D. McFadden

Presentation of invited talk to New Mexicans for Science and Reason.
Responded to numerous requests for advice and assistance from the public concerning issues related to soils and geology.

Charles Shearer

Lectures and field trips for Albuquerque Schools

Gary Smith

Responded to 19 personal inquiries for assistance in identifying fossil and mineral specimens.
Responded to 11 written inquiries 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.

Lee A. Woodward

Answering inquiries concerning geology and mineral locations in New Mexico.

Crayton Yapp

Identified minerals for public
Member, Hoffmanton Neighborhood Association
Informal consultation with D. McQuillan of state E.I.D. concerning groundwater chemistry
IV. PROFESSIONAL TALKS PRESENTED IN DEPARTMENT
Dr. R.C. Onstott, Princeton University: "How ten years of laser microprobe studies have led to coherent illumination of the K-Ar dating scheme" (January 21).

Dr. Gerald J. Wasserburg, Caswell Silver Distinguished Lecturer, California Institute of Technology: "$^{26}$Al here and there in the galaxy" (January 28).

Dr. Gerald J. Wasserburg, Caswell Silver Distinguished Lecturer, California Institute of Technology: "Isotopes, Trace Elements, and Hydrologic Circulation" (January 29)

Dr. John M. Bartley, University of Utah: "Timing of faulting and volcanism in eastern Nevada: Implications for transverse fault zones in the Great Basin" (February 4).

Dr. John M. Bartley, University of Utah: "Deformation at the Tip of the Golden Gate Thrust, Nevada: Implications for Thrust Fault Propagation" (February 5)

Dr. Matthew Davis, New Mexico Institute of Technology: "A conceptual geostatistical-sedimentological model of aquifer heterogeneity based on outcrop studies" (February 11).

Dr. J. Kent Snow, California Institute of Technology: "Large Magnitude Permian Shortening and Continental Margin Tectonics in the Southern Cordillera" (February 25)

Dr. Roy Wogelius, Argonne National Laboratory: "Recent Advances in Aqueous Geochemistry" (March 1)

Dr. Roy Wogelius, Argonne National Laboratory: "Synchrotron X-Ray Studies of Reactions at the Mineral Fluid Interface" (March 2)

Dr. Mark Williamson, Adrian Brown Consultants, Inc.: "The Kinetics of Acid Mine Drainage" (March 4)

Dr. Mark Williamson, Adrian Brown Consultants, Inc.: "Thiosulfate in the Geochemical Environment" (March 5)

Dr. Carrick Eggleston, Federal Institute for Water Resources and Water Pollution Control Swiss Federal Institute of Technology Dubendorf, Switzerland: "Structure and Function of Key Geochemical Reactants: Mineral Surfaces" (March 8)

Dr. Carrick Eggleston, Federal Institute for Water Resources and Water Pollution Control Swiss Federal Institute of Technology Dubendorf, Switzerland: "Structure of Hematite (001) Surfaces and Behavior of Adsorbed Cr (III)" (March 9)

Dr. Yemane Asmerom, Department of Geology and Geophysics University of Minnesota: "The Sr Isotope Record in Marine Carbonates and Global Processes" (March 10)

Dr. Yemane Asmerom, Department of Geology and Geophysics University of Minnesota: "U-Th-Pb Evolution of the Earth: The long and the short of it" (March 11)

Dr. Daniele Cherniak, Rensselaer Polytechnic Institute: "Studies of cation diffusion in feldspars" (March 11)

Dr. John Wolff, University of Texas at Arlington: "Petrogenesis and zoning mechanisms for the Bandelier Tuff magma, Jemez Mountains Volcanic Field, New Mexico" (March 25)

Dr. Kirk Vincent, University of Arizona: "Patterns of cumulative fault displacement from four earthquakes and implications for models of fault behavior" (March 25)

Dr. Kirk Vincent, University of Arizona: "Extreme flooding on an alluvial fan and its implications for flood hazards and fluvial geomorphology in arid lands" (March 26)

Dr. Frank Pazzaglia, Pennsylvania State University: "Tectonic Geomorphology and Late Cenozoic Geology of the Middle United States Atlantic Passive Margin" (March 29)

Dr. Frank Pazzaglia, Pennsylvania State University: "Quaternary Geology, Geomorphology and Landscape Evolution of the Central Appalachian Piedmont" (March 30)

Dr. Samuel A. Bowring, Massachusetts Institute of Technology: "Growth and differentiation of the Earth's earliest lithosphere, the 4.0 Ga Asasta Gneiss, Slave Province, NWT, Canada" (April 1)
Dr. Lisa Ely, Pennsylvania State University: "Extreme Floods and Climate Change: a 5000-year Record From the Southwestern United States" (April 1)
Dr. Lisa Ely, Pennsylvania State University: "Hydrologic Applications of Long-Term Paleoflood Records" (April 2)
Dr. Peter Ballance, University of Auckland: "Death of a Subduction Zone: Extension in the Southwest Pacific, 100 to 25 Ma" (April 7)
Dr. Charles Landis, University of Otago: "The New Zealand Permian Collage - A dog's breakfast of scraps from Gondwana, Tethys, oceanic arcs, and accretionary prisms" (April 8)
Dr. William R. Dickinson, Caswell Silver Distinguished Lecturer, University of Arizona: "The influence of tectonics on global sediment dispersal" (April 15)
Dr. Gordon McKay, NASA-Johnson Space Center: "Crystal-chemical control on rare-earth-element partitioning in pyroxenes" (April 22)
Dr. Frank Hawthorne, University of Manitoba: "Minerals, mineralogy, and mineralogists: Yesterday, today, and tomorrow" (April 29)
Dr. William Bull, University of Arizona: "Dating earthquakes along the Alpine Fault, New Zealand" (May 6)
Dr. Ronald Greeley, Arizona State University, Tempe: "Wind as a Geological Process: Earth, Mars and Venus" (September 3)
Dr. Randy Richardson, University of Arizona, Tucson: "Ridge Forces, Absolute Plate Motions, and the Intraplate Stress Field" (September 10)
Dr. Clement Chase, University of Arizona, Tucson: "Climate and Topography: Modelling why the Colorado Rockies weren't uplifted in the Pliocene" (September 17)
Dr. Jay Quade, University of Arizona, Tucson: "Strontium and carbon isotope tracers and the origins of soil carbonate in Australia" (September 24)
Dr. Rhian Jones, University of New Mexico: "Chondritic Meteorites: Understanding the Early History of the Solar System" (October 1)
Dr. Berry Lyons, University of Nevada, Reno: "Paleovolcanic Activity as Determined from Ice Core Records" (October 8)
Dr. Ray Eby, Royal Ontario Museum, Toronto: "The Amorphization of Silicates by Natural Processes and Ion-Bombardment" (October 22)
Dr. Phil Kyle, New Mexico Institute of Mining and Technology, Socorro: "Volcanic Gas; Emission from Mount Erebus Anarctica" (November 5)
Dr. Steven Bohlen, U.S. Geological Survey, Menlo Park California: "Evolution of the Lowermost Continental Crust" (November 12)
Dr. George Hornberger, University of Virginia, Charlottesville: "Bacterial Transport in Porous Media: Evaluation of a Model Using Laboratory Observations" (November 19)
Dr. Lisa Pratt, Indiana University, Bloomington: "A Circum-Caribbean transect for mapping paleo-oceanographic events in the mid-Cretaceous" (December 3)
V. GEOLOGY MUSEUM AND COLLECTIONS
More than 3,500 people visited the Geology Museum during the 1992-1993 academic year. Most of the visitors were school children, many of whom were ably guided by volunteers Glenn McLaughlin and Judy Stoopes, who are geology graduate students. The UNM Psychology Department used the museum for a reception on October 30, 1992. The Department of Earth and Planetary Sciences hosted museum receptions for two Caswell Silver Distinguished Lecturers, Gerald Wasserburg and William Dickinson.

The Museum received a generous, and significant donation of 160 mineral specimens from Dr. Eugene Meieran, of Phoenix, Arizona. Most of the specimens are of museum quality and all of them are important additions to the collections. 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.

For the first time ever the Geology Museum was invited to exhibit minerals at the prestigious Tucson and Gem and Mineral Show, in February 1993. Eight outstanding specimens from the Museum were exhibited at the main Tucson Convention Center show for four days. The Museum also participated in the Albuquerque Gem and Mineral Show in March 1993 with an exhibit of the best of the more than 500 cataloged mineral specimens that have been acquired over the last 2 years.
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**JULY, 92 TOTAL**

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**APRIL, 1992 TOTAL**

- Total: 966
- Grade Total: 174

**MAY, 1992 TOTAL**

- Total: 667
- Grade Total: 177

**JUNE, 1992 TOTAL**

- Total: 127
- Grade Total: 19

**GRAND TOTAL**

- Total: 3,739
- Grade Total: 800
VI. GRADUATE AND UNDERGRADUATE PROGRAMS
SUMMARY OF GRADUATE PROGRAM

The Department of Earth and Planetary Sciences 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, environmental and geological consulting companies, governmental organizations, and academia. It is worthy of note that three of our recent graduates, Dr. Rodney Metcalf, Dr. James Faulds, and Dr. Mark Gonzalez have obtained tenure-track faculty appointments at the University of Nevada-Las Vegas, the University of Iowa, and the University of Denver, respectively. During the past year, Dr. Grant Meyer assumed a two-year teaching position at Middlebury College, and Ms. Amy Thompson (close to completion of a PhD degree) assumed a one-year sabbatical replacement position at Hope College. 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, 1992, term, a total of 68 students were working toward M.S. and Ph.D. degrees in the Department of Geology, with 10 students entering the program in the Fall, 1992, term (Table 1). Of the entire group, 35 were M.S. students and 33 were Ph.D. students. The number of full-time students was 48; 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 18. The male/female ratio of M.S. students was 20/15 and 24/9 for Ph.D. students, with a total ratio of 44/24. With 6 (four men and two women) students entering the program for the Spring, 1993, term, there were no significant changes in the total graduate enrollment during this time period. A total of 4 M.S. degrees and 4 Ph.D. degrees were awarded by the Department in the 1992-1993 academic year, including the prior summer. During the Summer and Fall terms, 3 Ph.D. degrees and 2 M.S. degrees were awarded. During the Spring term 2 M.S. and 1 Ph.D. degrees were awarded (see list later in this section).

Over the past decade the Department has considerably improved its ability to support the full-time students enrolled in the graduate program. For the 1992-1993 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. 19 were supported by either full-time (20 hours/week) or half time (10 hours/week) teaching assistantships, 20 were supported by either full-time or half-time research assistantships, two (Tracey Cascadden, PhD, and Brad Ilg, PhD) were supported by Kelley-Silver Fellowship, one (Aurora Pun, PhD) was supported by a NASA fellowship, and two (Amy Thompson and Dan Larsen) were supported as part-time staff members teaching sections of Physical Geology (EPS101). These figures count some students twice if they received support from two different sources during the year. Over 60 percent of the M.S. students in residence during the Spring term were supported financially. 14 were supported by full- and half-time teaching assistantships, 10 by research assistantships. Judy Stoopes was supported on a full-time NSF Minorities Fellowship. Kyle Gay was supported on an AWU Fellowship. A list of all graduate students supported by assistantships or major fellowships is presented in Table 2. In addition to major support provided through teaching or research assistantships or fellowships, many graduate students also obtained scholarships and minor fellowships through donations by alumni and other friends of the Department and 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 as well as 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. 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. Some highlights of graduate student funding accomplishments include the funding of Geological Society of America Research Grants to Cathy Ratcliff, Steve Hayden, and Eric Kirby; State of New Mexico Graduate Fellowships to Aurora Pun and Paula Stout; and full-year Association of Western Universities Fellowships 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 to cost of attending professional meetings. The above accomplishments attest to the strong and growing level of professional activity within our graduate program. Several 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 1992-93 year. As well, research efforts of several students were published in professional, peer-reviewed journals and society guidebooks; a total of 31 Departmental published papers had graduate students as authors or co-authors (See Departmental Publications, Section III-2). Over 20 professional presentations were made by M.S. and Ph.D. students during the past academic year. These facts, 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 1992-1993 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, 1992, and Spring, 1993, terms is provided in Tables 1 and 2, respectively. The total number of completed applications to the graduate program remained essentially constant from the 1991-1992 academic year (total of 83) to the past 1992-1993 year (total of 83, 70 for the Fall and 13 for the Spring). 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; 83 for 1991-1992, and 83 for 1992-1993. 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. On a brighter note, since Fall, 1990, undergraduate enrollments in the geosciences across the country have increased, at some institutions by a factor of two. The increase in undergraduate enrollment is at least in part linked to improving job markets in the fields of hydrogeology and environmental geology. For the past two years, at least one third of the applicants 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 and are, unfortunately, 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, 12 in 1991-1992, and 16 in 1992-1993. Again, the total number of students applying to the program has decreased to some degree over this same period, the Department has actually increased its enrollment in comparison to the late 70's and early 80's and has attempted to maintain 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 1992-1993 academic year had an average undergraduate grade-point average (GPA) of 3.54 and average M.S. GPA of 3.58. The average undergraduate GPA has increased considerably in comparison to the past few years. The graduate GPA for students applying to the PhD program, as well as the overall quality of students in the program, appears to have remained constant over the past few years. The average undergraduate GPA for students not accepted into the graduate program was 3.10. Average scores on the Graduate Record Exam for students admitted into the program for Fall, 1992, were as follows: Verbal: 71%, Quantitative: 72%, Analytical: 71%, and Geology: 59%.

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 at least a two-year financial aid package! Although we have not continued to pursue this subject in more recent years, communication with several graduate students who did not enter the program at UNM indicates that they were usually supported with strong financial aid packages.

During the past several 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, 33 percent in 1991-1992, and 32 percent in 1992-1993. 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 over the past several 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 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 and substantial competition for members of underrepresented groups in the geosciences at present.

M.S. students

<table>
<thead>
<tr>
<th>Name</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Andrew, Joseph</td>
<td>McCarville, Peter</td>
</tr>
<tr>
<td>Appel, John</td>
<td>McKeown, Kevin</td>
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<tr>
<td>Brainard, James</td>
<td>McLaughlin, Glenn</td>
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<td>Carpenter, Sharman</td>
<td>McLaughlin, Glenn</td>
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<td>Denniston, Rhawn</td>
<td>Meuret, Suzanne</td>
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<td>Davidek, Lon</td>
<td>Moose, Llewellyn</td>
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<tr>
<td>Fowler, Grant</td>
<td>Mullally, Hope</td>
</tr>
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<td>Gay, Kyle</td>
<td>Newcomer, Paula</td>
</tr>
<tr>
<td>Goodspeed, Thomas</td>
<td>Paschall, Sallyann</td>
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<td>Groffman, Armando</td>
<td>Ratcliff, Catherine</td>
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<td>Hohweiler, Skip</td>
<td>Raugust, Steve</td>
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<tr>
<td>Hurley, Janet</td>
<td>Rogers, John</td>
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<tr>
<td>Hutchinson, Jimmie</td>
<td>Romano, Eileen</td>
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<tr>
<td>Kendrick, Katherine</td>
<td>Ruzika, Christine</td>
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<td>King, Samantha</td>
<td>Shaffran, Karen</td>
</tr>
<tr>
<td>Kirby, Eric</td>
<td>Shastri, Laurel</td>
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<tr>
<td>Lauffler, Franz</td>
<td>Stoopes, Judy</td>
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<tr>
<td>Lamaskin, Todd</td>
<td>Wiberg, Thomas</td>
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<td>Wroblicky, Greg</td>
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Doctoral Students

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<td>Bahar, Dana</td>
<td>Loomis, Jennifer</td>
</tr>
<tr>
<td>Bryan, Charles</td>
<td>Ma, Acheng</td>
</tr>
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<td>Bullard, Thomas</td>
<td>McDonald, Eric</td>
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<td>Callian, Jim</td>
<td>Meyer, Grant</td>
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<tr>
<td>Cascadden, Tracey</td>
<td>Mullally, Sean</td>
</tr>
<tr>
<td>Daniel, Chris</td>
<td>Noll, Philip</td>
</tr>
<tr>
<td>Eberly, Paul</td>
<td>Peabody, William</td>
</tr>
<tr>
<td>Erskine, Dan</td>
<td>Pedrick, Jane</td>
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<td>Finch, Robert</td>
<td>Pun, Aurora</td>
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<td>Fu, Guofie</td>
<td>Servilla, Mark</td>
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<td>Gonzalez, Mark</td>
<td>Shixin, Wang</td>
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<td>Grubensky, Mike</td>
<td>thompson, Amy</td>
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<td>Harlan, Steve</td>
<td>Treadwell, Carol</td>
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<td>Hayden, Steven</td>
<td>Ward, David</td>
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<td>Heywood, Charles</td>
<td>Watt, Paula</td>
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<td>Hunt, Adrian</td>
<td>White, Christine</td>
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<td>Ilg, Brad</td>
<td>Williamson, Thomas</td>
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<td>Larsen, Daniel</td>
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Table 2. Graduate Students Supported by Teaching Assistantships (TA), Research Assistantships (RA), or Fellowships (F) during the 1992-1993 Academic Year. (1/2 TA or 1/2 RA refers to half-time support).

<table>
<thead>
<tr>
<th>M.S. Students</th>
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<th>Spring, 1993</th>
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<tr>
<td>Andrew, Joseph</td>
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<td>RA</td>
</tr>
<tr>
<td>Denniston, Rhawn</td>
<td>-</td>
<td>TA</td>
</tr>
<tr>
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<td>F, AWU</td>
</tr>
<tr>
<td>Goodspeed, Thomas</td>
<td>TA</td>
<td>TA</td>
</tr>
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<td>Fowler, Grant</td>
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<td>TA</td>
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<td>TA</td>
</tr>
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<td>Kirby, Eric</td>
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<td>TA</td>
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<td>RA</td>
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<td>1/2RA</td>
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<tr>
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<td>1/2TA, 1/2RA</td>
<td>1/2TA, 1/2RA</td>
</tr>
<tr>
<td>Ratcliff, Catherine</td>
<td>1/2TA, 1/2RA</td>
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<td>Rogers, John</td>
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<tr>
<td>Shaffran, Karen</td>
<td>RA</td>
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<tr>
<td>Shastru, Laurel</td>
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<tr>
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<td>F, NSF Minority</td>
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<td>Wroblicky, Greg</td>
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<th>Ph.D. Students</th>
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<th>Spring, 1993</th>
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<td>Cascadden, Tracy</td>
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<td>F, Silver-Kelley</td>
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<td>Daniel, Chris</td>
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<tr>
<td>Finch, Robert</td>
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<tr>
<td>Fu, Guofei</td>
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<td>Grubeansky, Mike</td>
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<td>F, NASA</td>
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TABLE 3: DEPARTMENT OF GEOLOGY-SUMMARY OF GRADUATE APPLICANT DATA FOR; FALL, 1992

A. Applicants to Graduate Program (70 Completed Applications)

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>Minority</th>
<th>Foreign</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted</td>
<td>30</td>
<td>15</td>
<td>45</td>
<td>1</td>
<td>2</td>
<td>3.45</td>
</tr>
<tr>
<td>Not Admitted</td>
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<td>7</td>
<td>25</td>
<td>0</td>
<td>12</td>
<td>3.10</td>
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<tr>
<td>Accepted Admission</td>
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<td>4</td>
<td>10*</td>
<td>0</td>
<td>0</td>
<td>3.46</td>
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<tr>
<td>Did Not Accept Admission</td>
<td>24</td>
<td>11</td>
<td>35</td>
<td>1</td>
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** includes one student admitted previously but for different reasons had to defer entrance into the program until Fall, 1993.

TOTALS

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<table>
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<tr>
<td>Additional Incomplete</td>
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</tr>
<tr>
<td>Applications</td>
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</tr>
<tr>
<td></td>
<td>15</td>
</tr>
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</table>

B. Financial Aid Data (Teaching Assistantships and Fellowships)

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
<th>Minority</th>
<th>Foreign</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aid Offered</td>
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<td>3</td>
<td>13</td>
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<tr>
<td>Aid Accepted</td>
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<td>7</td>
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<tr>
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<td>33</td>
<td>53</td>
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**TABLE 4. DEPARTMENT OF GEOLOGY-SUMMARY OF GRADUATE APPLICANT DATA FOR: SPRING, 1992**

**A. Applicants to Graduate Program (13 completed applications)**

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>TOTAL</th>
<th>Minority</th>
<th>Foreign</th>
<th>GPA</th>
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</thead>
<tbody>
<tr>
<td>Admitted</td>
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<td>3*</td>
<td>8</td>
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<td>4</td>
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<td>2**</td>
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* includes one student readmitted into the graduate program  
** includes two students admitted previously but for different reasons had to defer entrance into the program until Spring, 1993.

**B. Financial Aid Data (Teaching Assistantships and Fellowships)**

<table>
<thead>
<tr>
<th></th>
<th>Aid Offered</th>
<th>Aid Accepted</th>
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<tr>
<td>Offer</td>
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GRADUATE DEGREES AWARDED

The following students listed below received M.S. or Ph.D. degrees in Geology, Summer 1992 through Spring 1993.

Master of Science

PASCHALL, Sallyann, Spring, 1993 - Geology of the Western Portion of the Mount Aetna Cauldron Complex, Chaffee County, Colorado. (Professor Lee A. Woodward, Advisor)

SHASTRI, Laurel, Fall, 1992 - Proterozoic Geology of the Los Pinos Mountains, Central New Mexico: Timing of Plutonism, Deformation and Metamorphism. (Professor Jeff Grambling, Advisor)

WIBERG, Thomas, Spring, 1993 - Stratigraphy and Transgressive-Regressive Cyclicity of the Lower Madera Limestone, Sandia Mountains, North-Central New Mexico. (Professor Gary Smith, Advisor)

Doctor of Philosophy

GONZALEZ, Mark, Spring, 1993 - Geomorphic and Neotectonic Analysis Along a Margin of the Colorado Plateau and Rio Grande Rift in Northern New Mexico (Professor Gary Smith, Advisor)

HARLAN, Steve, Fall, 1992 - Paleomagnetism and Ar$^40$/Ar$^{39}$ Geochronology of Selected Proterozoic Intrusions, Montana, Wyoming and Arizona. (Professor John Geissman, Advisor)

MEYER, Grant, Spring, 1993 - Holocene and Modern Geomorphic Response to Forest Fires and Climate Change in Yellowstone National Park. (Professor Gary Smith, Advisor).
UNDERGRADUATE DEGREES AWARDED

The following students received undergraduate degrees in Geology, Summer 1991 through Spring, 1992:

Bachelor of Arts

CORY, Timothy Grant - Spring, 1993
MADRID, Steven A. - Spring, 1993
MICHAEL, Michael T. - Spring, 1993
SMITH, Nancy - Spring, 1993
REYNOLDS, Cynthia Garth - Spring, 1993

Bachelor of Science

CASE, Terri J. - Spring, 1993
COURTRIGHT, Roy H. - Spring, 1993
MARTINEZ, David - Spring, 1993
SLOOP, Derek - Summer, 1993
SMITH, Andrew G. - Spring, 1993
SMITH, Kathryn - Spring, 1993
WICKHAM, Thomas A. - Spring, 1993
VII. STUDENT SCHOLARSHIPS AND OTHER AWARDS
1992-93

INTRODUCTION

Additional awards to undergraduate and graduate students, beyond teaching assistantships and other employment, are important both in helping with the expenses associated with pursuing degrees, and as a way of recognizing outstanding performance or accomplishments. Scholarship and fellowship funds are available to students within the Department from several sources: (1) specific funds established and sustained by alumni and friends, (2) other departmental sources, (3) the University, and (4) institutions outside the University. For departmental scholarships and fellowships, a standing committee reviews applications and makes recommendations, which are approved by the entire faculty. University scholarships (e.g., Regents Endowed Graduate Fellowship) may be awarded to students nominated by the Department, or, in the case of Student Research Allocation Committee (SRAC), funds, obtained by direct application to that committee. Graduate students frequently apply to various professional organizations, such as the Geological Society of America, Petroleum Research Fund, Sigma Xi and the New Mexico Geological Society, for awards in support of research. Total amount of scholarship/fellowship funds received by Earth and Planetary Sciences students in 1992-93 were: Departmental undergraduate - $9,837; Departmental graduate - $51,751; University graduate - $1,000; outside - $62,000. Additional but unknown university support was provided to several students through SRAC.

Although most student scholarships are relatively small (<$2,000), 5 graduate students were fully supported by scholarships/fellowships in 1992-93.

The following list indicates student scholarships/fellowship recipients for the 1992-93 academic year.

DEPARTMENTAL (UNDERGRADUATE)

Harry and Mabel Leonard Scholarships

- Christopher Andronicos $2000.00
- Karen Holmes 1000.00
- Joseph Huff 1000.00
- Stephanie Maehr 2000.00
- Mitch Schneider 600.00
- Kerim Martinez 400.00

General Titomas Campbell Scholarships

- Christopher Adcock 900.00
- John Bunch 900.00

James Drew Pfeiffer Scholarship

- Andrew Smith 445.00
Departmental Travel Scholarships

- Deb Corrao: 296.00
- Windy Jaeger: 296.00

Outstanding Student of Year Awards

- S.A. Northrop Outstanding Senior: Andrew Smith
- S.A. Wengerd Outstanding Junior: Chris Andronicos
- J.P. Fitzsimmons Outstanding Sophomore: Laurie Bowman
- Vincent C. Kelley and Estwing Outstanding Field Geologist: Andrew Smith

DEPARTMENTAL (GRADUATE STUDENTS)

Silver/Kelley Scholarships

- Tracey Cascadden: $14,000 + 3,000 (Research expenses)
- Brad Ilg: $14,000 + 3,000 (Research expenses)

Geology Alumni Fund Scholarships:

- Eric Kirby: $1,000.00
- Grant Fowler: $1,000.00
- Chris Daniel: $1,000.00
- Todd Lamaskin: $900.00
- Mark Servilla: $800.00
- Rick Livaccari: $700.00
- Joe Andrew: $600.00
- Dan Erskine: $600.00
- Dan Larsen: $600.00
- Ancheng Ma: $600.00
- Suzanne Meuret: $600.00
- Philip Noll: $600.00
- Cathy Ratcliff: $600.00
- Amy Thompson: $600.00
- John Rogers: $500.00
- Carol Treadwell: $500.00
- Tom Goodspeed: $350.00
- Janet Hurley: $350.00
- Sean Mullally: $350.00
- Aurora Pun: $350.00
- Tom Williamson: $350.00

Jean-Luc Miossec Memorial Scholarship:

- Carol Treadwell: $700.00

Rodney Rhodes Memorial Award:

- Mark Servilla: $170.00
Richard P. Vann Memorial Scholarship:

Ancheng Ma $1,000.00

Sherman and Florence Wengerd Travelling Fellowship

John Rogers $1,000.00

Departmental Travel Scholarships

Brad Ilg $ 100.00
Eric Kirby $ 100.00
Dan Larsen $ 350.00
Suzanne Meuret $ 296.00
Laurel Shastri $ 150.00
Amy Thompson $ 250.00
Carol Treadwell $ 150.00

Departmental Equipment Use Scholarships:

Armand Groffman $ 210.00
Steve Hayden $ 75.00
Suzanne Meuret $ 50.00
Hope Mullally $ 100.00
Cathy Ratcliff $ 100.00

University Regent's Endowed Graduate Fellowship

Robert Finch $1,000.00

OTHER INSTITUTIONS

NASA Graduate Student Researchers Program Fellowship for Under-represented Minorities:

Aurora Pun $22,000.00

National Science Foundation Minority Fellowship:

Judy Stoopes $10,000.00

Department of Defense/Associated Western Universities Graduate Fellowship:

Kyle Gay $14,400.00

Department of Defense/Associated Western Universities Thesis Parts Fellowship:

John Rogers $ 2,400.00

NASA Institute for Space Nuclear Power Studies/Graduate Space Grant Fellowship:

Philip Noll $ 2,500.00
Meteoritical Society Student Travel Fellowship:
  Aurora Pun $ 700.00

American Geological Institute Minority Participation Award:
  Aurora Pun $ 1,000.00

New Mexico Geological Society
Kottlowski Fellowship:
  Carol Treadwell $ 1,000.00

Grant-in-Aid:
  Eric Kirby $ 385.00
   Ancheng Ma $ 415.00
   Kathryn Smith $ 335.00
   Thomas Williamson $ 195.00

Lucille Pipkin Book Scholarship:
  Chris Andronicos $ 50.00
   Stephanie Maehr $ 50.00
   Andrew Smith $ 50.00
   Nancy Smith $ 50.00

Albuquerque Gem and Mineral Society Scholarship:
  Tom Goodspeed $ 750.00

Geological Society of America Research Grant:
  Brad Ilg $ 930.00
   Philip Noll $ 1,000.00
   Steve Hayden $ 1,080.00
   Eric Kirby $ 1,000.00
   Cathy Ratcliff $ 700.00

Colorado Scientific Society Grant:
  Brad Ilg $ 700.00
FUND CONTRIBUTORS: '1992-93

Caswell Silver Foundation

Mr. David B. Givens
Chevron Corporation - Matching Gift

Chair Discretionary Fund

Ms. Julia S. Berger
Dr. Saleh M. Billo
Dr. Theodore J. Bornhorst
Ms. Elaine S. Brouillard
Mr. Mark Cameron
Mr. William C. Carrigan
Mr. William L. Chenoweth
Mr. and Mrs. Michael W. Conrey
Ms. Brigitte Grasier
Mr. David L. Homan
Mr. Russell John Keenan
Mr. J.G. Kuhn
Mr. Philip C. Lovato
Dr. Bill P. Lovejoy
Ms. Elizabeth Medary
Mr. John M. O'Neill
Mr. Timothy Richardson
Mr. Kenneth D. Sharp
Mr. Victor H. Zabel

Geology Alumni Fellowship

Mr. Robert R. Merker
Leslie N. Merker
Mr. Alexander A. Wanek
Lee A. Woodward

Geology EEE Fund

Mr. Michael L. Davis

Geology Museum

Mr. Clarence Westbrook Cook
Dr. Rodney C. Ewing
Vincent C. Kelley Memorial Scholarship
Mr. and Mrs. David B. Givens
Dr. and Mrs. Barry S. Kues

James D. Pfeiffer Memorial Fellowship
Ms. Betty A. Wambold
Mrs. Patricia Pfeiffer Lewis

Wengerd Travelling Fellowship Fund
Dr. and Mrs. Sherman A. Wengerd
The Annual Report Of
THE INSTITUTE OF METEORITICS
July 1, 1992 through June 30, 1993

UNIVERSITY OF NEW MEXICO

James J. Papike, Director
Rhian Jones, Coeditor
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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. We will formally celebrate IOM's 50th anniversary during October 13-16, 1994, with a workshop and other activities. 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 (asteroids), the Moon, the Earth, and Mars. 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 continued developments in the progress of the UNM-Sandia National Laboratories SIMS (ion microprobe) facility taking place. This facility provides 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. This facility has been funded by the National Science Foundation as one of their four national facilities for SIMS
analyses of geological materials. Our ICP-MS laboratory is now fully operational and is producing significant amounts of high quality data.

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, 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. 42), 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. 38).
INSTITUTE OF METEORITICS FACULTY AND STAFF

Director, Institute of Meteoritics
Dr. James J. Papike, Regents Professor of Earth & Planetary Sciences

Senior Research Associates

Dr. Adrian J. Brearley
Dr. Rhian H. Jones
Dr. Graham Layne
Dr. Horton E. Newsom
Dr. Charles K. Shearer

Research Associates

James R. Connolly
Michael N. Spilde

Support Personnel

Debra Spilde, Administrative Assistant
Sarah Coulie, Clerk Specialist V
Ken Nichols, Photographer
Tom Servilla, Thin Section Specialist

Graduate Students

Rhawn Denniston
Grant Fowler
Phillip D. Noll, Jr.
Aurora Pun
Mark Servilla

Undergraduate Students

Eric Gauerke
Stephanie Maehr

SEPARATIONS FROM STAFF

Tom Servilla - January 8, 1993
SECTION I
RESEARCH

Institute of Meteoritics
1944

UNIVERSITY OF NEW MEXICO
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 terrestrial 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 23 scientific articles in major national and international journals (p. 17), as well as in the publication of 22 abstracts of papers presented at national and international conferences (p. 19). The extensive involvement of students in original research projects in the Institute of Meteoritics is particularly important for their education and advanced training.

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. 14-16). 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 lunar volcanic glass beads, (3) trace element studies of lunar minerals and glasses (melt inclusions and immiscible melts), and (4) trace element studies of minerals 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.

We are currently investigating several aspects of the petrogenesis of HED meteorites. These studies include questions concerning the origin of diogenites and eucrites and their relationship to basaltic magmatism on the eucrite parent body.

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 secondary 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. 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 mechanisms 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.

IOM personnel are involved in this 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 summers 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.

d. 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 and inductively coupled plasma mass spectrometry 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 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.

e. 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 (YMP) 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. Sandia National Laboratories (SNL) is the prime DOE contractor
involved in gathering data on geoengineering properties for site characterization. Sandia is also responsible 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 supports the Sandia mission by providing sample-specific geochemical and mineralogical analyses of rock from Yucca Mountain. Construction of an access tunnel (with associated surface drilling) for in situ study of the potential repository locality began in early 1993. We will provide petrologic and geochemical data on the rock samples obtained. These data will be integrated into a database of thermal, mechanical, hydrologic and other physical properties to be used in numerical models of total systems performance. Toward this goal, we are developing a method for quantifying petrographic and mineralogic data so that these data may be integrated into numerical models. Through a strategic planning process, we are participating in the development of a data system intended to provide open access to experimental data developed by different research teams to facilitate coupled-process modeling.

f. 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 recognized 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. 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. The research is a collaborative project involving high pressure experimental work coupled with transmission electron microscope characterization of the products of the experiments. 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.

g. Determination of the Fe-Mg interdiffusion coefficient in olivine. (Funded by NSF).

Diffusion is an important geologic phenomenon, and a knowledge of the diffusion rates of ions in silicate materials is fundamental to an understanding of many common processes. Diffusion in olivine controls a variety of igneous and metamorphic processes in the crust and mantle of the Earth, as well as in meteorites and the Moon. Data for diffusion rates of cations in olivine have been applied to problems such as estimating temperatures of olivine crystallization in basaltic eruptives, studies of equilibration processes in cooling igneous systems, determinations of mantle cooling rates, and modelling thermal histories of chondritic meteorites. A knowledge of the Fe-Mg interdiffusion coefficient is fundamental to an interpretation of many of these processes. Several previous measurements of this property have been made at high temperatures but extrapolation of the data to lower temperatures results in considerable uncertainties and errors. The aim of this project is to measure diffusion rates directly at low temperatures so that low-temperature modelling of diffusion-related phenomena will be considerably more precise. Interdiffusion of Fe-Mg in olivine is a complicated function of several variables (temperature, oxygen fugacity, composition, crystallographic orientation), the effects of which must all be determined. Diffusion experiments are carried out in a controlled-atmosphere furnace. Diffusion profiles generated in the experiments are analyzed by electron microprobe analysis, and by a depth-profiling technique using the ion microprobe (SIMS).
h. A SIMS study of calcite: Investigation of shallow crustal transport phenomena at Yucca Mountain. (Funded by Associated Western Universities)

Understanding and reconstructing the paleohydrology of shallow crustal environments that are potential sites for waste repositories are critical in forecasting possible future changes in the ground water table, the flux of recharge, the nature of fluid flow, and other factors that may adversely impact the integrity of the site. One approach to take in reconstructing the hydrologic history of a potential site is to use mineralogical indicators of fluid flow and water characteristics. This mineralogical approach utilizes mineral stability, mineral assemblages and major, minor, and trace element compositions of individual minerals. Calcite appears to be a ubiquitous mineral occupying fracture systems in many of these shallow crustal environments. Our team is currently involved in developing trace and minor element techniques to study hydrogenic calcite and to then apply these techniques to calcite from fracture systems at the potential high level waste repository at Yucca Mountain, Nevada.

The chemistry of calcite from the Yucca Mountain site will provide a unique perspective concerning the chemistries and flow characteristics of infiltrating water at the site. Recent studies have demonstrated that fracture calcite from Yucca Mountain had a variety of distinctly different bulk elemental and isotopic signatures. These signatures are generally correlated to location within the site (saturated zone versus unsaturated zone) and are thought to reflect source of the water, water chemistry, and phases that precipitated prior to the calcite. Bulk analyses have numerous interpretive problems such as mineral zoning (averages distinctly different episodes of calcite growth), mineral contamination, and mineral grain size. Our approach to this problem is to use microbeam analytical techniques to study the trace and minor element concentrations and distributions in growth zones in calcite.
2. **Grants and Contracts**

Table 1 documents that IOM was funded by a variety of agencies during FY 92/93 including NSF, NASA, DOE, and Sandia National Laboratory. Total grant contract expenditures totaled $391,700. Table 2 lists grants and contracts that are already in effect or have already been approved; $704,000 remains in these grants and contracts. Table 3 tabulates proposals that are now in the review process. These proposals request $1,189,800 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.
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<th>AGENCY</th>
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<td>NSF</td>
<td>&quot;Mechanisms of High Pressure Phase Transformations Between the α, β and γ Polymorphs of Mg$_2$SiO$_4$ and (Mg,Fe)$_2$SiO$_4&quot;$ (EAR 91-04777)</td>
<td>A.J. Brearley</td>
<td>23.1K</td>
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<td>NSF</td>
<td>&quot;Proposal to Upgrade Electron Microprobe X-Ray Analysis System&quot; (EAR 91-05294)</td>
<td>J.J. Papike/Brerley, Spilde</td>
<td>23.5K</td>
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<td>NSF</td>
<td>&quot;Determination of the Fe-Mg Interdiffusion Coefficient in Olivine: A Comparison of Electron Microprobe and SIMS Analytical Techniques&quot; (EAR 91-04777)</td>
<td>R. Jones</td>
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<td>NSF</td>
<td>&quot;Accretion &amp; Core Formation in the Earth: Siderophile &amp; Chalcophile Trace Elements&quot; (EAR-90-05199)</td>
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<td>&quot;Direct Observation of a Young Igneous System, Katmai, Alaska: Coordination Grant&quot; (EAR 90-96235)</td>
<td>J.J. Papike</td>
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<td>NASA</td>
<td>&quot;Trace-element Studies of Pyroxenes in Rocks of the HED Association&quot; (NGT-70223)</td>
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<td>&quot;Microbeam Studies of Planetary Materials&quot; (NAG 9-497)</td>
<td>J.J. Papike/Brearley, Shearer, Spilde</td>
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<td>AWU</td>
<td>&quot;A SIMS Study of Calcite: Investigation of Shallow Crustal Transport Phenomena at Yucca Mountain&quot;</td>
<td>C.K. Shearer/Denniston</td>
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<td>DOE/BES</td>
<td>&quot;Chemical Transport through Continental Crust&quot; (DE-FG04-90ER14149)</td>
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<td>&quot;Mineralogical Characterization of Mechanical Test Samples&quot; (54-1058)</td>
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<td>SANDIA</td>
<td>&quot;Geologic Support for SNL activities for the Yucca Mountain Site Characterization Project&quot; (AB-1106)</td>
<td>J. Connolly</td>
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<td>NSF</td>
<td>&quot;Determination of the Fe-Mg Interdiffusion Coefficient in Olivine: A Comparison of Electron Microprobe and SIMS Analytical Techniques&quot; (EAR 91-04777)</td>
<td>R. Jones</td>
<td>7/1/92-06/30/94</td>
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<td>NSF</td>
<td>&quot;Mechanisms of High Pressure Phase Transformations Between the α, β and γ Polymorphs of Mg2SiO4 and (Mg,Fe)2 SiO4&quot; (EAR 91-04777)</td>
<td>A.J. Brearley</td>
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<td>NSF</td>
<td>&quot;Mechanisms of High Pressure Phase Transformations Between the α, β and γ Polymorphs of Mg2SiO4 (EAR 93-05184)&quot;</td>
<td>A.J. Brearley</td>
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<td>NSF</td>
<td>&quot;Accretion and Core Formation in the Earth: Evidence from Siderophile and Chalcophile Trace Elements&quot; (EAR 92-05731)</td>
<td>H.E. Newsom</td>
<td>7/1/92-12/31/93</td>
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<tr>
<td>NSF</td>
<td>&quot;Direct Observation of a Young Igneous System, Katmai, Alaska: Coordination Grant&quot; (EAR 90-96235)</td>
<td>J.J. Papike</td>
<td>7/1/92-3/15/94</td>
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<td>NSF</td>
<td>&quot;Support of UNM/SNL Ion Microprobe Facility&quot;</td>
<td>J.J. Papike/Layne, Shearer</td>
<td>7/15/93-12/31/95</td>
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<td>NASA</td>
<td>&quot;Microbeam Studies of Planetary Materials&quot; (NAG 9-497)</td>
<td>J.J. Papike/Brearley, Jones, Shearer, Spilde</td>
<td>12/15/91-12/15/93</td>
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<td>NASA</td>
<td>&quot;Microbeam Studies of Planetary Materials&quot; (NAGW-3347)</td>
<td>J.J. Papike/Brearley, Jones, Layne, Shearer</td>
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<td>NASA</td>
<td>&quot;Trace-element Studies of Pyroxenes in Rocks of the HED Association&quot; (NGT-70223)</td>
<td>A. Pun/Papike</td>
<td>7/1/92-8/1/94</td>
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TABLE 2 CONTINUED: GRANTS AND CONTRACTS THAT WILL BE IN EFFECT FOR FY 93-94

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<td>NASA</td>
<td>&quot;Siderophile Trace Element Concentrations in Planetary Materials: Implications for Planetary Differentiation in the Earth, Moon, Mars, and the Eucrite Parent Body&quot;</td>
<td>P.D. Noll, Jr.</td>
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<td>AWU</td>
<td>&quot;A SIMS Study of Calcite: Investigation of Shallow Crustal Transport Phenomena at Yucca Mountain&quot;</td>
<td>C.K. Shearer/Denniston</td>
<td>01/01/93-12/31/93</td>
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<td>SANDIA</td>
<td>&quot;Geologic Support for SNL activities for the Yucca Mt Site Characterization Project&quot; (AB-1106)</td>
<td>J.R. Connolly</td>
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<td>IGPP</td>
<td>&quot;Simulating Silicic Eruptions at Long Valley, California, to understand processes of Continental Crust Formation&quot; (No. 414)</td>
<td>J.J. Papike/Servilla</td>
<td>10/1/93-9/30/94</td>
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<td>IGPP</td>
<td>&quot;Advanced Methods for the Determination of Moderately Siderophile Elements by Mass Spectrometry&quot; (No. 411)</td>
<td>H.E. Newsom</td>
<td>10/1/93-9/30/94</td>
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TOTALS 704.0K

TABLE 3: PROPOSALS IN REVIEW

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<td>NSF</td>
<td>&quot;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.&quot;</td>
<td>C.K. Shearer</td>
<td>01/01/94-12/31/96</td>
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<td>NSF</td>
<td>&quot;Geochemical Characterization of the uppermost basaltic oceanic crust in front of the Kurile, Central America, Lesser Antilles, and Kermadec-Tonga Arcs: An Assessment of the Contributions to Volcanic Arc Magmas from altered, subducted oceanic crust&quot;</td>
<td>H.E. Newsom</td>
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<td>NASA</td>
<td>&quot;Geochemical Clues to Planetary Origins and Evolution&quot;</td>
<td>H.E. Newsom</td>
<td>12/15/94-12/15/96</td>
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<td>NASA</td>
<td>&quot;Microbeam Studies of Planetary Materials&quot;</td>
<td>J.J. Papike/Brearley, Jones, Layne, Shearer</td>
<td>12/16/93-12/15/96</td>
<td>229.7K</td>
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</table>

TOTALS 437.1K 1,189.8K
I. RESEARCH


Members of IOM in bold print.
* Student authors.
4. Technical Reports Published


5. Travel

During the period of the report, IOM Personnel attended eight international and national meetings. Thirteen talks were presented, and six papers were presented as posters. One of these talks was presented by a student. In addition, IOM Personnel were authors on two 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.


Attended by: A. Pun
Abstract was published in Meteoritics, Vol. 27
Oral presentation:

Pun, A.*, C.K. Shearer, and J.J. Papike "A comparison of the trace element chemistries of pyroxenes between two unequilibrated eucrite clasts: A eucrite from the Kapoeta howardite and the Pasamonte eucrite."


Attended by: H. Newsom
Oral presentation:

Newsom, H.E. "Chemical Transport During Formation and Alteration of Martian Impact and Volcanic Deposits."

Attended by: J. Papike
Abstracts were published in Abstracts for the 3rd Continental Scientific Drilling Forum, p. 12.
Oral presentations:

Eichelberger, J., A. Sattler, C. Neal, W. Hildreth, and J. Papike "Katmai Project: The NEPA Phase."


Attended by: A. Brearley, J. Papike
Abstracts were published in GSA Abstracts with Programs, Vol. 24
Poster presentation:

Brearley, A.J. and Rubie, D.C. "Mechanisms of the transformations of modified spinel to spinel at high pressure."


Attended by: A. Brearley, R. Jones, H. Newsom, J. Papike, C. Shearer
Abstracts were published in EOS, Vol. 73.
Oral presentations:

Brearley, A.J. and Rubie, D.C. "High Pressure Experimental Studies of the Mechanism of the $\beta \rightarrow \gamma$ phase transition in Mg$_2$SiO$_4$."


Poster Presentations:

Jones, R.H. and Brearley, A.J. "An experimental and TEM investigation of the effect of cooling rate on the proto-to-ortho transition in enstatite."


Abstracts were published in Lunar and Planetary Science XXIV.
Oral presentations:

Brearley, A.J. and Jones, R.H. "Chondrite thermal histories from low-Ca pyroxene microstructures: Autometamorphism vs prograde metamorphism revisited."

Jones, R.H. "Complex zoning behavior in pyroxene in FeO-rich chondrules in the Semarkona ordinary chondrite."

Newsom, H.E. and Maehr, S.A.* "Core Formation in the Moon: The mystery of the excess depletion of Mo, W and P."


Shearer, C.K., J.J. Papike and G.D. Layne "Orthopyroxenes as Recorders of Diogenite Petrogenesis: Trace Element Systematics."

Shearer, C.K., and J.J. Papike "Basaltic Magmatism on the Moon. A Perspective from Volcanic Picritic Glasses."
I. RESEARCH

Poster presentations:

Brearley, A.J. "Carbonaceous chondrite clasts in the Kapoeta howardite."

Brearley, A.J., Bajt, S. and Sutton, S.R. "SXRF determination of trace elements in chondrule rims in the unequilibrated CO3 chondrite, ALH A77307."

The following paper was presented by printed abstract only:

Shearer, C.K., and J.J. Papike "Origin of the Apollo 15 very low Ti green glass: A perspective from the compositional diversity in the very low Ti glasses."


Attended by: G. Layne
Abstracts were published in GSA Abstracts with programs.

Oral presentations:

Layne, G.D., and Hart, S.R., Microscale lead and sulfur isotope variations in galena: Indicators of multiple ore-forming fluids and the mechanism of ore deposition in the Southeast Missouri lead district.


Attended by: C. Shearer
Abstracts were published in EOS, v.74.

Poster presentation:

Shearer, C.K., "Laramide igneous intrusions, Northern Black Hills, South Dakota-Wyoming: Evidence for multiple sources and mantle-crust interactions."
Institute Personnel were also authors of papers presented at the following meetings:


**GAC-MAC meeting** Edmonton Canada, April 1993. Abstracts were published in GACMAC Annual Meeting, Abstracts with Programs, v. 18.


Other meetings and workshops attended by IOM Personnel were:

Electron Microscopy Society of America annual meeting, Boston, MS, August 16-21, 1992. M. Spilde


SECTION II

FACILITIES

[Diagram: Institute of Meteoritics, 1941, University of New Mexico]
II. FACILITIES

1. Curation and Meteorite Museum

The Meteorite Museum has continued to be a major, popular attraction on campus for many school parties and tourists alike. During the year, several elementary and high schools from Albuquerque as well as elsewhere in the state, arranged guided visits to the Museum, emphasizing the important educational role of the Museum for the local community. The addition of the 1600 lb Navajo iron meteorite to the Museum last year has proved to be an important attraction along with the main mass of Norton County, which continues to be the centerpiece of the Museum. In order to increase public awareness of meteorites, the Institute set up an exhibit devoted to New Mexico meteorites at the Albuquerque Gem and Mineral Show, March 5-7, 1993. This proved to be extremely successful and aroused considerable interest from visitors.

During the year, Stephanie Maehr, under the supervision of Adrian Brearley, completed a full inventory of the meteorite samples in the Institute’s collection. This information is currently being entered into the Institute’s computer database of samples, which continues to expand with addition of new information about individual samples.

Malinda Stanley, under the supervision of assistant curator, Rhian Jones, has commenced updating the exhibit cases in the museum, to provide more visual and appropriate written information about the meteorites on display. This is part of a long term project to update the exhibits in the Museum.

During the year we were fortunate to obtain samples of several meteorites which were not previously represented in the collection. These include specimens of three extremely rare carbonaceous chondrites, Bells, Crescent and Loongana 001. All of these samples are of major scientific importance and are currently under study in the Institute.
II. FACILITIES

2. **Experimental Petrology Laboratory**

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 quadruple mass analyzer for ion detection. 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.

The Institute of Meteoritics operates a VG Plasma Quad PQ2 ICP/MS. A training course in ICP-MS is offered to graduate students interested in using trace element techniques in solving geologic problems. The laboratory has developed analytical procedures for the analysis of all REE, Rb, Cs, Ba, Zr, V, Nb, Hf, Sc, Ti, Cr, Co, Sr, Th, U, and Pb. We have recently expanded our analytical capabilities to include As, Sb, Gd, Hg, Zn, W, Bi, and Cu. We have also expanded inter-laboratory collaboration with Sandia National Laboratory.

Current and projected use of the laboratory for trace element analysis include faculty, staff and students from the Department of Earth and Planetary Sciences, Department of Chemistry, and Department of Civil Engineering at UNM. Analyses were also carried out for the following off-campus projects:

L. Cordell, Anthropological Studies (California Academy of Sciences and Maxwell Museum, UNM.)
E. Peterson, Super-conductor analysis (Los Alamos National Laboratories)
Fluid flow studies (Sandia National Laboratories)
S. Durand, Studies of ancient wood from New Mexico (Dept. of Anthropology, University of Eastern New Mexico)
Groundwater contamination (Jacobs Engineering, Albuquerque)
S. Vetter, Geochemical study of basalts (Centenary College, LA)

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 and facilities for radiochemical separations. A
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 is being used to process the gamma-ray spectra returned from the Mars Observer space probe. In the last year the laboratory has been utilized for studies by instrumental neutron activation analysis, instrumental epithermal neutron activation, and radiochemical epithermal neutron activation analysis. The laboratory manager, Dr. H. Newsom, is approved by the UNM Radiation Control Committee to be a permit holder for radioactive materials.

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.

In December 1992, a new Oxford/Link analytical system was added to the electron microprobe. The new system replaced an old Tracor Northern X-ray analysis system and LSI 11 computer, which were built in the 1970's. The new Oxford eXL II system includes an energy dispersive system (EDS) and a high-speed, modern computer. The five wavelength spectrometers and multi-sample precision stage on the Superprobe are controlled by the Oxford system to provide automated operation for precision quantitative analysis and quantitative X-ray mapping. Utilizing a new atmospheric thin window on the EDS detector and synthetic analyzing crystals on the wavelength spectrometers, the microprobe is capable of quantitative analysis of all elements with atomic numbers down to carbon. Sophisticated image analysis software, also included in the Oxford package, allows high resolution imaging that can be employed for applications such as percent porosity determination in thin sections, particle size and shape analysis, and mineral phase determinations across whole thin sections.
The SEM was upgraded to color-graphic capabilities with the addition of the LSI 11 computer and color monitor that was removed from the microprobe. Upgrade of the computer also allowed the installation of an HP graphics plotter on the SEM.

Both the electron microprobe and the SEM are used by faculty, research staff and graduate students within the Department of Earth and Planetary Sciences and the Institute of Meteoritics. The microprobe currently has 13 Departmental and IOM users, and the SEM has 22 users from around the campus. In addition, analytical work was performed by IOM personnel for the following out-of-department and off-campus requests:

E. Bloomstein, Santa Fe-Pacific Mining Company, Albuquerque (SEM)
E. Fritzsch, South Dakota School of Mines & Technology (SEM & Microprobe)
P. Hlava, Sandia National Labs (Microprobe)
J. Krebsbach, Albuquerque Police Department (Microprobe)
E. Lattyak, N.M. State Police, Sante Fe, NM (SEM)
G. Lowe, Jr., Panama City, FL (SEM)
P. Mozley, Department of Geoscience, N.M. Tech (SEM)
M. Shockey, Albuquerque, NM (SEM)
C. Schwandt, Sandia National Labs (Microprobe)
H. Stockman, Sandia National Labs (Microprobe)
M. Thompson, Sandia National Labs (Microprobe)

The laboratories were used by these out-of-department personnel, with training and supervision by IOM personnel:

E. Armour, Center for High Technology Materials, UNM (SEM)
M. Cather, Petroleum Recovery Research Center, N.M. Tech (SEM)
R. Metcalf, Geology Department, University of Nevada, Las Vegas, NV (Microprobe)
C. Poore, Jacobs Engineering Group, Albuquerque, NM (SEM)
J. Roberts, Mechanical Engineering Dept., UNM (SEM)
C. Stein, Sandia National Labs (SEM)
6. The UNM/SNL Ion Microprobe Facility

A CAMECA IMS 4f Secondary Ion Mass Spectrometer (SIMS), originally purchased by Sandia National Laboratories (SNL) in 1989, was relocated from SNL to the Advanced Materials Laboratory on UNM South Campus on June 25, 1992. This instrument is now jointly operated by IOM and SNL Department 1823 (Surface and Molecular Spectroscopy and Gas Analysis) as the UNM/SNL Ion Microprobe Facility. Graham Layne serves as the UNM Manager of this joint venture, with a SNL Senior Technical Associate serving as the SNL Manager.

From July until September 1992, work involved repair and optimization of the instrument and its ancillary systems to bring its performance to within original delivery specifications. From September until November work was concentrated on analytical technique development and trials to prove performance in anticipation of an operating grant proposal submitted to NSF on December 1, 1992. Subsequent to the initial optimization and technique trials the instrument's performance has been exceptional—meeting or exceeding that of the handful of other f-series SIMS instruments currently in use for geochemical research in the United States. Since November 1992, available instrument time has been devoted to a wide variety of geochemical analyses in support of IOM and external research projects.

The success of the December 1992 proposal to NSF Division of Earth Sciences means that as of July 1, 1993, the UNM/SNL Ion Microprobe will be funded as an open facility, available to NSF-funded earth scientists nationwide. This grant ($120,000 for 24 months) obligates the facility to support NSF-funded research for approximately 50% of the total operational hours available to the UNM half of the partnership.

Outside researchers who made use of the facility via the UNM half of the joint venture during the initial year of operation were:

- B. Fahrenholz, UNM Center for Microengineered Ceramics
- C. Schwandt, Sandia National Laboratories, Geochemistry Department
- B. Singer, Southern Methodist University.

We anticipate extensive use by outside researchers during the coming fiscal year.
SECTION III
TEACHING
III. TEACHING

1. Courses Taught

Fall 1992

   Guest lectures by A. Brearley, G. Fowler, R. Jones, H. Newsom, A. Pun, C. Shearer and M. Spilde

Geol. 410 Seminar coordinated by J. Papike
   R. Jones presented seminar "Chondritic Meteorites: Understanding the early history of the Solar System" on October 1, 1992

Spring 1993

Geol. 487 "Advanced Mineralogy" Taught by J. Papike.

Geol. 322 "Introduction to Petrology" Taught by C. Shearer.
   Guest lecture by A. Brearley.

Geol. 102, "Historical Geology" Guest lecture by R. Jones.

Geol. 209, "Earth Environment" Guest lecture by G. Fowler

Summer 1993

Geol. 517 "Theoretical and Operational Principals of Secondary Ion Mass Spectrometry" Taught by G. Layne.

2. Achondrite Working Group, Fall Seminar Series.

This working group met weekly during fall, 1992, to discuss the origin of HED achondrite meteorites. Participants were: A. Brearley, G. Fowler, R. Jones, H. Newsom, J. Papike, A. Pun, C. Shearer, M. Spilde.
III. TEACHING

3. Spring IOM Research Seminar Series

January 25       J. Papike
    Chemical systematics of diogenites.

February 1       C. Shearer
    Basaltic Achondrites.

February 8       A. Brearley
    The oldhamite controversy in the aubrites revisited.

February 15      R. Jones
    Comparison of pyroxene-rich chondrules and boninites.

February 22      G. Layne
    Application and potential of SIMS analysis in geochemical research.

March 29         H. Newsom
    Statistics of siderophile element depletions.

April 19         P. Noll
    Recycling of base-metals through subduction zones: Implications for crust-mantle evolution.

April 26         M. Spilde
    Introduction to elemental mapping on the electron microprobe using the new Oxford analytical system.

May 3            A. Pun
    Trace-element partitioning between low- and high-Ca pyroxenes in cumulate eucrites, Binda and Moore County.

May 10           G. Fowler
    Orthopyroxenes in diogenites, elemental systematics and textures.

May 17           J. Connolly
    Welding and devitrification in Ignimbrites from Yucca Mountain, Nevada.
# III. TEACHING

## 4. Student Committees

### Graduate Student Advisement

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<tr>
<th>Student</th>
<th>Committee</th>
<th>IOM Committee Members</th>
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<tr>
<td>Charles Bryan</td>
<td>Ph.D.</td>
<td>J. Papike</td>
</tr>
<tr>
<td>Tracy Cascadden</td>
<td>Ph.D.</td>
<td>J. Papike</td>
</tr>
<tr>
<td>Rhawn Denniston</td>
<td>M.S.</td>
<td>C. Shearer (Advisor)</td>
</tr>
<tr>
<td>Grant Fowler</td>
<td>M.S.</td>
<td>J. Papike (Advisor)</td>
</tr>
<tr>
<td>Guofei Fu</td>
<td>Ph.D.</td>
<td>J. Papike</td>
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<tr>
<td>Tom Goodspeed</td>
<td>M.S.</td>
<td>J. Papike</td>
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<td>Mike Grubensky</td>
<td>Ph.D.</td>
<td>J. Papike</td>
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<tr>
<td>Steven Harlan</td>
<td>Ph.D.</td>
<td>A. Brearley</td>
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<tr>
<td>Brad Ilg</td>
<td>Ph.D.</td>
<td>J. Papike</td>
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<td>Hope Mullally</td>
<td>M.S.</td>
<td>J. Papike</td>
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<tr>
<td>Phil Noll, Jr.</td>
<td>Ph.D.</td>
<td>H. Newsom (Advisor), J. Papike, C. Shearer</td>
</tr>
<tr>
<td>Jane Pedrick</td>
<td>Ph.D.</td>
<td>J. Papike</td>
</tr>
<tr>
<td>Robert Price</td>
<td>Ph.D.</td>
<td>R. Jones</td>
</tr>
<tr>
<td>(Astronomy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aurora Pun</td>
<td>Ph.D.</td>
<td>J. Papike (Advisor), C. Shearer</td>
</tr>
<tr>
<td>Mark Servilla</td>
<td>Ph.D.</td>
<td>J. Papike (Advisor), C. Shearer</td>
</tr>
<tr>
<td>Karen Shaffran</td>
<td>M.S.</td>
<td>J. Papike</td>
</tr>
<tr>
<td>Laurel Shastri</td>
<td>M.S.</td>
<td>C. Shearer</td>
</tr>
<tr>
<td>Amy Thompson</td>
<td>Ph.D.</td>
<td>C. Shearer</td>
</tr>
</tbody>
</table>

### Undergraduate Student Advisement

<table>
<thead>
<tr>
<th>Student</th>
<th>Adviser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephanie Maehr</td>
<td>H. Newsom</td>
</tr>
<tr>
<td>Eric Gauerke</td>
<td>C. Shearer</td>
</tr>
</tbody>
</table>
Progress of Earth and Planetary Sciences Department Graduate Students Supported by IOM

Rhawn Denniston joined IOM as an M.S. student in the spring of 1993. Rhawn received a B.A. in Geology from Hamilton College, Clinton, New York, in 1991. His research involves SIMS analysis of calcites from Yucca Mountain, Nevada. He is an AWU fellow and is conducting summer research at Los Alamos National Laboratories. Rhawn was a T.A. for EPS 105, Physical Geology.

Grant Fowler continued to make progress towards his M.S. degree, carrying out extensive electron microprobe analyses of orthopyroxenes in diogenite meteorites. He attended one international meeting at which he was an author on one presentation. Grant was a T.A. for Geol. 105, Physical Geology, and Geol. 322, Petrology.

Phillip D. Noll, Jr. continues to make progress towards his Ph.D. degree and plans to graduate this December. His research on siderophile element abundances in planetary materials has been presented at the Research Fellows Fall and Spring Semester seminars for the NASA Space Grant Consortium at UNM. Phil received $600 from the Geology Alumni Scholarship fund and is a two-time recipient of a $6,000 grant from the NASA Space Grant Consortium. In addition to research, he also performs routine maintenance and sample analyses in the ICP-MS laboratory and INAA laboratory.

Aurora Pun is continuing her Ph.D. research on basaltic achondrites, using SIMS and electron microprobe techniques. Her research is funded with a Graduate Student Researchers Program Training Grant from NASA. Aurora is a recipient of $1,000 scholarship from the American Geological Institute Minority Participation Program. She also received a $700 travel grant from the Barringer Crater Company for her travel to the 55th Meteoritical Society Meeting, where she gave an oral presentation.

Mark Servilla has passed both the Ph.D. Qualifying exam in November of 1992 and the Ph.D. Comprehensive exam in May of 1993. He has received faculty approval for his dissertation proposal, "Simulating silicic eruptions at Long Valley, California as a method to understand processes that influence eruption phenomena associated with caldera formation." Mark received $800 from the Geology Alumni Scholarship fund and $170 from the Rodney Rhodes Memorial Scholarship fund. Mark also received a
$250 Earth and Planetary Sciences scholarship to attend the department's Volcanology Field Course.

6 Other

Jordi Llorca, who began to study as a Ph.D. student in August 1991, left the Institute in June 1992, and returned to his native Spain because of family commitments. He has since obtained a position as Assistant Professor in Chemistry at the University of Barcelona.
SECTION IV

DEPARTMENTAL AND UNIVERSITY ACTIVITIES
IV. DEPARTMENTAL AND UNIVERSITY ACTIVITIES

A. Brearley

Curator of the Meteorite Museum and Collection.

Manager of the Scanning Electron Microscope and Electron Microprobe Laboratories. (to October, 1992)

Supervisor of Thin Section Laboratory in the Institute of Meteoritics.

Member, Department of Earth and Planetary Sciences and Institute of Meteoritics Facilities Committee.

Represented Institute of Meteoritics and manned display for Popejoy Society members reception, Popejoy Hall, October 15, 1992.

R. Jones

Manager of Experimental Petrology Laboratory.

Assistant Curator of Meteorite Collection.

Attended several College of Arts and Sciences Chairs and Directors meetings as IOM representative.

Member of Chemical Hygiene Committee, Department of Earth and Planetary Sciences.

Editor of IOM brochure, "Research and Graduate Programs, 1993/1994."

Represented Institute of Meteoritics and manned display for Popejoy Society members reception, Popejoy Hall, October 15, 1992.

Presented poster at opening ceremony of Advanced Materials Laboratory, UNM August 27, 1993.

G. Layne

Manager of UNM/SNL ion microprobe facility.


H. Newsom

Directed operation and development of the Neutron Activation Analysis Laboratory, Institute of Meteoritics.

Faculty advisor, student club: Students for the Exploration and Development of Space.
IV. DEPARTMENTAL AND UNIVERSITY ACTIVITIES

Member New Mexico Space Grant Faculty Advisory Board

Research Staff Representative to Department Faculty Meetings, Fall 1992.

J. Papike

Director of IOM

Member, Department of Earth and Planetary Sciences Graduate Student Committee

Member, Department of Earth and Planetary Sciences Long Range Planning Committee.

Chair, Earth and Planetary Sciences Department and IOM Facilities Committee.

C. Shearer

Manager, ICP-MS Laboratory.

M. Spilde

Manager, Electron Microprobe and Scanning Electron Microscope Labs. Provided training on electron microprobe for 13 users and on scanning electron microscope for 3 users.

Served on Earth and Planetary Sciences Department Computer Committee.

Visitors to IOM

Visitors to IOM during the period of this report included:


Dr. Miles R. Palmer, Senior Staff Scientist, SAIC. Discussed impact craters and possible applications of gun-launched space craft with H. Newsom. Sept. 4, 1992.

IV. DEPARTMENTAL AND UNIVERSITY ACTIVITIES


Dr. H. Yurimoto and Dr. Y. Mori, University of Tsukuba, Japan. Dr. Yurimoto presented seminar, "Inter- and intra-crystalline oxygen isotope distribution of fassaites in Allende CAI." March 22-23, 1993.

Dr. John Eichelberger and Dr. Akasofu, University of Alaska. Discussed the Katmai drilling program with J. Papike. April 13, 1993.


SECTION V

PROFESSIONAL ACTIVITIES
V. PROFESSIONAL ACTIVITIES

Adrian Brearley


Acted as abstractor for Mineralogical Abstracts, abstracted papers from Analytical Chemistry.

Rhian Jones

Acted as abstractor for Mineralogical Abstracts, abstracted papers from "Meteoritics".

Associate Editor of the journal "Meteoritics".

Member of Planetary Materials and Geochemistry, Management Operations Working Group. Meetings in Houston, TX on January 27-29, 1993 and June 24-26, 1993

Member of the Program Committee for the 56th Meteoritical Society Conference. Committee meeting in Denver, May 24-25, 1993.

Horton Newsom

Associate Editor for the international geochemistry journal Geochimica et Cosmochimica Acta.

Appointed to NASA committee: Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM).

Jim Papike


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 Program Committee, 56th Annual Meteoritical Society Meeting, 1992-1993
V. PROFESSIONAL ACTIVITIES

Charles Shearer

AWU-DOE Faculty Fellow at LANL.

In addition to the activities listed above, members of IOM acted as reviewers of numerous manuscripts submitted to international journals and proposals submitted to federal funding agencies.
SECTION VI

EDUCATIONAL OUTREACH

AND

PUBLIC SERVICE
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: Albuquerque Academy, Albuquerque; Eugene Field Elementary School, Albuquerque; Santa Fe High School, Santa Fe, St. Charles School, Albuquerque; UNM Physical Sciences students. Several members of IOM have also visited schools in the area to give talks on various aspects of planetary sciences.

Considerable interest was generated by a display of New Mexico meteorites set up by IOM at the Albuquerque Gem and Mineral Club show, March 5-7, 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.

2. Public Service

Adrian Brearley

- Presented talk to the Bear Canyon Senior Citizens Camera Club on photographing meteorites and rocks. October 1, 1992.

VI. EDUCATIONAL OUTREACH AND PUBLIC SERVICE


- Had telephone interviews with Mike Manser, Kansas City Star about the Norton County meteorite. April-May, 1993.

Jim Connolly


- 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, 1992 and March through May, 1993.

- Consultant to City of Albuquerque, Environmental Health Department providing mineralogical analysis of airborne particulates sampled at air quality stations, January, 1993.

Rhawn Denniston

- Served on the Student Research Advisory Committee during the 1992 Fall Semester

Rhian Jones

- Visited Albuquerque Academy middle school and presented lecture on meteorites to two groups of students. September 23, 1992.

- Staff volunteer for "One-on-One" program.


Horton Newsom


- Attended Red Cross Course: First aid and CPR, October 22, 1992.

Ken Nichols

VI. EDUCATIONAL OUTREACH AND PUBLIC SERVICE

James Papike

Mark Servilla
- Presented talk on Volcanoes at Albuquerque Academy.

Chip Shearer
- Presented lectures about the Moon at Albuquerque Academy.
- Led field trips for Sandia Prep.

Mike Spilde
- Served as Vice-President of Programs, Albuquerque Gem and Mineral Club, 1993.
APPENDIX

PUBLICITY

Institute of
Massachusetts
1944

UNIVERSITY OF NEW MEXICO
Science, Industry Unite in New Advanced Materials Laboratory

Sandian Ted Neil (1823) was one of the first scientists in the door of the recently opened Advanced Materials Laboratory (AML), a joint government-university-industry facility created for collaborative materials research at UNM's Research Park. He and UNM research scientist Graham Layne couldn't wait to get started on a joint research project between UNM's Geology Department and Sandia's Surface/Molecular Spectroscopy Dept. 1823. Their research involves analyzing natural materials such as meteorites and pieces of the moon.

While most of the researchers are still moving in, Ted and his partner have already begun work using one of the nation's few ion microprobes available for general research. Several days away from the Aug. 27 building dedication ceremony, AML co-director Ron Loehman (1708) says the collaboration is the first of many that will be formed in the new facility.

The AML laboratory, Ron says, is designed to promote joint research among Sandia, Los Alamos National Lab (LANL), UNM, and US companies in materials and process research, development, and application, and to aid in transferring the resulting technologies to industry. Though concepts of joint research and technology transfer are nothing new to the laboratories, the AML concept itself is unique.

For the first time, a number of Sandia researchers will work off-base at a dedicated laboratory facility located at the new University Center Research Park, located near University and Stadium Blvds. The venture, says Ron, marks the first time staff from two national laboratories will be permanently assigned to the same laboratory with the ability to do collaborative research. It will also be a rare opportunity to share equipment.

"We've worked hard at coordinating all the equipment that goes into the laboratory so that very little of it will be duplicated," says Ron.

A National Resource

"Development of advanced materials and processes is vitally important to US economic growth and competitiveness, and it is an important component of Sandia's new Advanced Manufacturing initiative," says Sandia President AI Narath. "It is also extremely important for Sandia and the other national labs to find new ways of collaborating with universities and industry. This new laboratory advances both of these goals. I expect it to evolve into a national resource."

The value of pooling government, university, and company resources can be seen in the AML's wide array of state-of-the-art equipment. For characterization and analysis, the AML contains equipment for ion microprobe analysis, thermal analysis, imaging ellipsometry, dynamic light scattering, and electron microscopy. For synthesis of new materials, the AML has both a class 100 clean room and a class 1000 clean room containing class 100 clean benches for particularly sensitive work. (A class

NEW FACILITY — The new Advanced Materials Laboratory at the University of New Mexico's Research Park opened its doors recently.

100 space contains no more than 100 particles of dust, typically) per cubic foot.) The AML also has facilities for a variety of spectroscopic measurements, including electron spin resonance, nuclear magnetic resonance, Raman, X-ray, photoelectron, and Auger electron spectroscopies.

Using this technology, researchers can process fine powders, sol-gel materials, electroceramic films, ceramics, chemical sensors, and advanced battery materials as well as synthesize materials in hydrothermal and supercritical fluids.

The laboratory will house about 65 people initially, including researchers from Duke Scientific, Superkinetics, Radiant Technologies, Sandia, and UNM. LANL plans to move staff members into the facility this fall.

UNM President Richard Peck will host the AML's formal dedication ceremony at 10 a.m. on Thursday, Aug. 27. Sandia President AI Narath, LANL Director Sig Hecker, and Senator Pete Domenici are featured speakers. The ceremony will be followed by an open house and tours of the AML facility.

FIRST OF MANY — UNM research scientist Graham Layne (right) shows the Advanced Materials Laboratory's (AML) new ion microprobe to AML co-director Ron Loehman (center, 1708). Layne and Ted Neil (left, 1823) have already begun a joint research project between UNM's Geology Department and Sandia's Surface/Molecular Spectroscopy Dept. 1823. The collaboration is the first of many that will be formed in the new facility, says Ron.
Meteors light up county nights

By LISA HOQUE
Staff Writer

A streaking meteor — commonly called a fireball — lit up the New Mexico night sky last Thursday, according to a Las Cruces police officer who reported it.

A Las Cruces police dispatcher said an officer reported seeing the fireball from a car for a few seconds in the New Mexico night sky.

A meteor is a piece of space debris entering the earth's atmosphere at such a high speed that it usually creates a visible light, commonly referred to as a fireball, said New Mexico State University atmospheric scientist Matt Anderson.

But Thursday's fireball, he said, was unique because it was seen in Las Cruces, Richfield and Alpine, Utah.

A state police dispatcher in Las Cruces said the fireball was about 11:39 p.m. and was similar to the bright light Thursday night, which was estimated to be 11,000 feet above the ground.

The state police dispatcher in Albuquerque estimated the size of the fireball to be about 11:39 p.m., which was similar to the bright light Thursday night.

The fireball was observed in Richfield, Utah, and Alpine, Utah, which are located south of Las Cruces.

A police officer in Las Cruces said the fireball was about 11:39 p.m. and that the fireball was similar to the bright light Thursday night.

The fireball was seen in Richfield, Utah, and Alpine, Utah, which are located south of Las Cruces.

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The fireball was seen in Richfield, Utah, and Alpine, Utah, which are located south of Las Cruces.
This report provides a general discussion of some of the major achievements of the UNM Department of Economics during the 1992-93 academic year. It also identifies the major problems that the Department faces at this time and the Department’s plans for the 1993-94 academic year.

A. Significant Achievements During the Academic Year 1992-93

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 1992-93 was 5.5% lower than that generated during 1991-92. The $198,364 total was from five awards made by Los Alamos National Laboratories, the WERC consortium through New Mexico State University, and the Energy Minerals and Natural Resources Department of the State of New Mexico. 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 to expect success in these efforts. We have made good contacts and done preliminary work with the Soil Conservation Service of the U.S. Department of Agriculture and the U.S. Geological Survey. The experimental lab should be fully operational during the next academic year and will serve to bolster sponsored research efforts.

2. Degrees Awarded. During the 1992-93 academic year 65 students received their B.A. degree with a major in economics (Table 2). During the
same period the Department of Economics awarded eleven (11) M.A. degrees. Three Ph.D. students completed their degrees.

3. The Evening Degree Program. Beginning with the Fall 1988 semester, the Department expanded the courses offered in the evening. This effort has been curtailed recently due to shifts in both available funding and personnel. During the 1992-93 academic year virtually all graduate courses were offered at 5:30 pm or later. However, only a few undergraduate courses were offered for evening students (three in the Fall and two in the Spring). We will be examining this question during the upcoming year as part of our undergraduate curriculum review. The demand for evening classes exists, but it needs to be evaluated in comparison with the demand for traditionally scheduled offerings. At the same time, we will be examining the need for summer offerings in face of decreased funding in that area as well.

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 assigned to these courses have teaching assistants who work with them to provide students with out-of-class contacts during office hours and structured review sessions.

5. The Hispanic Economics Program. Over the last five 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. These efforts will be evaluated during the undergraduate review planned for the 1993-94 academic year both for effectiveness and priority.

6. Outreach to the New Mexico Community. We have had continuing success in increasing our involvement with research organizations in the state and here at UNM. An internship for a graduate student is still available through Ms. Shirley Wozniak, Director of Albuquerque’s City Planning Department. Support for graduate students has continued through UNM’s Bureau of Business and Economic Research.

B. Significant Plans and Recommendations

As 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 undergraduate and graduate curricula. The Department’s graduate program is up for regular review. The results of that review will lend direction to initiatives in that program. The Department will conduct an internal undergraduate review; we will actually be completing a review that has stopped and started several times recently. It will deal with all phases of undergraduate education, including curriculum, course selection, undergraduate teaching, recruitment and retention.

C. Appointments to Staff

The following faculty member was hired for the upcoming academic year:

Andrew Morrison, Ph.D., Vanderbilt University, Associate Professor. Area of interest: Labor Economics, Latin American Economics, Urban and Regional Economics, Economic Development).
D. Separation of Staff

Professor Peter Gregory retired at the end of the Spring semester. He had served with the faculty since 1971. Professor Ron Cummings retired effective July 31, 1993; he joined the faculty in 1975. As a result of Professor Cummings's retirement, it was necessary to choose a new chair. Professor David S. Brookshire was selected to fill the unexpired term.

E. Economics Graduate Program -- A Status Report

We presently have over 50 students in the Department's graduate programs. This is an increase over earlier years. The increase is due to greater available support and continued interest in our evening program. The department plans to implement a new recruitment and advertising plan during the upcoming academic year.

F. Long Term Goals for the Unit

The Department's long term goals are in general: (1) to increase the level of sponsored research, (2) to improve undergraduate offerings and raise undergraduate enrollment, and (3) to foster planned growth in the graduate program.

G. Affirmative Action

The department has made and will continue to make substantive efforts to increase the cultural and ethnic diversity of its faculty.
Table 1 -- UNM Department of Economics
Sponsored Research Money Generated

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Grant Research</th>
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<tbody>
<tr>
<td>1980-81</td>
<td>997,210</td>
</tr>
<tr>
<td>1981-82</td>
<td>194,826</td>
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<td>1982-83</td>
<td>57,591</td>
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<td>103,533</td>
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<td>1984-85</td>
<td>522,298</td>
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<td>1985-86</td>
<td>380,662</td>
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<td>1986-87</td>
<td>310,667</td>
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<td>146,394</td>
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<td>170,452</td>
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<td>1991-92</td>
<td>209,804</td>
</tr>
<tr>
<td>1992-93</td>
<td>198,364</td>
</tr>
</tbody>
</table>

Table 2 -- Degrees Awarded by the
UNM Department of Economics

<table>
<thead>
<tr>
<th>Academic Year</th>
<th>Economics Majors</th>
<th>Economics Minors</th>
<th>Masters Degrees</th>
<th>Ph.D. Degrees</th>
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<tr>
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<td>45</td>
<td>12</td>
<td>6</td>
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<tr>
<td>1981-82</td>
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<td>59</td>
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<td>1992-93</td>
<td>68</td>
<td>unk</td>
<td>11</td>
<td>3</td>
</tr>
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</table>
1992-93 was a year of change for the English Department. Michael Fischer succeeded Lee Bartlett as Chair and appointed Scott Sanders Director of Undergraduate Studies and Chair of the Professional Writing Committee, Peter White Director of Graduate Studies, and David Johnson Chair of the Creative Writing Committee. Michael Hogan continued as Director of Freshman English and Helen Damico as Director of Medieval Studies.

Other personnel changes included the retirement, effective June 30, 1993, of the internationally known novelist Rudolfo Anaya, who will be sorely missed. Gary Harrison was awarded tenure and
promoted to associate professor; Lynn Beene was promoted to full professor; and Assistant Professor Laurie Alberts received a positive Code-3 review.

Marga Munkelt taught in our department as a visiting professor from the University of Munster, as did Dieter Schultz (from the University of Heidelberg). Robert Earle, Diplomat-in-Residence at the Latin American Institute, also taught an English Department course on Latin American and North American constructions of identity. Paul Zolbrod, Frederick F. Seely Professor of English, Allegheny College, taught an English Department course on Native American literature. The well known Native American writer Lance Henson, author of fifteen books of poetry, was our Visiting Writer for the spring.

In addition to approving the changes in our undergraduate and graduate programs discussed in the following reports, the department embarked on a major analysis of our staffing needs. Many developments precipitated this analysis. Several well known scholars from other universities applied to teach in our department, compelling us to re-examine our hiring priorities. Enrollments in our graduate and undergraduate programs continued to grow, leading to overcrowded classes and intensifying the need for new faculty. The death of Joseph Zavadil last year, the retirement of Rudolfo Anaya this year, and several other imminent retirements also forced us to think about how we were going to fill anticipated vacancies.
In response to these developments, we presented to Interim Dean Bill Gordon a detailed hiring proposal, which chronicles personnel changes in our department from 1986 to 1993; assesses the size of our department vis a vis other English departments; documents sharply increased enrollment pressures in several fields; examines the job market for English PhDs; and arrives at our top three hiring priorities for the coming year.

Putting together this plan was useful, in part because it was the first time in several years that the department had discussed where it was headed. Nevertheless, more needs to be done. Over the next 5-6 years, numerous senior faculty will be retiring; applications to our graduate program continue to escalate, along with enrollments in English courses at every level; and our discipline continues to change rapidly. In the coming years we will have to consider how we will address these changes.

Planning for future hiring, working to increase depressed faculty salaries (especially at the full professor level), while dealing with stagnant budgets—these are the challenges we face.

One immediate benefit of our hiring proposal was that it paved the way for our offering a position to Louis Owens. The English Department is becoming known for championing multicultural diversity in its faculty and curriculum. Many faculty from underrepresented groups consequently apply to teach here. In responding to these requests, we are hampered by the apparent
absence of a university Target of Opportunity or Minority Hiring program. Nevertheless, thanks to the support of newly appointed Dean Bill Gordon, in June we were able to extend an offer to Louis Owens of the University of California, Santa Cruz, an internationally renowned Native American novelist and literary critic. He will be joining us as a full professor Fall, 1994.

In addition to the determination of our hiring priorities, other departmental initiatives included clarifying policy on teaching assistants teaching outside of Freshman English; formulating criteria for promotion to full professor; and developing new procedures for the annual review of assistant professors.

1992-93 was an outstanding year for several individual faculty members. Their accomplishments—only some of which I can review here—suggest the scholarly productivity and excellent teaching that characterize our department.

* Laurie Alberts received the prestigious Pirate’s Alley Faulkner Society Award for her short story, "Inventory."

* David Dunaway continued work on his Writing the Southwest, an innovative multicultural project funded by the state humanities councils of New Mexico, Colorado, and Arizona, in association with the National Endowment for the Humanities.

* Monica Espinosa was awarded a highly competitive Stanford University Postdoctoral Teaching Fellowship for 1993-94. She will be teaching two courses in Comparative Literature at
Stanford as well as continuing her research on Aurelio Espinosa.

* Cheryl Fresch won the coveted Burlington Resources Foundation Faculty Achievement Award for her outstanding teaching—the second Burlington Award won in recent years by an English Department faculty member.

* English Department professors presented papers around the world. To cite only a few examples: Robert Fleming (at the International Hemingway Conference in Pamplona Spain); Michael Fischer (at the International Conference on the Legacy of Northrop Frye, University of Toronto); and Cheryl Fresch (at the Fourth International Milton Congress in Brussels).

* Helen Damico was invited to the University of Montana to help establish a Consortium for Medieval Studies there. As Director of Medieval Studies here at UNM, Professor Damico organized a highly successful spring lecture series and fall Outreach Program (which included a seminar at Sandia Prep on teaching the Arthurian Legend in the secondary schools).

* Minrose Gwin was invited to give the Fennimore Lecture on American Literature at Albion College, March 29.

Freshman English

During the 1992-93 year, as usual, the Freshman English Program accounted for a majority of the department's courses. The trend to staffing 200-level writing courses, as well as a handful of 200-level literature courses, with Teaching Assistants continued
also--this a development TAs certainly like and believe will make their credentials attractive when they enter the job market. In English 101 and 102 per se, the year's major change came in textbooks, with both courses now having students read and write about somewhat more challenging academic issues than has been routine in the past. The results of this shift are not yet entirely clear, and the changes will be reviewed in the '93-94 year. Finally, affected as always by the currents of American culture, the Freshman English Program saw in 1992-93 more and more of its students grow litigious and threaten to sue a teacher or the university when confronted with even the slightest inconvenience or disappointment. The Director reports that he lost his temper only occasionally and none of the "cases" reached the courts.
Members of the Undergraduate Committee for 1992-93 were Professors Laurie Alberts, Lynn Beene, Monica Espinosa, David Jones, Gary Scharnhorst, and Hugh Witemeyer; Scott Sanders, Undergraduate Director, chaired the committee. Accomplishments for the year include changes, some major some minor, to nearly all of the undergraduate concentration curricula and establishment of a more formal departmental honors program with clearer deadlines and procedures for identifying students as honors candidates, reading and evaluating honors theses and proposals for theses, and offering honors seminars on special topics.

CHANGES TO THE CONCENTRATIONS IN ENGLISH

The concentrations in pre-teaching and pre-business were discontinued: the former because continuing changes at the state level in the requirements for obtaining teaching certification had made much of the concentration obsolete (and coping with those changes would be more appropriately done by the College of Education, not by our department); the latter because our course offerings in pre-business areas had not developed sufficiently to support the concentration.

The concentration in Liberal Arts was changed only slightly to allow students to elect any two literature survey courses (201 or 375, 202 or 376, 294, 295, 296) rather than stipulate that students take both British literature (294 or 295) surveys.
The pre-graduate concentration was not changed.

The concentration in creative writing was changed only slightly to stipulate that students must have one creative writing course at the 200, 300, and 400 level.

The concentration in professional writing was changed to shift emphasis and required credit hours from lower division to upper division courses. Before, all students were required to take English 290, Introduction to Professional Writing; now, students may take either 219 (Technical Writing) or 220 (Expository Writing) or 290. Coupled with this choice, students now take only one 200-level literature survey course where before they took two 200-level surveys or a combination of 219 or 220 and a survey. To keep the total required hours at 34, students must now take an additional 320 or 420 (advanced professional writing course). All other requirements remain unchanged.

The concentration in pre-law was strengthened by adding three credit hours (raising the minimum required total from 30 to 33) at the upper division level, requiring students to choose a writing class (320 or 420) or the English Grammars class (441). At the lower division level, rather than requiring expository writing (220), students may now choose either 220 or 240, Traditional Grammar. Finally, students must take either 410 (literary criticism) or 442 or 443 (early or later rhetoric) where before 410 alone was required. The Form C required to complete this curriculum change
apparently did not reach the registrar's office before the deadline for new catalog copy, so the changed pre-law concentration requirements were not published in the new 1993-95 catalog. This means that we will honor the superseded requirements for all students who enter the University through 1995, making the new curriculum available to those students who wish to pursue it.

HONORS PROGRAM

The committee re-defined the department honors program by setting stages for a student's progress through the program. We now identify students as honors applicants (they have the minimum grade point average requirements, which are unchanged), honors candidates (they have submitted a thesis proposal and the proposal has been approved by the committee and an honors thesis director), and as honors recipients (their thesis has been read by the director and the committee and a level of honors has been awarded). The program was described on a one-page flyer that we asked professors to place in their syllabi for the Spring 1993 term.

Honors students at any level are eligible for restricted honors topics classes (offered as sections of English 411: Topics); the first honors topics seminars will be taught Fall 1993 by Barry Gaines ("Shakespeare on Stage and Screen") and Gary Harrison ("Utopias").
At this writing there are about two dozen honors applicants and candidates; more will be identified during the first few weeks of the fall term after the honors flyer appears in syllabi.

GRADUATES
At the 15 May 1993 department graduate ceremony, the names of 117 students were read and they were recognized as graduates for the 1992-93 academic year. Seven students received departmental honors: Patrick Briscoe, Kelly McGuire, and Felicia Steele \textit{(summa cum laude)}; David Atkinson and Deborah Weide \textit{(magna cum laude)}; Judith Driscoll and Alissa Selvia \textit{(cum laude)}.

CONCLUSION
We will watch the changes to the concentrations and the more formal departmental honors program over the next several semesters to see that these programs continue to increase the quality of our undergraduate program.
1992-93 was a productive year for the Graduate Program in English. Members of the Graduate Committee included Professors Peter White (chair), Patrick Gallacher, David Johnson, Joy Harjo, Antonio Marquez, Gary Harrison and Mary Bess Whidden. Kay Thurston and Jennie Dear served as Graduate Student Representatives. The Committee met at least a dozen times during the academic year and instituted the following significant policy changes in the program.

**PROGRAM CHANGES:**

1. We have changed the Ph.D. Comprehensive exam structure to make it both more rigorous and more suited to the academic needs of our students. We now have three (instead of two) major field exams, each lasting four hours and requiring at least one exam in a standard, literary historical period. We have included Native American, Chicano, and African American Literature fields in a second, optional category.

2. Students in the Ph.D. Program may now complete three years of one foreign language or two years of two foreign languages. We instituted the three year sequence so that students could focus on a particular language and culture in keeping with movements towards internationalism in literary studies and criticism.

3. We have devised a more rational philology sequence for Ph.D. students, allowing them now to choose two courses from a list of six.

4. We have devised an advising system for all MA students, with one faculty member assigned to each student in the first semester of his or her work in literature or creative writing.

5. The Committee approved reading lists in Contemporary Literature for the Ph.D., ethnic literature reading lists for the Ph.D., and
divided the Ph.D. Comprehensive exams in Modern and Contemporary Literature into separate areas.

(6) The Graduate Committee voted on a number of issues which might be classified under tightening policy and procedures. We therefore reconfirmed our policy to require students to take English 500 in the first semester, take comprehensive exams during the regularly scheduled administration dates, apply for teaching assistantships with three letters of recommendation, GRE scores, and copies of teaching evaluations. We have also insisted that our policy of using MA exams for admission to the Ph.D. program be consistently and uniformly enforced.

PROGRAM REVIEW:
In addition to the business described above, the Graduate Committee performed other very difficult and time-consuming tasks, including:

(1) Review of enrollment patterns in our program and development of an admissions policy to limit our growth within reasonable bounds. Attached to this report is a breakdown by program of numbers of applications and admissions. As you can see, 261 people applied to the English Graduate Program. As of August 18, 1993, roughly twenty new students will enroll, keeping our total enrollment about the same as last year--186 students. While this a large figure by national faculty to student ratios, we feel that we can control the quality of the program at this level. Those few students awarded assistantships were among the best in the country.

(2) The committee also approved dozens of MA and Ph.D. exams, approved revised reading lists in four fields, approved 27 MA students for graduation and 4 Ph.D. students, and approved the non-renewal of two
teaching assistantships, one for lack of academic performance and one for unsatisfactory teaching. I have also attached a list of student awards made by the Graduate Committee and the names of MA and Ph.D. students who passed exams or dissertation final exams.

(3) The Graduate Director, with assistance from the Committee and the Director of Freshman Composition and the Chair of the Department, prepared an 86 page guide to graduate studies in English, encompassing all areas from the application process to examinations, assistantships, regulations, deadlines, and policies of the department. This comprehensive booklet explains in detail every aspect of our several concentrations--MA in Literature, MA in Creative Writing, MA in Professional Writing, MA in Language & Rhetoric, and the Ph.D.

This year the graduate director took some of the steps mentioned above in response to certain statements in the last graduate review. While this review was flawed in many respects, it did point out the need for some revision in the structure of our program and in communication among students and faculty. The Graduate Director has met regularly with students at informal lunches in the SUB or in formal meetings with the students to explain these changes and to remind the students of departmental policy. The size of our program and the burden it places upon faculty to write and evaluate exams and to assess applications are two areas of continued concern. The Graduate Committee is attempting to improve our program by admitting only the most qualified applicants and offering assistantships to deserving MA students already enrolled in our program who wish to move on to the Ph.D. The Committee has set limits on class size, particularly seminars, and has encouraged more faculty to teach.
500 level classes. Our new advising system should also help to establish better communication and guidance within the department.

A note of special thanks to Ms. JoAnn Lucero for helping to provide statistical information on applications and on current student status. Controlling the paper work for the graduate office is a tremendous job. This year the department received 750 inquires about admission to the program. Ms. Lucero helped to devise a computerized system for tracking applications and for overseeing student progress toward the degree.

SPECIAL STUDENT RECOGNITION:

Megan Simpson, this year's winner of the Buchanan-Arms Award; Anna Carew-Miller, winner of the New Mexico Folklore and Southwestern Literature Scholar's Award; Inez Peterson from Oregon and Paul Olson from our MA Writing Program, winners of writing fellowships in English; Jami Huntsinger, winner of a scholarship from P.E.G. (an organization which supports women's education); Lori Kula, winner of a tuition fellowship to Claremont Graduate School; Ann Grigsby, a Ph.D. student who will be teaching at Cochise Community College in Arizona.

Congratulations are also in order to the following students:

Ona Barry, Russell Day, S. Renee Faubion, Michele Loeblich, Kathryn McPherson, Sheri Metzger-Hoge, Scott Moore, Linda Prowell, Jeff Severinghaus, Shelly Skinner, Kelly Thacker and John Weston passed their Master's comprehensive exams; David Benedetti, Alan Blackstock, Isabella Devere, Tracy Johnson, David Martinson and Rebecca Rowley passed their Ph.D. comprehensive exams; Seth Bovey, Myung Joo Kim, Edward Lorusso and Jose Morales-Serrano successfully defended their doctoral dissertations; Stephanie Booth, Terry Hauptman, Nora Hunter,
Randi Israelow, Kenneth Jehle, Judi Lynne Judy, Carmela Lanza, Laura Mayo, Mitzi McGuire, Shannon Noya, Suzanne Roberts, Sara Spurgeon, Jefferson Voorhees, Janis Wellington and Jon Wolff were awarded an M.A. in our Writing Program.

GRADUATES 1992-93

MASTER'S IN LITERATURE/LANGUAGE & RHETORIC

FALL 1992
Ona Barry
Russell Day
Michele Loeblich Lit/L&R
Kathryn McPherson
Scott Moore
Shelly Skinner
John Weston Lit/L&R

SPRING 1993
S. Renee Faubion
Sheri Metzger-Hoge
Linda Prowell
Jeffrey Severinghaus
Kelly Thacker
M.A. Writing Program

Summer 1992
Judi Lynne Judy

Fall 1992
Stephanie Booth Fiction
Terry Hauptman Poetry
Kenneth Jehle Fiction
Carmela Lanza Poetry
Mitzi McGuire Poetry
Suzanne Roberts Prof. Writing
Jefferson Voorhees Fiction
Janis Wellington Poetry
Jon Wolff Fiction

Spring 1993
Nora Hunter Poetry
Randi Israelow Fiction
Laura Mayo Fiction
Shannon Noya Fiction
Sara Spurgeon Fiction

Ph.D. Comprehensive Exams

Summer 1992
David Benedetti 20th-Century British & American Literature
19th-Century American Literature
Alan Blackstock 19th-Century British Literature
Language & Rhetoric
Isabella Devere Restoration & 18th-Century Literature
The Drama
Tracy Johnson 20th-Century British & American Literature
Criticism & Theory

Fall 1992
David Martinson Criticism and Theory
Early Renaissance
Rebecca Rowley 19th-Century British Literature
Criticism & Theory
Ph.D. Dissertation Defense

Summer 1992 Graduation

Seth Bovey
Chair: Gary Scharnhorst
Committee: Robert Fleming, Ivan Melada, Richard Etulain
Title: The Indian Hater as American (Anti)Hero

Myung Joo Kim
Chair: Patricia Clark Smith
Committee: Michael Fischer, Mary Power, Diana Rebolledo
Title: Religion and Literature in Flannery O'Connor

Edward Lorusso
Chair: Robert Fleming
Committee: Paul Davis, Ivan Melada, Walter Putnam
Title: The Importance of Truth: Nonfictive Bases for the Novels and Short Stories of Robert McAlmon

Jose Morales-Serrano
Chair: Robert Fleming
Committee: Hugh Witemeyer, Frederick Warner, Robert Kern
Title: Spanish Civil War Fiction
TO: Peter White
FR: JoAnn
RE: FALL 1993 ADMISSIONS

Here are some statistics on Fall 1993 admissions.

FALL 1993

261 students applied for admissions. There were 186 files reviewed for admission and TAships.

PHD

89 applied for admission (4 were offered TAships and 2 accepted)
  13 were offered admission - 9 accepted and 4 declined
  62 were refused admission
  14 are Incomplete files

MA/LIT

102 applied for admission (NO TAships offered)
  21 were offered admission - 12 accepted and 9 declined
  57 were refused admission
  24 are Incomplete files

MA/CW

70 applied for admission (NO TAships offered)
  20 were offered admission - 5 accepted and 15 declined
  43 were refused admission
  7 are Incomplete files

261 applied for admission - Fall 1993

  54 were offered admission
    26 accepted (2 will be TA's) and 28 declined

  162 were refused admission

  45 were Incomplete files
ANNUAL REPORT

DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES

Chair: Diana Robin

Revised September 9, 1993
ANNUAL REPORT
July 1, 1992-June 30, 1993

ABSTRACT

A total of 3,321 students enrolled in the 164 different courses the Department of Foreign Languages and Literatures offered during the Summer, Fall, and Spring semesters in 1992-1993. Thus 10 tenured faculty (4 of whom were on leave for either one or both semesters), 9 part-time instructors (this number excludes visiting faculty at the summer schools), and 16 TAs produced a total of 9,392 student credit hours for the department in AY 92-93.

Foreign Languages and Literatures is a new department; it received its charter less than a year ago. It currently offers programs in French, German, Classics, Russian, Italian, Chinese, Japanese, and Comparative Literature. The department offers a Ph.D. in French, M.A.s in 3 different fields, and B.A.s in 6 different fields. In addition, the department sponsors courses in Arabic, Quechua, and Persian, in cooperation with Continuing Education and Afro-American Studies.

The biggest challenge we face as a department for the coming year will be to forge an identity for ourselves as a more or less unified body, and to settle on a few worthwhile, yet realistic goals. One such goal must be to determine where our
departmental strengths and weaknesses lie so that we can
develop a clearer programmatic focus for our energies as a
group; we should also be wary of expanding on too many fronts
at once.
I. TEACHING FACULTY AND STAFF

A. Tenure Track Faculty
Hannemann, Bruno  Professor, German
Pabisch, Peter  Professor, German
Robin, Diana  Professor, Classics (Greek, Latin)
Senninger, Claude  Professor, French
Smith, Warren  Professor, Classics (Greek, Latin)
White, Julian  Professor, French
Jespersen, Robert  Associate Professor, German
Kolchevska, Natasha  Associate Professor, Russian
Lindsey, Byron  Associate Professor, Russian
Putnam, Walter  Associate Professor, French

B. Permanent Part-time Instructors
Hanson, Suzanne  Lecturer II, French
Santistevan, Grace  Lecturer II, Japanese
Wu, Pearl  Lecturer II, Chinese

C. Part-time Instructors
Duke, Rachele  Lecturer II, Italian
Iundin, Boris  Lecturer II, Russian
Putnam, Valerie  Lecturer II, French
Reeves, Robert  Lecturer II, Latin
Warren, Denise  Lecturer II, Latin

D. Visiting Scholars
Cyrino, Monica  Assistant Professor, Classics
Gusev, Vladimir I.  Professor, Moscow Literary Institute
Le Clezio, J.-M.  Professor, French, PNM Chair

E. TAs
Lanter, Brian (Classics/Comp. Lit.)
Arcangeli, David (French)
Bennett, Deana (French)
Coppex, Claudine (French)
Cully, Suzanne (French)
Field, Tanya (French)
Marshall, Quannah (French)
Nakas, Ausra (French)
Prentice, Daria (French)
Sanchez-Guerra, Edouard (French)
Schense, Mary (French)
Spencer, Lynda Sharp (French)
Vaugelade, Nathalie (French, Exchange Student)
Lee, Steven (German)
Lommen, Barbara (German)
Mishoe, James (German)
Williams, Wilma (German)
Ueno, Teruo (Japanese/Linguistics)

F. Office Staff
Andrews, Stephen Department Secretary
Stewart, Lisa French/Italian Division Secretary
Newe, Bernie German/Russian/Asian Division Secretary
Williams, Wilma German Summer School Office Manager

G. Student Temporary Staff (Work Study)
Menaul, Kate Department Office
Skinner, Tina Department Office
Lanter, Brian Classics
Bell, Michael French/Italian
Mischoe, M.-B. French/Italian
Lewis, Heike German/Russian/Asian
McBain, Alliso German/Russian/Asian
Oldfield, Anne German/Russian/Asian
Newberger, Kirk German/Russian/Asian

II. DEGREES OFFERED

B.A. in French, German, Classics, Russian, Comparative Literature, or Languages
M.A. in French
M.A. in German Studies
M.A. in Comparative Literature
Ph.D. in Romance Languages with a concentration in French

III. DEGREES GRANTED MAY 1993

A. B.A.
31 total
(Breakdown: 8 French, 9 German, 7 Languages, 4 Russian Studies, 2 Classics, 1 Comp. Lit.)

B. M.A.

Cully, Suzanne (French)
Coppex, Claudine (French)
IV. COURSES OFFERED

A. SUMMER 1992 (INCLUDES FRANCOPHONE, GERMAN SUMMER SCHOOLS)

<table>
<thead>
<tr>
<th>Language</th>
<th>Course No., Name, &amp; No. of Sections</th>
<th>No. of Studs.</th>
<th>Cred. Hrs.</th>
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<td>FR SSCH</td>
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<td></td>
<td>380 Histoire/Culture</td>
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<td>380 Panorama de Francophonie</td>
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<td>385 Film</td>
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<td>390 Chanson Folklorique</td>
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<td>385 Poesie quebecoise</td>
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<td>485 Le conte voltairien</td>
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<td>305 Phonologie et Morphologie</td>
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<td>390 Apprentissage d. diction</td>
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<td>485 Le 16eme siecle francais</td>
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<td>585 Semin. la litt. Suisse/Frn.</td>
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<td><strong>FR SSCH TOTAL SUMMER 1992</strong></td>
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<td><strong>266</strong></td>
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| GER SSCH | 380/350 Grundkurs I                  | 30            | 60         |
|          | 380/351 Grundkurs II                 | 20            | 40         |
|          | 390/350 Der Chor                     | 31            | 31         |
|          | 390/352 Allerlei Computerei          | 3             | 3          |
|          | 370/350 Aufsatzub. u. Konvers.       | 26            | 52         |
|          | 410/350 Aufsatzub, u. Konvers.       | 8             | 16         |
|          | 470/350 Stilkunde                    | 12            | 24         |
|          | 470/351 Zeitungsredaktion            | 4             | 8          |
|          | 470/352 Geschäftsdeutsch             | 3             | 6          |
|          | 470/353 Gastronomie/Hotell.          | 3             | 6          |
|          | 385/353 Einf./Deutsche Lit.          | 11            | 22         |

-5-
<table>
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<td>351 Accelerated Latin (1)</td>
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<td>497 Undergrad. Problems (1)</td>
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B. FALL 1992

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GERMAN SSCH TOTAL SUMMER 1992

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### JAPANESE

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**Total**

| Course No, Name, & No. Sections | 73 | 219 |

### LATIN (see CLASSICS)

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**Total**

| Course No, Name, & No. Sections | 153 | 429 |

### F LANG (administered through Continuing Ed)

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**Total**

| Course No, Name, & No. Sections | 54 | 162 |

### DIVISION TOTALS

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**FLL DEPARTMENT TOTAL FALL 1992**

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### C. SPRING 1993

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345 Women in Ancient Greece  
(=Women Studies 379) (1)

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COMPARATIVE LITERATURE (see literature offerings in all language programs)

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**GREEK (see CLASSICS)**

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**JAPANESE**

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**LATIN (see CLASSICS)**

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**F LANG (administered under Continuing Ed)**

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V. FACULTY PUBLICATIONS 1992-1993

A. BOOKS (1990-1993)


C. OUTSIDE PROFESSIONAL LECTURES, PAPERS PRESENTED, OFFICES HELD IN PROFESSIONAL ORGANIZATIONS (FALL 1992-SPRING 1993)

Cyrino, M. "Shame, Danger and Desire: The Power of Aphrodite in

Cyrino. Offices. Chair, Classical Languages and Literatures Session, Rocky Mountain Modern Language Association; President, Yale New Mexico Alumni Association; member, editorial collective. Frontiers. A Journal of Women Studies.


Kolchevska. Offices. Vice president, NM/EL Paso American Association of Teachers of Slavic and East European Languages; Russian Area Liaison with Governor’s office.

Lindsey, B. Research Associate. Summer Slavic Research Laboratory, Center for Russian and Eastern European Studies, University of Champaign-Urbana, July 1992.

Lindsey, B. Offices. Board of Directors, Albuquerque organizations to aid Russia: Friends To Friends; Response.

Pabisch, P. "Karl Kraus: die Sorge um die Sprache." Presented November 6 at Swedish University, Turku, Finland; Nov. 19, 1992 at University of Helsinki, Finland; Nov. 16 at University of Tampere, Finland.


Pabisch. "Oesterreichs Kulturszene seit 1945." Nov. 25, 1992 at
University of Jyvaskla.


Pabisch. "German Studies and the German Summer School of New Mexico." Nov. 9, 1992 at Univ. of Jyvaskla.


-16-
Robin. "Renaissance Genres, Gender, and the Relational Self."

Robin. 1992-93. Offices: Co-Chair, Women's Caucus, American Philological Association; Councillor and Discipline Representative, the Renaissance Society of America; Vice-President for New Mexico, the Classical Association of the Middle West and South.


D. PUBLIC PERFORMANCES: MEDIA INTERVIEWS, PUBLIC READINGS, EXHIBITIONS


Pabisch. Poetry reading (Nov. 4) and exhibition of drawings (Nov. 4-16). Jyvaskylka, Kijailijatalo.


E. EDITORSHIPS OF SCHOLARLY JOURNALS OR REFERENCE SERIES

Pabisch, P. Editor. Encyclopedia Die Deutsche Literatur.

Putnam, W. Bibliographer. French XX.


F. OUTSIDE-SPONSORED RESEARCH, GRANTS, AWARDS, HONORS

Kolchevska, N. 1993. Faculty Scholar (one of six at the University of New Mexico).


Santistevan, Grace, Coordinator. $40,000. The US/JAPAN program. P.I.: Dr. Wally Lopez (Engineering). For the development of the program in Japanese language, literature, and culture in the Department of Foreign Languages and Literatures.
Senninger, C. Consul Honoraire de France a Albuquerque.

VI. SIGNIFICANT DEVELOPMENTS DURING AY 1992-1993

The Department of Foreign Languages and Literatures was formed after the official separation, in October 1992, of the old Department of Modern and Classical Languages into two new departments: Spanish/Portuguese (S/P) and Foreign Languages and Literatures (FLL).

The Department of Foreign Languages and Literatures includes majors in French, German, Classics (with separate majors in the culture track: Classical Studies; or the language track: in Greek, and Latin), Russian (with separate majors in Russian Studies or Russian Literature), Foreign Languages (a language intensive major requiring 54 credits in languages), and Comparative Literature. In addition, the department offers a three-year program (100 through 300-levels) in Chinese and Japanese. The equivalent of a four-year program is currently offered in Italian (200 through 400-levels). The department also offers courses in Arabic, Persian, and Quechua in cooperation with the Division of Continuing Education and Community Services.
FLL offers the following degree programs: the Ph.D. in Romance Philology with a concentration in French; the M.A. in French, German Studies, or Comparative Literature; and the B.A. in French, German, Classics (with a concentration in Classical Studies, Greek, or Latin); Russian (with a concentration in Russian Studies or Russian Language and Literature), Comparative Literature, or in Languages.

The Department of Foreign Languages has three formal divisions: French/Italian; German/Russian/Asian; and Classics; each division has its own head and secretary. All three divisions are administered by the department chair. In addition, the chair administers the program in Comparative Literature, the Languages major, and the language programs offered in cooperation with Continuing Education.

The program in Comparative Literature, previously housed in the English Department, came under auspices of Foreign Languages and Literatures in November 1992. Dean Bill Gordon appointed FLL Chair Diana Robin to be the Director of Comparative Literature. Professor Robin named a new interdisciplinary committee to oversee the program and to bring its curriculum into conformance with developments in the discipline around the country. The faculty appointed to the new committee were Michael Fischer
Chair (Chair, English Department), Minrose Gwin and Gary Harrison in English); Ruth Salvaggio in American Studies; Erlinda Gonzalez-Berry (Chair, Spanish/Portuguese Department); Ira Jaffe (Chair, Film and Media Arts); Beverly Burris (Acting Chair, Sociology Department); Louise Lamphere in Anthropology (Chair, Women Studies); and Shane Phelan in Political Sciences. The committee has proposed that in addition to the existing program, which is focused around the comparative study of two or more national literatures, there be a new track II added to both the B.A. and M.A. programs with a concentration in Cultural Studies. The committee has also proposed that the name of the program be changed to Comparative Literature and Cultural Studies. The committee's proposals are presently being routed through the college and Senate Committees for approval; implementation of the new track II in Cultural Studies is expected to begin in Spring 1994.

The department continues to take pride in the international prestige it receives from its two outstanding summer programs, the Francophone Summer School held from June 14-July 16 on the main campus of the University of New Mexico in Albuquerque and the German Summer School held in Taos from June 1-July 3.

The 1993 session of the German Summer School served this year...
90 students from around the country (students came from Texas, Arizona, Colorado, Arkansas, Wisconsin, Indiana, Michigan, Oklahoma, Illinois, Kentucky, Missouri, S.C., Tennessee, and Germany). Its distinguished faculty came from such institutions as St. Edwards University/Austin, UT/Arlington, UA/Tucson, U Ark/Fayetteville, and the Goethe Institute in Chicago. The guest lecturers and groups that performed at the School this summer included the American String Quartet, Professor M.S. Batts (University of British Columbia (Vancouver), the TV script writer Margaret Piper of Munich, Germany, the Austrian author and artist Walter Koenigstein, the German author and noted designer Eugen Gomringer, and Joachim Graf, Director of the German Academic Exchange Service (DAAD). The Summer School is assisted by grants from the Max Kade Foundation in New York, the Institute for International Relations in Stuttgart, the Austrian Cultural Institute in New York, the Goethe Institute, and the Federal Republic of Germany as well as by funding from UNM.

The 1993 session of the Francophone Summer School served 41 students, half from New Mexico and half from other states. The School is assisted by grants from the Quebec and Swiss governments, the Alliance Francaise, private donors, as well as by funding from UNM. Students this year came from all over the
United States and from diverse educational backgrounds as well; among the usual French majors were also two physicians, a graduate student from the Harvard Divinity School, a UPS parcel sorter and a returning Peace Corps volunteer. The faculty represented many diverse areas of the Francophone world; visiting faculty came from France, Quebec, Switzerland, and Africa. Courses included offerings in business French as well as in literature and culture. The special programs at the School this summer included guest lectures by Professors Nisolle (on French/American cultural differences), Steen (on Versailles), and Brulotte (on painting in the province of Quebec). There were also excursions to the Santa Fe opera and Acoma Pueblo, and a special exhibit of Francophone literature from Africa was mounted in Zimmerman Library.

VII. FACULTY AND STAFF APPOINTMENTS, SABBATICALS, LEAVES, RETIREMENTS, AND SEPARATIONS

Robert Jespersen, Associate Professor in German retired in July 1993. Suzanne Hanson, Lecturer in French retired in May 1993.

Three of our faculty were on leave this year. Professor Peter Pabisch (German) spent his Sabbatical in the Fall 1992 in Vienna and Finland where he completed research for his

The department received three new tenure track appointments for the coming AY 1993-1994: Assistant Professor Susanne Baackmann in German (Ph.D. University of California, Berkeley 1993); Assistant Professor Monica Cyrino in Classics (Ph.D. Yale University 1992); and Assistant Professor Giullaume Ansart (Ph.D. Princeton University 1993).

Through a grant from the US/JAPAN program (PI and Director, Dr. Wally Lopez), Foreign Languages and Literatures has been the beneficiary of a full-time lectureship in Japanese and a teaching assistantship in Japanese for the academic year 1993-1994. Azusa Takegami of Osaka, Japan (M.A. College of Education, University of New Mexico) is the new visiting lecturer in Japanese. Japanese is one of the fastest growing programs in FLL.

The department secretary, Stephen Andrews, left the department in April to take a new position in the College of Education. In
June 1993, Pamela Becker-Koch, formerly of the College of Engineering, was appointed to the position of department secretary and secretary to the chair.

VIII. FUTURE PLANS AND CHALLENGES

Looking toward the immediate future, we plan to hire a new faculty member in German at the rank of assistant professor when Professor Bruno Hannemann retires in July 1994. For Fall 1994, we have Dean Gordon's approval for the hiring of a new faculty member in French, upon the retirement of Professor Julian White in December 1994.

The three main language divisions, French, German, and Classics, still sometimes think and act like autonomous departments—a holdover from the old M&CL days, when Dean Wildenthal gave each division its own budget and administrative staff. Our main challenge this and next year will be to learn to think of ourselves as a more unified entity. We must learn to plan and build more efficiently as a unit if we are to obtain a fair share of the allocatable resources in a College where competition for those resources is going to continue to be keen.
1. DEVELOPMENTS, RECOMMENDATIONS, AND PLANS

1.1 SELF-STUDY

The geography program at UNM underwent a review of its graduate program during the Fall, 1992 semester. Professor Barrett coordinated and wrote a "Self-Study" of the Department which described its growth and development, stated its missions, analyzed its funding, and specified goals for the future. The "Self-Study" not only served as the foundation for an internal evaluation of the graduate and undergraduate programs, but provided an outside review team with the background and data required to conduct its review of the department.

1.2 EXTERNAL REVIEW

An external review team visited UNM on October 26-28, 1992. After reviewing the "Self-Study" and meeting with Provost Risser, Deans Gordon and Goldberg, members of the Senate Graduate Committee, library representatives, geography faculty and students, Technology Application Center staff and community sponsors, and interested faculty from other departments, they compiled a report which included their findings and a set of recommendations which are summarized below:

1. Departmental status should be maintained for geography;

2. The department should pursue development around environmental analysis, geographic information technologies, and the Southwest US/Latin America;

3. A two-year hiring plan should be implemented immediately to recruit four faculty:
two replacements ("bridges" to future retirements) and two new positions. One of the recruits should be a new departmental head;

4. Three hires in addition to those mentioned in 3 above should be made between 1995 and 1998, leading to the implementation of a Ph.D. program by the Fall of 1998;

5. An image processing/GIS lab should be set up and equipped on the campus;

6. Teaching loads for the new faculty should reflect the college average of 2/2 for research-active departments;

7. The department should establish and implement procedures (in addition to ICES) for the evaluation and improvement of teaching at both the graduate and undergraduate levels;

8. The department should develop a seminar/colloquium series for visiting scholars and researchers conducting studies of interest to the Department;

9. Members of the department should be encouraged to become involved in appropriate interdisciplinary activities related to environmental analysis; and

10. The Technology Application Center (TAC) should be closely linked to the Department of Geography.

1.3 DEAN'S RECOMMENDATIONS

After carefully reviewing the "Self-Study", the review team's report, and considering the importance of geography to the College's mission, to the work of other departments in the College, and to the needs of our community and state, Dean Gordon made several recommendations to Provost Risser which are summarized below;

1. The College should mandate that the department submit a detailed plan refocusing its training programs on environmental analysis and GIS skills training;

2. The department should be allowed to recruit for two positions, including a senior level chair, for Fall, 1994 and commit to filling Professors Barrett's and Snead's positions when they retire;

3. The central administration should provide the College with the funds necessary to hire the two additions recommended for the Fall of 1994. When Professors Barrett and Snead retire, the College would then pick up the salaries of these two additions and would also fund the replacements for the two retiring faculty;
4. To support the new program and to equip a GIT laboratory, the College would provide a proportional increase in geography's S&E and travel budget when the department's FTE faculty increases, and the College would enter into a five-year agreement with Geography concerning overhead returns generated by its faculty's external contracts and grants. The goal of the agreement would be for the College to return a substantial portion of its overhead share from Geography grants submitted through the College back to the Geography Department; and

5. The links between TAC and both the Department of Geography and the College should be carefully evaluated.

On December 14, 1992, Provost Risser concurred with Dean Gordon's recommendation and in a memorandum suggested to President Peck that they be implemented.

1.4 LONG-RANGE DEVELOPMENT PLAN

As a result of the self-evaluation, graduate unit review, and Dean's recommendations, the department put together a long-range development plan that will focus the department's research and teaching orientation in two areas:

1. environmental analysis (physical geography and human/environment interaction);

2. geographic information technologies - GIT (GIS, GPS, and remote sensing).

Both of these specialties serve important societal needs and build on existing strengths within the university. When fully implemented, the plan will afford the department the opportunity to increase collaborative research and to develop a GIT laboratory. It will also enable the department to attract graduate students of first quality and to raise the department's overall standing in the university and profession.

The two subfields selected for emphasis are well-suited not only for the enhancement of geographical research but for integration into the mission of many other units of the university and the state. As the review team's report indicated, the development of geographic information technologies matches well with developments at the major scientific laboratories, and promises
to attract major grants and funding for the department. The demand for GIT training is not limited to the Department of Geography; biologists, geologists, anthropologists, and planners all make use of the technologies and are eager to have a teaching laboratory on campus. There is also support from biologists and geologists for the attention the environmental focus will give to climatology and global change. Both of these areas are begging for interdisciplinary research efforts, which should attract significant new research funding to the department and university.

1.4.1 Faculty Replacements

The faculty currently is comprised of 4.5 salaried members. Three of the faculty members are professors and two are associate professors. The department will begin searches during the 1993-94 AY for two additional faculty members. One of these searches will be for a department chair, while the second search will be for a beginning assistant professor. Subsequently, Professor Barrett's and Snead's positions will be replaced with beginning assistant professors when they retire. Professor Barrett has announced that she will retire after the 1993-94 AY. We would, therefore, search for her replacement in AY 1994-95, with the selected individual joining the faculty in the Fall of 1995. Professor Snead has yet to decide the exact date of his retirement.

The department's immediate needs are for strong, dynamic leadership to implement the development plan and for individuals who emphasize environmental analysis in their research programs and who also utilize GIT skills in their work. After consulting with several members of the Biology and Geology Departments, we have identified climatology as the aspect of environmental analysis that will best complement existing UNM programs and provide the largest number of avenues for collaborative, funded research. As a result, the initial searches
will be for a department chair with an established reputation in applied climatology and a GIS specialist with a background in some aspect of climatology. The new chair will be hired at the professor level, and he/she must have a proven record of obtaining extramural funding. The GIS specialist and Professor Morain will be charged with the development of the GIT curriculum and the establishment of a GIT laboratory. The search committee for these two new hires will be composed of interested individuals from other departments, as well as members of the Department of Geography.

The exact areas of specialization for Professors Barrett’s and Snead’s replacements will have to be determined once the first two hires join the faculty. But at this time we envision hiring a systematic and/or synoptic climatologist to replace Professor Barrett. This would establish the critical mass needed to address the complex problems associated with global climate change and establish a national reputation for the department in this area. Professor Snead will not be replaced with another geomorphologist, because geology is strengthening this aspect of its program. Instead, we envision searching for an individual with a background in water resources who would complement the climatologists and interface with the existing water resources community on campus.

1.4.2 Existing Faculty

After Professors Barrett and Snead retire, only the following three existing faculty members will remain in the department: Professor Morain and Associate Professors Williams and Cullen. Professor Morain’s areas of specialization fit directly into the subfields the department will emphasize. His research and teaching focus is on remote sensing, which is critical to the success of the GIT program, and his work in biogeography will strengthen the
program in environmental analysis. We envision that our new faculty members and Professor Morain will make use of the equipment and expertise at TAC by engaging in collaborative research projects.

Associate Professor Williams' interest in the urban environment will enhance our environmental offerings, and the remainder of his courses and several of Associate Professor Cullen's courses will enable us to fulfill our service obligations to the college and university. In addition, Associate Professor Cullen is refocusing several of his courses so that they will be in keeping with the department's new emphases. He is also planning to introduce a new course on research methods for undergraduates that should strengthen the overall program.

2. OTHER SIGNIFICANT DEVELOPMENTS

2.1 COMMUNITY OUTREACH

This year marketed the 5th anniversary of a Memorandum of Understanding (MOU) between the Department of Geography, U.S. Bureau of Land Management, and UNM's Technology Application Center. Through this instrument, the three parties have collaborated in the development of their mutual capabilities in GIT. The department's participation focuses on: 1. providing scientific and technical inputs; 2. offering evening and weekend courses in these technologies to serve as a means for continuing education; and 3. directing qualified students into internships, other on-the-job training experiences, and thesis projects. It is the intention of the department to expand the MOU concept to include other State and Federal agencies. In addition, Dr. Kann, a part-time faculty member, has arranged with the Albuquerque Office of the National Weather Service to involve students in weather service projects. These linkages should prove beneficial to the individuals who will be hired next year.
To celebrate *National Geography Awareness Week*, the department invited Dr. Brian B. Brodeur to give a public lecture on "GIS Based Water Resource Assessment." The geography faculty have also tried to improve geographic awareness by serving as lunch time speakers at civic functions, conducting workshops, and participating in symposiums.

2.2 POST-COMMENCEMENT CONVOCATION

The Department joined with Anthropology, American Studies and Linguistics in a post-commencement convocation ceremony honoring its 1992-93 graduating class. Geography graduated fourteen undergraduate majors.

2.3 SOUTHWEST INSTITUTE

Associate Professor Williams organized and supervised the ninth annual Southwest Institute. The Institute was hosted in 1993 by the Albuquerque Academy. The theme of the Institute was *Early Contacts Along The Rio Grande*. Thirty lectures and performances were presented over 10 days in the auditorium at Albuquerque Academy, and three six-day field programs were arranged for participants who wanted to explore the study area.

3. PUBLICATIONS AND PROFESSIONAL ACTIVITIES

Professor Morain was elected President of the American Society for Photogrammetry and Remote Sensing (ASPRS). His responsibilities included the inaugural address, periodic letters from the President, and service on several committees. He also served as the volume editor for an issue of *Photogrammetric Engineering and Remote Sensing*, in which he authored or coauthored four articles. He is on the editorial boards of *GeoCarto International: A*
Multidisciplinary Journal of Remote Sensing and Earth Sciences and the International Journal of Photogrammetry and Remote Sensing. Furthermore, Professor Morain secured $300,000 of extramural funding for "Technology Transfer" from NASA. For a list of his presentations and participation at professional meeting, I refer you to his Annual Biographical Supplement.

Associate Professor Cullen completed his term as President of the Southwest Association of American Geographers (SWAAG) in the Spring of 1992. SWAAG is a regional affiliation of professional geographers who are members of the national Association of American Geographers. The region stretches from Louisiana to New Mexico. As the Past-President, he became a member of the Executive Council of SWAAG and chair of its nominating committee. He also served on the Executive Council of the Southwest Social Science Association as an affiliate member. In addition, he published articles in the Proceedings of the Applied Geography Conference and Proceedings of the IGU Subcommission on Highland and High Latitude Development. He also presented papers at annual meetings of the Association of American Geographers, SWAAG, Applied Geography Conference, and IGU Subcommission on Highland and High Latitude Development.

Professor Barrett published a book review and continued to work on a book manuscript entitled Rio Grande Pueblos, 1540-1598: Settlement Patterns and Subsistence Strategies. Professor Snead has agreed to prepare a chapter on the "Environmental Basis of South Asia" for an upcoming edited book to be published by John Wiley.

4. STAFF APPOINTMENTS AND SEPARATIONS

There were no staff appointments or separations in AY 1992-93.
GENERAL DEPARTMENTAL INFORMATION

A. Significant Achievements

1. Graduates

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Sam Brunk (Adv. Hall), Fall 1992
Kevin Fernlund (Adv. Etulain), Fall 1992
Michelle Butts (Adv. Hutton), Fall 1992

2. Course Offerings

Summer 1992

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**Spring 1993**

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3. Personnel & 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:
Connell-Szasz, Margaret

Etulain, Richard W.

Feller, Daniel M.

Hall, Linda B.

Hayoz, Loretta

Western History Association
Associate Professor:
American Indian History

Professor: Western America,
Literature of the American West
Director: Center for the
American West

Associate Professor:
Jacksonian Era,
Civil War,
Reconstruction

Professor: Modern Latin
America, Modern Mexico

Clerical Specialist V:
Receptionist,
Himmerich y Valencia, Robert

Hukill, Traci

Hutton, Paul A.

Jameson, Elizabeth

Kern, Robert W.

Kessell, John L.

Secretary,
Typist,
(appointment 10/92)
Editor, New Mexico Historical Review
Clerical Specialist V:
Center for the American West
Associate Professor:
Military History, Western America
Associate Professor:
Western America, U.S. Social
Professor:
Iberian History
Modern Europe
Associate Professor:
Spanish Southwest, Borderlands
Lauderdale, Sandra
Associate Professor: Latin America, Social History, Brazil

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:
<table>
<thead>
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Spidle, Jake W.

Steen, Charlie R.

Sullivan, Donald D.

Szasz, Ferenc M.

Yazawa, Melvin

Professor:
Women's History,
Sexuality,
Modern Europe
Graduate
Coordinator

Associate
Professor: German
History, Africa,
History of
Medicine

Associate
Professor: Early
Modern Europe,
France

Associate
Professor:
Medieval and
Renaissance
Europe

Professor:
American Social and
Intellectual
History

Associate
Professor and
Temporary:

Andres, Benny
Bailey, James
Barbour, Bart
Brunk, Sam
Bryan, Terri
Carey, Elaine
Chamberlain, Dudley
Cocron, Fritz
Culhane, Jolane

Darcy, Yvonne
DeMark, Judi
Drolet, Raymond
Dunagon, Marcia
Erickson, Bruce

Farr, George
Ferrante, Deborah
Gardner, Dudley

Assistant Chair:
Colonial and Revolutionary America

Graduate Assistant
Reader (Fall)
Teaching Associate
Visiting Lecturer
Graduate Assistant
Graduate Assistant
Reader (Spring)
Visiting Professor
Assistant Editor (NMHR)
Graduate Assistant
Visiting Lecturer
Graduate Assistant
Reader (Fall)
Graduate Assistant
Reader (Summer)
Reader (Spring & Fall)
Graduate Assistant
Graduate Assistant
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<td>Haught, Janelle</td>
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<td>Ye, Lin</td>
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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 1992-93 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: Jonathan Porter

4. Activities Beyond the Formal Curriculum

a. The Department held its semi-annual Open House for all students on August 20 (Fall) and January 14 (Spring), all day in the Common Room. Most of the faculty attended to advise, offer guidance or simply to socialize.

b. Dr. Jose Maria Muria, Head of the Colegio of Jalisco delivered a Lecture on "The Conquest of
c. Dr. Ruth Schwartz Cowan, Professor of History of Science and Technology of SUNY at Stony Brook, delivered a Lecture on "OLD WINE IN NEW BOTTLES: The Eugenics Movement and Postmodern Genetics".

d. The History Department and Russian Studies sponsored "Back to the CSSR" (A provocative discussion on current conditions in the soon to be "X-Czechoslovakia" given by Hanna Norton, UNM History Ph.D. Graduate and Professor at TVI.

e. The Eighth Annual Calvin Horn Lecture Series was held in November. This year’s guest lecturer was Dr. Donald Worster, Hall Distinguished Professor of American History, University of Kansas. "The Wild and the Tame: Environmental Change in the American West".

f. Dr. Cynthia Talbot delivered a Lecture, "Female Kings and Widow Queens: Gender and Power in Medieval India".

g. Dr. Santiago Perez del Centro de Estudios sobre America, delivered a lecture on "Change in the Soviet Union and Eastern Europe and Their Impact on Cuba".

h. History Graduate Student Association presented A Multimedia Presentation. Raphael Cristy interpreting "Charlie Russell’s Yarns".
University delivered a lecture on "THE WEST AS EAST: The Crossroads of Asian Immigrant and Asian American History and the U.S. West".

j. Two lectures were delivered on RUSSIA: NOW & THEN, by Dr. Igor Zevelev, Head of the Department of Developing Countries, Institute of World Economy and International Relations delivered a lecture on "Prospects for Democracy in Russia Today". Dr. Barbara Engel, Professor of History, University of Colorado delivered a lecture on "City Morals, City Life: A View From the Russian Village".

k. Dr. Glenda Riley and Dr. Alexander M. Bracken delivered a lecture on "Interpreting the Life of Annie Oakley".

l. The Department of History and Asian Studies sponsored a lecture by Dr. Ren Donglai on "The Chinese Popular Image of the U.S.A. in the 1990's".

m. Dr. John C. Rule delivered a lecture on "Louis XIV: Changing Fashions in History".

5. Awards

a. Terri Bryan was the recipient of the Dabney Award.

b. Michael Stanfield was awarded the Tom L. Popejoy Dissertation Prize.
c. Victoria Gonzalez and Aurora Morcillo received the Graduate Achievement Award.

B. Significant Plans and Recommendations

IN 1992-93 the History Department brought to fruition initiatives which will develop the program in several areas. First, we successfully completed a search for an historian of science and technology to replace Donald Skabelund, who retired in 1989. We expect the new incumbent in this position to (1) develop the field of history of science and technology within the department along lines that recognize the development of science in the late twentieth century, (2) work with other departments and units within the university to expand interdisciplinary programs relating to the history of science and technology, such as the Science, Technology, and Society Program, and (3) to established appropriate connections with science and technology institutions in the state. Dr. Timothy Moy will join the faculty in August 1993 as our new historian of science and technology.

Second, we inaugurated a pilot course in World History, team taught by three faculty under the supervision of Professor Melissa Bokovoy, in the Fall Semester 1992. The course was repeated in the Spring Semester 1993. Our experience with this course was successful enough to
warrant its adoption by the department as a regular offering. It will be offered again in the Fall Semester 1993, and thereafter probably at least once a year depending on demand. Those who have participated in the course have been enthusiastic about the ability of the course to engender intellectual interaction among the instructors and the stimulation of the students.

Third, recognizing that the field of women's history is not only an increasingly important field in history nationally and internationally, but that the UNM History Department enjoys a substantial strength in faculty in this area, the department adopted a proposal to inaugurate a new Ph.D. field in Comparative History of Women & Gender in the graduate program. It is expected that this field will broaden and strengthen the preparation of students who select it for a growing number of jobs seeking candidates trained in this field.

The History Department faces several significant challenges in the near future. The first, the rapidly rising number of applications to the graduate program, is very positive sign in that it attests to the increasing visibility and strength of the UNM History Department nationally. In several fields, we now possess programs on a par with the best in the country, which has contributed
to the rise in applications. However, we have not been able to accept a proportionally larger number of applicants, which has accordingly presented a challenge to effectively and efficiently screen the applicant pool and to shape the incoming graduate student body in a way mutually beneficial to the program and the students. In 1992-93 we received almost 171 applications, of which we accepted approximately 56. Of these, we expected that about 25 would actually come, a number the program could effectively accommodate at the current staffing level. An additional problem attendant on increased graduate applications is the dearth of financial aid we are able to offer. This problem is particularly acute when we wish to bid competitively against other graduate programs for the best students. We find we are too often losing in that process. We are sorely in need of additional graduate assistantships or some other form of financial support.

The most serious problem the department faces is replacement of faculty who resign, retire, go on leave, or are detached to other duties in the university. In the absence of any clear policy on which predictions regarding staff replacements can be made, we are always at less than optimum strength relative to our course needs and enrollment demands. This problem, which is no doubt afflicts all departments, inhibits the ability of the
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):**

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**D. Appointments to Staff**

1. **Visiting or Part-Time Appointments**
   b. Sam Brunk, Visiting Lecturer, Western
c. Fritz Cocron, Visiting Lecturer, Western Civilization, Spring 1993.
e. Rolf Lokke, Visiting Lecturer, Western Civilization, Fall 1992
f. Carol Lovato, Visiting Lecturer, History of New Mexico, Fall 1992, Spring 1993.

E. Separation from Staff
   a. Geneva Esquibel, Clerical Specialist V.
   b. Sandra Lauderdale, Associate Professor.

F. Sponsored Research
   1. Five professors submitted 8 proposals (19% of current faculty).
   2. Of these submitting proposals, 5 obtained awards (100%).
A. **Significant Developments during the Academic Year, 1992-93**

**PhD Proposal.** The Department of Linguistics, after waiting until the University Reallocation process was completed, submitted its PhD proposal to the College of Arts and Sciences for approval in March of 1992 (see 1991-92 report). After review by the appropriate committees, the proposal was considered at a meeting of the College Faculty on November 23, 1993 and unanimously approved. It was subsequently reviewed and approved by the Faculty Senate Curriculum Committee prior to consideration by the entire Faculty Senate on February 9, 1993 where it was again unanimously approved. The proposal was reviewed by two sub-committees of the Regents (Academic Affairs and Finance) in May and approved. The full Board of Regents considered the PhD proposal on June 8, 1993; the Chair made a brief presentation to the Regents which was followed by a unanimous vote approving the proposal.

At the time of the writing of this annual report, our proposal still had to be reviewed by the New Mexico Council of Graduate Deans (July, 1993), the Council of Vice Presidents for Academic Affairs (September, 1993), and the Committee on Higher Education. We are hoping to receive final CHE approval in Autumn of 1993 in order to begin the PhD programme in Autumn 1994.
1995 LSA Institute. Much effort has been devoted to the planning of the 1995 Linguistic Society of America Institute, to be hosted by the Department of Linguistics in the summer session of 1995. The planning for this Institute was first noted in the 1990-91 Annual Report. 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 Dean of the College of Arts and Sciences and the Provost have both committed significant financial support to the Institute.

The director of the Institute, Professor Joan Bybee, and the planning committee (Professor Mary Ann Willie, Professor Garland Bills, and Jackie Trademan, graduate student representative), with the endorsement of the Department Faculty, have invited a large number of well-known scholars to serve as faculty during the Institute. Professors Bybee and Newman presented a progress report on the planning for the Institute to the Executive Committee of the LSA at its annual meeting in January of 1993. This report was well-received and endorsed by the LSA Executive Committee.

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). The Department Curriculum Committee is working on the reorganisation of graduate course offerings in anticipation of the PhD.

Our second major planning effort is the LSA Institute. The amount of planning required for the 1995 Institute will increase in the coming year and will take much of our time and energy. In addition to its obvious scholarly benefits, this institute will provide the Department with an excellent opportunity to inform our colleagues of the new PhD at the University of New Mexico.
The third major focus of our planning efforts is the Sign Language Interpreter Training Program. The Sign faculty have submitted a proposal to the Dean that proposes to reorganise and update their curriculum. The Sign Language Interpreter Training Program was one of the first interpreter training programmes in the country and is a long-recognised leader in the field. In order to maintain that position, and to meet the ever-increasing demand for the degree, the curriculum must be updated. This will also necessitate the hiring of an additional, full-time, lecturer. This proposed lecturer would teach courses in the language (ASL), thereby allowing the tenure-stream faculty to concentrate their efforts in the teaching of courses on interpreting. Eventually students will be required to know ASL before applying for acceptance into the interpreting programme. The Sign faculty hope to implement their proposed changes over the next two years.

C. Appointments to Staff

Dr. William Isham. Dr. William Isham (a graduate of Northeastern University and formerly a postdoctoral fellow at the Laboratoire de Psychologie Experimentale, University of Paris) assumed his position as assistant professor of linguistics, starting in the Spring 1993 term (the effective start date was December 30, 1992). Professor Isham’s area of specialisation is sign language interpreting.

Office Staff. Charles Wilkinson was hired at .75 FTE to be an interpreter/secretary for Phyllis Wilcox, the Coordinator of the Signed Language Interpreter Training program, effective September 14, 1992.

D. Separations from Staff

There were no separations from staff in 1992-93.
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:


Sharon Neumann Solow, 3 colloquia, October 9, 1992:
"How alinguisic communication becomes systematical: Some specific examples",
"Challenges faced by interpreters at linguistic conferences",
"Polysemy: Look to the meaning of the word or sign".

John O. Greene, Purdue University, (jointly sponsored by the Department of Communication & Journalism), "Studying the process of making messages: The sound of one mind working", October 14, 1992.

Jean Newman, University of New Mexico, "Cues to the comprehension of anaphoric pronouns", November 6, 1992.

Karen Ebert, University of Zurich and University of Michigan, "Young people's Frisian: A case slow language death in western Europe", November 20, 1992.


Barbara Kannapell, "Power and oppression (A lecture on Deaf culture)", February 1, 1993.


Lectures presented to the Dept. of Anthropology:


Sherman Wilcox, Department of Linguistics, University of New Mexico, "Language from the body", April 21, 1993.

Workshops offered for the Signed Language Program during 1992-93:


F. Publications not Listed Elsewhere

Since the submission of the 1991-92 Annual Supplements to the Biographical Record, Professor Joan Bybee has had a book entitled The Evolution of Grammar accepted for publication by the University of Chicago Press. It has a May 1994 release date.

The Linguistics Graduate Student Organisation published an edited volume of Working Papers in Linguistics which included articles by a number
of Department faculty and graduate students. Copies of the volume have been distributed both locally and nationally to other universities.

G. **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, our faculty members are active in the governance of the University. One of our faculty, Professor Joan Bybee, served as Associate Dean of the College of Arts and Sciences for 1992-93.

Other faculty are active in providing their professional expertise to groups in the community; for example, Professor Willie continues to be a consultant on language and reading for the Pueblo Pintado Elementary School in Cuba New Mexico (see 1991-92 Annual Report). Professor Willie is also one of five members of the organising board of the National Native American Archives which is under the supervision of the American Indian Arts Institute in Santa Fe, New Mexico.

The Department of Linguistics is the new home of the Southwest Journal of Linguistics—the journal of the Linguistic Association of the Southwest (LASSO). The journal was previously published at the University of North Texas. Professors Garland Bills and Alan Hudson have assumed the responsibility of directing the association and editing the journal.

H. **Outside-sponsored Research**

**Continuing Grant Support.** There was one (continuing) research project in the Department that was funded from outside sources: Garland Bills, Project director (with Neddy A. Vigil), a $225,000 grant from the National Endowment for the Humanities entitled "Linguistic Atlas and Archive of the Spanish of New
Mexico and Southern Colorado", June 1, 1991- November 30, 1993. The PIs learnt this spring that their grant was renewed for $92,000 from December 1993 to November 30, 1994.

**Other Grant Support.** Professor Sherman Wilcox with William Stokoe (PI), submitted a small business grant proposal to develop a Multimedia Dictionary of ASL. This proposal (for $400,000) was funded by 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 was not submitted through the University of New Mexico although the topic is related to Professor Wilcox's research at UNM.

Professor Sherman Wilcox was awarded a Research Allocations Committee grant for $2,225 for a project entitled "Coarticulation in a visual language" on January 2, 1993.

Professor Newman was awarded a Teaching Allocations Committee grant for $2,500 on May 5, 1993 for a proposal to purchase a Speech Analysis system for use in phonetics and psycholinguistics courses.

I. **Honours and Awards**

*Analytical Lexicon of Navajo* by Robert Young, Professor Emeritus of Linguistics, was selected as a CHOICE Outstanding Academic Book for 1993. The University of Arizona is publishing a collection on Athapaskan syntax and morphology that will be dedicated to Professor Young.

Scott Schwenter, graduating MA student in Linguistics, was selected by President Peck as the Outstanding Graduate Student of the Year and addressed UNM's general Commencement in May.
J. Students Graduated

The following students received degrees from the Department of Linguistics:

BA Scott Ketzner

BS Mary Anderson, Jose Avila, Donna Clapper, Sarah Hart, Janis Carbajal, Loretta Luna, Paula McCluskey, Francine Olmstead, Kristin Petersen, Amber Ridley, Gwen Olivas, Caryl Williams


Educational Linguistics

Six students in the Doctoral Concentration in Educational Linguistics successfully defended their dissertations in 1992-93. These students received doctorates in Education but as the programme is jointly administered by Education and Linguistics, their dissertation titles are noted below:


K. Other Significant Events

On May 3, 1993, Phyllis Wilcox, Lecturer in Linguistics and Coordinator of the Sign Language Interpreter Training Program, successfully defended her PhD dissertation in Education entitled "Metaphorical mapping in American Sign Language".

On April 23 and 24, the Sign Language Interpreter Training Program presented its 15th annual Sign Fest at Del Norte High School. This was a significant event as it is scheduled to be the last Signfest to be sponsored by the Sign programme. The three performances (two evening and one matinee) were, as always, very successful and brought in approximately $3,000 to the programme. Guests of honour were Chris Schueler of Channel 13 (April 23) and Mark Medoff, author of "Children of a Lesser God" (April 24). 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 cash awards to students on the basis of excellence in research. Cecilia McCrossen-Klaus, a major in the Sign Language Interpreter Training Program, received a $100 award. In addition, the Albuquerque Sertoma Club contributed $400 for an award to the outstanding undergraduate in the Sign Language Interpreter Training Program. Janis Carbajal received this scholarship. An additional $100 award (donated by the Sign programme) is made annually by the Department of Linguistics to a graduate student for outstanding research. This year's recipient was Scott Schwenter, a Spring 1993 MA graduate.
The Department of Mathematics and Statistics was very productive in Academic year 1992/93. The research and teaching activities of the faculty continue to receive recognition through federal grant awards and the involvement of faculty in national and international professional activity. Such activities enhance the stature of the department and university and contribute to the further development of UNM as a leading educational institution in the western United States.

Enrollments in mathematics and statistics courses declined slightly in Academic year 1992/93. We had approximately 13,400 students enrolled in courses during the two semesters last year, while in Academic year 1991/92 the corresponding total enrollment was approximately 13,800. On the other hand enrollments in the fall semester were higher in Academic year 1992/93 than in Academic year 1991/92. Attrition and the availability of introductory courses at TVI are probably the factors which contribute the most to this situation. Nevertheless our instructional programs remain strong and we are committed to providing the many courses which are critical for study in fields such as engineering, physical and life sciences, and the humanities. The importance of this service mission is highlighted by the fact that each semester approximately one third of all UNM students take a mathematics or statistics course to satisfy some university requirement. We will continue to cooperate with public
schools in such matters as the promotion of scientific literacy, curriculum development and teacher training as we seek to fulfill all of the missions of the department which are research, education, service, and outreach.


   (a) The research productivity of the faculty remained at a very high level. The department currently has 38 faculty active in mathematics and statistics research. A total of 82 papers were published in nationally recognized professional journals. Further recognition of the value of this research is evidenced by the fact that we now have 35 grants, some spread over several years, with a funding in excess of 2 million. In Academic year 1992/93, 19 grants were awarded to the department by agencies such as NSF, AFOSR, Navy, DOE, Sandia, and DHHS. Several faculty members are on editorial boards of journals and some are active in reviewing and refereeing duties with journals and granting agencies.

   (b) Our computing capability continues its growth. Within the department proper, we have 29 Unix workstations (a mixture of SUN 3's, SPARC, SPARC 2's, IRIS, IBM RS6000, and 486's) networked using unified password control (YP) and transparent file mounting (AMD). About 20 PC's running DOS or Windows live on the network as
well, allowing them to share files and print to any of the 3 large unix network laser printers. The front office is run using networked PC's and a few faculty members use such machines as well. The unix machines are used primarily for research, although a few are dedicated to network administration tasks.

About half of the faculty and almost no graduate assistants have graphics capable machines in their offices. Those without such machines generally have text terminals in their offices, which allow access to electronic mail and simple text file editing. Those terminals have been bought at salvage auctions from a variety of sources a long term goal is to put graphics capable machines in every faculty office.

Including faculty, staff and graduate assistants, we serve over 300 users on the machines in the department alone. Some of these extra users are research collaborators, and most of the rest are advanced students.

Purchases this year included an IRIS Indigo graphics visualization machine (grant money), 2 SPARC 2's (grant money with some department supplement), a large disk drive (department funds), a SPARC Classic (department funds), a large tape drive (department funds). These and
numerous other computing related expenses such as repairs, memory upgrades, tools, site license renewals, and sundry supplies cost the department about $20,000.

The department also administers a computing laboratory, the north ESC pod. In that pod are 50 486 computers running unix and Xwindows, with two SPARC servers. The equipment was purchased this year with NSF funds and matching university funds. Department staff maintain the equipment. The pod is open to all UNM students, and several classes.

(c) UNM in partnership with IBM and Cornell was selected by Phillips Laboratory to administer the Air Force's Maui High Performance Computing Center. The successful effort to obtain this funding was coordinated by Frank Gilfeather, Brian Smith (Computer Science), and John Sobolewski (CIRT). An official public announcement has not yet been made.

(d) Visitors to the department contributed immensely to instructional and research programs. Professor R. James Milgram was a visitor in the fall of 1992 and will join our permanent faculty as a Regents' Professor in the fall of 1993. Professor Milgram is an internationally known expert in geometry and topology. Professor Ruy Exel, a
researcher in operator algebras, was reappointed as a visiting assistant professor in Academic year 1992/93 and worked collaboratively with Terry Loring. Professor Laszlo Szekely, a graph theory and combinatorics expert, also visited in Academic year 1992/93 and collaborated with Roger Entringer and members of the Computer Science department. In the spring semester, Professor Martin Kummer visited the department and worked with Jim Ellison. In addition to their research activities, all visitors taught courses at both the graduate and undergraduate level.

(e) Dr. Jeremiah U. Brackbill was appointed as a UNM/National Laboratory Professor. Dr. Brackbill taught an advanced graduate course in numerical methods in differential equations in the spring and participated in applied mathematics seminar activities.

(f) The number of bachelors degrees awarded in Academic year 1992/93 was 24, while 9 Master's degrees and 4 Ph.D. degrees were awarded. Two of the Ph.D. recipients will hold prestigious postdoctoral appointments in Academic year 1993/94. One will have an appointment at the Institute for Advanced Study in Princeton and the other will be at Texas A&M.
(g) Graduate student enrollments remained at approximately the same level in Academic year 1992/93 as in Academic year 1991/92. We have over 90 students enrolled in graduate programs and are able to support 42 teaching assistants. T.A.'s received a stipend of $8,000 for 9 months of service. The process for selecting T.A.'s remains very competitive. T.A. offers were made to 10 candidates from a pool of close to 70 applicants.

(h) Professor Richard Metzler continued as a co-director of the Fellows for the Advancement of Mathematics Education (FAME). Funding for this project comes from NSF and Exxon and is administered by the Albuquerque Public Schools. The program seeks to enhance the Public Schools training of elementary school teachers in the teaching of mathematics.

(i) Our annual Awards Banquet was held in April at the Four Seasons Inn. The purpose of this event is to recognize the research and teaching accomplishments of our faculty and students. This year our featured speaker was Dean William Gordon. Franck scholarships were awarded to four of our undergraduates, and Efroymson awards were made to five graduate students and two faculty, for academic excellence.
(j) The winner of the High School Mathematics Contest was Guy Bassan, a 12th grade student at Eldorado High School.

(k) The Junior Mathematics Program (JUMP) continues to impact mathematics education in New Mexico High Schools. Phil Herlan continued as director of this program which seeks to improve the mathematical preparation of New Mexico high school students.

2. Significant Plans and Recommendations:

(a) The Department of Mathematics and Statistics provides many courses which are crucial in fields such as the engineering, physical and life sciences, and the humanities. Each semester approximately one third of all UNM students take a course in our department. Many of these students take a precalculus or calculus course. Our average class size (60 to 120) in these courses is shockingly high, and the percentage of students completing these course is shockingly low. The fact that only 50% of our students can successfully complete a pre-calculus or introductory calculus course is a national phenomena. Significant factors which contribute to this low success rate probably include inadequate mathematics preparation at the secondary school level and the large class sizes in
mathematics and statistics departments. The department seeks to address this situation through the approaches described here.

The improvement of the mathematics preparation of students entering UNM is a major concern of the department. We seek to address this issue through our continued participation in the Junior Mathematics Prognostic Program (JUMP). This program is directed by Phil Herlan who coordinates the activities of approximately 30 high schools in New Mexico, and the program receives generous financial assistance from the UNM administration.

In the allocation of our resources a major problem in the U.S. is now to reduce the size of precalculus and calculus classes. It is accepted by most universities in the U.S. that instruction in modern languages and English courses in writing is more effective in small classes (25 students). Introductory mathematics courses, on the other hand, typically have enrollments that are much larger. For example, we have two calculus sequences, of three semesters (Math 162, 163, 264) for physical science, engineering, and math students, and another of two semesters (Math 180, 181) for humanities students.
sizes in these courses can range from 60 to 120 students. To significantly reduce class size would require, at the least, more classroom space and more faculty. Such additional resources are not likely to become available in the near future, in spite of the great needs in this area. The undergraduate committee will, nevertheless, continue its study of how to best serve all of our students. The Calculus Reform Movement, now several years old, seeks to improve calculus instruction through an emphasis on the use of modern technology in calculus instruction. In the fall of 1993, we will

- introduce two sections of Math 162 (Calculus I) which will be based on the Harvard Calculus Reform proposals. These proposals include an emphasis on the use of graphing calculators.
- seek to expand the use of computers in many of our courses. Our new Instructional Computing Laboratory which is housed in the Engineering Classroom Annex, is now operational.
- continue to seek the advice of other departments on how to improve our service
(b) We want to continue our effort to develop a Geometry and Topology Institute. Professor R. James Milgram, a world leader in geometry and topology, has joined our department and will head a very strong research group which will be among the very best in this country.

(c) The Air Force Maui High Performance Computing initiative, led by Frank Gilfeather, Brian Smith (Computer Sciences) and John Sobolewski (CIRT) will continue its effort to expand UNM's role in developing research projects utilizing the Maui faculty.

(d) Our graduate programs continue to grow in strength and stature. The graduate committee is concerned with a number of issues, including the recruitment and retention of students from underrepresented groups. Advisement and examination procedures will continue to be studied.

(e) The Selection of Dr. William J. Bramble as the Director of Distance Education at UNM makes it possible for us to develop plans for an expansion of our course offerings on instructional television.

(f) The undergraduate committee will study issues which include:

- Evaluation of instruction (possible alternatives to
Evaluation of Calculus reform measures
- Recruitment and retention of math majors
- Articulation of courses among New Mexico schools
- Revising and updating course syllabi
- Text book selection

We expect authorization to recruit new faculty for Academic year 1994/95. The Hiring Committee, in consultation with the chair, will determine priorities. It is anticipated that over 1,000 applications will be received during the fall semester.

3. Appointments to Staff

(a) In Academic year 1992/93 we had four visiting faculty. Professor R. James Milgram was a visitor in the fall of 1992. Professors Ruy Exel and Laszlo Szekely visited during the entire academic year, and Professor Martin Kummer was a visitor in the spring of 1993.

(b) John L. Casti was appointed as an Adjunct Professor and William A. Johnson was appointed as an Adjunct Associate Professor.

4. Separations from Staff

(a) In Academic year 1992/93, Professor Robert F. Cogburn retired.
5. Faculty Publications

Aceves, Alejandro


Bedrick, Edward


Boyer, Charles


Buchner, Michael


Christensen, Ronald


Cogburn, Robert


Coutsias, Evangelos


Efroymovich, Sam


Embida, Pedro


Ellison, James


"Report of the Super Fixed Target Beauty Facility Working Group on Progress

**Entringer, Roger**


**Exel, Ruy**


Galicki, Krzysztof


Gibson, Archie


Gilfeather, Frank


Hersh, Reuben


"Analogies Between Analogies," In The Mathematical Reports of S. M. Ulam

**Kyner, Walter**


**Kucharz, Wojciech**


**Kummer, Martin**


**Lorenz, Jens**


"Numerical Solution of a Functional Equation on a Circle," SIAM, Journal on
Loring, Terry


"Extending Cellular Cohomology to $C^*$-Algebras," Transactions of the American
Mann, Benjamin


Onneweer, Cornelis


Pathak, Pramod


Qualls, Clifford

"Central Autonomic Dysfunction in Vascular Headache," New Advances in


Steinberg, Stanly


Coauthor: P. J. Roache.


Sulsky, Deborah


Zimmer, William

"The Risk of Catastrophic Failure of the Solid Rocket Boosters on the Space Shuttle,"


6. Outside Professional Activities

Aceves, Alejandro

He presented two papers at the annual meeting of the Optical Society of America in Albuquerque, September 21-25, 1992.

He presented a paper at the SIAM conference in Dynamical Systems in Snowbird, Utah, October 15-19, 1992.

Bedrick, Edward

He has been selected to be an associate editor of "The American Statistician".

Boyer, Charles

He arranged and participated in the NM Geometry and Topology Seminar from October 23-24, 1992.

He visited McGill University January 11-16, 1993 to give a talk on joint work with K. Galicki and B. Mann, entitled "Quaternionic Reduction and Einstein Manifolds".

He participated in the NM Geometry and Topology Seminar from February 26-27, 1993 in Las Cruces.

Buchner, Michael


He gave a talk entitled "Algebraic Vector Bundles over Euclidean Space" at the Spring 1993 NM Geometry and Topology Seminar in Las Cruces, February 26-
Coutsias, Evangelos

He attended the annual meeting the American Institute of Chemical Engineers in Miami in November 1992 and gave the talk "The Instability of Parabolic Solidification Fronts".

He participated in the conference at Oberwolfach in Germany on Theory and Numerical Methods for Initial-Boundary Value problems in December 1992.

Ellison, James

He attended the SIAM conference in Dynamical Systems in Snowbird, Utah, October 15-19, 1992 and gave an invited talk.

He gave a talk in a workshop on the Stability of Particle Motion in Storage Rings at Brookhaven National Laboratory.

Entringer, Roger

He participated in the Southeastern International Conference on Combinatorics, Computing and Graph Theory in Boca Raton from February 22-26, 1993.

Galicki, Krzysztof


He participated in the NM Geometry and Topology Seminar from February 26-27, 1993 in Las Cruces.

Gilfeather, Frank

He attended a SERC/NATO conference in Durham, England in the summer of

He attended meetings in Hawaii for the Maui Supercomputing project in September 1992.

He participated in twelve workshops for the Systemic Initiative for Mathematics and Science Education (SIMS), the $10 million NSF project in New Mexico which is being directed by UNM.

He took part in the West Coast Operator Algebras Seminar in Reno, October 24-25, 1992.

Hagstrom, Thomas

He visited Mississippi State University in Starkville, MS and gave a colloquium in September, 1992.

He participated in the conference on Theory and Numerical Methods for Initial-Boundary Value problems at Oberwolfach in Germany in December 1992.

He gave a colloquium at the University of Delaware in March 1993.

Hersh, Reuben

He reviewed three books of Stanislaw Ulam’s collected articles on mathematics and computing for the Mathematical Intelligencer.

He reviewed "Discrete Thoughts" by Mark Kac, Gian-Carlo Rota and Jack Schwartz for a new journal for mathematics books and software. He also reviewed "Ethnomathematics" by Marcia Ascher for the SIAM Review.

His "A Visit to Hungarian Mathematics", co-authored with Vera John-Steiner appeared in the Spring issue of the Intelligencer. He also edited Edgar Lorch’s
memoir of his year in Hungary in 1932, which appeared in the Intelligencer in March 1993.

Kucharz, Wojciech
He gave a talk on "Real Algebraic Curves in Complex Algebraic Curves" at the NM Geometry and Topology Seminar from October 23-24, 1992.

Kueny, Walter
He attended the SIAM conference in Dynamical Systems in Snowbird, Utah, from October 15-19, 1992 and presented a paper.

Lorenz, Jens
He and a colleague H.-O. Kreiss organized a conference in Oberwolfach, Germany on Theory and Numerical Methods for Initial-Boundary Value problems, in December 1992. He gave several talks while in Germany and was a guest of the Sonderforschungsbereich Diskrete Mathematik at the University of Bielefeld.

Loring, Terry
He visited Copenhagen in September to give talks on C* Algebras at the Mathematics Institute.
He visited Arizona State University in October to give a talk.
He took part in the West Coast Operator Algebras Seminar in Reno, October 24-25, 1992.
He gave a colloquium in November, 1992 at Purdue University.
He gave a talk at the University of Victoria, British Columbia in April 1993.
Mann, Benjamin

He arranged and participated in the NM Geometry and Topology Seminar from October 23-24, 1992.

He participated in the NM Geometry and Topology Seminar from February 26-27, 1993 in Las Cruces.

Metzler, Richard

He participated in twelve workshops for the Systemic Initiative for Mathematics and Science Education (SIMS), the $10 million NSF project in New Mexico which is being directed by UNM.

He attended the national meeting of the National Council of Teachers of Mathematics in Seattle from March 31 to April 3, 1993, along with teachers in the NM FAME project (Fellows for the Advancement of Mathematics Education).

Onneweer, Cornelis

He presented a paper "Multipliers of mixed-norm type" at the Wavelets and Applications meeting at Auburn University, December 3-5, 1992.

Steinberg, Stanly

He visited Brazil and attended the 15th National Conference in Applied Computation Mathematics in São Carlos and gave a paper. He visited the Federal University of Rio Grande do Sul in Porto Alegre to give a talk at their Supercomputing Center.

He helped organize a workshop on Intelligent Scientific Computing and Artificial Intelligence as part of the AAAI Fall 1992 Symposium Series in

He visited UNAM in Mexico City in November 1993 to visit their computing center in the mathematics department, a visit sponsored by the Latin America Institute.

He attended meetings in Sao Paulo, Brazil where he made a presentation "The use of a symbol manipulator to write FORTRAN code" at the Pan American Congress of Applied Mechanics. At a Workshop in Applied and Computation Mathematics in Caracas, Venezuela he gave another presentation.

He visited Schlumberger Laboratory for Computer Science in Austin from March 22-24, 1993, where he worked with Dr. Elaine Kant on using object oriented programming.

Stone, Alexander

He presented papers on electromagnetic lenses at a meeting in October, 1992, at the Polytechnic Institute and also in January, 1993, at the University of Colorado.

Sulsky, Deborah

She visited Tallahassee, Florida, November 22-24, 1992 to give a talk "A Particle-in Cell Method applied to Suspension Flow" at the annual meeting of the American Physical Society.

Zimmer, William

He visited Canterbury University in New Zealand, in late fall 1992, where he and his co-author John Deely finished a paper.

He spoke at the Industrial Engineering Department of Arizona State
University in January 1993.

7. Outside Sponsored Research

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<tr>
<th>P.I.</th>
<th>AGENCY</th>
<th>PURPOSE</th>
<th>AMOUNT</th>
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<td>Aceves, A.</td>
<td>AFOSR</td>
<td>Light Beam and Pulse propagation in Nonlinear Dielectrics</td>
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<td>RAC</td>
<td>Aspects of Wavelet Theory related to Spherical Symmetry</td>
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<td>NSF</td>
<td>The Geometry of Quaternionic Manifolds</td>
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<td>Gibson, A.</td>
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<td>$180,950</td>
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<td>DOE</td>
<td>Numerical and Asymptotic Studies Computation and Analysis of Waves and their Dynamics</td>
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1. Significant developments during the academic year, 1992-3

The department continued to develop relations with the Instituto de Investigaciones Filosóficas at the Universidad Nacional Autónoma de México (UNAM). In the fall, Bill Hart visited the Institute for a week of lectures on logic, and discussions with their working group on logic, and in the spring Brom Anderson visited for 9 days, attending seminars on the history of modern philosophy with their working group in history of philosophy and presenting a paper entitled "Kant and Descartes on Freedom." In the Fall, Raúl Orayen of the Institute visited our campus, offering us a series of 4 talks on philosophy of logic entitled "A Paradox in the Semantics of Set Theory."

The department planned a series of exchanges for 1993-4.

The Gwendolyn J. Barrett trust assets were finally transferred to the university. The department and the UNM Foundation's officer Joseph McKay, agreed that Ms. Barrett's home in Corrales should be sold, and the sale was completed in January, netting the department $153,791.00. As of May, 1993, the Gwendolyn J. Barrett Endowment contained approximately $282,643.00.

The department conducted successful national searches for faculty to teach philosophy of science and metaphysics/epistemology. We were fortunate to be able to hire Barbara Hannan (Ph. D. and J. D., Arizona) teaching last year at the Universities of Idaho and Arkansas, for the former position, and Amy
Schmitter (Ph. D., Pittsburgh) teaching last year at Hamilton College, for the latter position.

Together with the History Department, the Philosophy Department successfully applied to the Dibner History of Science Program for support of a visit by Ruth Schwartz Cowan of the State University of New York at Stony Brook. Professor Cowan spoke to both the Philosophy and History departments, and conferred with the Provost and Graduate Dean concerning the expanding field of Science Studies.

The department again conducted a series of lectures, highlighted by our Brian O'Neil Memorial Lecture, given this year by Professor Burton Dreben of Harvard and Boston Universities. His well-attended and provocative talks on November 10 and 13 were on the subject "Logic in Philosophy from Frege to Wittgenstein." Other visitors to the department and their topics were as follows:

Professor Sharon Cameron, The Johns Hopkins University, on "Choosing Not Choosing: Emily Dickinson and the Identity of the Text," Sept. 23.

Professor John Haldane, St. Andrews University, Scotland, on "MacIntyre's Thomist Revival: Whatever Next?" Sept. 29.

Professor John Halpin, Oakland University, on "Is Counterfactual Logic Empirical?" Nov. 11.

Professor Sahotra Sarkar, Boston University, on "What is 'Genetic'?", Nov. 20.

Professor Margaret Malamud, New Mexico State University, on "Men, Women, and the Politics of Submission in the Islamic Social Order," Dec. 4.

Professor Eli Franco, LaTrobe University, Australia, on "Valid Reason, True Sign: Introduction to Indian Philosophy," Dec. 11.
Professor Alan Richardson, University of Keele, England, on "Neo-Kantianism in Early Carnap: Methodology and the Synthetic A Priori," Dec. 30.

Professor Colin Allen, Texas A&M University, on "Communication and Cognition: Is Information the Connection?" Jan. 29.

Professor John Carroll, New York University, on "Causation," Feb. 12.

Professor Amy Schmitter, Hamilton College, on "The Subject Position: Descartes and Painting," Feb. 19.

Professor Shane Phelan, UNM, "Getting Specific About Community," Mar. 5.

Professor Takashi Yagisawa, California State University, Northridge, on "Descriptions of Intensional Objects," Mar. 12.

Professor David Bolotin, St. John's College, Santa Fe, on "Leo Strauss and Classical Political Philosophy," Apr. 6.

Professor Tim Cleveland, New Mexico State, on "The Irony of Contingency and Solidarity," Apr. 16.

Significant achievements by individual department members this year include:

Anderson: Submitted invited review essay for Philosophical Quarterly (Scotland) entitled "Metaphysics and Method in Early Modern Philosophy."

Bussanich: Participant in National Endowment for the Humanities Summer Institute on "Knowledge, Teaching, and Wisdom." Invitation to contribute to the forthcoming Cambridge Companion to Plotinus.

Goodman: Taught courses in "American Literature and American Philosophy" and "20th Century American Literature" as Fulbright Senior Lecturer at the Universitat de Barcelona and the Universitat Autónoma de


Schueler: Completion of book manuscript entitled "Desire." Read "Is there a Practical Syllogism?" at the Pacific Division of the American Philosophical Association in San Francisco in March. Outside tenure reviewer for Indiana University (Indianapolis) Philosophy Department. Reviewer for Wadsworth Publishing Company.

2. Plans and recommendations for the near future.

The department will continue to build its relationship with the Instituto de Investigaciones Filosóficas at UNAM. We are still short of staff (our two additions to staff being replacements, not new lines), and particularly shorthanded as far as teaching courses in moral philosophy is concerned. We recommend that the university hire a new full-time staff member in ethics.
We also recommend that the College of Arts and Sciences seek funding for an endowed chair in Humanities.

3. Appointments to Staff

4. Separations from Staff

5. Outside sponsored research
Russell Goodman received a teaching and research grant from the Fulbright Commission for lecturing and research in Spain, worth approximately $12,000.
THE REPORT OF
THE DEPARTMENT OF
PHYSICS AND ASTRONOMY
July 1, 1992 - June 30, 1993
David M Wolfe, Chairman
A. Significant Achievements during the Academic Year 1992-1993 (Research)

The Department continues to make good progress. The funded research has grown by approximately 50% during the past two years. We continue to emphasize the development of the major areas of our department's research. These are the Institute for Astrophysics (IfA), Optics and the Center for Advanced Studies, the New Mexico Center for High Energy Physics (NMCHEP), and Condensed Matter Physics. We will consider these areas in order.

Institute for Astrophysics:

The IfA has been reorganized under the leadership of John McGraw. He has chosen the concept of high-resolution astronomy as the major area of specialization for the Institute. Thus, instead of specializing in one area of astronomy such as visible, infrared, radio, ultraviolet, he has chosen to work in any wavelength region but with great accuracy of measurement. He has arranged for the transfer of his $3,000,000 telescope, the CTI, from Arizona to New Mexico. This instrument will fit well into the new program.

Phillips Lab has been the locus of development of the concept of adaptive optics for more than a decade. This technique, classified until just a few years ago, allows astronomers to make real-time mirror corrections. This compensates for the distortions of the atmosphere and thereby "removes the twinkle" from observed stars.
This phenomenal advance makes it possible to view the skies, in the visible and infrared regions, with the same accuracy and clarity that one could from space. Because larger telescopes can be used on earth, the data will be better from the earth's surface. Ultraviolet radiation is attenuated by the earth's atmosphere and cannot, therefore, be observed.

Ultraviolet observation must be done from outside the atmosphere. Last year's Department Report noted the desire of NASA to return to the lunar surface this decade with robotic instruments. Their first choice for lunar missions is a design created by John McGraw and based on the CII instrument he is bringing from Arizona. This telescope, LUTE for Lunar Ultraviolet Telescope Experiment, continues to be the highest priority in this branch of NASA. UNM organized a major workshop in March, bringing together scientists and engineers from around the world to discuss the characteristics of the desired instrument. We hope that it will be possible to place an instrument of one meter diameter or greater on the lunar surface in less than the next ten years. The increasing collaborations between the United States and Russia might make a Russian rocket and lunar lander available at low cost for the project.

The work on LUTE was interrupted by a serendipitous discovery of an announcement in the Commerce Business Daily announcing Congressional Authorization for an astronomy-oriented science center. A copy of the announcement is included below.
The Broad Agency Announcement (AFOSR BAA.93-4) requesting proposals to establish an Astronomy-Oriented Science Center is now available. Proposals for a competitively awarded grant for an astronomy-oriented science center/observatory are being sought. To be considered for award the center must be located in a large urban school district with a joint power agreement by a city, regional park district, school district and an astronomical association. Location of the center near a national laboratory with focus on teacher training and student and public programming shall all be positive evaluation factors for selection.

Approximate amount of the award in $15.8 million. An additional condition of the grant is that its award may only be made if matching non-federal government funds are available for the creation of the center. The purpose of the center is to stimulate science and technology interest in students to promote an increase in mathematics and science professions. Proposals must be received no later than 3:00 p.m. E.D.T. on Wednesday, 8 September, 1993. Instructions for proposal submissions, and copies of Astronomy-Oriented Science Center Announcement (AFOSR 93-4) can be obtained from AFOSR/XPT, 110 Duncan Avenue, Suite B115, Bolling AFB DC 20332-0001, phone (202) 767-4910. This announcement and other AFOSR publications may also be downloaded from the Federal Information Exchange (FEDIX), an on-line information system accessible via computer and modem 24 hours a day, 7 days a week. Call the FEDIX computer at 1-800783-3349 (eight data bits, one stop bit, no parity). The FEDIX Helpline is available at 301-975-0103 from 8:30 a.m. until 5:00 p.m. (Eastern) Monday through Friday. (0182)

We are busily working on this project and have assembled a Consortium known as the New Mexico Consortium for Astronomy and Astrophysics (NMAAC) comprised of nine member organizations. There are three governmental bodies, the State of New Mexico, the City of Albuquerque, and the Pueblo of Acoma; three educational organizations, the University of New Mexico, New Mexico Tech, and the Albuquerque Public School District; and three major laboratories, Sandia National Laboratories, Los Alamos National Laboratory, and Phillips Laboratory. An official
Joint Powers Agreement defining the functions and responsibilities of the various members will be negotiated following the award of the grant to us.

The complete Proposal will be made available but a brief synopsis is possible here. Clearly the language of the BAA suggests Albuquerque although the grant was originally aimed at Oakland CA. Oakland is the 37th largest urban area in the country and Albuquerque the 36th! Our proposal is based on a triad of sites, Albuquerque, Acoma, and Socorro. The Albuquerque site will be at the new ¡Explora! Science Center where there will be demonstrations, equipment, and historical data on display. At Acoma and Socorro we will locate various telescopes dedicated solely to student use. Our concept involves the submission of observing proposals from various schools and the designation of telescope time in exact analogy with the procedures followed by professional astronomers. Students will be able to control the telescopes remotely from their classrooms and we have included in our proposal enough money to supply every school in New Mexico with a computer and modem. The telescopes will then return data to the classrooms where it can be analyzed with software provided according to grade level. The programs and analysis will be done during school hours with the observations taking place after dark. To train teachers in these new techniques, we will hold at least two training workshops each summer. These will involve work at UNM and at least one evening spent under the skies at Acoma.

A strong feature of our proposal is the inclusion of the Pueblo of Acoma. They see this proposal and the use of their land for an observatory site as a double
advantage. On the one hand they can expose their children to the most modern astronomical and electronic equipment. On the other, they can use the site as a means of preserving their own culture by comparing and contrasting their ancestral stories with those of the modern scientist.

We plan to locate McGraw’s CTI telescope at the Acoma site (to be called Enchanted Skies Park). In addition, we have reached an agreement with Georgia State University to locate the CHARA array at the Park. This is an interferometric array of seven large telescopes operating in the visible region in an arrangement similar to the operation of the VLA in the radio band. This remarkable instrument has been funded at the $10,000,000 level and will involve the Phillips Lab and their expertise in both adaptive optics and interferometry.

We believe this project, which we have titled Cosmic Explora!, to be of great importance to all of the parties concerned and we believe we have a good chance of being the winners.
The addition of Prof. Carl Caves as the Director of the CAS has broadened the horizons. The interests of Prof. Caves overlap well with the Santa Fe Institute. This was the only major local institution with which we had not already established strong ties. The addition of Prof. Caves corrects this failing. In addition, he has widened the faculty participation in the Center.

The move of the former Director, Prof. Marlan Scully, to Texas A & M deprives us of his presence on campus but not of his influence. He has agreed to remain on the Advisory Board of the Center with the title of Founding Director and will continue to be an Adjunct Distinguished Professor at UNM. He will continue collaborations with us and to bring us visitors and speakers from throughout his vast international network.

The founder of the Santa Fe Institute is Prof. Murray Gell-Mann of the California Institute of Technology. He is considering his retirement from Cal Tech and a possible full-time relocation to New Mexico. He is also considering the possibility of a three month appointment as University Professor at UNM. This would make him the first (and only) Nobel Laureate on campus. While he would be a university-wide professor, capable of teaching in several departments, it is clear that his major impact would be in Physics and Astronomy. Our faculty is enthusiastic about this appointment.

One of the major advantages of the CAS for the intellectual life of our Department lies in the large number of interesting and exciting guests and speakers
who visit here. The list is long and distinguished and, it is generally agreed, such visitors are one of the major reasons behind the rise of the reputation of our department in the physics community. A list of this past year's speakers is included in the list of Seminars that accompanies this Report. Among the things one notices in this list is the initiation by the Director of a new seminar series on the Physics of Information and Fundamental Questions in Quantum Mechanics.

Center for Advanced Studies

- Appointment of Prof. Carl Caves as Director
- Close contact with Santa Fe Institute
- Possible appointment of Nobel Laureate to the faculty
- Distinguished list of seminar speakers

New Mexico Center for High-Energy Physics:

Prof. John Matthews remains as Director of this young effort. The Center is promoting many goals but chief among them is a closer connection with similar work being done at Los Alamos National Laboratory. During the past year, this connection has grown stronger, with more visits, more joint projects, and more interaction. This continues to grow and we look forward to having specialty courses taught by LANL physicists and to have several of them appointed to Adjunct faculty positions.

Another seminar series, The Particle Physics Seminar, has been initiated by this Center. This is a weekly meeting and brings speakers from Los Alamos as well as
from many other institutions, including Fermilab and the SSC Laboratory in Dallas. Several of our own faculty have delivered these seminars as well.

The high-energy group has been doing most of its work at Fermilab and has now been officially accepted as a member of the Central Detector Facility experiment. The most exciting work at Fermilab involves the use of the Tevatron, a 1000 GeV x 1000 GeV superconducting machine that collides protons and antiprotons. These collisions reveal much new physics and are the best method at present to search for the existence of the top quark, a particle whose existence is firmly predicted by the Standard Model of strong interactions. There are only two detectors at the Tevatron (CDF and D Zero), major investments of the order of $100,000,000. The most sophisticated of these detectors is the CDF one and membership is a jealously guarded privilege. The expertise in our Center, particularly in the areas of design and construction of high-rate silicon detectors, has led to this coveted invitation. It is useful to realize that much of the silicon equipment that we own has been bought with start-up funds provided to the Center by UNM.

The two junior members of the Center, Profs. Gold and Seidel, have contributed strongly to its success. Prof. Seidel had her SURP research grant renewed for a second year. Prof. Gold won a SURP grant this year and, because of the quality of the proposal, was awarded $5,000 MORE than he had originally requested. Prof. Seidel completed a proposal to the American Physics Society for UNM to act as the host of a major meeting next summer. The Division of Particles and Fields (DPF) is the second largest division of the APS and the DPF Annual Meeting attracts of the
order of 1000 participants. It is the largest and most well-known annual meeting for high-energy physics anywhere in the world. Competing proposals for the 1994 DPF meeting were received from UCLA and the University of Minnesota. Each of these institutions made a presentation, using a senior faculty person. Prof. Seidel’s proposal was accepted by the APS and the meeting is now scheduled to be held on the UNM campus starting on 4 August 1994. We regard this as an achievement of the first magnitude. A successful meeting in Albuquerque will bring enormous renown to UNM and the NMCHEP. We have already begun the planning and are eagerly looking forward to the event itself. There will be much more detail in the next two Annual Reports.

New Mexico Center for High-Energy Physics

- Close Collaboration with LANL physicists
- Initiated Particle Physics Seminar series
- Membership in the Central Detector Facility Experiment at Fermilab
- Host to the 1994 Annual Meeting of the Division of Particles and Fields of the American Physical Society
Condensed Matter Physics:

This is an area of major concentration for our department and one of the areas where we can foresee considerable growth. The enormous stress placed on Condensed Matter Physics at both Sandia and Los Alamos Laboratories makes possible a large number of collaborations. There is also a natural affinity between this area and the field of non-linear phenomena. This provides an overlap with the Center for Non-Linear Studies at Los Alamos. It also is a field of considerable interest to our Optics work in the CAS and provides a natural link between the two areas of our department.

Theoretical physics is an excellent area for encouraging collaborative work. Prof. Kenkre, our senior figure in the Condensed Matter field, has established several important international connection. We are starting an exchange program with the University of Ulm in Germany and considering such programs with the Universities of London and Edinburgh in the United Kingdom. We are also involved in negotiating a FIPSE International Agreement with Colorado State University, the University of Regensburg in German, and one or more of several possible British universities. Finally, a joint UNM-University of Warsaw collaboration has been funded by the NSF, with Prof. Wodkiewicz working both at UNM and at Warsaw in alternate years.

One of our longest running and most successful seminar series is the nu-seminar series. This continued to be an enormous success and the work of Prof. Kenkre in continuing to draw a list and distinguished and exciting speakers is greatly
appreciated by all of the members of the department. A list of these seminars is also included.

Experimental physics in this field is an expensive endeavor and collaboration allows us to do experimental work without the attendant expense. The National Laboratories in New Mexico have invested hundreds of millions of dollars in superb equipment for this work. They have facilities unmatched anywhere else in the world. It is a tremendous advantage to us to be able to collaborate and thereby have access to this equipment. We have begun a collaboration with Dr. Rob Duncan at Sandia, a renowned low-temperature physicist. An Adjunct Professor, Dr. Duncan was recently awarded a major NASA grant. This award, worth more than $20,000,000 was the only grant made from a set of over FIFTY proposals. The grant is for the design and construction of Josephson junction devices, operating at less than 1° K, used to measure minute fluctuations in the earth’s gravitational field. This experiment is designed to be flown by the Space Shuttle within the next five years. All of the scientific portion of the work is being done in our building and in collaboration with faculty and students. We have modified a portion of our equipment storage area to allow the work to proceed. This is the first liquid helium work done in our building.
Condensed Matter Physics

- New ties with SNL and LANL
- International student exchange with Universities of Ulm, Regensburg, Edinburgh, and London
- NSF international research program with University of Warsaw
- Low-temperature experimental program in collaboration with Sandia Laboratories
- Major NASA micro-gravity research project

Experimental Optics:

Prof. Rudolph had his SURP grant renewed for a second year. In addition, he has won significant support from Phillips Labs. Laser Division, a unique honor for a non-citizen. He has been able to work at the lab and, because of their intense interest in his research, Phillips would like to transfer some of their research programs to our building. We have not yet been able to identify space where this work could be done however.

The connection with Phillips Lab and their Laser Division has been greatly increased through the awarding of an L-Bars contract to prof. McIver. This has enabled a significant increase in the work, in the number of Research Associates employed in this research, and the support for a considerable number of UNM graduate students to work at the Lab.

Prof. Diels continues to be our most productive researcher, both in terms of
grant funding as well as the number of papers written and graduate students supervised. The intense interest in the field of experimental optics by our graduate students is one of the major reasons we have been pressing hard to replace Daniel McGraw, terminated after a negative Code 3 Review in 1991. We are gratified that the Administration has agreed to allow us to search for a replacement optics person during the coming year.

**Experimental Optics**

- Intense interest of graduate students in experimental optics
- Renewal of SURP grant for W. Rudolph
- Contract for Rudolph with Phillips Lab
- Large Contract for J. McIver with Phillips Lab
- Search for D. McGraw replacement

**Other Areas:**

Noting in the above description is meant to detract in any way from other significant research done in the department. The atomic physics work of Prof. Bryant, for example, continues to lead the world in his area. He has created the entire area of high-energy atomic physics and continues to dominate it. His work has attracted international attention. Prof. Chandler's excellent work in Nuclear Theory continues, as does the fine General Relativity work done by Prof. Finley. Prof. Panitz's work on surface physics continues to be well funded and of the highest quality.
One of the major impacts of the high-quality work being done in the department is the pressure on space.

B. Significant Achievements during the Academic Year 1992-1993 (Teaching)

The Department has gone through a complete discussion of its undergraduate curriculum during this academic year. At our Annual Retreat in May, a series of final recommendation was presented by the Undergraduate Committee, following several weeks of general faculty discussion. These recommendations were unanimously adopted and implementation work will begin during the Fall semester. In addition, the Chairman attended a national gathering of Physics Chairs in Washington and reported on the meeting at the Retreat. The most interesting point was the great national debate taking place on the subject of undergraduate laboratory courses. These courses are particularly difficult to design and implement properly. Our department, in an attempt to take advantage of all of the work done nationally, has asked Prof. Bryant to accept, as his teaching responsibility for the next three years, a role as Undergraduate Lab chief. He has formed an alliance with the Personnel Retraining division at LANL, which has great video and computer expertise, to work together on this project. This is a difficult but crucial task.

The Undergraduate Committee has been charged with continuing its revision of the new curriculum and to follow its development. At the same time, we have charged the Graduate Curriculum Committee with starting the same process. A thorough examination of the graduate curriculum will be completed during the coming academic year.
The department continues to be interested in the use of computers as part of the training of a modern physicist. We have invested approximately $10,000 of overhead return money in the purchase of new computer facilities for our students. This includes both hardware and software, with packages such as MathCad and Maple being made available for the new and faster machines.

Prof. Zeilik has won one of the few NSF educational awards. The money will be used for modernization of the Astronomy 101 course.

Prof. Campbell has been elected as the President of the Faculty Senate. Despite this singular honor and massive new responsibility, she continues with her Natural Science program for education majors. In addition she serves on the Management Board for the NSF Statewide Systemic Initiative for the improvement of math and science education for grades K through 12.

Finally, the department desires to increase the number of people from the local laboratories who teach here. We have found that the commitment to an entire course is a major burden for such busy people. In an attempt to remedy the situation, we will be creating a series of short courses, of a few weeks duration, so that our students can benefit from the enormous expertise available locally and the demands on these people will only involve three or four afternoons rather than a full semester of such days.

Awards and Recognitions

Our department has a long interest in the recruitment and retention of minorities and under-represented groups. To this end, we have been relatively
successful in attracting female students. This year, the NSF has granted a small amount of money to the Committee on the Status of Women in Physics of the American Physical Society. There is enough for about five site visits nationally this coming year. We have applied to be one of these sites and will be so honored with a visit this Fall. We look forward to the opportunity.

Our Departmental Commencement was held this year in Regener Hall on May 15. We were pleased to have Mrs. Daphne Orner, the daughter of the late Colonel Durward Young Jr make the Second Annual Award of the Durward Young Prize for the Best PhD Dissertation. The award was made to Dr. John Prentice for an outstanding dissertation under the supervision of Prof. Colston Chandler. The Excellence in Teaching Award was split in three this year, going to Mark Price, Charles Beckel, and Michael Zeilik. The Chairman’s Award for the best graduate Teaching Assistant was shared by Srikanth Raghavan and John Sandusky. The prestigious Eoin Gray Fellowship award for the best graduating senior was captured by Mark Blount. We are delighted that Mark will stay at UNM to do his graduate work under the supervision of Prof. Panitz. Finally, the Feynmann Prize for the best student in the senior Contemporary Physics Class was won by Aaron Patton.
During the academic year 1992/93 ... 24 students earned degrees in Physics, Astrophysics or Optical Sciences. Five of these received B.S. degrees in Physics or Astrophysics (*), one with honors and the designation of summa cum laude. Ten students received M.S. degrees in Physics and nine received the Ph.D. degree. Of the Ph.D.'s awarded, one was in Optical Sciences (*). The following table lists the names of the students involved:

Students receiving a B.S. in 1992/93 ...

Physics and Astrophysics (*) Major

Christopher Abdalla *
Mark Alan Blount **
Steven C. LaMarra *
Prakash S. Bhakta *
Jeanette Irene DeBar

** Honors in Physics, summa cum laude

Students receiving the M.S. Physics in 1992/93 ...

Matthew J. Bohn
Elke Elisabeth Kahler
Xiangcun Long
Thomas John Schilling
Frederick Alexander Slane
Dorothee Anja Fischer
Klaus-Peter Kress
Peter Erich Riegler
Kristin A.M. Scott
Frank Hermann Wohnsland

Students receiving the Ph.D. degree in 1992/93 in Physics or Optical Sciences (*) (dissertation advisor) ...

Pamela King Benicewicz
(John McIver)
Monica Helen Halka
(Howard Bryant)
Vassilios Kovanis
(V.M. Kenkre)
John Keith Prentice
(Colston Chandler)
Lee-Zhung Wang
(Sudhakar Prasad)
Susan Elizabeth Durham
(R. Marcus Price)
Bruce McGregor Kemmell
(Christopher Leavitt)
Bruce William Liby *
(John McIver)
Theodor C. Salvi, Jr.
(John McInerney)
Sponsored Research or Other Projects

a. During the year, there were 34 new proposals submitted to outside funding agencies by 24 regular faculty members (80%), seven research faculty and one Adjunct faculty.

b. Altogether 25 faculty members (89%), nine research faculty and one Adjunct faculty were actively involved in outside-sponsored research on 71 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 $3,375,000 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. This compares to a figure of $2,832,000 for the 1991/92 Academic Year. The percentage increase in the past year is nearly 20%!
PARTIAL ECONOMIC IMPACT
OF THE PROPOSED ASTRONOMY SCIENCE CENTER
TO THE STATE OF NEW MEXICO

Construction and operation of the proposed Astronomy Science Center (ASC) in New Mexico will have important economic benefits for the State. We propose to implement two sites, one near Old Town in Albuquerque, and the other on Acoma land near Grants. Both of these sites will provide economic benefits.

The primary site, the Cosmic Explora Science Center, will be operated by the City of Albuquerque. We conservatively estimate the expenditure of $5 M of ASC funds for construction and capital investment at this site. This will enable full implementation of the Center, which is expected to attract approximately 186,000 visitors annually. The construction and continuing economic benefits to the State are significant and defensible by comparison to other technically-oriented attractions.

The second site, Enchanted Skies Park, also provides significant benefits in an economically depressed region of the State. Because we must also understand these benefits, we have asked Dr. John Temple of the Bureau of Business and Economic Research to help us assess the impacts of this remote site. The impacts appear in three forms: jobs, both for construction and continued operation of the facility, enhanced research capabilities which attract federal funding, and significantly enhanced tourism. The remainder of this discussion, and Dr. Temple's analysis (appended), deals only with Enchanted Skies Park and the research observatory situated on it. Based on our research into similar facilities in this and other states, we believe this analysis to be both conservative and realistic.

CONSTRUCTION:

We currently have two separate telescope facilities committed to Enchanted Skies Park. The first is the CCD/Transit Instrument (CTI), which is currently situated on Kitt Peak in Arizona awaiting transfer to New Mexico. This unique telescope, with a 1.8 meter diameter primary mirror, uses computer-controlled detectors to nightly survey the sky to faint limiting magnitudes. This telescope can be moved to Enchanted Skies Park as soon as access is provided.

The second telescope facility is the imaging interferometer array, which operates at visible and infrared wavelengths, proposed by Georgia State University's (GSU) Center for High Angular Resolution Astronomy (CHARA). This array, which will scientifically complement the Very Large Array (VLA) and the Very Long Baseline Array (VLBA), both of which are based in New Mexico, has committed to it $5 M from NSF, awarded by the peer review process, and an additional $5 M in matching funds from Georgia State University. We have a letter of commitment from GSU to bring this array to New Mexico, if we provide the site. Research into the weather and atmospheric characteristics of Enchanted Skies Park indicate this to be a
premier astronomical site, worthy of the CHARA array and other future telescopes. Enchanted Skies Park is the agreed-upon site for the $10 M CHARA array. Because of the nature of an array, a significant fraction of these funds will be used for on-site development and construction. The total spending for construction of this telescope alone is estimated to be $4.7 M and to provide about 90 man-years in new jobs.

Once the site is developed, we shall have the opportunity to compete for other capital and construction funds from outside the State in the form of additional telescopes to be placed at our site.

ANNUAL OPERATIONS:

We can separate annual expenditures at Enchanted Skies Park into three parts. The first is the operation, maintenance and upgrades directly related to CHARA and CTI. The jobs generated by this activity include three technical on-site staff who supervise day-to-day operations and one non-technical on-site person for clerical or maintenance duties.

The second annual activity is indirectly related to, but enabled by the observatory. Establishment of Enchanted Skies Park will help researchers within the State, principally at universities and federal laboratories, to attract scientific research grants from agencies such as NSF, NASA and ARPA. These grants will provide support for operations including new support staff. In addition, grants will also provide salaries for scientists and graduate/undergraduate students. All such grants have a significant component of indirect funds which accrue to the appropriate ASC consortium agency. In addition, the Air Force Phillips Laboratory will have an active research role with CHARA. New staffing at Phillips Laboratory is expected to support CHARA.

The observatory operations impact is estimated to be $0.56 M annually, and to create approximately 24 jobs. These jobs will be created in the currently economically depressed Grants/Acoma area.

TOURISM:

Enchanted Skies Park will bring additional visitors into the central New Mexico area. Park activities, especially those held at night, can be expected to extend the stay of visitors already in the area. The State will benefit directly from the tourism revenues and their associated taxes.
We have conducted a survey of annual attendance at the following locations:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Location</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitt Peak National Observatory</td>
<td>Arizona</td>
<td>80,000</td>
</tr>
<tr>
<td>Acoma Pueblo</td>
<td>Acoma</td>
<td>104,000</td>
</tr>
<tr>
<td>Bradbury Science Museum</td>
<td>Los Alamos</td>
<td>85,000</td>
</tr>
<tr>
<td>El Malpais National Monument</td>
<td>Grants</td>
<td>80,000</td>
</tr>
<tr>
<td>National Atomic Museum</td>
<td>Albuquerque</td>
<td>215,000</td>
</tr>
<tr>
<td>NM Museum of Natural History</td>
<td>Albuquerque</td>
<td>329,000</td>
</tr>
<tr>
<td>Roswell Museum</td>
<td>Roswell</td>
<td>62,000</td>
</tr>
<tr>
<td>The Space Center</td>
<td>Alamagordo</td>
<td>196,000</td>
</tr>
<tr>
<td>White Sands National Monument</td>
<td>Alamagordo</td>
<td>600,000</td>
</tr>
</tbody>
</table>

These locations represent science-oriented Visitor Centers or Areas of Interest in the general locale, similar in nature to Enchanted Skies Park. Because New Mexico is highly tourist oriented, the State facilities record 50% or greater out-of-state attendance.

We conclude that visitors to New Mexico are interested in and visit technically-oriented attractions. Kitt Peak provides a direct paradigm. Because the Enchanted Skies Visitor Center would be located an easy 15 - 20 miles from Interstate 40, and on a future tourist loop, after the park is developed, we estimate we could easily attract 40,000 - 80,000 out-of-state visitors annually, a significant addition to tourism. By comparison, Kitt Peak is 50 miles (one way) from Tucson, with no major continuing routes. Visitors to Kitt Peak must return 50 miles to Tucson to continue their journey, yet Kitt Peak attracts a significant tourist trade.

Adopting conservative assumptions of 60,000 out-of-state visitors annually, and that visitors extend their stay by one day to participate in Enchanted Skies activities, total annual spending from tourism is estimated to be $6.5 M and to create approximately 112 new jobs.

With a projected minimum lifetime of 30 years, Enchanted Skies Park will be a significant long-term revenue-producing facility for the State.

In the future, we believe that with appropriate programming and advertising we might legitimately attract more visitors and make Enchanted Skies Park a destination site for some of the three million amateur astronomers in the United States.

Details and a description of the economic impact analysis of Enchanted Skies Park are given in the appended document provided by Dr. John Temple of the Bureau of Business and Economic Research, whose assistance we gratefully acknowledge.
Expected Economic Impacts:
Astronomy Science Center

Estimates of economic impact in the state that will result from construction and operation of the proposed Astronomy Science Center were derived through standard multiplier analysis. The underlying assumptions are both reasonable and prudent. Expected impacts are: construction, operations and tourism.

CONSTRUCTION IMPACT:

Construction cost of the facilities is estimated to total about $4 million in federal funds. The construction phase is expected to last one year. The injection of new funds into New Mexico's economy will provide jobs and tax revenue to Cibola county and the state. Impacts assume: payroll $852,000 with the $3,148,000 balance to materials, supplies and other costs of construction.

<table>
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<tr>
<th>Impacts</th>
<th>Multipliers</th>
<th>Direct</th>
<th>Indirect</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Materials, etc.</td>
<td>1.8698</td>
<td>$3,148,000</td>
<td>$741,070</td>
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<tr>
<td>Earnings</td>
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<td>$852,000</td>
<td>40</td>
<td>48</td>
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<tr>
<td>Total Spending</td>
<td></td>
<td>$4,000,000</td>
<td></td>
<td></td>
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</tbody>
</table>

ASSUMPTIONS & SOURCES:

- Payroll to outlay ratio is 21.3 Percent. Based on Census of Construction, NM 1987. US Department of Commerce.

OPERATIONS IMPACT:

Operation and maintenance will be funded through federal grants that will support a staff of about 15 FTE's. The estimate for average annual salary outlay is $325,000. One third payroll is assumed for maintenance and repair and two thirds for services.

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Multipliers</th>
<th>Direct</th>
<th>Indirect</th>
<th>Total</th>
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<tr>
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<td>$238,640</td>
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<td>Employment</td>
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</table>
ASSUMPTIONS & SOURCES:

- Maintenance and Repair Construction direct-effect multipliers are 1.6127 and 1.6756, respectively, for earnings and employment. Miscellaneous Services direct-effect multipliers are 1.7883 and 1.6341, respectively, for earnings and employment. See above for source.

TOURISM IMPACT:

Based on other similar sites it appears reasonable to expect between 40,000 and 80,000 out-of-state visitors annually. To derive a conservative estimate of tourist impact, it is estimated that out-of-state visitation will average 60,000 annually. Each visitor is assumed an one day stay with $95 expenditure per person. Total spending is $5.7 million. Most spending is expected in two sectors, retail trade (e.g., restaurants) and services (e.g., Hotels, motels). It is assumed that 40 percent will impact the trade sector and 60 percent the services sector.

<table>
<thead>
<tr>
<th>TOURIST IMPACT</th>
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</thead>
<tbody>
<tr>
<td>Impacts</td>
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<tr>
<td>Materials, etc.</td>
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<tr>
<td>Earnings:</td>
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<tr>
<td>Retail Trade</td>
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<td>Services</td>
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<td>Total Spending</td>
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<tr>
<td>Employment:</td>
</tr>
<tr>
<td>Retail Trade</td>
</tr>
<tr>
<td>Services</td>
</tr>
<tr>
<td>Total Jobs</td>
</tr>
</tbody>
</table>

ASSUMPTIONS & SOURCES:

- The applied ratio of payroll to sales was 22 percent. Weighted ratio derived from Census of Services and Census of Retail Trade. NM 1987 US Department of Commerce.
- The estimate of 40 percent trade sector impacts is arbitrary. This proportion produces the total direct payroll figure of $501,600.
- Earnings and employment direct-effect multipliers from Department of Commerce, see above.
- Daily visitor spending from NM Department of Tourism.
- Total visitor spending is $5.7 million, with $1.254 million to payroll and the balance to materials, supplies and other costs of retail trade and services.
CONCLUSION:

Construction spending in the state is expected to total $4 million and will generate earnings of over $1.5 million and 89 direct and indirect full time jobs for one year. Daily operations will support 24 jobs and earnings of about $563,600. This benefit to New Mexico is expected to occur annually. Out-of-state tourism should initially impact the retail and services sectors, bringing in about $5.7 million and providing about 112 full time jobs annually. Earnings are expected to be over $2.1 million annually. Total annual impacts are: spending $6.26 million with 201 jobs created and earnings over $2.7 million. Based on The New Mexico Taxation and Revenue Department’s estimate that about 10 percent of personal income in the state is paid in state and local taxes, annual tax benefits will exceed $270,000.

Prepared by John L. Temple, Assistant Director
Bureau of Business and Economic Research
1920 Lomas NE, Albuquerque, New Mexico 87131-6021
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08/28/92
Krzysztof Wodkiewicz
Perfectly Entangled Correlations: From EPR to GZH
University of New Mexico

09/04/92
Carlton Caves
Information, Entropy, and Chaos
University of New Mexico

09/11/92
David Caldwell
Searching for Most of the Universe
University of California, Santa Barbara

09/17/92
Joseph A. Sholtis Jr.
Nuclear Power in Space: Benefits & Risks
Kirtland Air Force Base

09/18/92
Alan Van Heuvelen
Education--it's a verb!
New Mexico State University

09/22/92
Hans Stephani F. Smart
Far Fields of Diverging, Twisting, Type N Vacuum Solutions of
Einstein's Field Equations
Jena University

09/25/92
John Panitz
Probing the Liquid-Solid Interface
University of New Mexico

10/02/92
Peggy Shea and Don Smart
Spacecraft and Terrestrial Problems in Association with Episodes of
Intense Solar Activity
Hanscom Air Force Base

10/08/92
Curtis Runnels
The Myth of Eden

10/09/92
Ruvin Deich
Fast Radiation Induced Processes in Insulators
Case Western Reserve

10/10/92
Helen Quinn
Challenges for Science Education
11/06/92
Christophe Blondel
Negative Ions: Atoms Without Coulomb Force?
Laboratoire Aime Cotton, Orsay

11/12/92
Edith Ackermann
Pathways Into a Child's Mind
Massachusetts Institute of Technology

11/13/92
Dana Anderson
Decision Making and Self-Organization in Photorefractive Systems
Joint Institute for Laboratory Astrophysics, Boulder

   Dieter Meschede
Cavity Quantum Electrodynamics
University of Hannover

11/20/92
Timothy Cornwell
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THE REPORT OF THE DEPARTMENT OF POLITICAL SCIENCE
July 1, 1992 - June 30, 1993
Karen L. Remmer, Chairperson

A. Significant Achievements

1. Undergraduate program development.

The department graduated a record number of majors and honors students.

2. Graduate program development.

   a. The graduate program of the department was reviewed by an external committee under the leadership of William Riker from the University of Rochester. In preparation for the review, the department drew up a detailed self study.

   b. The department approved new rules and procedures to ensure adequate support for and supervision of graduate assistants teaching their own course sections.

   c. The department instituted a one-hour professionalization seminar as a requirement for incoming graduate students and undertook a major revision of the Graduate Handbook.

   d. The department reviewed and revised the rules governing Ph.D. comprehensive examinations.

   e. A record number of students applied to and were accepted by the graduate program of the department.

3. Institute for Public Policy.

   a. Under the direction of Gilbert St. Clair, the Institute for Public Policy completed its fifth year of quarterly state-wide surveys. The surveys collect general behavioral and demographic information and explore the opinions of New Mexicans regarding special sets of issues. This year the surveys focused
on the state's political system, the presidential election, the state budget, health care, and legislative ethics. The results are published as the Quarterly Profile of New Mexican Citizens.

b. The IPP also published two Legislative Update booklets offering in-depth analysis and discussion of New Mexico citizens' perceptions of issues before the legislature. Using data collected through the quarterly surveys, these booklets focused on Budget Allocations and Health Care Reform.

c. Funded research secured by the IPP during the year totalled $469,819, which represented an increase of $173,131 over 1991-92. The funding accruing to the university in indirect costs totalled $136,400. The IPP's research projects included a survey of Rio Grande Zoo visitors, non-visitors, and Zoo Society members; a national household survey of public images of nuclear and other environmental risks; a state-wide survey to assess awareness of citizens with and without disabilities of the availability of assistive technologies; two regional surveys of the perceived risks of nuclear waste management policies in Colorado and New Mexico, measuring variations in public opinion over time; a national telephone survey of households and national mail survey of scientists and engineers designed to measure the communications gap between scientific experts and the lay public about potential risks associated with hazardous materials facility siting and waste remediation; a national telephone survey of households and mail survey of selected scientists to assess public and expert perceptions of nuclear weapons safety; and periodic state-wide telephone surveys of citizen perceptions of the U.S. National Laboratories and community perceptions and attitudes regarding Los Alamos National Laboratory.
d. Student support and employment: the IPP provided professional training and financial support totalling $167,067 to advanced undergraduate and graduate students, who were employed as survey interviewers and research analysts. Research projects undertaken in 1992-93 supported 100 undergraduate student interviewers and 11 graduate student research analysts.

e. Five papers were presented at professional meetings on the basis of IPP research, including "Evaluating the Advocacy Coalition Framework: Assessment, revisions, and Implications for Policy Scholars," presented at the American Political Science Association meeting, Chicago, September 1992.

4. Outside Speakers.

a. The Institute for Public Policy sponsored Institute sponsored talks by Peter deLeon of the University of Colorado at Denver, Howard Kunreuther of the Wharton School, University of Pennsylvania, and Kenneth Meier of the University of Wisconsin at Madison.

b. Speakers sponsored by the UNM-Sandia Seminar Series in International Relations Theory:

Randolph Siverson, University of California, Davis "Survival of Political Leaders in Time of War."

Jack Snyder, Columbia University, "Relevance of the Soviet Collapse for International Relations Theory."

Bruce Bueno de Mesquita, Hoover Institution and University of Rochester, "War and Reason: Domestic and International Imperatives."

5. Internship programs.
   a. The department continued to expand its internship programs in terms of number, variety, and level of involvement of student participants. Department majors were involved in both introductory (Political Science 291) and advanced (Political Science 499) internships programs in the offices of New Mexico's U.S. Senators and Representatives, the Speaker of the N.M. House of Representatives, the Washington office of Senator Brown (R-Colorado), Second Judicial District (N.M.) Court, Texas General Land Office, City of Albuquerque Planning and Community Development Office, and Village of Los Ranchos Planning and Zoning Department.
   b. The department placed fourteen undergraduate students in internship positions with the New Mexico State Legislature. Each intern spent one week at the legislative session working under the supervision of Gilbert St. Clair.
   c. Several A&S Cooperative Education Program students completed their requirements for the cooperative program working under the supervision of departmental faculty in government agencies.

6. Curriculum development.
   The following courses were taught for the first time:
   a. Research Seminar in Central American Politics
   b. Democracy in Latin America
   c. U.S. Intervention in the Third World
   d. Contemporary International Security
   e. Politics of Perestroika
   f. Campaigns and Elections

7. Student recruitment and advisement. The department continued its advisement process for students participating in the College Enrichment Program who are inter-
ested in attending law school and sponsored a series of informational meetings for students interested in pursuing a graduate degree in political science.

8. **Noteworthy service and achievements.**

a. The research of F. Chris Garcia was featured on the front page of the *New York Times* on December 15, 1992. Professor Garcia served as Acting Provost, Spring semester, and was elected Secretary of the American Political Science Association.

b. Fred Harris, Director, Summer Program, Granada, Spain; elected to Board of Trustees, Milton S. Eisenhower Foundation.

c. Hank Jenkins-Smith, Director, Graduate Committee.

d. Karen L. Remmer, Associate Editor, *Latin American Research Review*; A&S Dean Search Committee; Committee on Democracy and States in Transition, National Academy of Sciences.

e. Robert J. Sickels, Academic Freedom and Tenure Committee; Advisor, Political Science Honors Program.

f. Harry Stumpf, Chair, Political Science Undergraduate Committee and Editor, Department Newsletter.

g. Roger Morris, Adjunct Professor, was awarded a Guggenheim Award.

h. Shane Phelan, co-chair, UNM Curriculum Committee; Gender Politics Section Organizer, Western Political Science Association meeting; APSA Committee on the Status of Lesbians and Gays in the Profession.

i. Gregory Gleason, Visiting Research Scholar, Tashkent, Uzbekistan (Spring 1993); Resident Fellow, Center on East-West Trade, Investment and Communications, Duke University (Summer 1993).

j. Mark Peceny, Coordinator, UNM-Sandia Seminar Series in International Relations Theory.
k. Kenneth Roberts, Eugene Gallegos Lectureship Award

B. Significant Plans and Recommendations for the Near Future.

1. **M.A. in Public Policy.** Pursuant to the recent graduate review, 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.

2. **Recruitment.** The department will initiate the recruitment of a new member of the faculty to strengthen its public policy program.

3. **Internships.** The department is developing a collaborative internship and exchange program with Sandia National Laboratory that will provide employment and support for graduate students and selected senior majors in areas of national security and technology policy. Upon selection and recommendation by the department, these students will be supported by the lab to work in staff positions related to their educational programs and expertise. The first students are expected to be placed in positions in the autumn semester.

4. **Western Political Science Association.** In the Spring of 1994, the department will host the Western Political Science Association meeting in Albuquerque. Gilbert St. Clair will be in charge of the local arrangements.

C. Staff Changes

1. **Appointments:**
   
   Marina Oborotova, Visiting Associate Professor, Spring.
   
   Robert J. Sickels, Department Chair, effective August 1, 1993.

2. **Leaves and sabbaticals:**
a. Neil Mitchell, Associate Professor, Autumn.
b. Christine Sierra, Associate Professor, academic year.
c. Gregory Gleason, Associate Professor, Spring.
d. William Stanley, Assistant Professor, Autumn.

D. Sponsored research and other projects.

1. Members of the department applied for a record amount of outside funding and received grants totalling over $500,000, excluding continuing grants. Significant new projects include:
   a. UNM-Sandia Seminar Series on Nuclear Proliferation." $16,422 grant from Sandia National Laboratory. Principal investigator: Mark Peceny.
   e. "Transnational Implications of Legal and Institutional Change in Soviet Central Asia." $31,000 from the National Science Foundation. Co-Principal Investigator: Gregory Gleason.
   f. "Public Images of Nuclear and Environmental Risks." $49,877 from Argonne National Laboratory. Principal Investigator: Hank Jenkins-Smith.

2. Number of faculty submitting proposals to outside agencies: 10 (62.5 percent).

3. Number and percent of faculty obtaining awards from outside agencies: 6 (38 percent).
APPENDIX A: AFFIRMATIVE ACTION

A. Faculty. Excluding visiting faculty, 17.6 percent of the full-time faculty in the department are women (as compared to the national figure of 6.9 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. The only new faculty member recruited during 1992-93 was a one-semester visitor, Marina Oborotova.

C. Graduate students. Of the twenty-seven graduate students active in the department during the Spring semester, three were Hispanic students and six were women. Of the twenty-five students admitted to the program for Fall, 1993, 11 were women and 16 were minority. As in the past, budgetary constraints hampered the department's efforts to compete for highly 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. Meetings were held for interested undergraduates in the autumn semester and nominations forwarded to the APSA.

2. The department expanded its efforts to advertise its graduate program and received a record number of applications.
ANNUAL REPORT
1992 – 1993

DEPARTMENT OF PSYCHOLOGY

John P. Gluck, Acting Chair
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 to:

- 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
1992 - 1993
DEPARTMENT OF PSYCHOLOGY

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I. DEPARTMENTAL INFORMATION AND ACHIEVEMENTS

A. DEPARTMENTAL ADMINISTRATION AND STRUCTURE. The current academic year marked the third year of William Gordon's term as Chair of the department. However, as he served as acting Dean of Arts & Sciences, John Gluck was appointed acting chair by Dean Wildenthal on June 30, 1992. 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, Harold Delaney; Graduate Education,
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

Core Curriculum

*Experimental Committee

*Clinical Committee

Undergrad Honors

Admissions

Experimental Curriculum

Clinic

Undergrad Advisement

Graduate Minorities

Methodology/Computer Use

Clinical Curriculum

Undergrad Minorities

Graduate Honors

Human/Animal Subjects

Clinical Colloquium

Psi Chi

e etc.

etc.

etc.

etc.

*Committees chaired by the responsible Associate Chair in each area
Michael Dougher; Experimental Training, Feder Johnson; Clinical Training, Samuel Roll (Jane Smith served also in a part-time capacity as she prepared to take the position full-time in the fall of 1993.) 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.

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 1992-1993 academic year is given in Appendix A.

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 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 Anne Treisman, Professor of Psychology at the University of California, Berkeley.

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 Edel Kruger.

The department hosted a commencement convocation for its graduating students for the fifth consecutive year. The convocation was conducted by the Acting Chair. The commencement address, delivered by Distinguished Professor Ellis, was entitled "Taking Care of Business: Hope, Optimism, and a Sense of Control." This continued a tradition begun in 1989 of the commencement address being given by a senior faculty member in the department. Previous addresses had been delivered by Frank Logan, Bill Gordon, Sam Roll, and John Gluck. Arrangements for the convocation were ably handled by Administrative Assistant Candace Blashak. Because of the very large number of graduates and the interest on the part of their families and friends, this has become a major departmental effort and service to the University involving several hundred people and entailing expenses to the department of over $3,000.

B. UNDERGRADUATE EDUCATION. Stated succinctly, the undergraduate education productivity of the department's faculty and staff is enormous and unsurpassed. The department offers a stunning variety of courses, ranging from introductory psychology to research ethics. Students are exposed to lecture class topics to advanced laboratory courses requiring creative experimental design development and "hands-on" contact with human and animal subjects.
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. Appendix B presents summary statistics for the department for the 1992-1993 academic year along with the same statistics for the preceding four years. Actual enrollment counts per course for each AY 1992-1993 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. Thankfully, TVI administration and faculty have worked to ensure that their course offerings are compatible with our undergraduate topic pattern.

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 1992-1993 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 increased by approximately 60% 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 1992 semester show that there were over 700 undergraduate Psychology majors in the College of Arts and Sciences. This makes Psychology by far the most popular major in the College.

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, it accomplished this task with 23.0 FTE. 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. Neither of these trends is ultimately acceptable. In the first case, one-on-one contact with students and faculty is sharply curtailed. In the second, undercompensated faculty with access to minimal amounts of department resources (e.g., lab space) become increasingly responsible for undergraduate education and professional influence. 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 1992-1993 honors students along with the titles of their research theses, the names of their faculty supervisors, and the level of honors awarded to them by the department.

C. GRADUATE EDUCATION. The department implemented its modified core curriculum which was approved in 1991-1992. Basically, the faculty had decided to reduce the number of courses required of first year graduate students and expand opportunities for research. Although student and faculty evaluations seem quite favorable, a formal assessment is planned for the
summer of 1994.

During this 1992-1993 academic year, the department awarded 12 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 210.

In addition to Ph.D. degrees, the department awarded 14 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.

Our graduate students continued to distinguish themselves in their research and teaching. Space permits mention of only selected award recipients. Steve Kubacki was chosen to receive the department's highest graduate student award in recognition of his outstanding research. He delivered the annual Benjamin Franklin Haught lecture on April 29, 1993. In terms of teaching, advanced graduate student Allen Butt received campus-wide recognition as recipient of the "UNM GSA Outstanding Student Teacher Award." Michael Markham, one of our most productive student researchers, received Honorable Mention in the competition for the "UNM GSA Outstanding Researcher Award."

Fourteen graduate students have accepted offers of admission to our Ph.D. program for Fall 1993 (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 (5 out of 14). Although this attempt to maintain a balance in our program
can be easily justified, we must assess the success of our experimental students to gain professional employment following graduation. It is not enough to merely admit good students, we must be able to reasonably ensure that our efforts result in the influence of the discipline.

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. 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 3 of 14 (21%) of our incoming class are minority, and another is an international student.

D. FACULTY. At the beginning of the academic year the department had 23 voting faculty (please see Appendix B for other faculty statistics and Appendix I for a summary of faculty research interests). Most importantly, we were successful in hiring Kathy Stansbury for our vacant developmental position. We were fortunate indeed to have made such an excellent hire. In addition, the department was honored by the presence of Visiting Professor Edith Neimark during the Fall semester. Her involvement added a wealth of psychological information and more than a touch of grace. Her views of psychology and our department were very valuable to me. Professor Jan Smedslund from the University of Oslo spent the summer with us in a visiting professor capacity. He met with faculty and gave two presentations on the nature of psychological phenomena and training in clinical psychology. He was a wonderful addition.
We will need the continuing support of the College next year as we strive to hire replacements for Dean Gordon and the upcoming retirement of Distinguished Professor Henry Ellis. The expectation is that these advanced positions will be in the area of cognitive psychology.

During the fall, the department recommended the promotion to full professor of Michael Dougher, the promotion and tenure of Steven Gangestad, and declined to recommend the promotion and tenure of Dr. Frank George. The Dean and Provost supported all three evaluations and recommendations.

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 1992-1993 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.

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. The report shows that the Clinic provided over 1600 hours and involved 45 graduate students in the provision of those services.

In addition, for the fifth consecutive year, the Clinic was able to operate in the financial black. This is a tribute to the able and caring leadership of Dan Matthews and the support of his excellent staff. The Clinic report also shows that a number of physical improvements and renovations have been accomplished which support both the clinical service and research missions of the unit. It is also noteworthy that Dr. Matthews is in the process of negotiating a major contract with the New Mexico Department of Corrections. If achieved, that contract will provide significant financial support, important clinical experience, and essential aid to the New Mexico community.

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 only one change in its staff personnel. Specifically, Mary Hungate left the department and Nancy Shea was hired to replace her. Otherwise, Robyn Santillanes remained as our Academic Support Aide II and Candace Blashak continued as the Chair's Administrative Assistant and as office manager. Lois Kennedy completed her third year as our student advisor, Margaret Ackley remained as the Department Secretary, and Dee Ann Quintana took over as Project Coordinator for Grants. 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 fifth 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. 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.

My year as Acting Chair has been difficult and in many ways fulfilling. There were many moments of stress, excitement, confusion and clarity. I consider the work of the newly formed Tenure and Promotion Committee (Ellis, Hodge, Johnson, and Roll) which was chaired by Peder Johnson to be particularly valuable and important. They showed the kind of careful and deliberate study and evaluation required by their task and their individual sense of integrity. The staff provided me help, support, and emergency rescue. Candace never forgot anything and was willing to stay late and struggle with my confusing dictations. Margaret showed remarkable organizational creativity, and Robyn’s competence was of course, obvious. Lois showed an enormous command of undergraduate and graduate requirements, and her ability to deal with complex files, a line of students, and a constantly ringing phone repeatedly amazed me.

There were others who provided me important counsel at difficult times. Peder Johnson, Mike Richard, Bill Gordon, Michael Dougher, Lynette Cofer, Harold Delaney, and Sam Roll are only some of them. I thank you.

The department faces important decisions ahead. What directions do we take as we build on and evolve from the Logan and Ellis era? How shall we define ourselves and alter our mission? Shall we continue to emphasize graduate education or seek more of an undergraduate/graduate balance? I am convinced that the resolution of these and other issues resides in a continued elaboration of the concept of "shared governance" put forward some four years ago. The creativity of this faculty is enormous and should be continually empowered by the expectations of shared responsibility.
## Undergraduate Studies

1. **Curriculum**  
   Faculty (Chair in caps): **DELANEY**, Johnson, Roll

2. **Honors**  
   Faculty: **DELANEY**, Amrhein, Logan

3. **Psi Chi**  
   Faculty: **GANGESTAD**

## Graduate Affairs

4. **Admissions**  
   Faculty: **GANGESTAD**, Arroyo Cofer, Delaney, Sutherland, Waldron, Yeo

5. **Financial Aid**  
   Faculty: **GOLDSMITH**, Agostinelli, Ciesielski, Hodge, Sutherland, Waldron

6. **Curriculum**  
   Faculty: **DOUGHER**, Johnson, Roll

## Departmental Affairs

7. **Promotions/Tenure**  
   Faculty: **JOHNSON**, Ellis, Roll

8. **Human Subjects**  
   Faculty: **JOHNSON**, Gangestad, Goldsmith

9. **Animal Facilities & Use**  
   Faculty: **RICHARD**, Gluck, Hodge, Sutherland

10. **Salary**  
    Faculty: **DELANEY**, Dougher, Johnson, Roll

11. **Methodology/Computer Use**  
    Faculty: **HARRIS**, Amrhein, Delaney, Goldsmith

12. **Commencement**  
    Faculty: **AGOSTINELLI**, Arroyo, Gluck

## Area Committees

13. **Clinical**  
    Faculty: **ROLL**, Arroyo, Ciesielski, Dougher, Gangestad, Gluck, Miller, Padilla, Ruebush, Smith, Waldron, Yeo

14. **Cognitive/Learning**  
    Faculty: **ELLIS**, Amrhein, Delaney, Goldsmith, Johnson

15. **Developmental/Personality/Social**  
    Faculty: **COFER**, Agostinelli, Gluck, Harris, Roll, Ruebush

16. **Psychobiology**  
    Faculty: **HODGE**, Ciesielski, George, Sutherland, Yeo

17. **Quantitative/Methodology**  
    Faculty: **DELANEY**, Amrhein, Gangestad, Goldsmith, Harris

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16
### DEPARTMENT OF PSYCHOLOGY SUMMARY STATISTICS

#### Faculty Information

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#### Undergraduate Education

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#### Graduate Education

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#### General Information

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* 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.
William Miller - Principal Investigator

NIH Research Scientist Award, NIAAA; $78,527 - 8/92-7/93

Alcohol/Drug Faculty Development Program, NIAAA; $149,938 - 9/92-8/93
(Drs. Waldron, Smith, Arroyo & Padilla)

Alcohol & Drug Abuse Prevention and Treatment Evaluation, NIAAA,
Predoctoral National Research Service Award (NRSA); $95,226 - 7/92-6/93

Strategies for Matching Clients to Treatment, NIAAA, Project MATCH;
$431,395 - 9/92-

Characterizing Relapse: Alternative Approaches, NIAAA, Treatment
Research Validation and Extension Program; $211,048 - 9/92-10/93

Tim Goldsmith - Principal Investigator

Devising a Method for Developing and Validating Classroom Knowledge,
Office of Naval Research; $242,088 - 1/91-12/93

Examining Cognitive Structures of Air Force Fighter Pilots, University
of Dayton (USAF); $25,440 - 1/92-6/93

Frank George - Principal Investigator

A Randomized Trial of Sertraline in Alcoholism Treatment, NIAAA;
$285,688 - 9/92-8/93

Pharmacogenetics: Ethanol reinforcement and effects, NIAAA; $133,477 -
7/92-8/93

Jane Smith - Principal Investigator

Community Reinforcement Approach with the Homeless, NIAAA; $198,342 -
2/92-1/93

Holly Waldron - Principal Investigator

Alcohol, Adolescents, and Family Interaction, NIAAA; $189,944 -
8/92-7/93

Dennis Feeney - Principal Investigator

Head Trauma Study, US Army/Ft. Detrick; $247,000 - 1/92-1/93
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Total SCH: 13,461
### APPENDIX D

**PART-TIME FACULTY HIRED DURING FY 1992 - 1993**

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<tr>
<th>NAME</th>
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<td><strong>Fall, 1992</strong></td>
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<tr>
<td>Michael Hillard, Ph.D.</td>
<td>Psychology 105-002</td>
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<td>Kermit Parker, Ph.D.</td>
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<td>Robin Jacobvitz, Ph.D.</td>
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<td>Robin Jacobvitz, Ph.D.</td>
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<td>Robert Zussman, Ph.D.</td>
<td>&quot; 331-001</td>
<td>Psychology of Personality</td>
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<td>Carolina Yahne, Ph.D.</td>
<td>&quot; 332-002</td>
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<td>Therese Goetz, Ph.D.</td>
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<td>Psychology of Women</td>
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<td>Almaron Wilder, Ph.D.</td>
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<td>Stephen Rokicki, Ph.D.</td>
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<tr>
<td>Jeff Lewine, Ph.D.</td>
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<td>Michael Hillard, Ph.D.</td>
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<td>Frank Logan, Ph.D.</td>
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<td>Senior Honors Seminar</td>
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### APPENDIX E

#### SENIOR HONORS THESSES

Department of Psychology  
AY 1992 - 1993

<table>
<thead>
<tr>
<th>Student</th>
<th>Thesis</th>
<th>Faculty Sponsor</th>
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<td>Archibeque, Margarita&lt;sup&gt;c&lt;/sup&gt;</td>
<td>What is a Relapse? Definitions and Predictors of Alcoholism Outcomes</td>
<td>Bill Miller</td>
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<td>Bucklin, Edward&lt;sup&gt;b&lt;/sup&gt;</td>
<td>The Effect of Punishing on the Punisher's Discrimination of Controlling Variables</td>
<td>Mike Dougher</td>
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<td>Carley, Jaimie&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Perceived Short-term and Long-term Attraction in Relation to Behavior Characteristics Mate Selection</td>
<td>Steve Gangestad</td>
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<td>Craig, Davin&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Contextual Control of Mood on Equivalence Classes</td>
<td>Mike Dougher</td>
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<td>Dickinson, Lauri&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Relationship between Ethanol Self-administration and Locomotor Stimulation in FAST and SLOW Mice</td>
<td>Frank George</td>
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<td>Fisher, Andrew&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Evaluations of a Stressor on State-Trait Anxiety and Draw-a-Person Test</td>
<td>Sam Roll</td>
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<td>Gonzales, Debbie&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Coping Styles, Health Beliefs and Smoking Behaviors</td>
<td>Celia Michael &amp; Frank George</td>
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<td>Rabie, Jennifer&lt;sup&gt;c&lt;/sup&gt;</td>
<td>The Transfer of Function Through Equivalence Relations</td>
<td>Mike Dougher</td>
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<td>Romero, Julianne&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Developmental Trends in Animism and Anthropomorphism</td>
<td>John Gluck</td>
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<tr>
<td>Shackelford, Todd&lt;sup&gt;a&lt;/sup&gt;,&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Perception of Death-relevant Ambiguous Stimuli as a Function of Death Threat</td>
<td>Gina Agostinelli</td>
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<td>Speed, Ann&lt;sup&gt;b&lt;/sup&gt;</td>
<td>What are Popular People Really Like?</td>
<td>Steve Gangestad</td>
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<sup>a</sup> Summa Cum Laude  
<sup>b</sup> Magna Cum Laude  
<sup>c</sup> Cum Laude  
<sup>*</sup> Recipient of both "Best Honors Thesis" and "Outstanding Honors Student" Awards
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<th>Name</th>
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<td>Patricia Ashbrook</td>
<td>A Methodology to Assess the Cognitive Distortions of Pedophiles</td>
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<td>Motivational Intervention with Alcohol Outpatients</td>
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<td>Lynn Vranes Bulger</td>
<td>A Phenomenological Investigation of Process Interventions During An Ongoing Psychotherapy Session</td>
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<td>Alexandra P. Diddams</td>
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<td>Paul N. DiTullio</td>
<td>Perceptual Integrity and Stimulus Sampling</td>
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<td>Relating Underlying Values to Methods and Processes in Cognitive-Behavioral and Psychodynamic Therapy: Commonalities and Differences</td>
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<td>Mark S. Smasal</td>
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<td>Ivan Smason</td>
<td>Social Motive, Other's Strategy, and Incentive Magnitude: Effects On Choice Behavior in a Prisoner's Dilemma</td>
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### APPENDIX G

**MASTERS OF SCIENCE DEGREES AWARDED**

**Department of Psychology**  
**AY 1992 - 1993**

<table>
<thead>
<tr>
<th>NAME</th>
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<td>Thomas Barbera</td>
<td>Resistance As A Process Measure In Family Therapy With Juvenile Delinquents</td>
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<td>Jane M. Bardal</td>
<td>Need For Cognition As A Moderator Of Overoptimism For Future Life Events</td>
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<td>Thomas Paul</td>
<td>Treating The Concerned Family Members and Friends of Problem Drinkers: A Clinical Trial of Reinforcement Training</td>
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<td>Don Miguel</td>
<td>Effects of Social Comparison Information On Task Persistence Among Depressed and Nondepressed Individuals</td>
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<td>Stephen T. Hahn</td>
<td>&quot;Fittin In&quot; America's Value System: The Relationship Between Acculturation and Body Dissatisfaction</td>
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<td>College Students Idolatry of Favorite Musicians Related To Hope-Faith Measured As An Ego-Strength</td>
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<td>John Harlow</td>
<td>The Cough Suppressant, Dextromethorphan, Evokes Seizures In Rats</td>
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<td>Maternal Influences On Early Childhood Competence</td>
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<td>Extinction of A Within-Compound Association Within and Outside The Learning Context</td>
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APPENDIX I

THE FACULTY
DEPARTMENT OF PSYCHOLOGY
UNIVERSITY OF NEW MEXICO

AGOSTINELLI, GINA

Assistant Professor. Ph.D. Indiana University, 1988.
Social psychology, social cognition. 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, and facial expressions associated with confusion. Also interested in motivational biases present in social perception (e.g., false consensus effect), especially as they relate to alcohol use.

AMRHEIN, PAUL C.

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 production tasks (i.e., drawing, writing, speaking). Current aging research concerns age- and dementia-based changes in cognitive processes that pertain to the preparation and execution of movements, and picture-word processing behavior.

ARROYO, JUDITH A.

Assistant Professor. Ph.D. University of California, Los Angeles, 1989.
Clinical Psychology. Primary interests are in minority mental health, and community psychology. Current research involves measurement of acculturation among New Mexican Hispanics; developing an orthogonal model of adaptation to Mexican and non-Hispanic white culture; and the mental health implications of this model for alcoholism, violence in the family, gangs, and eating disorders.

CIESIELSKI, KRISTINA T.

Cognitive/clinical neuropsychology; brain event-related potentials; brain imaging; 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, LYNNETTE FRIEDRICH

Professor. Ph.D. Cornell University, 1965. Developmental psychology, human circadian rhythmicity as a mediator of personality development and cognitive performance, social development and gender differences, mediation of television effects, analyses of theoretical and empirical approaches to applied developmental research and family public policy. Current research interests include human circadian rhythmicity and parent-child relations and school performance, media portrayals of youth and families, processing of TV news content and environmental issues.

DELANEY, HAROLD D.

Professor and Associate Chair for Undergraduate 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 in substantive areas include the psychology of religion, and individual differences in values and in cognition.

DOUGHER, MICHAEL J.

Associate Professor and Associate Chair for Graduate Education. 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.

FEENEY, DENNIS M.

Professor (and Professor of Physiology). Ph.D. University of California, Los Angeles, 1968. Behavioral neuroscience, 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 behavioral measurements. Our goal is to understand and enhance behavioral recovery after brain damage in humans, and determine what commonly prescribed drugs may slow behavioral recovery.

GANGSTAD, 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 Acting Chair. Ph.D. University of Wisconsin, 1971. Clinical psychology, moral and ethical development, human and animal interactions. My general interests in clinical psychology center on the nature of behavioral and value changes in psychotherapy and existential models of both short and longer-term psychotherapy. My focus in developmental psychology involves the nature of ethical thinking in both children and adults, and professional healthcare providers. Finally, my interests in human-animal interactions involve study of both developmental and cultural perspectives.

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 Acting Dean of the College of Arts & Sciences. 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.
HAALAND, KATHLEEN Y. (Primary appointment is outside Psychology Department.)

Associate Professor. Ph.D. University of Rochester, 1972.
Clinical and experimental neuropsychology. Motor deficits are a common outcome of brain damage (e.g., stroke, Parkinson's disease). My research program focuses upon understanding the different cognitive processes (e.g., motor programming; encoding, storage and retrieval of motor programs; scheduling movements) which produce complex motor deficits after damage to different areas of the brain. In our laboratory strong emphasis is placed on the integration of cognitive and neuropsychological approaches.

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. 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).

PADILIA, 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). 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, psychological reaction of "birth mothers" and sexual perversions.

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.

Associate Professor and Associate Chair for Clinical Training. Ph.D. State University of New York at Binghamton, 1985. Clinical psychology. Research interests: psychophysiological assessment, assessment and treatment of eating disorders (bulimia, obesity and anorexia), alcoholic homeless individuals, dual diagnosis, and implosive (flooding) therapy.

SUTHERLAND, ROBERT J.

Associate Professor. Ph.D. Dalhousie University, 1980 Behavioral neuroscience, neuropsychology, learning and memory. Primarily interested in exploring the relationship between brain and
mind, especially the anatomical and functional organization of memory and related cognitive processes. The research includes combinations of behavioral analyses, electrophysiological recording, neurotoxins, and neuropharmacological techniques. Other goals are to understand in detail the function of the hippocampal formation, the nature of amnesic symptoms in Alzheimer's disease, Korsakoff's Syndrome, epilepsy, cerebral trauma, and other disorders. We also explore potential factors related to 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, genetic and environmental factors influencing brain development, and 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**

**1992 - 1993**

<table>
<thead>
<tr>
<th>Name and Address</th>
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<th>Professional Title</th>
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<tr>
<td>Julia C. Barker, M.A.</td>
<td>883-0010</td>
<td>Clinical Associate</td>
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<td>4600-A Montgomery, NE</td>
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<td>Patricia Boham, Ph.D.</td>
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<td>Charles Cofer, Ph.D.</td>
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<td>Phillip W. Day, D.V.M.</td>
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<td>Director, Animal Resource Facility</td>
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<td>Peter DiVasto, Ph.D.</td>
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<td>Family Practice/Psychiatry 307</td>
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<td>Charles H. Elliott</td>
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<td>Roger Enfield, Ph.D.</td>
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<td>Clara Farah, Ph.D.</td>
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<td>Al Fedoravicius, Ph.D.</td>
<td>265-1711 ext. 2425</td>
<td>Adjunct Assistant Professor</td>
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<td>Behavioral Medicine Veterans Administration Medical Center 2100 Ridgecrest Drive SE Albuquerque, NM 87108</td>
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<td>William E. Foote, Ph.D.</td>
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<td>1925 Juan Tabo NE Suite B Albuquerque, NM 87112</td>
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<td>Kathleen Haaland, Ph.D.</td>
<td>265-1711 ext. 2440</td>
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<td>Reid Hester, Ph.D.</td>
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<td>Ben Klein, Ph.D.</td>
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<td>Jeffrey Lewine, Ph.D.</td>
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<td>Edward Maclin, Ph.D.</td>
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<td>Ron McGowan, Ph.D.</td>
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<td>Charlene McIver, Ph.D.</td>
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<td>Ruth Shore Mondlick, Ph.D.</td>
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<td>David Mumby, Ph.D.</td>
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<tr>
<td>Steve Rokicki, Ph.D.</td>
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<td>Elizabeth Roll, Ph.D.</td>
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<td>Doris Sahd, Ph.D.</td>
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<td>Joseph Schenkel, Ph.D.</td>
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<td>Chief, Psychology Service (116B)</td>
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<td>Professor</td>
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<td>Will Scofield, Ph.D.</td>
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<td>Rene Silleroy, Ph.D.</td>
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<td>Frank Spring, Ph.D.</td>
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<td>Jerry Sue Thompson, Ph.D.</td>
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</table>
| Maryann Thompson, Ph.D.  
8100 Constitution Pl. NE  
Albuquerque, NM 87110 | 292-3776 | Clinical Associate                |
| Scott Tonigan, Ph.D.  
4800 Royene NE  
Albuquerque, NM 87110 | 768-0266 | Research Assistant Professor      |
| 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  
(Secondary appointment) |
| Carolina Yahne, Ph.D.  
791 Encino Pl. NE B-10  
Albuquerque, NM 87102 | 242-6705 | Clinical Associate                |
### APPENDIX K

**DEPARTMENT OF PSYCHOLOGY COLLOQUIA**

**AY 1992 - 1993**

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<th>Colloquium Presented By</th>
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<td>Dr. Anne Treisman</td>
<td>&quot;Quad L lecture - &quot;Visual Attention and the Perception of Features and Objects&quot;</td>
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<tr>
<td>Department of Psychology</td>
<td>October 30, 1992</td>
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<tr>
<td>University of California, Berkeley</td>
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<tr>
<td>Dr. Richard Harris</td>
<td>&quot;Faculty Scholars Program Lecture - &quot;Neither Totally Intuitive nor Fully Formal Be: Striking the Right Balance in Research&quot;</td>
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<tr>
<td>Department of Psychology</td>
<td>November 6, 1992</td>
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<td>University of New Mexico</td>
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<tr>
<td>Dr. Kathy Stansbury</td>
<td>&quot;Behavioral Neuroendocrine Regulation of Emotion in Normal and at Risk Preschool Children&quot;</td>
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<td>Department of Psychology</td>
<td>February 18, 1993</td>
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<td>Scripps College</td>
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<tr>
<td>Dr. Harvey Keselman</td>
<td>&quot;Stepwise Multiple Comparison Procedures for Repeated Measures&quot;</td>
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<td>Department of Psychology</td>
<td>March 1, 1993</td>
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<td>University of Manitoba</td>
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<td>Winnipeg, Manitoba, Canada</td>
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<tr>
<td>Dr. Jan Smedslund</td>
<td>&quot;What Must Students Learn in Order to Become Competent Psychologists?&quot;</td>
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<tr>
<td>Visiting Professor</td>
<td>April 23, 1993</td>
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<tr>
<td>Department of Psychology</td>
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<td>University of Oslo</td>
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<td>Oslo, Norway</td>
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<tr>
<td>Dr. Steven Kubacki</td>
<td>&quot;Benjamin Haught Lecture - &quot;Relating Underlying Values to Methods and Processes in Cognitive Behavioral and Psychodynamic Therapy: Commonalities and Differences&quot;</td>
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<td>Department of Psychology</td>
<td>April 29, 1993</td>
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<td>University of Wyoming</td>
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<tr>
<td>Dr. Gordon Hodge</td>
<td>&quot;Southwestern Undergraduate Research Conference -&quot;</td>
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<tr>
<td>Faculty Advisor</td>
<td>May 7, 1993</td>
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<td>Department of Psychology</td>
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<td>University of New Mexico</td>
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<tr>
<td>Dr. Jan Smedslund</td>
<td>&quot;Inspecting the Bare Bottom of Scientific Psychology&quot;</td>
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<tr>
<td>Visiting Professor</td>
<td>June 17, 1993</td>
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<td>Department of Psychology</td>
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<td>University of Oslo</td>
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APPENDIX L

ANNUAL REPORT

DEPARTMENT OF PSYCHOLOGY CLINIC
1992-1993

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 1600 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, competent 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 is not universal. Increasingly over the past four years, the Clinic has had more involvement in family, child and couples therapy. This has been due to the 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 practical experiences 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 women's therapy group conducted by Birgitta Gabel and Tracy Simpson and supervised by Jane Einhorn has continued. Beth Melka and Dan Matthews began a group of men and women which met for several sessions but did not continue. This year, in response to the waiting list but also because of the demands of treatment in the current healthcare environment, we will be discussing shorter-term treatment and time-limited models among supervisors and student-clinicians.

The contract with the Metropolitan Court Probation Department for dispositional assessments was carried out this year by Jill Nelson under Dan Matthews' supervision. As the year ends, we have begun to do assessments for the New Mexico Youth Diagnostic and Development Center, an agency of the Corrections Department. Karen Augustson, Suzanna Chang, Laura Little and Paul Loflin have each taken some assessments on a case-by-case basis. Their work has helped us develop the experience with this setting that should make it possible to develop an on-going contract with YDCC.

Four of our student-clinicians, Karen Augustson, Tom Dominguez, John Harlow and Sheryl Kern-Jones have begun the second year in the assessment and group or individual 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 Beth Roth, M.A. of the Court Clinic and Dan Matthews. In the coming year, Rick Perkins and Anne Waldorf will replace John and Sheryl on this project.

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); Lucianne Hackbert, work-study student; and Jill Nelson, evaluator for the Metropolitan Court Probation Division.

Wanda's reorganization of the Clinic continues to provide a steady foundation for our work here. 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 efforts in a sometimes stressful work environment.

Luci is a first-year clinical student whose funding was provided through the Clinic for an existing position that may continue to be filled by otherwise unfunded students. Having a clinical student in this position has been mutually beneficial, in that Luci 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.
Jill has previously filled the Metro Court Probation position. She was thus able to work more independently and produced work products of high and steadily improving quality. She also was able to assist with the evaluation of Campus Police candidates, relieving Dr. Matthews of some time on this task. Her work over the years has been excellent, and her competence, good nature and humor will be missed as she completes her internship year.

I (Dan Matthews) am close to completing my fifth year as Clinic Director. I continue to enjoy the Interviewing and Case Formulation practical for first year students, and group as well as individual supervision of student-clinicians. I am increasingly involved in work with other agencies through contracts such as those with Metropolitan Probation and the Court Clinic. Similar contracts with YDSC and the Western New Mexico Correctional Facility in Grants, NM are in the works.

This is the time each year that we experience the loss of our "senior staff"—those who have graduated or are leaving for internship. Beth Melka, Jill Nelson, Janice Brown and Pauline Sawyers have terminated or transferred their Clinic cases in preparation for internship. Their work in the Clinic and contact in supervision will be missed. Beth and Jill may be singled out for an additional comment and special thanks. Both spent more time in the Clinic than the average student due to paid duties or interest, and both served as resources for other students and to Wanda and me.

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 testing materials and improvements of the building and equipment.

Physical Setting

Owing to the remodeling when the Clinic moved to its present location over 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 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 Holly Waldron and Bill Miller, we have improved our observation and videotaping capabilities this year. Dr. Waldron is conducting family therapy research at the Clinic, requiring the construction of an observation room. In addition, her videotaping equipment—twin cameras and equipment to merge their images on tape—has been available for more general Clinic use. Dr. Miller included video equipment in a recent grant on supervisor training in alcohol and substance abuse.
These funds enabled us to purchase equipment which will allow us to videotape in four of our five rooms. It is our intent to permanently leave a fifth room clear of video equipment for those therapists and supervisors who adhere to the notion that recording is an intrusion on the therapeutic space.

Plans of Clinic improvement this next year include better sound proofing through replacement of some interior doors and the addition of carpeting and sound-dampening panels. Utilization of more of the basement space for clinical use was again investigated, but it remains an unwieldy task to accomplish due primarily to fire regulations. Space is increasingly tight at the Clinic, but in the near future it will have to be handled through scheduling rather than expansion.

Research

Almost continuously over the past two years, students and faculty are using the Clinic facilities for their research. Dr. Waldron's family therapy research has utilized Clinic rooms and also enhanced our space, as mentioned above. Jill Nelson's dissertation research on alcohol effects was conducted at the Clinic on weekends. Russ Walsh and Nancy Handmaker completed research that was conducted at the Clinic in previous years.

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

As the year ends and begins, Jane Smith is taking over responsibilities as Associate Chair for Clinical Training from Sam Roll, and Harold Delaney takes over as Acting Chair from Dr. Gluck. Dr. Roll was one of the first to welcome me when I joined the staff five years ago and has been a welcome supporter and advisor for me and the Clinic before and during his tenure as Associate Chair. Dr. Gluck was Faculty Director of the Clinic when I was hired, and has become a valued friend as well as supportive colleague. I hope for a return to our previous contacts in both cases; I won't then have to say that I'll miss them. Dr. Smith has helped the Clinic by seeing clients here for many years, and so is knowledgeable about our operations. I have begun to work with both her and Dr. Delaney in maintaining our working atmosphere and moving beyond to new projects and directions.

The biggest projects in the works are funding possibilities for student-clinicians in two correctional facilities. The Youth Diagnostic and Development Center in Albuquerque and the Western New Mexico Correctional Facility at Grants both need pre-sentence evaluations to be conducted and it is likely that we will be involved in providing part of this service through contracts. Another assessment contract with a local psychiatric hospital is in beginning phases as well. We hope that these possibilities become reality, providing excellent experiences for students as well as additional sources of funding.

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
1992 - 1993

ADMINISTRATIVE SUPPORT STAFF:

Academic Support Aide II: 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.

Program Specialist 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 comprehensive examinations and thesis and dissertation
defenses. 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.

Administrative Assistant: Candace Blashak
Works in support of Department Chair. Responsibilities include front
office management; supervision of office clerical and student
employees. Responsible for preparation of a variety of administrative
and instructional documents. Responsible for coordinating the
department convocation activities, departmental receptions, and other
special events.

Editorial Assistant II: Nancy Shea
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 for department faculty.
Responsible for updating data and submitting department annual report,
publication of department newsletter, and supervision of student
employee. Assists Administrative Assistant with special departmental
activities.
Department Secretary: Margaret Ackley
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.

Project Coordinator for Grants: Dee Ann Quintana
Coordinates all phases of extramural funding requests. Examines all proposals for accuracy. Trains and supervises project personnel. Monitors and reports on direct and indirect costs associated with research grants to the Department. Department liaison to the Office of Research Administration.

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. Works under general supervision of Department Chair and Administrative Assistant. Advises chair and department faculty regarding purchase, installation and maintenance of electronic equipment.

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.

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 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 Academic Support Aide. 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.
I am pleased to submit this report covering this past year as acting chair of Sociology.

The fall semester began on a sad note when one of the faculty members, Assistant Professor Miguel Korzeniewicz, was seriously injured in an automobile accident. He suffered a severing of the spinal cord at the lower neck causing permanent paralysis from the neck down. Miguel began immediate rehabilitation at St. Joseph's Rehabilitation Center. While Miguel was in therapy, Dr. Roberto Patricio Korzeniewicz took leave-of-absence from Albion College, Albion, Michigan, to teach his brother's Spring 1993 courses for the department. After his release from the Rehabilitation Center, Miguel is now able to maneuver successfully with a computerized wheelchair and will be teaching two classes for the department during Fall 1993 semester.

A. Significant Achievements

Opening the Fall 1992 semester, the department faculty scheduled a half-day retreat in Old Town's Maria Teresa Restaurant on Friday, August 28, 1992. The main focus of this retreat was to define and
discuss issues of immediate concern to the department and which could be effectively addressed during the 1992-93 year, and to translate the discussions into clearly defined tasks for the 1992-93 standing committees. Interim Dean of Arts & Sciences Bill Gordon was guest speaker and the faculty members were stimulated and encouraged by his comments. As evidenced by this Annual Report, the faculty continued to move forward successfully during the year using some of the contributions submitted on improving the quality of our graduate and undergraduate programs.

On July 1, 1992, the Institute for Criminal Justice Studies (ICJS) became the Institute for Social Research (ISR) and merged with the Sociology Department. ICJS was created in 1987 as a freestanding research center specializing in Criminal Justice and Criminology. The new ISR, now an administrative division of the department, will continue to conduct research in criminal justice and criminology but will now broaden its mission to include basic and applied research in sociology and related disciplines. During its five year existence, the ICJS attracted over one million dollars in grants from federal, state, and local governments, and also developed close links with criminal justice agencies such as the Bureau of Justice Statistics, the New Mexico Department of Corrections, and the New Mexico Youth Authority. ICJS also worked closely with other units at UNM, including the Institute for Public Policy and the Department of Pediatrics. ISR is
located in Onate Hall. The Annual Report of the ISR is printed in Section P. of this report.

Beginning 1993, the department coordinated a multidisciplinary program leading to a Bachelor of Arts in Criminology, and as a result, starting June 1993, students will major in Criminology rather than Criminal Justice. The new program is designed to emphasize the department's strengths in Criminology, and to offer better academic training for students. Students can also elect to Minor in Criminology.

The dates of August 6 and 7, 1992, marked the Fifth Annual Summer Conference for Criminal Justice Professions held at Mitchell Hall 101. This well-attended conference was sponsored by the UNM-TVI Institute for Criminal Justice Studies. Four morning and afternoon workshops provided educational and informative topics beneficial to those professionals involved in any aspect of criminal justice.

The Sociology Convocation of May 15, was an occasion that the families of the 1993 graduates will remember with happiness because there were about 700 in attendance, with 144 graduates—33 with Sociology degrees and 111 with Criminal Justice and Criminology degrees. Departmental Honors were earned by Tim Gardner, Sociology Valedictorian, and Marie Angela Clevenger, Sociology Salutatorian; Robert L. Wilson, Criminal Justice/Criminology Valedictorian, and Ben W. Rogers, Criminal
Justice/Criminology Salutatorian. Master's Degrees were earned by Paul Stein and Cheryl Temple, and Ph.D.'s were earned by Jeremy Brown, Russell Long, and Layne McAdoo. Dr. Susan Tiano presented the Sociology Outstanding Alumnus Award to Dr. Maxine Baca Zinn. Dr. Beverly Burris, Acting Chair, gave the Convocation Address and the Opening Welcome was by Undergraduate Chair, Dr. Chris Birkbeck.

The second annual Graduate Convocation was Friday, August 21, 1992, at Popejoy Hall. The principal speaker was Dr. Walter Massey, Director of the National Science Foundation.

Sunday, August 23, 1992, was the date of the University's New Student Convocation at the Student Union Ballroom. Many new students were welcomed by faculty and returning students at the reception.

October 2, 1992, 2:00 to 7:00 p.m., marked the beginning-of-the-year Sociology department cookout at San Gabriel Park. Faculty and staff contributed to a convivial atmosphere with guests, families, and friends enjoying various activities which included volleyball, walking, visiting, and feasting of course!

Friday, October 30, 1992, will go down in the annals of Sociology because it was the Department's Second FREE LUNCH! Hosted by the Undergraduate Sociology Students Association for all Sociology
undergraduate students, faculty, and staff, it was a nice beginning for the semester!

Fall 1992 heralded the second edition of the Sociology Newsletter "NEWS & NOTES" which included academic happenings and work interests of various contributing Sociology faculty plus some University news. Of special interest to alumni and others was the article, written by Emeritus Professor Charles Woodhouse, focusing on the birth of the Sociology Department at UNM. This second issue was received with much the same enthusiasm as the 1991 initial issue, and more pledges were received. As a result, the department purchased a "Friends of Sociology" plaque designed with name plates for contributors giving $100 or more. The plaque is now mounted in the glass case of the Sociology building’s west entrance lobby.

Dr. Philip May planned and implemented the first Medical School curriculum on Fetal Alcohol Syndrome, UNM, October-November, 1992, with J. M. Aase, MD; William Smith, MD; Fred Coler, and Patti Munter.

The First Criminology Student Association meeting was Thursday, March 25, 1993, at 5:30 in the SUB. FBI Agent Matt Perez gave students career information among other interesting facts. The meeting was sponsored by the Criminology Student Association.
Dr. Dodd Bogart, advisor for the Undergraduate Sociology Student
Association, arranged the session "How To Apply To Graduate School."
This USSA sponsored event was Friday, April 23, 1993, in the Sociology
Commons, and Dr. Robert Fiala, Chair of the Sociology Graduate
Committee, was the Guest Resource Person. Sociology/Criminology/Social
Welfare Major and Minors were welcomed.

Friday, May 21, 1993, marked the end-of-the-year party for all faculty
and graduate students held at the home of Dr. Miguel Korzeniewicz.
Dr. Fiala's son, Corey, played guitar and sang with some of the group
accompanying him. The party was a relaxing and pleasant diversion
creating an appropriate ending to a busy and productive year.

Faculty Publications:
Dr. Chris Birkbeck edited CRIME AND SOCIETY: AN INTRODUCTION TO
This set of readings is designed for the new Crime and Society course,
Sociology 205.

Dr. Beverly Burris published her book TECHNOCRACY AT WORK, Albany, NY:

F. Borgatta and Marie L. Borgatta (eds.), Encyclopedia of Sociology,


Dr. Laurence Ross' book, *CONFRONTING DRUNK DRIVING: SOCIAL POLICY FOR SAVING LIVES*, Yale University Press, 1992, was critiqued, and he responded at a "Meet the Author" session at the Transportation Research Board (National Academy of Sciences) meeting on January 12, 1993, in Washington, D.C.

B. Graduate Program

The graduate program in Sociology continues to make quite substantial progress with a record number of new admissions, 19 for Fall 1992 and 2 for Spring 1993. The department awarded both Ph.D. and Master's degrees to the following students:

Jeremy Brown completed his dissertation for the Ph.D. and has been teaching part time in the department while seeking full-time employment.

Russell Long completed his dissertation for the Ph.D. and was hired on tenure track as assistant professor at Delta State University, Cleveland, MS.

Layne McAdoo completed her dissertation for the Ph.D. and has been teaching part time for the department and part time at TVI.

Paul Stein completed requirements for the Master's Degree and is seeking employment in the criminal justice field.

Cheryl Temple Thompson completed requirements for the Master's Degree and is employed as a youth care worker by Rising Sun, a New Day Shelters program.

The department continues to emphasize its obligations in both quality enhancement and quantity production in hiring graduate assistants who have completed the Master's Degree. The department will award 13 graduate assistantship positions for Fall 1993.
The first annual graduate student conference (two sessions) was held in April, 1993, with the first session focusing on gender issues and alienation. For Session I on April 9, the following graduate students gave these presentations: Sandy Emory--"Women in Crime"; Kim Vesper--"Los Pasos Women"; Robbin Davis--"Lobbying and Political Decision Making"; Rebel Aitcheson--"Alienation and Anomie"; and Leo Griego--"Liberation Theology."

The second session on April 16 was more diverse, moving from the analysis of language to the international division of labor in a postindustrial/postmodern world. The following graduate students gave these presentations at Session II: Kathy Daily--"Sociology of Language"; Adam Aguirre--"Institutionalization in Myth and Ceremony in the Criminal Justice System"; Cliff McNary--"The Effect of Group Dynamics on Jury Outcomes"; Janine Fitzgerald--"Women in Development Programs in the Peace Corps: The Case of Guatemala"; and Victoria Carty--"Nike in the Postindustrial/Postmodern World."

C. Appointments

Dr. Keiko Nakao joined the department as a full-time Associate Professor in Fall 1992. She is from the University of Southern California, Los Angeles, and her appointment filled the line vacated by Professor Peter Evans. Professor Nakao will be teaching primarily in the methods area.
Dr. John M. Roberts, Jr., was hired as a full-time Assistant Professor beginning Fall 1993. Dr. Roberts obtained his Ph.D. from Cornell. Previous to his UNM appointment, he was a Post-doctoral Fellow at the Institute for Mathematical Behavioral Sciences at University of California, Irvine. Dr. Roberts will be teaching sociological methods and statistics, and his appointment fills the line vacated by Dr. Ed Gilliland.

Dr. Bert Useem was hired as a full-time Associate Professor beginning Fall 1993, and will be teaching in the criminal justice area. Dr. Useem obtained his Ph.D. from Brandeis University. Since 1990, he has been working as a Research Scientist at The Urban Research Institute at the University of Louisville in Kentucky. His appointment fills the line vacated by the resignation of Dr. Chris Birkbeck.

Dr. Robert Fiala served as associate chair for the Department in the Fall of 1992, and Spring/Summer 1993. Dr. Fiala has accepted the directorship of the Institute for Social Research (ISR) for the academic year 1993-94. This position is in addition to his teaching duties in the Department.

Dr. Susan Tiano will serve in the capacity of associate chair in the Department for the academic year, 1993-94.
D. Separations

Mrs. Madonna Watkins, Clerical Specialist V, resigned her position effective May 31, 1993. Madonna worked most effectively and efficiently for Sociology for 10 years, and will be missed by the Department. The faculty, staff, and graduate students wish her a long and happy retirement.

Dr. Christopher Birkbeck resigned his assistant professorship on tenure track, effective August 1, 1993, and he and his family will return to their home in Venezuela. The Department extends best wishes to them. Dr. Ed Gilliland, former Assistant Professor on tenure track, is currently working in research at ISR during Summer of 1993. The Department extends best wishes to him in his future career.

E. Leaves of Absence, Sabbaticals

Dr. Gary LaFree, Chair, was granted sabbatical for Fall 1992, Spring and Summer 1993. He was the recipient of a Guggenheim grant issued for the study of race and crime in post-war America.

Dr. Philip A. May, Director of CASAA (Center for Alcohol, Substance Abuse, and Addiction) South Campus, will begin his fourth year of leave from the Department for Fall 1993 and Spring 1994. Dr. May had completed his three-year term on leave from the Department and was asked to remain as Director of CASAA for another year.
The Sociology NMARC grant continues under Professor May's directorship, and this grant remains in the department.

Dr. Patrick McNamara's research leave for Spring 1993 was supported by a grant from the Lilly Endowment. His project concerns a five-denomination nationwide study of church giving, and is being administered through the Institute for Social Research (ISR). Sociology graduate student Kristen Johnson is serving as research assistant on the project.

F. Promotions

Dr. Felipe Gonzales was promoted to Associate Professor with tenure.

G. Distinguished Department Visitors

Professor Rose Weitz, Medical Sociologist from Arizona State University, and author of LIFE WITH AIDS, a qualitative study of AIDS patients, visited the department and talked informally with faculty and graduate students in the Sociology Commons on November 6, 1992. Her lecture: "Uncertainty and the Lives of People with Aids," was held at the College of Nursing 3:30-5:00. Both the College of Nursing and the Department of Sociology sponsored this event.

World systems scholar Dr. David Smith, from the University of California at Irvine, gave a formal presentation on "Changing Industrial Patterns in Korea." His talk was at 3:30 in the Sociology Commons on December 2, 1992. Dr. Tiano sponsored his visit.
Dr. Isabel Jaramillo visited the department and met with students and faculty on February 23, 1993, 3:30, Sociology Commons. Dr. Jaramillo was the personal secretary to Salvador Allende, the elected president of Chile (1970-1973), who was overthrown by the military in September 1973. Dr. Jaramillo lives in Cuba and has done research and published on InterAmerican Security Issues in the Hemisphere. Professor Nelson Valdes was the sponsor for this visit.

Mr. William Ross, Adjunct faculty member of the University of Washington, Seattle, and member of the consulting firm of Ross and Associates, Seattle, spoke on "Private Choices, Public Responsibilities: Future of Environmental Policy in the U.S." January 29, 1993, 3:30 in the Commons with a reception following. The following departments co-sponsored this event: Sociology, Geography, Anthropology, Economics, Water Resources, Community & Regional Planning, Natural Resources, and the Latin American Institute. Dr. Beverly Burris, Acting Chair, introduced Mr. Ross at the colloquium.

Dr. Maxine Baca Zinn, Professor of Sociology at Michigan State University was the recipient of the department's "Outstanding Alumnus" award and was speaker at the Departmental Commencement Ceremony on May 15, 1993.
Professor Mel van Elteren, a sociologist from Tilburg University, Holland, spoke on "Rock, Rap, and the Impact of American Mass Culture in Europe Recently" in the Sociology Commons, Monday, April 12, 1993, 12:00-01:30. Dr. Stephen Fox, Sociology Lecturer III, was the sponsor for this event.

H. Lectures, Presentations

Presentations by Dr. Tomas Atencio:


University of New England, "Quincentennial Lecture"

Boston College "Resolana, a Pathway to Knowledge".

Presentations by Dr. Chris Birkbeck:

President and organizer, three sessions on "Comparative Criminology and Latin America," annual meeting of the American Society of Criminology, New Orleans, LA. Papers presented on "Criminological Concepts Derived from Latin American Experience," and "White Collar Crime: Corruption in Public Works Projects in Peru" (with Ray Bromley).
Presentations by Dr. Beverly Burris:


Presentations by Dr. Richard Coughlin:


"Why Are We Always Reforming Welfare?" Keynote address to the annual Conference of the National Association of Human Services Quality Control Directors, Albuquerque, NM, September 28, 1992.

Presentations by Dr. Robert Fiala:


Presentations by Dr. Edward Gilliland:

"The Political Sources of Coup Attempts, 1945-1980" at the Social Science History Association, November 7, 1992, Chicago, IL.

Presentations by Dr. Felipe Gonzales:


Presentations by Dr. Jane Hood:


Dr. Hood: "Saying Goodbye to Superwoman," invited lecture for the annual meeting of Xerox Corporation's women employees, Chicago, IL, October 3, 1992.

Elected Chair of Society for Social Problems Committee on Committees 1992-94.
Presentations by Dr. Miguel Korzeniewicz:


Presentations by Dr. Gary LaFree:

Presented research papers at the American Sociological Association and the American Society of Criminology meetings; was Chair of Crime, Law and Deviance Section of ASA and President of Division of International Criminology ASC.

Delivered public addresses at the University of Colorado Law School, the Armand Hammer World College, American University, George Washington University, and the University of California at San Diego.

Presentations by Dr. Philip May:

"An Interdisciplinary, Comprehensive University-Based Center on Substance Abuse and Addictions: History and Programs," presented at the Association of Academic Health Centers annual meetings, Amelia Island, FL, October 1-3, 1992.


Presentations by Dr. Patrick McNamara:


Address to Campus Ministry representatives, UNM, "Religious Concerns of Today's College Students" October 8, 1992.

Presentations by Dr. Keiko Nakao:

Taught a Didactic Seminar and presented a research paper at the American Sociological Association Meeting, 1992.

Session Chair, Western Conference of the Association for Asian Studies, 1992.

Session Chair for the Pacific Sociological Association meetings, 1992.

Presentations by Dr. Laurence Ross:

In July, 1992, participated in Symposium on Research Needs in Alcohol and Transportation for the National Academy of Sciences, Irvine, CA.

Dr. Ross: Participated in Drinking and Driving Prevention Symposium, Automobile Club of Southern California, Ontario, CA, December, 1992, and delivered a paper on cultural constraints on policy.

Interviewed Fall 1992 on radio KQEO, and WILL in Urbana, IL, re drinking and driving.

Interviewed by the following newspapers, Fall 1992, on drinking and driving policy: Santa Fe Record, Albuquerque Tribune, Albuquerque Journal, Gallup Independent.

In March, 1993, presented a paper on sobriety checkpoints at the Life-Savers Conference, U.S. Department of Transportation, Denver, CO.

April 7, 1993, lectured on deterrence to a group organized by Los Alamos National Laboratories in Las Vegas, NV.

April 1993, spoke to TATSEA Conference of Texas A&M University at College Station on drinking and driving.

On April 29, 1993, addressed the conference, "Working Toward Healthier Communities," held by Community Partnership, Inc., and organized by the Las Vegas, New Mexico, Police Department.

On May 6, 1993, presented a paper on deterrence at the conference of the Substance Abuse Program Administrators Association in Las Vegas, NV.

On May 14, 1993, presented a review of research on drivers refusing to take breath tests at the National Highway Traffic Safety Administration in Washington, DC.
Presentations by Dr. Paul Steele:


"Developing Services for Child Sexual Abuse Cases in Rural Areas." Conference on Community Responses to Children’s Issues, Albuquerque, NM, August 14, 1992.


Presentations by Dr. Susan Tiano:


I. AWARDS

Dr. Irene I. Blea, Part-time Spring 1993 Instructor, received the "Jessie Bernard Wise Woman Award" from the Center for Women’s Policy Studies, Washington, DC. Dr. Blea is now Professor of Chicano Studies Department at California State University, Los Angeles.
Dr. Blea was the recipient of the "Outstanding Chicano Author" award from San Jose State University, San Jose, CA.

Dr. Richard Coughlin was the recipient of the Fulbright Senior Scholar Award for lecturing and research, University of Umea, Sweden, 1993-94.

Dr. Gary LaFree was the recipient of the Harry Frank Guggenheim Award, "Race and Crime in Postwar America."

Dr. Philip May was the recipient of a plaque entitled: "Recognition and Appreciation for Outstanding Contribution and Support in the Prevention of Fetal Alcohol Syndrome among American Indians and Alaska Natives, Indian Health Services, 1992.
Dr. May was awarded a Certificate of Appreciation from Disabilities Prevention Program, The State of New Mexico, 1992.

Dr. H. Laurence Ross' presentation at the Institute for Traffic Safety Management and Research panel the first week of February, 1993, was recognized by the New York State Governor's Traffic Safety Committee at their recent highway safety forum on alcohol advertising.
An appreciation letter was awarded to Dr. H. Laurence Ross for his presentation "Table Wine and Traffic Safety: Most Benefits, Fewest Problems" at the 1993 Annual Southwest Grape Growers and Wine Makers
This recognition was from the New Mexico State University Cooperative Extension Service, Las Cruces, NM, May 7, 1993.

Dr. Ross was awarded an appreciation letter for participating in the Highway Safety Forum on alcohol advertising from the Institute for Traffic Safety Management and Research (ITSMR), Albany, NY. This recognition was from the State of New York Department of Motor Vehicles of Albany, NY on February 26, 1993.

Dr. Ross received a recognition letter, May 3, 1993, for his address on "Detection vs. Deterrence" during the 10 CFR 707, Workplace Substance Abuse Programs at DOE Sites Conference, Los Alamos National Laboratory, Los Alamos, NM.

Dr. Patrick McNamara was one of the four UNM faculty members named as the 1992-93 recipients of the $2500 Burlington Resources Foundation Faculty Achievement Awards for excellence in teaching effectiveness.

Dr. McNamara was the recipient of an award given by the Association of Latino Scholars of Religion for "pioneering research in religion among Mexican-Americans." McNamara was honored at a ceremony held at Princeton University on April 17, 1993.

J. Invited Lectures Outside of the Continental United States
Dr. Tomas Atencio, Lecturer III, accepted an invitation, along with other national Hispanic leaders and Hispanic educators, and attended a
seminar in Israel January 24 to February 2, 1993. His trip was sponsored by the Annual Jewish Committee Project Interchange and covered mid-eastern multicultural and educational policies. Professor Atencio spoke on Sephardic Jewish Heritage.


Dr. Miguel Korzeniewicz conducted research in Porto Alegre, Brazil, Buenos Aires, Argentina, and interviewed exporting firms in the leather and shoe industries in July and August, 1992.

Dr. H. Laurence Ross presented a plenary session paper at the Triennial Conference of International Committee on Alcohol, Drugs, and Traffic Safety, Cologne, Germany, September-October, 1992.

Departmental Colloquia Series

Professors Laurence Ross and Jane Hood hosted the Department Colloquia Series for the academic year. Opening series speaker was Dr. Stephen Fox, part-time Spring 1993 Lecturer III in the department, and former Fulbright Lecturer at Frankfurt and Hamburg. Professor Fox’s talk on "Images of American Types in German Advertising: Off-the-Shelf Diversity in Threatening Times" on October 5, 1992, 12:00-01:30, in the Sociology Commons, was well received.
The department's second speaker in the series was Professor Harvey Williams of the Department of Sociology and Anthropology, University of the Pacific, Stockton, CA. His October 14, 1992, talk "A Comparative Study of Drug Use Among Adolescents in the United States, Nicaragua, and Venezuela" was held at noon in the Sociology Commons.

Dr. Keith Hawkins, Deputy Director of the Centre for Socio-Legal Studies, Oxford University, spoke on "How do Rules Apply? A Socio-Legal Perspective on Rules and Discretion" on October 23, 1992, 3:30, in the Sociology Commons. Dr. Hawkins is author of "Environment and Enforcement: Regulation and the Social Definition of Pollution" (Oxford U. Press), and was Visiting Professor at the Law School of the University of Texas at Austin, and Ohio State University.

Sociology doctoral student David Broudy spoke on "The Perils and Joys of Intercultural Participant Observation: Reflections on Fieldwork in Campeche, Mexico" on Monday, December 7, 1992, 12:00-01:30, Sociology Commons. The topic for David's dissertation on the organization of Guatemalan refugees in Mexico, grew out of his participation in Central American solidarity groups such as Witness for Peace and the Central American Peace Alliance. The present work stemmed from a week-long visit of one of the refugee leaders to Albuquerque in 1990, and a brief visit to refugee camps in Campeche in 1991.
David A. Smith, Associate Professor, University of California, Irvine, spoke on "Technology and Development in South Korea: Limits on a Semi-Peripheral Success Story?" on Wednesday, December 2, 1992, at 3:30 p.m., Sociology Commons. Dr. Smith is author of the forthcoming book "Third World Cities in Global Perspective: The Political Economy of Uneven Urbanization."

Dr. John Alan Lee, University of Toronto, spoke at the Colloquium series on "The Sociology of Love" on Friday noon, February 19, 1993, Sociology Commons. Dr. Lee is the author of numerous books on sexual and affectional relations, including "The Colors of Love" and "Getting Sex."

K. Funded Research

Professor Jane Hood: American Council of Learned Societies grant-in-aid for GROWING UP RED, an oral history study of children of the U.S. left during the McCarthy era, $3,000, 1992-93.

Professor Hood: University of New Mexico Research Allocation Committee grant for GROWING UP RED, $2,330, 1992-93.

Professor Patrick McNamara: UNM Research Allocations Committee grant, Comparative Study of American, English and Irish Young People, $750, 1992-93.

Professor Philip A. May: UNM Grant money awarded from the College of Arts & Sciences and the Vice President for Research for Non-Minority
Students to participate in the New Mexico Access to Research Careers Program, $9,000.


Professor Merkx: "Data Base Consortium linking UNM Latin America Data Base with INFOSOUTH/HAPI," funded by U.S. Department of State, $300,000, Project Duration, June 1990-May 1991.

Professor Paul Steele: 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, $38,500, December, 1990-June, 1992.

Professor Paul Steele: 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, $178,200, October, 1990-September 1993.

L. Joint Appointments

David L. Bachelor (Professor, Ph.D., University of Chicago) Education.
M. Adjunct Appointments

Dr. Gene Levine, Emeritus Professor of UCLA, was given adjunct status for the academic year. Dr. Levine has served in the capacity of part-time Lecturer III for the Department.

The faculty voted adjunct status for Associate Professor Kathryn Ward of Southern Illinois University for the Summer of 1993.

N. Contributions from Part-time Teachers Spring 1993

Irene I. Blea, part-time Lecturer III, Spring 1993, gave the following presentations:

"Mentoring La Chicana at a Southwest University" National Association of Chicano Studies, San Jose, CA.; paper focuses on her work at UNM.

"The First Generation of Chicana Scholarship", Chicano Studies, University of California at Sacramento.

"Chicana Health & Healing" applied Anthropology meeting, San Antonio, TX.

"Writing a Sociology Textbook," San Jose State University, San Jose, CA.

Dr. Blea: Reading of her origin work in poetry, 4th S.W. Symposium, English Department, UNM, Blue Mesa Review.

Her new book, Bessemer: A Sociological Perspective of a Chicano Barrio by Irene Isabel Blea, was published by AMS Press, Inc.
Steve Fox, part-time Lecturer III, Spring 1993, published in the
journal Radical America Vol. 24, #3, May 1993: "Bitter Love For
America: U.S. Popular Culture and New East German Identities."

His article, accepted for Fall 1993, Journal of the Southwest
(Tucson: U of AZ): "Chaco to Chimayo to Trinity: The Secularization
of Pilgrimage in the Southwest."

0. Other

103 applications were received in response to the department's national
advertisement for two tenure track positions to fill the vacant lines
due to the resignation of Professor Christopher Birkbeck, and the line
formerly filled by Professor Edward Gilliland. 43 applications were
received for the Criminology position, Job No. 2302; and 60
applications were received for the Methodology position, Job No. 2303.
The Sociology Recruitment Committee narrowed the list of applicants to
a finalist list of 5 for Methodology, and a finalist list of 6 for
Criminology. After approval from the Dean of Arts & Sciences, two
applicants were invited to interview for each position.

In the process of moving forward, the Department purchased four (PC)
computers for the computer lab. Hopefully in future semesters, the
Department will be able to stock the lab with enough computers so that
graduate students will have access without waiting. With an eye to the
future, eventually enough computer equipment can be obtained so that
the lab can be used for classes.

A new department camcorder was purchased to replace the one that
disappeared a year ago.
Overview

The Institute for Social Research (ISR) at the Department of Sociology began activities on July 1, 1992. The ISR incorporated the offices, projects and personnel of the former Institute for Criminal Justice Studies (ICJS) located in Onate Hall. The ICJS was created in 1987 as a freestanding research center specializing in criminal justice and criminology. During its five year existence, the ICJS attracted over one million dollars in grants from federal, state and local government agencies. The new ISR is an administrative division of the Department of Sociology. The ISR will continue to conduct research in criminal justice and criminology and also broaden its mission to include basic and applied research in sociology and related disciplines.

The ISR is governed by an Executive Committee, comprising all principal investigators, and reports to the Chair of the Department of Sociology. In August 1992, the Executive Committee voted to create an administrative unit, overseen by the ISR Director and Staff Assistant. The administrative unit provides clerical and accounting services for projects affiliated with the ISR.

ISR personnel and projects in 1992/93 were as follows:

1. ISR Director - Christopher Birkbeck
2. Administrative Unit - Doreen Neely, Staff Assistant

3. Centers:
   a. New Mexico Statistical Analysis Center
      Gary LaFree, Director
      Christopher Birkbeck, Associate Director
   b. Youth Resource and Analysis Center
      Paul Steele, Director
      Keiko Nakao, Target Cities Project Director
      Edward Gilliland, Medicaid Project Director
      Alice Otero, Program Specialist II
   c. Psychological Screening Unit
      Peter DiVasto, Director
      Stephanie Newman, Clerical Specialist V

4. Other projects:
   a. Congregational Giving - Patrick McNamara
   b. Licence Plate Confiscation in DWI cases - H. Laurence Ross
   c. Economic Growth and Democratization in Latin America -
      Miguel Korzeniewicz

5. Department of Sociology Representative on the ISR Executive
   Committee - Robert Fiala

6. Research Assistants
As of June 15, 1993, ISR employed 11 graduate and 14 undergraduate research assistants. All graduate students and most undergraduate students were enrolled in programs at the Department of Sociology.

The ISR also has a Criminal Justice Steering Committee, composed of approximately 20 representatives from state and local criminal justice agencies. The Steering Committee met on April 23, 1993, to hear reports on current criminal justice research at the ISR and to provide suggestions for future research projects in this area.

Research Activity

1. New Mexico Statistical Analysis Center (SAC)

The New Mexico SAC was founded in 1988 to conduct and disseminate criminal justice research in the state. As in previous years, the SAC was supported by a grant from the Bureau of Justice Statistics. The SAC also received grants from the Albuquerque Police Department and the New Mexico Department of Public Safety. SAC research projects completed during the year were as follows:

- A comparison of mediation and adjudication in civil cases.
  [In collaboration with the Institute of Public Law.]
- A second survey on citizen satisfaction with the Albuquerque Police Department.
- A survey on prevalence and incidence of substance use among
Albuquerque's adult population. [In collaboration with the Institute for Public Policy in the Department of Political Science.]

- Tracking felony offenders in New Mexico: The pilot project.

SAC research projects initiated or continued during the year were as follows:

- Tracking felony offenders in the 2nd, 9th and 12th Judicial Districts.
- A comparative study of media treatment of DWI in Arizona and New Mexico.
- A statewide survey on communities and crime prevention.

2. Youth Resource and Analysis Center (YRAC)

YRAC was founded in 1990 to conduct and disseminate research on juvenile justice and human service programs, with special emphasis on project evaluation. YRAC research projects completed during the year were as follows:

Assessment of mental health needs for urban Indians. [Funded by Urban Indian Health and Human Services, Inc.]

- Evaluation of the information system at the Peanut Butter and Jelly Therapeutic School. [Funded by the Peanut Butter and Jelly Therapeutic School.]
- Evaluation of access, delivery, outcome and costs of service in the New Mexico State Medicaid Program. [Funded by the New Mexico Human Service Department.]

YRAC research projects initiated or continued during the year were
as follows:

- Evaluation of services provided to drug-exposed infants through the Los Pasos Project. [Funded by the Children's Bureau of the Federal Agency for Children, Youth and Families.]

- Evaluation of services provided to drug-addicted mothers and pregnant women through the Milagro Project. [Funded by the Center for Substance Abuse Prevention.]

- Evaluation of services provided to substance abusers in the Target Cities Program (Albuquerque). [Funded by the City of Albuquerque Human Services Department.]

Evaluation of the Children's Safehouse of Albuquerque. [Funded by the New Mexico Children, Youth and Families Department.]

- Evaluation of the National Children's Advocacy Center (Huntsville, Alabama) National Training Program on Effective Treatment Approaches. [Funded by the National Children's Advocacy Center.]

3. Psychological Screening Unit

The Psychological Screening Unit continued to provide psychological assessment of Corrections Officer applicants at the New Mexico Corrections Department. Approximately 300 applicants were screened during the year. Data on applicants were entered in a computer file as a first step in developing a study on
predictors of occupational stability among Corrections Officers.

4. Other Projects

a. Congregational Giving. This study is part of a national project funded by the Lilly Endowment to examine patterns of giving in five religious denominations. The ISR is responsible for data collection in three study sites in the southwest. Starting in May, 1993, surveys were mailed to samples of church members in the study sites. Completed surveys will be checked and forwarded to the project's coordinating office at the Catholic University in Washington, D.C.

b. License Plate Confiscation in DWI cases. This project is funded by the Insurance Institute to examine the effectiveness of programs designed to immobilize DWI offenders by confiscating their vehicle license plate. Research began in May, 1993 in Minnesota and will also be conducted in Iowa.

c. Economic Growth and Democratization in Latin America. This project was funded by the North South Center at the University of Miami. Fieldwork on economic entrepreneurs was conducted in Argentina and Brazil during the summer of 1992. Results will be incorporated in several journal articles.

Reports and Publications (not elsewhere mentioned in Departmental Annual Reports)
Tracking Adult Felony Offenders in New Mexico: The Pilot Project and Results. The New Mexico Statistical Analysis Center, August, 1992.

A Survey of Substance Use among Albuquerque's Adult Population. [In collaboration with the Institute for Public Policy.] The New Mexico Statistical Analysis Center, August, 1993.


**Evaluation of the New Mexico Primary Care Network.** Evaluation Technical Report for the Medical Assistance Division of the New Mexico Human Services Department, prepared by the Youth Resource and Analysis Center, June, 1993.

**Summary of Active Funded Projects as of 6/30/93**

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<th>Funding Agency</th>
<th>Principal Investigator</th>
<th>End Date</th>
<th>Amount</th>
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I. TEACHING FACULTY AND STAFF

A. Permanent Faculty

Spanish

Bergen, John, Professor
Bills, Garland, Professor
Cárdenas, Anthony, Professor
Gerdes, Dick, Professor
Gonzales-Berry, Erlinda, Professor
Lipski, John, Professor
Rodríguez, Alfred, Professor
Tolman, Jon, Professor
Lamadrid, Enrique, Associate Professor
Rebolledo, Tey Diana, Associate Professor
Cornejo-Parriego, Rosalía, Assistant Professor
Hegstrom-Oakey, Valerie, Assistant Professor
Fernández, Rosa, Lecturer III

B. Visiting Professor

Meléndez, Gabriel

C. Lecturers

Cornejo-Patterson, Deanna
Espinosa, Hilma
Martínez, Raquel
Riker, Katharine
Simo-Goberna, María Lourdes

D. Emeritus Professors

Duncan, Robert
Fernández, Pelayo
González, Angel
Holzapfel, Tamara
McCurdy, Raymond
Nason, Marshall
Ulibarri, Sabine
E. Language Learning Center

Vigil, Neddy, Director

F. Teaching Assistants

Ph.D

Aleixandre, Eduardo
Archuleta, Walter
Branche, Jerome
Clark, Susan
Crosby, Margaret
Desachy, Elvira
Fernández, Arturo
Grover, Lisa
Huer, Kyung
Lettieri, Mónica
Martínez; Elizabeth
McLoughlin, Betsy
Pernía, José R.
Ruiz-García, Martha
Watts, Keith

M.A.

Abraham, James
Baratta, Gloria
Billat, Astrid
Breining, Daniel
Cox, David
DiFrancesco, Christina
Dos Santos, Vivaldo
Dutta, Nandini
Goodnough, Robin
Herrera, Daniella
Herron, Paul
Kelly-Smith, Kristin
Lee, Jaehak
Llamas, Pilar
López, Carrie
Medellín, Christopher
Pérez-Gonzáles, María Luisa
Peters, Kathryn
Romero, Yolanda
Sánchez, Angelica
Sandoval, Adrian
Silesky, Jean
Stevens, Camilla
Utley, Gregory
Walker, Theodore
Wiltshire, Kyer
G. Office Staff

Johnson, Rosario
Cerna, Ivana
Zazueta, Ana S.
Hicks, Artemisa

Administrative Assistant
Staff Assistant
Department Secretary
Lower Division Spanish Secretary

H. Work Study Help

Archuleta, Michael
Armijo, Andrew
Baker, Tammy
Guillén, Yvette
Griffin, Julie
Jenner, Eva
Kelly, Pablo

II. DEGREES AWARDED

A. B.A.

Awarded 15 Bachelor of Arts

M.A.

Andrade Dos Santos, Vivaldo (Portugués)
Baratta, Gloria
Billat, Astrid
Burton, Charles
Goodnough, Robin
Hershberger, Robert
Jurewiez, Liliana
Lee, Jaehak
Romero, María Yolanda
Silesky, Jean
Taylor, Kimberly
Wright, Paul

Ph.D.

Harris, Sara
Vigil, Lucy
Villa, Daniel
### III. COURSES OFFERED

#### A. SUMMER 1992

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#### B. FALL 1992

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**SPRING 1993**

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IV. DEPARTMENT DEVELOPMENTS

A. General News

The department split which was formalized last fall was realized without any major gliches. The services of Rosario Johnson who served as Administrative Assistant for both new departments, the Department of Spanish and Portuguese and the Department of Foreign Languages and Literatures, were crucial in facilitating the change.

The Department of Spanish and Portuguese was joined by two new faculty members in the Fall: Professors John Lipski and Rosalía Cornejo-Parriego. John Lipski, Professor of Spanish linguistics, arrived from the University of Florida, Gainesville. Rosalía Cornejo-Parriego, Assistant Professor of Spanish, recently received her Ph.D. from Penn State. Before coming to UNM she served as an adjunct professor for two years at Penn State, Altoona. A native of Salamanca, Professor Cornejo-Parriego teaches Twentieth-Century Latin American and Peninsular narrative.

Professor Pelayo Fernández and professor Angel González retired. Professor Fernández came to the University of New Mexico in 1963 and was an active member of the Hispanic community, promoting Spanish culture and history through radio and the press. Professor González, internationally-recognized Spanish poet of the Generation of 1950, served UNM as a Professor of Spanish Literature since 1972. During his successful and fruitful tenure at UNM, Professor González taught a wide variety of courses, was invited to countless
conferences, and published several books of poetry. Most noteworthy of his achievements was receiving the coveted Spanish Nobel "Príncipe de Asturias" Award for Literature in 1987.

We are especially pleased to have issued our first Departmental Newsletter in December. 300 copies were mailed to alumni and friends. We hope to continue this practice on a yearly basis.

B. Department Highlights

The Graduate Student Association of the Dept. of Spanish & Portuguese presented its First AHORA '92 Conferences, featuring Dr. José Ortega lecturing on "Mexican Culture: Art and Literature", on Thursday, July 9, 1992 at Ortega Hall Reading Room.

The Graduate Students Association of the Dept. of Spanish & Portuguese presented its Second AHORA '92 Conference featuring a lecture by Prof. Julio Pazos on "Poesía popular del Ecuador" Tuesday, July 21, 1992 at Ortega Hall Reading Room 4:30-5:30 p.m.

The Graduate Student Association of the Department of Spanish & Portuguese presented a workshop titled "Teaching Culture in the Classroom" by Dr. Bárbara González and Dr. Frank Pino on Tuesday, August 18, 1992 at Ortega Hall Reading Room from 9 a.m.-12 p.m.
Lectures were delivered by Ana Lúcia Gazolla "Decentering Narcissus: Comparing Literatures in (and from) the Third World" on Thursday, November 12, 1992 at 2 p.m. at Ortega Hall Reading Room and "Orbis Alterius: Discovering/Encovering America", Friday, November 12, 1992, 2 p.m. at Ortega Hall Reading Room.

The department sponsored Tlen-Huicani, a musical group from Universidad Veracruzana of Veracruz, México, who performed Saturday, September 5, 1992 at 7 p.m. in the Continuing Education Auditorium, 1634 University Blvd.

A lecture, "Poniatowska on Poniatowska," was delivered by Mexican writer, Elena Poniatowska, Friday, October 30, 1992 at Woodward Hall 147, 2 p.m.

A lecture, "Sor Juana Inés de la Cruz," was delivered by Professor Berta Falomir, University of Chihuahua Thursday, November 5, 1992 at 11 a.m. Ortega Hall Reading Room.

The department participated in the University's yearly event, "Finding a Major Day, on November 12, 1992.

Día de los muertos was celebrated Nov. 2, 1992 by the Department's Lower Division classes.
A lecture by José Donoso, Chilean writer of international reputation, was delivered on Thursday, January 28, 1993, 7 p.m., at Woodward Hall 147.

The second of our annual UNM Conference on Hispanic Culture and Society was held in February. The topic this year was Reconsidering Canonicity. Approximately forty scholars from the United States, Spain and Canada read papers on a broad array of topics. Keynote speakers were Dr. Federico de Armas from Penn State and James Burke from University of Toronto. The conference offered us an excellent opportunity to pay homage to our colleague Angel González upon his retirement from the department. Four young poets from Spain, Luisa García Montero, Luisa Castro, Jon Juriasti and German Yanke, joined us in paying tribute to this colleague and world class poet.

A lecture, "Symbol and Allegory: An Interpretation of the Logic of Brazilian Culture," was delivered by Lúcia Helena from the Federal University of Rio de Janeiro, Monday, February 15 at 3 p.m., at Ortega Hall 335.

A lecture, "La Literatura infantil y la enseñanza de la lengua," was delivered by Prof. Sylvia Olga Garza Benavídez, Secretaría de Educación del Estado de Nuevo León, México, March 6, 1993 from 10-11:30 a.m. Ortega Hall Reading Room.
Alberto Ruy Sánchez, contemporary Mexican writer, read from his work, Wednesday, February 3, 1993 at 4 p.m. at Ortega Hall Reading Room.

A lecture series by Professor Jean-Marie Le Clézio, French professor and writer, was held Spring, 1993. The following were topics covered:

1) Del mito y de la creación poética en la literatura moderna de la indohispanidad.

2) Los tres libros fundadores: Libros del Chilam Balam, La Relación de Michoacán y el Codex Florentino.

3) El origen y la evolución de la ola surrealista en América latina: el stridentismo, Gilberto Owen y los contemporáneos, Octavio Paz.

4) Tres autores bajo la influencia del mito: Miguel Angel Asturias, José Maria Argüedas y Juan Rulfo.

Lectures were held on March 2, 4, 9 and 11, 1993 5:30-6:30 p.m., at Ortega Hall Reading Room.

Gary Soto, Chicano poet from California had a Poetry Reading, Friday, March 5, 1993, 3:30 p.m. at Franklin Dickey Theater, Humanities 108.
A colloquium on Chicana/o Literature featured professors Tey Diana Rebolledo, Erlinda Gonzales-Berry and Ph.D. student, Jerome Branche. the colloquium was held on Wednesday, March 31, at Ortega Hall Reading Room, 1993 3:30-5 p.m.

A colloquium on Afro-Hispanic Studies featured professor Marvin E. Lewis, University of Missouri-Columbia; professor Laurence E. Prescott, Penn State University; and professor John Lipski, UNM. It was held on Thursday, April 15, 1993, 2-4 p.m., Ortega Hall Reading Room. Reception followed.

A lecture, "El cuento mexicano contemporáneo," was delivered by Sara Poot-Herrera, professor of Spanish, University of California-Santa Barbara, Monday, April 5, 1993, 3 p.m., Ortega Hall Lounge.

A WEEKLONG SYMPOSIUM ON VENEZUELAN CULTURE AND LITERATURE FEATURED:

Venezuela 93 - Taller de creatividad poética y narrativa venezolana contemporánea. Dictada por: Rafael Alfonzo, Douglas Bohórquez y Eduardo Zambrano. Wednesday, April 14, 1993, 3-5 p.m. at Ortega Hall Reading Room.

Venezuela 93 - Coloquio - Problemática de la Educación Superior en Venezuela, dirigido por el profesor Ramón Reyes. Jueves, 15 de abril de 1993 12 p.m. en el Instituto Latinoamericano.
Venezuela 93 – Coloquio de la Literatura Venezolana, Viernes, 16 de abril, 1993 9-11 a.m. Ortega Hall Reading Room.

1. Rafael Alfonzo: "El paisaje: metáfora del extravío en tres poetas venezolanos".
2. Margoth Carrillo: "El discurso de la Historia en Cubagua, d Enrique Bernardo Núñez".
3. Douglas Bohórquez: "Teresa de la Parra y el problema de los géneros".

Coloquio sobre la enseñanza de lenguas extranjeras en Venezuela 11:30-12:30, 16 de Abril, Ortega Hall Reading Room.

1. Enrique Avila: Enseñanza del Inglés en el NURR.
2. Romy Hurtado-Vivas: Enseñanza del Inglés en la UDO.

The department co-sponsored the Primer Festival de Cine Contemporáneo de México, April 12-17, 1993, at the UNM SUB Theater. Películas: Danzón, La mujer de Benjamín, Angel de Fuego, Sólo con tu pareja, Gertrudis, Serpientes y Escaleras, La Tarea.

Alejandro Morales, author of The Brick People, La Verdad sin Voz, Reto en el Paraíso, and The Rag Doll Plagues, read from his works and talked about Chicano Literature, Friday, April 23, 1993 at 2 p.m., Ortega Hall Reading Room.
A lecture and reading titled "Women and Stories" was delivered by Isabel Allende, Sunday, May 2, 1993 at 7:30 p.m. at Popejoy Hall. The Dept. of Spanish & Portuguese was a co-sponsor.

A lecture, "Presencia Española en Nuevo Méjico," was delivered by Caros M. Fernández-Shaw, former Spanish Ambassador, on Monday, May 3, 1993, 2 p.m. Ortega Hall Reading Room, reception followed. The Department was a cosponsor together with the Spanish Resource Center and the Consulate of Spain in Santa Fé.

C. Professional Public Activities

Papers read at Professional Meetings

Bills, Garland: 1) "Contact and maintenance: The role of geographical distance in language shift" (with Eduardo Hernandez-Chávez and Alan Hudson), Linguistic Association of the Southwest annual meeting, Tucson, October 1992. 2) "English language proficiency, Spanish language maintenance, and the socioeconomic characteristics of the Spanish origin population" (with Alan Hudson and Eduardo Hernández-Chávez), 13th Conference on El Español en los Estados Unidos, Minneapolis, October 1992. 3) "Geographical variation and dialect contact in New Mexican Spanish: Some initial findings" (with Neddy Vigil), 13th Conference on El Español en los Estados Unidos, Minneapolis, October 1992.


Gerdes, Dick: 1) "La aventura de traducir a Alfredo Bryce Echenique," VII Symposium Internacional de Campos Semióticos, Universidad Veracruzana, Xalapa, México (July, 1992). 2) "The Art of Translation" Annual American Association of Teachers Spanish and


Papers read by Teaching Assistants of the Dept. of Spanish & Portuguese


Breining, Daniel: "La voz narrativa en la novela epistolar de aprendizaje: El principio del placer por José Emilio Pacheco", UNM 2nd Annual Conference Reconsidering Canonicity, (February 1993).


Lettieri, Monica: "Función etica de la literatura critica y la critica literaria en el periodismo de Juan Carlos Onetti" 46th Annual Kentucky Foreign Language Conference, U of Kentucky, (April 1993).


D. Contributions to Other Meetings, Workshop, Seminars, Readings, etc...


Lamadrid, Enrique: 1) Participated lectures and panel discussions in Washington D.C. Contributed with part of his field work to the National Archive in connection with the Smithsonian events honoring New Mexico (Summer 1992). 2) Guest Lecturer: "El Idioma Español en los Estados Unidos: Estado Actual y Perspectivas," Instituto de Cultura Hispánica de Quito, December 9, 1992. 3) Trip to Chihuahua, México entitled "Vientos de la Frontera" with the students of his Spanish 301 course, during the Spring break of 1993, to inmerse them in the culture of México, (March 1993).


Tolman, Jon: 1) Designed and conducted a Brazilian Film Series in conjunction with International Museum of Folk Art, Santa Fe (July 29, August 5, 12, 19, 26, 1993, - 5 lectures, sessions). 2) Leading the organizing effort to create a new international Brazilian Studies Association (BRASA), with 150 founding members in the US, Brazil and Canada.

E. University and Community Service

Bergen, John: 1) Graduate Advisor, Department of Spanish & Portuguese, Fall semester of 1992 and Spring semester 1993. 2) Member, Arts & Sciences Graduate Committee, Fall-Spring semesters 1992-93. 3) Member, Faculty subcommittee, Arts & Sciences Graduate Committee, Fall-Spring semesters of 1992-93.

Bills, Garland: 1) 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. 2) Member, selection...
committee for 1991 Helmut Esau Award of the Linguistic Association of the Southwest (cash prize for best graduate student paper at annual meeting). 3) Reviewer of book manuscript for McGraw-Hill. 4) Reviewer of article manuscripts for *Hispania* journal. 5) Reviewer of research proposals for the National Endowment for the Humanities.

Cárdenas, Anthony: 1) Department: Coordinated 2nd Annual UNM Conference on Ibero-American Culture and Society: Reconsidering Canonicity; 2) Undergraduate Adviser (June 1993). 3) College: Senior Promotion Committee. 4) AATSP Interest Sessions Coordinator for University Level. 5) MLA Executive Committee, Spanish Medieval Language and Literature 1991-1995. 6) University: Lena Clauve Awards (Karen Glaser); 7) Graduate Achievement Awards Committee; 8) Jesus Quiñones Grievance Committee; President’s Library Committee.

Cornejo-Parriego, Rosalía: Search Committee for French position. Member of BRAC Committee of the Dept. of Spanish Portuguese.


Lipski, John: 1) Member of Graduate Committee, Spanish & Portuguese Dept. 2) Member of Spanish hiring search committee, Spanish & Portuguese Department 3) Member of Merit Committee, Spanish & Portuguese Department 4) Member of junior faculty tenure and promotion committee, College of Arts & Sciences. 5) Task Force on overseas program in Quito, Educador, Latin American Institute.


Tolman, Jon: 1) Associate Director for Luso-Brazilian Programs; Grants and Awards committee; Policy Committee at the Latin American Institute.

F. Attendance and Officer at Professional Meetings Workshops
Cárdenas, Anthony: 1) MLA Executive Committee, Spanish Medieval Language and Literature 1991-1995. 2) AATSP: a) organized Cancionero and Libro de buen amor sessions; b) Nominating Committee (for Vice President and Executive Council); c) Committee on Honorary Members and Honorary Fellows.

Tolman, Jon: 1) Designed and conducted a Brazilian Film Series in conjunction with International Museum of Folk Art, Santa Fe (July 29, August 5, 12, 19, 26, 1992 - (5 lectures). 2) Leading the organizing effort to create a new international Brazilian Studies Association (BRASA), with 150 founding members in the US, Brazil and Canada.

G. Honors to Faculty
Cárdenas, Anthony: Faculty Scholar, Spring 1993, University of New Mexico.

Fellowship (June-December 1992), spent as a research fellow at the Centro Interamericano de Artesanías y Artes Populares in Cuenca, Ecuador. Topic: "Cultural Otherness, Resistance, and Assimilation in the Indo-Hispanic Folklore of Ecuador."


Honors to students
Six students received awards from the University:
Jerome Branche, Graduate Student Association, Outstanding Research Award; Department Achievement Award Vivaldo Andrade dos Santos, Maria Ortega, Eric Villegas and Annu Radha Sharma, Undergraduate Achievement Awards.
H. 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-Nov. 30, 1993
Funding: $225,000
Funding: $91,000

Hegstrom-Oakey, Valerie
Title: "María de Zayas, La Traición en la amistad".
Agency: UNM Research Allocations Committee
Dates: March 13-29, 1993
Amount: $1,325

Title: "María de Zayas, La Traición en la amistad".
Agency: The Program for Cultural Cooperation Between Spain’s Ministry of Culture and United States Universities
Dates: March 13-29, 1993
Amount: $1,000

Lamadrid, Enrique
Title: "La indita de San Luis Gonzaga".
Agency: RAC
I. Affirmative Action

This past fiscal year, the department tried to set goals to comply with the rules and regulations of Affirmative Action providing employment to qualified personnel making the effort to attract women and minority groups. The Department of Spanish and Portuguese was joined by two new faculty members in the Fall: Professors John Lipski and Rosalía Cornejo-Parriego, professor Parriego is a woman of hispanic origin. During this year the department issued contracts to 42 Teaching Assistants, 17 of which were hispanic, 23 women, 10 of them were of hispanic origin; 2 asian; and 1 black. A total of 5 lecturers taught on a part time
basis, 4 of them were women of hispanic origin. The work study team was composed of 7 students, 3 being hispanic.
COLLEGE OF EDUCATION


Peggy J. Blackwell
Dean
The College of Education entered its second year of restructuring and reorganization. As the 1991-1992 year was, this was a tumultuous and difficult year. However, it also brought significant progress and change within the College.

It is imperative for colleges of education to embrace the change that is sweeping this nation, both in schools and in the corporate sector. It is clear that colleges of education can have a central role in the accomplishment of the national goals of education and in the creation of a seamless educational system, K through 16. Tomorrow’s schools of education must meet the needs of the schools and the universities by preparing more and better educators; at the same time, colleges of education must provide the research that informs practice. This is the mission of the UNM College of Education as it seeks to improve substantially the quality of its academic programs and its service to students.

The College spent the year implementing the Plan of Action agreed upon by the faculty in April, 1992. At the same time, Provost Risser, after talking with faculty, announced that he had asked Peggy Blackwell to continue in the deanship for a two-year term as dean of the College. In July, approximately 100 faculty and staff were moved to facilitate the change process and accomplishment of the goals in the Plan. Organized in eight departments during the 1991-1992 academic year, the College faculty agreed to reorganize the College into three divisions, called divisions A, B, and C. By August, the three divisions were functioning under division directors/associate deans

- Craig Kelsey, Division A
- Paul Pohland, Division B
- Richard van Dongen, Division C.

The majority of non-licensure programs were administratively housed in Division A; most licensure programs were in Division B, and Division C housed the Health Education program, three program initiatives, and two faculty collaboratives.
The first part of this report summarizes the normal business of the College, providing information about students, faculty and staff, contracts and grants, and College highlights. The second part of the report focuses on the continuing process of change and provides an assessment of the work of the College during 1992-1993.

STUDENTS

Undergraduate Students

Significant changes in undergraduate student enrollment in the College included:

- An 8% increase in enrollment in upper division courses.
- A 50% increase in the number of Native American students who passed the Pre-Professional skills test.
- A 9.8% increase in the number of undergraduate degrees awarded.
- A 42% increase in the number of Hispano students completing programs for licensure.
- A 17% decrease in the number of admissions to the College. Of those not admitted, 94% were in elementary or secondary education.

Of the 501 undergraduate students who applied to the College in 1992-1993, 450 were admitted, down from 544 admitted in 1991-1992. Of the students who were admitted to College licensure programs, 34% were in elementary, and 24% were in secondary education licensure programs. In secondary education, the largest number of students enrolled in social science (35%) and in mathematics and science education (36%). Physical education accounted for 15% of the new students and special education for 14%. In non-licensure programs, the highest number of admissions was in recreation and training and learning technologies.

Of the students who applied to the College, 20% were taking majors in Arts and Sciences, while 37% were in University College. Non-degree students accounted for 20% of the applicants and 18% had previously received a provisional admittance to the College.

The average ACT scores of students admitted to the College for licensure programs continued to increase. The average composite score for 1992-1993 was 20.1, compared to 19.1 the previous year.
The College had 984 students officially enrolled in undergraduate degree programs. However, the number of undergraduate/non-degree students enrolling in upper division courses continued to increase, from 2693 in 1991-1992 to 2909 in 1992-1993 (+8%). There was a total of 8,210 course enrollments in upper division courses, representing these 2,909 students. The number of Arts and Sciences students taking Education courses for licensure remained steady, while the number of students classified as "Non-Degree" also remained fairly constant at 18% of the total number of students.

Graduate Students

Enrollment data statistics (Office of the Registrar) show 1,369 graduate students enrolled in the fall, 1992 and 1,440 in the spring, 1993. However, these data do not include graduate students classified by the Office of Graduate Studies as "intermediate" status in a doctoral program. We estimate that about 325 students enrolled in doctoral programs in the College are in that category. Our conservative estimate of graduate student enrollment is 1,550. Enrollment increased slightly (about 2%) from 1991-1992.

Program Completions

Undergraduate degrees were awarded to 308 undergraduate students in the College, with 222 of those in a teaching field.

Data on students enrolled in graduate programs were unavailable. In the University system, all graduate students are viewed as "belonging" to the Office of Graduate Studies, and this College is not given information about the very large number of students who enroll in its graduate programs, study with College faculty, conduct research on education issues, and complete their degrees in Education. However, a review of the University's Commencement programs indicates that the College probably graduated about 570 students with an advanced degree, with approximately 75% at the master's level. The Education Specialist certificate was awarded to 35 students.

CURRICULUM

The report of Associate Dean Pauline H. Turner is attached. The report details work of the College curriculum committees, UNM North, Continuing Education, and new curricular/program initiatives. An upper division licensure program was awarded to the College by the Commission on Higher Education for the Gallup and Farmington areas. Additional funding was provided by the
Navajo Nation and the Zuni Pueblo. A new program proposal for early childhood education, in alignment with the State Board of Education approval of a new license in this area, is under development by a group of faculty with teachers from the Albuquerque Public Schools. A new master's degree program was developed through elementary education for Ecuadorian teacher trainers. In collaboration with Professor Bel Campbell of the Physics and Astronomy department, the natural science courses required by the State Legislature were developed and offered through the College of Arts and Sciences. The College collaborated with the College of Architecture and Planning to offer a summer conference on Architecture for Children. A pilot program for a cohort of master's degree students was planned in educational technology through the Math, Science, Environment and Technology collaborative.

Associate Deans DePaepe and Oshima did not submit annual reports.

DIVISIONS AND CENTERS

The annual report of each division is attached. Division A, called Education in the Professions because the University budget office insisted on a name, was directed by Associate Dean Craig Kelsey. His report is attached. Significant outcomes during the year included the restructuring of Counseling Psychology and Counselor Education, which proposed to close Counseling Psychology and create a common curriculum for Counseling. Psychological Foundations proposed an initiative to reform its mission and curriculum toward a focus on cognition and the learning process. Parks and Recreation proposed an initiative to reform its mission by closing the Parks and Recreation program and revising its curriculum to focus on environmental education. The Leisure Services Program was transferred at its request to the University Student Affairs Division. The Employee Health Promotion Program moved to the Department of Family and Community Medicine for oversight; and the supervision of Johnson Center was moved administratively to the dean's office.

The Division B annual report is attached. Division B was called Learning and Teaching during 1992-1993 and was directed by Associate Dean Paul Pohland. A student data base was created for all programs in the division and programs became the primary unit of focus. The CIMTE department was dissolved, and elementary and secondary education programs pursued independent revision efforts. A well-defined elementary admissions and admissions appeals process was developed, resulting in a substantial reduction in the number of appeals and grievances. In Educational Administration, faculty completed curricula and procedural planning for a field-based Ed.D. cohort program. Students participated in an Assessment Center in the spring for
admission in the fall, 1993. A moratorium was placed on admission to the Ph.D. program. A moratorium was also placed on admissions to the Spanish Language Master's program, due to insufficient numbers of students. Elementary Education proposed to engage in planning for alternatives to the Block Program, which has been sponsored by the contract with the Albuquerque Public Schools for more than twenty years. As a part of the planning, the GPA for admission to elementary education was raised to 2.75, to take effect in the fall, 1994. Secondary Education proposed to engage in systemic restructuring of its program in 1993-1994. Special Education presented a two-year plan for restructuring to include a focus on students at-risk.

Division C was conceptualized as the primary restructuring division of the College. Initiatives were formed to develop innovative programs, while collaboratives served as forums to discuss areas of priority that might lead to programs or to research agendas. All work in the division was centered on the College focus statement and goals in the Plan of Action. In the Math, Science, Environment and Technology initiative, in addition to activities previously mentioned, the work of Visiting Professor Lois Folsom led to collaborative work with the Mathematics Department. Health Education developed an enrollment management plan, connected with other initiatives and collaboratives, and completely revised its curriculum and approach to its program. The Professional Development Schools had both elementary and middle school sites, where faculty explored the changing demands in schools. Several reports are attached with the Division C annual report. Language, Literacy, Culture, and the Arts developed a document addressing the linguistic and cultural diversity of the communities in the State. The Policy, Development and Leadership collaborative designed an interdisciplinary, team-taught course (only to be hampered by various bureaucratic rules) and found an agenda on which to focus for 1993-1994. The Bureau of Educational Planning and Development, David Colton director, had an extraordinary year, assisting the State in writing a proposal and implementing a state grant for systemic reform in math and science education. The Leadership Academies, sponsored by the Rockefeller Foundation, worked with schools in Taos, Albuquerque, and Silver City. Carnegie Foundation funded a Middle Level Policy Initiative, assisted by the Bureau. Four regional forums - in Gallup, Roswell, Taos, and Las Cruces - were held for educators from 86 of the State's 88 school districts. The Multicultural Education Center, directed by Leroy Ortiz, provided service to the Multicultural and Gender Equity Resource Center, which provides curriculum materials for bilingual and multicultural education. The MEC also collaborated on a training grant with universities in Texas, Arizona, and Colorado to study ways to improve teacher preparation for bilingual and multicultural education. The MEC also sponsored bilingual training grants that brought bilingual students into teacher endorsement, master's, and doctoral programs. Manzanita Center, under the leadership of Roger Kroth, provided demonstration and training opportunities
for a variety of programs across the College. Latin American Programs in Education continued building connections with educators in Latin America and Mexico. Under the direction of Gary Anderson, LAPE sponsored a program in Puebla, the Summer Rio Grande Writing Project, and the Inter-American Ethnography in the Classroom Conference.

FACULTY AND STAFF HIGHLIGHTS

- Mary Harris served as President of the Faculty Senate.
- Bill Kane served as co-program director of a training project by the Conrad N. Hilton Foundation for 5,400 teachers in the use of three anti-drug use programs.
- Ruth Luckasson served as chair of the Ad Hoc Committee on Terminology and Classification of the American Association on Mental Retardation.
- Ginger Blalock served as President of the Council for Learning Disabilities.
- Lyn Oshima was appointed to the New Mexico Teacher Assessment Review Panel.
- Lani Gunawardena and Jan Naslund received the College of Education's Faculty Research Awards for 1993.
- Kathleen Koehler was appointed to the editorial board of the Journal of Nutrition Education.
- Kathleen Koehler received the 1993 UNM Burlington Resources Foundation Faculty Achievement Award.
- David Nateman was elected president of the New Mexico Art Education Association.
- Leroy Ortiz received a gift from the U.S. West Foundation for $242,998 to integrate multiethnic perspectives into the curricula and instruction for prospective teachers.
- Don Zancanella sponsored the Rio Grande Writing Project, in collaboration with the Albuquerque Academy, and LAPE.
- Gary Anderson and Guillermina Engelbrecht organized and hosted the Third Inter-American Symposium on Ethnography and the Classroom.
- With Don Kelly's leadership, the Los Lunas Middle School Project was selected as a demonstration site for the Carnegie Foundation's middle school program.
- Jo Ann Krueger served as editor of the Network Newsletter for the Danforth Foundation.
- Joe Gonzales was selected as the recipient of the UNM Service Award.
- Vonda Long was elected president of the New Mexico Association for Counselor Education and Supervision.
- Pauline Turner authored the monograph on Children and Families for the New Mexico First Town Hall meeting.
- Linda Day was given an award by the Land Grant and Associated Private University Deans for her outstanding dissertation on teacher education.
Joseph Suina was a member of the Holmes Group Equity Committee.

The Family Development Program directed by Maria Chavez, received a national award for program excellence from President Bill Clinton.

The College of Education had 101 FTE faculty during 1992-1993, with 19 vacant faculty positions by May, 1993. The faculty offered 432 professional education courses during the regular academic year, as well as 133 courses taught by part-time faculty and 76 taught by teaching assistants. The average teaching load of faculty was 7.58 credit hours. Faculty Milestones are attached.

COLLEGE HIGHLIGHTS

- Contracts and grants to the College totaled more than $9,600,000, a slight increase over 1991-1992.
- The College co-sponsored an address by Jaime Escalante.
- Zimmerman Library notified the College of its intent to close Tireman Library. The College assumed management of Tireman, under the direction of Joe Gonzales.

The College's state budget was $7,567,997, with an additional $1,288,269 in non-I&G support. Sources outside the institution (grants, foundation and so on) provided $9,651,248, for a total College budget of $18,507,514, a decrease of 1.2%. Travel budgeted from state funds for faculty professional development and presentations was $430.78 per faculty member. A total of $820.41 per faculty FTE was budgeted for supplies, Xerox, and telephone expenses.

PLANNING AND CHANGE

In the Plan of Action, the College selected eight themes to be reflected throughout the change process. They are:

- student outcome-based assessment and planning
- competency in the use and integration of technology in instruction
- flexible programs in response to market forces
- diversity and equity in all programs
- motivation for life-long learning
- research and evaluation
- interdisciplinary and integrated curriculum
To accomplish these eight themes, the College adopted five long-range goals. Major accomplishments for each goal during the year are given.

1) The College began a systematic review of its undergraduate programs. While the planning and review was still in the inception stage by the end of the year, preliminary ideas include a phase-out of the traditional "block" program in elementary/secondary/special education with a shift to a field-based model. The Professional Development Schools programs were expanded to include two middle schools and four elementary schools. Reports from faculty in the College, teachers and administrators in schools, and students in the College indicate that this model is having profound impact on the preparation of pre-service students and professional development of teachers. Administrators report that the effect on student teachers is so significant that the model warrants consideration for all licensure programs. However, this model is more labor-intensive than the block program and if the College is to move to a totally field-based model, long-range planning must be done to ensure that the programs have sufficient resources. Cross-professional training in practicum experiences provide students in Family Studies and Health Education the opportunity to work in schools and community and state agencies.

One aspiration under this goal is to achieve a balance between undergraduate, graduate, and professional development programs. This is a key aim for future planning, and a proposal to initiate systematic professional development programs has been presented to the University administration.

2) Coherence among College programs is a long-range aspiration and was a driving force behind the Plan of Action. The issue is whether the wide range of resources and expertise in College programs can be brought to bear on licensure programs and how the graduate programs are related to professional development and to undergraduate programs. This is a priority task for future planning.

3) The integration of issues of cultural diversity into curricula, classrooms, and practica is also a long-range aspiration. "A Campus of Difference" was integrated into part time and new faculty and teaching assistant orientation. The Faculty Policy Committee worked with a group
of faculty who are active in the Holmes Group to begin development of a model for a culturally pluralistic organization. A panel presentation was made at the South Central Holmes meeting and one faculty member, Joseph Suina, presented the model to the national Holmes Executive Board. As the faculty begin to work through the issue of a knowledge base for instruction in the College (required for NCATE and state accreditation), the issues of cultural diversity are central.

4) The College was reorganized into three divisions for administrative purposes. Funds from unfilled positions were made available for speakers, retreats, site visits, conferences, and faculty development.

5) With the adoption of a new and tighter focus for the College, programs were asked to determine whether they "fit" that focus. Nutrition program faculty determined that they had little to contribute to the broad field of education and asked to move to the Medical School. Two Exercise Science faculty also asked to move to the Medical School, but the issues around the "fit" of that program were less clear, as the accreditation standards for physical education present exercise science as central to the understanding of physical education. Physical education faculty in general had a difficult year with uncertainty about the future of the various subprogram units and some faculty involved in various ways in difficulties stemming from the quest for eligibility of student athletes.

6) Five curriculum areas were selected for priority in 1992-1993. They were:

- Mathematics, science and technology education
- Early childhood and middle school
- Health education
- Leadership and policy
- Language, literacy, culture, and the arts

Health education completed the review and revision of its curriculum, while early childhood is scheduled to complete its work during 1993-1994. Elementary education faculty made some progress on its admissions and advisement problems. The middle school initiative secured funding from the Carnegie Foundation, and faculty made a major presentation as a national model for middle school education. These priority areas will continue their work during 1993-1994.
7) The College followed its plan to issue a Request for Proposals for vacant faculty positions; 55 requests were received for a possible 18 positions. The RFP was developed by a group of faculty and associate deans and set criteria for positions, emphasizing the goals, the focus, and the 8 themes in the Plan of Action. Searches were conducted for 16 positions; one position was reallocated by the President, and one position was held pending planning for the College's Hemispheric Initiative. Seven positions were filled on tenure-track, while six were filled with one-year visiting faculty, two with two-year visiting faculty, and funds from one position were allocated for one year to elementary education to support the Professional Development Schools.

8) Faculty were asked to present proposals for program restructuring in 1993-1994 and six program proposals were accepted.

☐ To strengthen the research in the College of Education and to identify a research agenda that contributes to the purpose of the College.

The Plan of Action states that educational research should inform and stimulate systemic change throughout the education system. Historically, the College has not encouraged nor supported faculty research but has placed emphasis on teaching and service. One aspiration of the College is to increase its base of research and to adopt a model of scholarship somewhat similar to that presented by Ernest Boyer in Scholarship Reconsidered. However, this goal created more problems than the other four, as faculty cited infringement of academic freedom.

1) The acquisition of external funding increased by about 6%, although much was not classified as research. The College is hosting the Statewide Science Systemic Initiative, funded by the National Science Foundation, and Alliance 2000, a project to work with minority institutions of higher education to improve their special education programs.

2) Collaborative efforts on site in schools have begun to work with teachers on various research projects and a team-taught research course was offered on site in one school.

3) A major criterion in all faculty searches was the ability to contribute to a research agenda of the College.

4) The travel budget was increased by $12,000 in 1992-1993 to support travel to scholarly conferences for presentation of papers.
5) A major focus of the Associate Dean for Research and Administration was to work with graduate students on dissertation research designs.

- 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.

1) Faculty worked with a variety of state agencies during the year, resulting in major funding from the DeWitt Wallace Foundation, through the American Association for Colleges of Teacher Education, to develop a model inter-agency training program. Bill Kane serves as Principal Investigator.

2) Special Education proposed to expand and revise its programs to focus on at-risk students.

3) Several College faculty participated on site in Albuquerque schools, working with teachers, administrators, and parents.

4) Several College faculty participated in public policy issues by serving on state-wide boards and advisory councils.

5) Several grants focus on collaboration, including the Rockefeller Leadership Academy, the project for Leadership in Educational Administration, the New Mexico Research and Study Council, North Central Association, the NSF Systemic Initiative, the US West project to improve bilingual education programs, the AACTE project to provide inter-agency training, the APS partnerships, the project for assistance in equity, the New Mexico Geographic Alliance, and others.

6) The dean was asked by the Governor and State Superintendent for Public Instruction to serve on the Advisory Committee for New Mexico Systemic Change in Education.

- To prepare a greater number of educational personnel from traditionally underrepresented populations.

1) The College instituted training for all teaching assistants and part-time faculty on issues of teaching to diverse classroom populations. This training is mandatory for all new part-time faculty and teaching assistants.
2) Faculty searches made serious recruitment efforts for applicants from underrepresented populations. The following new faculty had accepted positions by June, 1993:

- Robertta Barba, Associate Professor, Science Education
- Rebecca Benjamin, Assistant Professor, Bilingual/ESL Education
- Susan Cameron, Assistant Professor, Counseling
- Victor Delclos, Associate Professor, Psychological Foundations
- Ann Madsen, Assistant Professor, Mathematics Education
- Elizabeth Saavedra, Assistant Professor, Bilingual/ESL Education
- Quincy Spurlin, Assistant Professor, Science Education

3) Two Holmes Scholars, Frances Sanchez and Rosalita Mitchell, were sponsored during 1992-1993.

4) The College is working with other colleges of education and the State Board of Education to develop systems of entry into the College for undergraduates that acknowledge the significance of diversity in educational settings.

5) The College began an upper division program in Gallup, which primarily focuses on preparing Native American teachers.

☐ To create and sustain helpful attitudes and structures to enhance the professional environment of the College.

1) The restructuring of the College is continuing and evolving.

2) Approximately $150,000 (equipment allocation from the University) was spent to up-date hardware and software for faculty and instructional programs.

3) Team teaching within and across programs was initiated during 1992-1993.

4) Course scheduling presented major difficulties during the year. However, semester schedules were reviewed in their entirety for the first time, permitting assessments to be made related to duplication of courses, errors, double-booked classrooms, and so on, as well as faculty load.
5) The dean worked with the Faculty Senate Reallocation Committee on issues of restructuring and received approval for the interim administrative arrangement of the College.

The 1992-1993 academic year was a pivotal year of change for the College. In many ways, we mirrored the traditional stages of change predicted by those who are experts on the process. The year dealt with major issues and was fraught with an overlay of concern about what kind of future, if any, the College had. For many faculty and staff, this year was one of "storming," as intense debates and disagreements emerged about future directions. Change of the type sought by the College is not an easy task, nor is it a one-time event. It is a process that evolves over time, requiring persistence and the best of cooperation. It is indeed a challenge to meet the needs of the present, while planning for the future. The trends in the State and at the national level make it clear, however, that this College is in the forefront of a process that must be engaged if education is to improve and meet the challenges of the future.
SECTION A

FACULTY MILESTONES

Visiting Faculty

Lois Folsom, Visiting Assistant Professor of Math Education
Frederick Gregory Lopez, Visiting Research Associate Professor of Counseling
George Jaramillo-Leone, Visiting Assistant Professor of Counseling
Neil Thueson, Visiting Assistant Professor of Physical Education
Rikko Levin-Varjan, Visiting Assistant Professor of Counseling

Retirements

Dean Brodkey, Associate Professor of Curriculum and Instruction
25 years of service
Lorain F. Diehm, Associate Professor of Physical Education
37 years of service
George Stoumbis, Professor of Curriculum and Instruction
25 years of service
Billy L. Watson, Professor of Special Education
22 years of service
Robert White, Professor of Curriculum and Instruction
27 years of service
John T. Zepper, Professor of Educational Foundations
33 years of service

Resignations

James DePaepe, Associate Professor of Physical Education

Death

Jon Facey, Associate Professor of Educational Administration
Sabbaticals

Guillermina Engelbrecht, Professor of Family Studies, Academic Year

Hemming Atterbom, Professor of Physical Education, Fall, 1992
Ginger Blalock, Associate Professor of Special Education, Fall, 1992
Bill DeGroot, Associate Professor of Physical Education, Fall, 1992
Wayne Maes, Professor of Counseling and Family Studies, Fall, 1992
Joseph Martinez, Associate Professor of Educational Foundations, Fall, 1992
Andrea Vierra, Associate Professor of Educational Foundations, Fall, 1992

Philip Duryea, Professor of Health Education, Fall, 1992

Leave Without Pay

Anita Pfeiffer, Associate Professor of Curriculum and Instruction, Academic Year
Vera John Steiner, Professor of Educational Foundations, Academic Year

Positive Code 3

Deborah Riftenbary, Assistant Professor of Counseling and Family Studies
Robert Robergs, Assistant Professor of Physical Education
Laura Smolkin, Assistant Professor of Curriculum and Instruction
Carolyn Wix, Assistant Professor of Art Education

Positive Mid-Probationary Review

David Nateman, Assistant Professor of Art Education

Awarded Tenure

Bill Kane, Associate Professor of Health Education

Promotion to Full Professor

Carolyn Wood, Educational Administration
COLLEGE OF EDUCATION
STUDENT DATA SUMMARY

FISCAL YEAR 1992-1993

prepared by
COE Advisement Center
July 7, 1993
NOTE: All information is for Fiscal Year 1992-93, unless it is indicated that the breakdown is for other periods. The period corresponds with academic semesters Summer 1992, Fall 1992, and Spring 1993.

PART I: APPLICATION & ADMISSION

PART II: TESTING

PART III: ENROLLMENT*

PART IV: PROGRAM COMPLETIONS

* 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 1992-93 decreased slightly from 1991-92, however, new teacher education programs were instituted in Gallup, and San Juan which are not reported on in the total. Because these programs have their own funding, and draw from a different resource pool than main campus College of Education programs, they will be reported on separately at the end of this section of the report.

### APPLICATION & ADMISSION

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<td>43 9%</td>
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Of the 51 applicants who were not admitted in 1992-93, 48 (94%) were CIMTE applicants.

### ADMITTED BY DEPARTMENT AS PERCENT OF COE TOTAL

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<td>Family Studies</td>
<td>17</td>
<td>21</td>
<td>32</td>
<td>27</td>
</tr>
<tr>
<td>Art Ed</td>
<td>12</td>
<td>6</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Special Ed*</td>
<td>33</td>
<td>55</td>
<td>37</td>
<td>65</td>
</tr>
<tr>
<td>Music Ed**</td>
<td>5</td>
<td>7</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL ADMITTED</td>
<td>374</td>
<td>536</td>
<td>544</td>
<td>450</td>
</tr>
</tbody>
</table>

* 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
86-87 thru 92-93

Fiscal Year

- Applied
- Admit
- Not Admit
ADMISSION BY PROGRAM: FY 1992-93
(By Teaching & Non-Teaching)

### TEACHING PROGRAMS

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>ADMIT</th>
<th>NOT ADMIT</th>
<th>APPLIED AS % OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Ed.*</td>
<td>108</td>
<td>0</td>
<td>108 26%</td>
</tr>
<tr>
<td>Elementary Ed.</td>
<td>155</td>
<td>48</td>
<td>203 50%</td>
</tr>
<tr>
<td>Family Studies Ed.</td>
<td>0</td>
<td>0</td>
<td>0 0%</td>
</tr>
<tr>
<td>Health Ed.</td>
<td>6</td>
<td>0</td>
<td>6 2%</td>
</tr>
<tr>
<td>Physical Ed.</td>
<td>15</td>
<td>0</td>
<td>15 4%</td>
</tr>
<tr>
<td>Music Ed.</td>
<td>2</td>
<td>0</td>
<td>2 0%</td>
</tr>
<tr>
<td>Special Ed.</td>
<td>65</td>
<td>2</td>
<td>67 16%</td>
</tr>
<tr>
<td>Art Ed.</td>
<td>8</td>
<td>0</td>
<td>8 2%</td>
</tr>
<tr>
<td><strong>TEACHING TOTAL</strong></td>
<td>359</td>
<td>50</td>
<td>409 100%</td>
</tr>
</tbody>
</table>

### NON-TEACHING PROGRAMS

<table>
<thead>
<tr>
<th>PROGRAM</th>
<th>ADMIT</th>
<th>NOT ADMIT</th>
<th>APPLIED AS % OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ath Training</td>
<td>7</td>
<td>0</td>
<td>7 8%</td>
</tr>
<tr>
<td>Ex Technology</td>
<td>10</td>
<td>0</td>
<td>10 11%</td>
</tr>
<tr>
<td>Nut/Dietetics</td>
<td>9</td>
<td>1</td>
<td>10 11%</td>
</tr>
<tr>
<td>Comm Health</td>
<td>2</td>
<td>0</td>
<td>2 2%</td>
</tr>
<tr>
<td>Recreation</td>
<td>21</td>
<td>0</td>
<td>21 23%</td>
</tr>
<tr>
<td>Family Studies</td>
<td>13</td>
<td>0</td>
<td>13 14%</td>
</tr>
<tr>
<td>Technology &amp; Training</td>
<td>15</td>
<td>0</td>
<td>15 16%</td>
</tr>
<tr>
<td>Child Dev &amp; Fam Rel</td>
<td>14</td>
<td>0</td>
<td>14 15%</td>
</tr>
<tr>
<td><strong>NON-TEACHING TOTAL</strong></td>
<td>91</td>
<td>1</td>
<td>92 100%</td>
</tr>
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</table>

* See listing of Secondary Ed Majors below

### INTENDED MAJORS OF SECONDARY EDUCATION ADMISSIONS

<table>
<thead>
<tr>
<th>Science</th>
<th>Math</th>
<th>English &amp; Lang Arts</th>
<th>Soc Sci</th>
<th>TESOL &amp; Languages</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>21</td>
<td>23</td>
<td>34</td>
<td>12</td>
<td>108</td>
</tr>
<tr>
<td>ETHNIC GROUPS : NUMBER AND PERCENT OF TOTAL APPLICANTS by Admission Status &amp; Ethnicity : 89-90 Through 92-93</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APPLIED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>329 79%</td>
<td>481 78%</td>
<td>401 72%</td>
<td>366 73%</td>
<td></td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>75 18%</td>
<td>118 19%</td>
<td>120 22%</td>
<td>124 25%</td>
<td></td>
</tr>
<tr>
<td><strong>Native American</strong></td>
<td>12 3%</td>
<td>15 2%</td>
<td>27 5%</td>
<td>6 1%</td>
<td></td>
</tr>
<tr>
<td><strong>Black</strong></td>
<td>1 0%</td>
<td>4 1%</td>
<td>4 1%</td>
<td>5 1%</td>
<td></td>
</tr>
<tr>
<td>ADMIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>293 79%</td>
<td>422 79%</td>
<td>395 72%</td>
<td>328 73%</td>
<td></td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>68 18%</td>
<td>98 18%</td>
<td>118 22%</td>
<td>111 25%</td>
<td></td>
</tr>
<tr>
<td><strong>Native American</strong></td>
<td>12 3%</td>
<td>12 2%</td>
<td>27 5%</td>
<td>6 1%</td>
<td></td>
</tr>
<tr>
<td><strong>Black</strong></td>
<td>1 0%</td>
<td>4 1%</td>
<td>4 1%</td>
<td>4 1%</td>
<td></td>
</tr>
<tr>
<td>NOT ADMIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>36 84%</td>
<td>59 72%</td>
<td>6 75%</td>
<td>38 73%</td>
<td></td>
</tr>
<tr>
<td><strong>Hispanic</strong></td>
<td>7 16%</td>
<td>20 24%</td>
<td>2 25%</td>
<td>13 25%</td>
<td></td>
</tr>
<tr>
<td><strong>Native American</strong></td>
<td>0 0%</td>
<td>3 4%</td>
<td>0 0%</td>
<td>0 0%</td>
<td></td>
</tr>
<tr>
<td><strong>Black</strong></td>
<td>0 0%</td>
<td>0 0%</td>
<td>0 0%</td>
<td>1 2%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OTHER</td>
</tr>
<tr>
<td><strong>Admit</strong></td>
</tr>
<tr>
<td><strong>Not Admit</strong></td>
</tr>
<tr>
<td>HISPANIC</td>
</tr>
<tr>
<td><strong>Admit</strong></td>
</tr>
<tr>
<td><strong>Not Admit</strong></td>
</tr>
<tr>
<td>NATIVE AMERICAN</td>
</tr>
<tr>
<td><strong>Admit</strong></td>
</tr>
<tr>
<td><strong>Not Admit</strong></td>
</tr>
<tr>
<td>BLACK</td>
</tr>
<tr>
<td><strong>Admit</strong></td>
</tr>
<tr>
<td><strong>Not Admit</strong></td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>
ENROLLMENT STATUS AT TIME OF APPLICATION : FY 1992-93

<table>
<thead>
<tr>
<th>Enrollment Status</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts &amp; Sciences</td>
<td>100</td>
<td>20%</td>
</tr>
<tr>
<td>University College</td>
<td>183</td>
<td>37%</td>
</tr>
<tr>
<td>Graduate (for licensure programs)</td>
<td>11</td>
<td>2%</td>
</tr>
<tr>
<td>Non Degree</td>
<td>98</td>
<td>20%</td>
</tr>
<tr>
<td>COE (provisional)*</td>
<td>91</td>
<td>18%</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>3%</td>
</tr>
<tr>
<td>TOTAL APPLICANTS</td>
<td>501</td>
<td>100%</td>
</tr>
</tbody>
</table>

* 366 Undergraduate & 135 Postbachelor applicants.

AVERAGE GPA & CREDIT HRS AT TIME OF APPLICATION
Fiscal 1982-83 through 1992-93

<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>N</th>
<th>GPA</th>
<th>CREDIT HRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982-83</td>
<td>351</td>
<td>2.72</td>
<td>62</td>
</tr>
<tr>
<td>1983-84</td>
<td>308</td>
<td>2.80</td>
<td>69</td>
</tr>
<tr>
<td>1984-85</td>
<td>313</td>
<td>2.76</td>
<td>74</td>
</tr>
<tr>
<td>1985-86</td>
<td>246</td>
<td>2.78</td>
<td>77</td>
</tr>
<tr>
<td>1986-87</td>
<td>212</td>
<td>2.87</td>
<td>76</td>
</tr>
<tr>
<td>1987-88</td>
<td>320</td>
<td>2.98</td>
<td>82</td>
</tr>
<tr>
<td>1988-89</td>
<td>301</td>
<td>2.98</td>
<td>88</td>
</tr>
<tr>
<td>1989-90</td>
<td>286</td>
<td>3.00</td>
<td>87</td>
</tr>
<tr>
<td>1990-91</td>
<td>396</td>
<td>3.03</td>
<td>81</td>
</tr>
<tr>
<td>1991-92</td>
<td>396</td>
<td>3.04</td>
<td>79</td>
</tr>
<tr>
<td>1992-93</td>
<td>364</td>
<td>3.07</td>
<td>77</td>
</tr>
</tbody>
</table>

** MISCELLANEOUS INFORMATION : FY 1992-93 **

Of the applicants to COE programs, 379 (76%) were female, and 122 (24%) were male. The average age of COE applicants was 28. Of those who applied, 27% had received a prior degree (i.e. were Postbachelor).

There were 328 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 1992-93

Graph shows average hours for undergraduate applicants only.

AVG GPA AT ADMISSION TO COE
1983-84 Through 1992-93

Graph shows average gpa for undergraduate applicants only.
AVERAGE AGE OF COE APPLICANTS
FY 1983-84 THROUGH FY 1992-93

N is 90% of total applied or
better for all fiscal years.

COE APPLICANTS BY GENDER
1992-1993

COE APPLICANTS BY ETHNICITY
1992-93
COE APPLICANTS ADMITTED AND DENIED 1992–93 BY ETHNICITY

- **Other**: 366 applied, 328 admitted, 38 not admitted
- **Hispanic**: 124 applied, 111 admitted, 13 not admitted
- **Native American**: 6 applied, 6 admitted, 0 not admitted
- **Black**: 5 applied, 4 admitted, 1 not admitted

Legend:
- **Filled Bar**: Applied
- **Crosshatched Bar**: Admitted
- **Diagonal Striped Bar**: Not Admitted
<table>
<thead>
<tr>
<th>DEPT</th>
<th>TEACHER LICENSURE</th>
<th>OTHER EDUCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bach PostBach</td>
<td>Bach Mast Spec</td>
</tr>
<tr>
<td>1988-89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>CIMTE</td>
<td>160</td>
<td>0</td>
</tr>
<tr>
<td>Couns &amp; FS</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Ed Admin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ed Found</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HPPELP</td>
<td>20</td>
<td>56</td>
</tr>
<tr>
<td>Special Ed</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>TOE</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>214</td>
<td>67</td>
</tr>
<tr>
<td>1989-90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>CIMTE</td>
<td>138</td>
<td>-</td>
</tr>
<tr>
<td>Couns &amp; FS</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Ed Admin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ed Found</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HPPELP</td>
<td>9</td>
<td>39</td>
</tr>
<tr>
<td>Special Ed</td>
<td>22</td>
<td>-</td>
</tr>
<tr>
<td>TOE</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>179</td>
<td>58</td>
</tr>
<tr>
<td>1990-91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>CIMTE</td>
<td>204</td>
<td>-</td>
</tr>
<tr>
<td>Couns &amp; FS</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Ed Admin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ed Found</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HPPELP</td>
<td>11</td>
<td>63</td>
</tr>
<tr>
<td>Special Ed</td>
<td>35</td>
<td>-</td>
</tr>
<tr>
<td>TOE</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>252</td>
<td>84</td>
</tr>
<tr>
<td>1991-92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>CIMTE</td>
<td>254</td>
<td>-</td>
</tr>
<tr>
<td>Couns &amp; FS</td>
<td>1</td>
<td>31</td>
</tr>
<tr>
<td>Ed Admin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ed Found</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HPPELP</td>
<td>18</td>
<td>44</td>
</tr>
<tr>
<td>Special Ed</td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td>TLT</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>308</td>
<td>80</td>
</tr>
<tr>
<td>1992-93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>CIMTE</td>
<td>160</td>
<td>-</td>
</tr>
<tr>
<td>Couns &amp; FS</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Ed Admin</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ed Found</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>HPPELP</td>
<td>19</td>
<td>68</td>
</tr>
<tr>
<td>Special Ed</td>
<td>63</td>
<td>-</td>
</tr>
<tr>
<td>TLT</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>246</td>
<td>110</td>
</tr>
</tbody>
</table>
There were 409 students who attempted admission to COE teaching programs in fiscal year 1992-93. The 409 students qualified for admission by taking some entrance test.

It was found that 189 students (46%) had taken the PPST, and that 131 students (32%) had taken the NTE. It was determined that the remaining 89 people tested as follows: 59 submitted ACT scores for exemption purposes, 28 passed COE "Alternate Route" tests, and 2 were exempt because they already held a current teaching license in another area.

It is interesting to note that significant use is being made of COE "near miss" admission requirements. Of the 189 students who submitted PPST scores at application, 77 (40%) 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: 30 students in Reading, 51 students in Math, and 38 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 1992-93**

<table>
<thead>
<tr>
<th>STATUS</th>
<th>N</th>
<th>READING*</th>
<th>MATH*</th>
<th>WRITING**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit</td>
<td>166</td>
<td>179.4</td>
<td>178.2</td>
<td>175.7</td>
</tr>
<tr>
<td>Not Admit</td>
<td>23</td>
<td>179.2</td>
<td>176.3</td>
<td>175.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>189</td>
<td>179.4</td>
<td>178.0</td>
<td>175.7</td>
</tr>
<tr>
<td>NATIONAL AVG</td>
<td>***</td>
<td>174.7</td>
<td>174.8</td>
<td>175.2</td>
</tr>
</tbody>
</table>

* minimum pass is 172
** minimum pass was 175
*** ETS November 1984 Standardization Sample

**MEAN NTE SCORES FOR COE APPLICANTS : FY 1992-93**

<table>
<thead>
<tr>
<th>STATUS</th>
<th>N</th>
<th>COMM SKILLS*</th>
<th>GEN KNOWLEDGE**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit</td>
<td>111</td>
<td>669.8</td>
<td>670.0</td>
</tr>
<tr>
<td>Not Admit</td>
<td>20</td>
<td>663.1</td>
<td>663.1</td>
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<tr>
<td>TOTAL</td>
<td>131</td>
<td>669.1</td>
<td>668.9</td>
</tr>
<tr>
<td>NATIONAL AVG</td>
<td>***</td>
<td>659</td>
<td>656</td>
</tr>
</tbody>
</table>

* minimum passing score is 644
** minimum passing score is 645
*** ETS November 1982 Standardization Sample
ENTRANCE TESTING
COE APPLICANTS: FY 1992-93

PPST 46.4%

NTE 32.2%

ACT 14.5%

ALTERNATE ROUTE 6.9%

Alternate Route includes PPST Near Miss
### PASS-FAIL RATE ON PPST 1988-89 THROUGH 1992-93 BY ETHNICITY

<table>
<thead>
<tr>
<th>Year</th>
<th>PASS</th>
<th>FAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>1988-89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native American</td>
<td>4</td>
<td>44%</td>
</tr>
<tr>
<td>Black</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>40</td>
<td>65%</td>
</tr>
<tr>
<td>Other</td>
<td>161</td>
<td>85%</td>
</tr>
<tr>
<td>All</td>
<td>205</td>
<td>79%</td>
</tr>
<tr>
<td>1989-90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native American</td>
<td>3</td>
<td>43%</td>
</tr>
<tr>
<td>Black</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>38</td>
<td>66%</td>
</tr>
<tr>
<td>Other</td>
<td>128</td>
<td>88%</td>
</tr>
<tr>
<td>All</td>
<td>169</td>
<td>79%</td>
</tr>
<tr>
<td>1990-91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native American</td>
<td>5</td>
<td>50%</td>
</tr>
<tr>
<td>Black</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>45</td>
<td>70%</td>
</tr>
<tr>
<td>Other</td>
<td>157</td>
<td>92%</td>
</tr>
<tr>
<td>All</td>
<td>209</td>
<td>80%</td>
</tr>
<tr>
<td>1991-92</td>
<td></td>
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<tr>
<td>Native American</td>
<td>3</td>
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<tr>
<td>Black</td>
<td>0</td>
<td>0%</td>
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<tr>
<td>Hispanic</td>
<td>51</td>
<td>80%</td>
</tr>
<tr>
<td>Other</td>
<td>146</td>
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<tr>
<td>All</td>
<td>200</td>
<td>84%</td>
</tr>
<tr>
<td>1992-93</td>
<td></td>
<td></td>
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<tr>
<td>Native American</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Black</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>44</td>
<td>80%</td>
</tr>
<tr>
<td>Other</td>
<td>112</td>
<td>85%</td>
</tr>
<tr>
<td>All</td>
<td>158</td>
<td>84%</td>
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## MEAN ACT SCORES FOR COE APPLICANTS* : FY 1992-93

<table>
<thead>
<tr>
<th>TEACHING PROGRAMS</th>
<th>N</th>
<th>English</th>
<th>Math</th>
<th>Soc.Sci</th>
<th>Nat.Sci</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit</td>
<td>183</td>
<td>20.8</td>
<td>19.4</td>
<td>19.9</td>
<td>22.5</td>
<td>20.8</td>
</tr>
<tr>
<td>Not Admit</td>
<td>20</td>
<td>19.0</td>
<td>12.4</td>
<td>15.4</td>
<td>19.8</td>
<td>16.7</td>
</tr>
<tr>
<td>Applied</td>
<td>203</td>
<td>20.6</td>
<td>18.7</td>
<td>19.5</td>
<td>22.2</td>
<td>20.4</td>
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</table>

<table>
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<tr>
<th>NON-TEACHING</th>
<th>N</th>
<th>English</th>
<th>Math</th>
<th>Soc.Sci</th>
<th>Nat.Sci</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit</td>
<td>40</td>
<td>19.3</td>
<td>16.8</td>
<td>18.6</td>
<td>20.8</td>
<td>18.9</td>
</tr>
<tr>
<td>Not Admit</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Applied</td>
<td>40</td>
<td>19.3</td>
<td>16.8</td>
<td>18.6</td>
<td>20.8</td>
<td>18.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ALL APPLICANTS</th>
<th>N</th>
<th>English</th>
<th>Math</th>
<th>Soc.Sci</th>
<th>Nat.Sci</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admit</td>
<td>223</td>
<td>20.5</td>
<td>18.9</td>
<td>19.7</td>
<td>22.2</td>
<td>20.5</td>
</tr>
<tr>
<td>Not Admit</td>
<td>20</td>
<td>19.0</td>
<td>12.4</td>
<td>15.4</td>
<td>19.8</td>
<td>16.7</td>
</tr>
<tr>
<td>TOTAL APPLIED</td>
<td>243</td>
<td>20.4</td>
<td>18.4</td>
<td>19.3</td>
<td>22.0</td>
<td>20.1</td>
</tr>
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* UNM Database had ACT scores for 243 out of 501 applicants (only 49%)

## MEAN ACT SCORES FOR COE TEACHING PROGRAM ADMISSIONS : BY FISCAL YEAR

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>N</th>
<th>English</th>
<th>Math</th>
<th>Soc.Sci</th>
<th>Nat.Sci</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983-84</td>
<td>147</td>
<td>20.0</td>
<td>18.3</td>
<td>19.2</td>
<td>21.9</td>
<td>20.0</td>
</tr>
<tr>
<td>1984-85</td>
<td>141</td>
<td>20.0</td>
<td>19.5</td>
<td>20.2</td>
<td>22.6</td>
<td>20.7</td>
</tr>
<tr>
<td>1985-86</td>
<td>109</td>
<td>18.6</td>
<td>16.5</td>
<td>18.8</td>
<td>21.1</td>
<td>18.8</td>
</tr>
<tr>
<td>1986-87</td>
<td>132</td>
<td>19.4</td>
<td>17.9</td>
<td>19.3</td>
<td>22.3</td>
<td>19.9</td>
</tr>
<tr>
<td>1987-88</td>
<td>209</td>
<td>19.8</td>
<td>18.1</td>
<td>19.9</td>
<td>21.5</td>
<td>19.9</td>
</tr>
<tr>
<td>1988-89</td>
<td>157</td>
<td>20.1</td>
<td>18.4</td>
<td>19.3</td>
<td>21.9</td>
<td>20.1</td>
</tr>
<tr>
<td>1989-90</td>
<td>158</td>
<td>19.7</td>
<td>17.5</td>
<td>18.7</td>
<td>21.6</td>
<td>19.4</td>
</tr>
<tr>
<td>1990-91</td>
<td>221</td>
<td>20.1</td>
<td>18.3</td>
<td>19.6</td>
<td>22.0</td>
<td>20.1</td>
</tr>
<tr>
<td>1991-92</td>
<td>228</td>
<td>19.5</td>
<td>17.1</td>
<td>18.2</td>
<td>21.2</td>
<td>19.1</td>
</tr>
<tr>
<td>1992-93</td>
<td>243</td>
<td>20.4</td>
<td>18.4</td>
<td>19.3</td>
<td>22.0</td>
<td>20.1</td>
</tr>
<tr>
<td>Level IV Average</td>
<td>*</td>
<td>20.6</td>
<td>20.5</td>
<td>20.5</td>
<td>23.8</td>
<td>21.5</td>
</tr>
<tr>
<td>UNM Average</td>
<td>**</td>
<td>20.8</td>
<td>20.4</td>
<td>20.5</td>
<td>24.1</td>
<td>21.6</td>
</tr>
</tbody>
</table>

* 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 1992-93**
*(By Sex and Ethnicity)*

#### BY SEX

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 1992-93:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>56</td>
<td>19.1</td>
<td>20.1</td>
<td>21.1</td>
<td>24.0</td>
<td>21.2</td>
</tr>
<tr>
<td>Female</td>
<td>167</td>
<td>21.0</td>
<td>18.6</td>
<td>19.2</td>
<td>21.6</td>
<td>20.2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>223</td>
<td>20.5</td>
<td>18.9</td>
<td>19.7</td>
<td>22.2</td>
<td>20.5</td>
</tr>
<tr>
<td>1982-1992:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>543</td>
<td>18.7</td>
<td>19.1</td>
<td>20.0</td>
<td>23.2</td>
<td>20.5</td>
</tr>
<tr>
<td>Female</td>
<td>1595</td>
<td>19.8</td>
<td>17.1</td>
<td>18.2</td>
<td>21.0</td>
<td>19.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2138</td>
<td>19.5</td>
<td>17.8</td>
<td>18.6</td>
<td>21.6</td>
<td>19.4</td>
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</table>

#### BY ETHNICITY

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>FY 1992-93:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>140</td>
<td>21.7</td>
<td>20.3</td>
<td>21.4</td>
<td>23.7</td>
<td>21.9</td>
</tr>
<tr>
<td>Hispanic</td>
<td>79</td>
<td>18.4</td>
<td>16.8</td>
<td>16.7</td>
<td>19.7</td>
<td>18.0</td>
</tr>
<tr>
<td>Native American</td>
<td>2</td>
<td>19.0</td>
<td>13.5</td>
<td>17.0</td>
<td>20.5</td>
<td>17.5</td>
</tr>
<tr>
<td>Black</td>
<td>2</td>
<td>20.0</td>
<td>12.0</td>
<td>15.5</td>
<td>17.5</td>
<td>16.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>223</td>
<td>20.5</td>
<td>18.9</td>
<td>19.7</td>
<td>22.2</td>
<td>20.5</td>
</tr>
<tr>
<td>1982-1992:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1509</td>
<td>20.3</td>
<td>18.5</td>
<td>19.9</td>
<td>22.6</td>
<td>20.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>552</td>
<td>17.8</td>
<td>15.4</td>
<td>15.9</td>
<td>18.9</td>
<td>17.0</td>
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<tr>
<td>Native American</td>
<td>61</td>
<td>16.5</td>
<td>14.3</td>
<td>14.8</td>
<td>19.6</td>
<td>16.4</td>
</tr>
<tr>
<td>Black</td>
<td>19</td>
<td>12.0</td>
<td>12.1</td>
<td>11.2</td>
<td>11.2</td>
<td>12.1</td>
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<tr>
<td>TOTAL</td>
<td>2140</td>
<td>19.5</td>
<td>17.4</td>
<td>18.2</td>
<td>21.1</td>
<td>19.4</td>
</tr>
</tbody>
</table>

* It should be noted that ACT scores were obtainable for slightly less than 50% of the students admitted in this time period.
In Fiscal Year 1992-93, 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:

<table>
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<th>Semester</th>
<th>Number</th>
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<tbody>
<tr>
<td>SUMMER</td>
<td>1257</td>
</tr>
<tr>
<td>FALL</td>
<td>3264</td>
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<tr>
<td>SPRING</td>
<td>3689</td>
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</tbody>
</table>

The above 8210 enrollments represent 2909 individuals.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>A &amp; S</td>
<td>379</td>
<td>15%</td>
<td>435</td>
</tr>
<tr>
<td>Education</td>
<td>831</td>
<td>33%</td>
<td>857</td>
</tr>
<tr>
<td>University</td>
<td>219</td>
<td>9%</td>
<td>190</td>
</tr>
<tr>
<td>Non Degree</td>
<td>471</td>
<td>19%</td>
<td>507</td>
</tr>
<tr>
<td>Univ. Std.</td>
<td>440</td>
<td>18%</td>
<td>506</td>
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<tr>
<td>Other</td>
<td>145</td>
<td>6%</td>
<td>198</td>
</tr>
<tr>
<td>ENROLLED</td>
<td>2485</td>
<td>100%</td>
<td>2693</td>
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</tbody>
</table>


* "Upper Division" is 300 & 400 Level
## DEMOGRAPHIC INFORMATION
### FOR NON-GRADUATE STUDENTS TAKING UPPER DIVISION COE COURSES
### FY 1992-93

### AGE

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Count</th>
<th>Percent</th>
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<tr>
<td>under 20</td>
<td>23</td>
<td>1%</td>
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<tr>
<td>20 - 24</td>
<td>1031</td>
<td>35%</td>
</tr>
<tr>
<td>25 - 29</td>
<td>523</td>
<td>19%</td>
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<tr>
<td>30 - 34</td>
<td>389</td>
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<td>35 - 39</td>
<td>323</td>
<td>11%</td>
</tr>
<tr>
<td>40 - 44</td>
<td>305</td>
<td>10%</td>
</tr>
<tr>
<td>45 - 49</td>
<td>170</td>
<td>6%</td>
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<tr>
<td>50 or over</td>
<td>145</td>
<td>5%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2909</td>
<td>100%</td>
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### SEX

<table>
<thead>
<tr>
<th>Sex</th>
<th>Count</th>
<th>Percent</th>
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<tr>
<td>Male</td>
<td>845</td>
<td>29%</td>
</tr>
<tr>
<td>Female</td>
<td>2064</td>
<td>71%</td>
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<tr>
<td>TOTAL</td>
<td>2909</td>
<td>100%</td>
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</table>

### ETHNICITY

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Count</th>
<th>Percent</th>
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</thead>
<tbody>
<tr>
<td>Native American</td>
<td>157</td>
<td>6%</td>
</tr>
<tr>
<td>Black</td>
<td>79</td>
<td>3%</td>
</tr>
<tr>
<td>Asian</td>
<td>38</td>
<td>1%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>650</td>
<td>22%</td>
</tr>
<tr>
<td>Other</td>
<td>1985</td>
<td>68%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2909</td>
<td>100%</td>
</tr>
</tbody>
</table>
STUDENTS TAKING COE UPPER LEVEL COURSES*  
92–93 BY AGE GROUPS

NUMER

AGE GROUPS

Students

FEMALE

MALE

STUDENTS TAKING COE UPPER LEVEL COURSES*  
BY SEX 92–93

STUDENTS TAKING COE UPPER LEVEL COURSES*  
BY ETHNICITY 92–93

OTHER HISPANIC NATIVE AMER BLACK ASIAN

Students

*Courses numbered 300 and 400's

*Courses numbered 300 and 400's
### TEACHING MAJORS

<table>
<thead>
<tr>
<th>AREA</th>
<th>Majors</th>
<th>Minors</th>
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<tr>
<td>Bilingual Ed.</td>
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<tr>
<td>Biology</td>
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<tr>
<td>Chemistry</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Communication Arts</td>
<td>9</td>
<td>15</td>
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<tr>
<td>Earth Science</td>
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<tr>
<td>Elementary Ed.</td>
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<tr>
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</tr>
<tr>
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<td>0</td>
</tr>
<tr>
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<td>0</td>
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<tr>
<td>P.E.</td>
<td>12</td>
<td>0</td>
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<tr>
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</tr>
<tr>
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<td>0</td>
</tr>
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<td>2</td>
<td>0</td>
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<tr>
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<td>1</td>
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<tr>
<td><strong>TEACHING MAJORS</strong></td>
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</table>

### NON-TEACHING MAJORS

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<th>Majors</th>
<th>Minors</th>
</tr>
</thead>
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</tr>
<tr>
<td>Child Dev &amp; Family Rel</td>
<td>13</td>
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</tr>
<tr>
<td>Community Health Ed</td>
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<td>0</td>
</tr>
<tr>
<td>Exercise Tech</td>
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<td>0</td>
</tr>
<tr>
<td>General Family Studies</td>
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**TOTAL** 295 UNDERGRADUATE DEGREES
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COE TEACHING PROGRAM COMPLETIONS
PERCENT MINORITY: 86-87 thru 92-93

PERCENT MINORITY

86-87: 28% Teaching Degrees, 21% All Teaching Progs, 11% PostBA Student Teach
87-88: 29% Teaching Degrees, 21% All Teaching Progs, 11% PostBA Student Teach
88-89: 33% Teaching Degrees, 24% All Teaching Progs, 8% PostBA Student Teach
89-90: 30% Teaching Degrees, 26% All Teaching Progs, 9% PostBA Student Teach
90-91: 32% Teaching Degrees, 28% All Teaching Progs, 15% PostBA Student Teach
91-92: 27% Teaching Degrees, 24% All Teaching Progs, 9% PostBA Student Teach
92-93: 33% Teaching Degrees, 29% All Teaching Progs, 19% PostBA Student Teach

* Missing Ethnicity
3 in 85-86, 1 in 87-88
## SEX BREAKDOWN: NUMBER & PERCENT
### INITIAL PROGRAM COMPLETIONS
1988-89 through 1992-93*

### TEACHING BACHELORS DEGREES

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#### FOR NON BACHELORS DEGREE STUDENT TEACHING COMPLETIONS
1988-89 Through 1992-93

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* In 1988-89, COE began to have Postbachelor students transfer in.
COE TEACHING PROGRAM COMPLETIONS
1987-88 thru 1992-93

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### ALL INITIAL PROGRAM COMPLETIONS
(Non Bachelors Completions Based On Student Teaching)

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* 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.
INTRODUCTION

The 1992-93 year represented the first phase of the reorganized College of Education. Eight departments were reorganized into three divisions: Division A, Education in the Professions; Division B, Learning and Teaching; and Division C, Innovative Programs in Education. For the first time, academic programs functioned autonomously within a large division rather than being part of a department containing a few programs. The new structure presented many challenges related to curriculum, both administratively and substantively. Perhaps the greatest challenge for faculty was the effort required to maintain current programs for students currently enrolled while engaging in planning for restructured programs for yet-to-be admitted students. The long-term goal is that every academic program in the College will be restructured to represent state-of-the-art preparation programs for a wide range of education professionals. These programs are intended to meet the criteria specified in the Plan of Action.

The Associate Dean for Program and Curriculum oversees the academic programs in the College. This position entails the facilitation of the development of new and the revision of existing courses and programs. As part of this endeavor, the Associate Dean serves as an ex-officio member of the College Undergraduate and Graduate Committees. Further, she provides final approval for all College courses (and the instructors) taught through Continuing Education, at the branch colleges and at UNM-North facilities. She facilitates collaboration with other colleges and departments at UNM and with other universities on curriculum matters. Finally, she performs a variety of other tasks as needed to move the College toward its goals.

ON-GOING ACTIVITIES

1. Undergraduate Committee: The undergraduate committee was relatively inactive during the year. They approved the following new course: FS 485, Ethnic Minority Families. In addition, they drafted a proposed Probation and Suspension Policy. However, the policy cannot be brought to the faculty for approval until the GPA for admission to all programs is consistent throughout the College. This item will be a continuing one for discussion in the 1993-94 academic year. The committee was unable to agree on a meeting time to discuss the proposed EDUC prefix for 293/493 courses, but several members gave approval by mail. The prefix was proposed to the general faculty and was tabled until guidelines for its use and monitoring procedures were recommended by both the Undergraduate Committee (for 293/493) and the Graduate Committee (for 593).

2. Graduate Committee: The graduate committee approved the following course to carry graduate credit: FS 485, Ethnic Minority Families. The committee approved a special mission for Frank Zittle to the TLT graduate program and forwarded its approval to the Senate Graduate Committee, which subsequently approved the request; members participated in the revised edition of the Graduate Bulletin; began a revision of the document, Monitoring Doctoral Programs in the COE (to be completed in the coming year); acted on two appeals—one a request for readmission to the Exercise Science program and another, an appeal of a grade in a graduate level Special Education class; and approved a petition from a student from Nepal for admission to the CIMTE graduate program. Two new initiatives were pursued by the Graduate Committee: the EDUC prefix for 593 courses and specialized courses for professional development. The Committee approved the EDUC prefix; when it was tabled in the general faculty, they drafted
guidelines for its use and procedures for monitoring. At the beginning of the 1993 academic year, a sub-committee consisting of selected members from both the Graduate and Undergraduate Committees will review the draft and make final recommendations to the general faculty. The Graduate Committee also approved the concept of Professional Courses that would carry a specialized number and would either count in a limited way or not count at all toward a graduate degree. This issue will be pursued further over the summer and into the Fall. The Committee is requesting that the Faculty Policy Committee provide them with a policy for committee membership in the existing structure of the College and guidelines for their charge.

3. NM-North Advisory Committee: The Associate Dean for Program and Curriculum sits as a member of the UNM-North Advisory Committee. UNM-North consists of the Santa Fe Graduate Center, UNM-Los Alamos, the Harwood Foundation, and the newly established Taos Education Center. The College of Education currently offers courses in both Santa Fe and Los Alamos, and requests are being made to offer courses in Taos. A procedure was implemented for course and instructor approval for COE courses which is working well. There is an understanding that adjunct faculty in UNM-North facilities who teach graduate courses must meet the OGS requirements for graduate instruction except in rare cases where the instructor has a special talent or no qualified instructor can be found.

4. Collaboration with Continuing Education: Hundreds of COE courses are offered through Continuing Education throughout the state during the calendar year. Most, but not all, of these courses are CIMTE and Special Education and are requested by the school districts. The majority, up until this year, had been 593 Topics courses primarily offered for professional development. In the past, the process for course and instructor approval had been rather perfunctory; that is, they were not subjected to scrutiny by faculty. Often the course did not seem appropriate for graduate credit and/or the proposed instructor does not hold a doctoral degree, yet many of the courses have years of precedent. A considerable effort was made during the past year to work with Drs. Trujillo and Dominguez to meet community needs and, at the same time, to preserve the integrity of our graduate programs. A procedure was developed, in conjunction with the Associate Deans for Divisions, for program faculty scrutiny and for processing proposed courses in a timely fashion. This process has worked well and has eliminated all approvals after the courses have begun. Many proposed courses were changed from Topics to Workshops (492/592), since students are limited in the number of workshop credits that can be counted toward a graduate degree. Continuing Education has agreed to attempt locate qualified instructors (those holding doctoral degrees) for proposed 500-level courses, unless the individual has a special talent. While these negotiations have resulted in a temporary solution to the dilemma of professional development, efforts to create specialized professional development courses should continue. Continuing Education is very supportive of these efforts.

5. Undergraduate Catalog: The Undergraduate Catalog required massive revision in the Spring to reflect the current organizational structure of the College. The Associate Dean's Office, in conjunction with the Scheduling and Registrar's office, was responsible for this task.

6. Scheduling of Classes: This office oversees the scheduling of classes for the College for Fall, Spring, and Summer semesters. Due to the new organizational structure, and the short lead time allowed by the Scheduling Office, this process was less than satisfactory. A more efficient and satisfactory system must be developed for the coming academic year.
NEW INITIATIVES

1. **Gallup Teacher Education Program:** The Commission on Higher Education awarded a competitive contract to the College of Education to establish a baccalaureate teacher education program in Gallup. Funding was provided by the CHE, the Navajo Nation, and Zuni Pueblo. Professor Sig Mierzwa directs the program, which has completed its first year. Initially, there were significant problems associated with admissions and registration of students. Several meetings occurred between the College of Education, Dr. Mierzwa, and the Admissions and Registration office, and a plan was adopted to improve the process. At this point in time, the situation is better but not yet fully resolved.

2. **Knowledge Base Task Force:** Because of the poor performance of the College of Education on NCATE's standard regarding the knowledge base for teacher education programs, a task force was appointed to develop a knowledge base model that is known, understood, and supported by the College's activities. The task force reviewed all of the documents that frame the current efforts toward reorganization and selected unifying themes that emerged from those documents. Next, they reviewed the literature related to NCATE's adoption of a knowledge base approach to the review of educational institutions. Third, the task force reviewed knowledge bases created by other institutions that had been successfully reviewed and endorsed by NCATE. The summary of these documents provided the first draft of a knowledge base model. The task force then initiated a Delphi Study to seek consensus from faculty, program directors, clinical supporting faculty and interns from the College's programs. The third and final round of the study is in progress. The results will represent a starting point for the full implementation by the faculty of a knowledge base model. The same task force (or a new one) will need to address the process of integrating the knowledge base into each program in the College during the next academic year.

3. **Alternative (Outcomes-based) Assessment:** The State Department of Education's Licensure Testing Task Force determined that Provisions I, II, and III of the Staff Accountability Plan is outdated and that a restructuring of the Plan is necessary for the advancement of teacher preparation and teacher licensure in New Mexico in the 1990's. Therefore, they proposed amendments to these three provisions, which basically allow for universities to develop their own plans to assess and develop basic skills, using a combination of assessment indicators. Included in the second provision is an assessment process that includes a mandatory uniform written exam of communication skills and professional knowledge. This means that universities may develop options to the PPST and the NTE. In April, 1993, some COE faculty met with some NMSU faculty to begin discussion about potential alternative methods of assessment that would satisfy the revised provisions adopted by the State Board of Education. This discussion was continued and moved forward on June 19th in Las Cruces, where representatives from higher ed institutions from across the state met. There will be another state-wide meeting in October. In the meantime, this office will assemble a local team of faculty, including representatives from the branch colleges, to consider options we might wish to pursue. This initiative will be a priority for 1993-94.

4. **COE Program and Course Initiatives:** A variety of program and course initiatives have occurred, some as the result of restructuring and others independent of the restructuring effort. Several programs will be moving to Division C to engage in significant restructuring during the 1993-94 academic year. The following initiatives occurred in the preceding year:

   a. **Early Childhood Education**—The Early Childhood Consortium, which consists of faculty from Family Studies, Elementary Education, Special Education, and Health Education, continued work toward an interdisciplinary baccalaureate program in Early Childhood Education. The proposed program, together with the new courses, will be ready to proceed through College and University approval processes in the Fall. The State Board
of Education adopted a licensure for personnel working with children birth through age 8, both typical and atypical, on July 1, 1993. The proposed new program will meet the competencies identified in the new licensure. The consortium will continue to meet to address a proposed master's degree, issues of interdisciplinary research in early childhood, articulation with other institutions, and possibly the formation of an advisory board.

b. Programs in/for Latin America—Three program initiatives were undertaken in conjunction with LAI/OITEC in or for Latin America. The first is a Master's degree in CIMTE taught in Spanish on the UNM campus for teacher trainers from Ecuador. The final contract is being negotiated and applicants are being interviewed in Ecuador at the time of this writing.

A proposal is pending with the University of Guadalajara for a Spanish master's degree in Public Administration with an emphasis in Higher Education. Included in the proposal are four courses in Educational Administration.

In conjunction with OITEC, APS, and the State Department of Education, the College of Education provided a two-week program in June, 1993, for individuals from the Ministry of Education in the Dominican Republic. The program included visits to schools in APS and combined both observation and practical instruction Professor Sara Dawn Smith coordinated this initiative.

c. Examination of college-wide curricula for possible duplication/overlap/gaps was begun during 1992-93 and will continue throughout the coming year. The following activities in this area were begun:

1. Professor David Bachelor was asked to conduct an inventory of all the courses in the College of Education. His report was made available to members of a Task Force on Human Development and a Task Force on Research, which were appointed out of this office. Bachelor identified 39 college courses in research/evaluation and 27 courses in child/human development. Both task forces began to examine course syllabi for courses to identify duplication/overlap, and this office assembled enrollment data over the past few years for these courses. The task forces will continue their work in the fall in order to make recommendations about restructuring/streamlining courses in these two areas.

2. This office made a request to the Multicultural Education Committee to review multicultural and bilingual courses throughout the college to accomplish the same objectives described above. In his inventory, Bachelor identified 32 college courses with the words "multicultural" or "bilingual" in the title. The progress of the MEC on this task is not known.

MISCELLANEOUS CURRICULUM INITIATIVES

1. Natural Science courses: Initial discussions were held with Bel Campbell, Physics, and David Wolfe, Chair of Physics, on the Natural Science courses required for teacher certification. The ultimate goal is to house the three courses in Arts & Sciences, in either a single department or multiple departments, and have them team-taught by A & S and COE faculty. Professor Wolfe promised to talk with other science chairs and convene another meeting to include them as well as the Dean of A & S. This has not yet occurred and must be a priority for the coming year.
2. Navajo Nation Head Start: More than a year ago, a proposal was submitted to provide a baccalaureate program with an emphasis in early childhood to Navajo Head Start teachers at NM-Gallup and at San Juan. The proposal was not funded by the Navajo Nation. In June, 1993, the Navajo Nation requested a meeting to resurface discussions with the COE for such a program. The Associate Dean for Program and Curriculum, the Associate Dean for Division C, and Professor Mary Patton met with representatives from the Navajo Nation, and another meeting is scheduled for July to discuss the possibility for beginning a pilot program for a small number of students in the Fall of 1993.

3. Collaboration with Architecture: This office is collaborating with Professor Anne Taylor, Architecture, on two projects: the Architecture for Children Conference (which was held in June) and the Head Start Classroom of the Future, which is housed at the UNM Child Care Center. Three faculty members participated in the Architecture for Conference: Craig Kelsey, David Nateman, and Bob Weber. Students in Family Studies and CIMTE who are interested in early childhood will be invited to do research in the Head Start classroom.

4. Articulation with Navajo Community College: Representatives from the COE, including the Associate Dean for Program and Curriculum and representatives from the Linguistics program, met with representatives from Navajo Community College to discuss articulation of Navajo language courses taught at NCC with UNM requirements, specifically with programs in the College of Education. No resolution of the problems was reached, but discussions will continue.

5. Innovative courses: Several innovations were/will be undertaken with respect to courses in COE. For example, a graduate level course in Educational Policy will be taught in the Fall, cross-listed in Educational Administration, Health Education, Family Studies, and Educational Foundations. The course will be team-taught with faculty from the four programs. A Museum Education graduate level course was taught by David Nateman and Bob Weber in conjunction with Maxwell Museum, and a graduate level research methods course in Health Education will be taught in the Fall by faculty from across the college.

6. Graduate unit review: The old Health Promotion, Physical Education and Leisure Programs Department underwent a graduate unit review in 1992-93 under the auspices of the Senate Graduate Committee.

7. Committee for values: A committee to develop values for classroom climate was appointed by the Dean.

8. Admission to Elementary Education: The Elementary Education faculty voted to increase the GPA required for admission to the El Ed program from 2.5 to 2.75. The change will be in effect for students admitted for Fall, 1994.

9. Sub-committee on academic standards: A small committee reviewed information provided by the Provost's office regarding intersession courses and undergraduates registered for graduate level problems courses. The committee requested that the Dean write to all faculty regarding academic standards in the College and request that each faculty who had registered undergraduates in graduate level problems courses be asked to provide a written explanation by July 1. Most faculty responded. The investigation revealed that the majority of students designated as undergraduates in COE 591 courses are actually post-baccalaureate students. The Associate Dean's office will work with the Provost's office and the Registrar's office to develop a system whereby these students will be identified as graduate status. With respect to intersession courses, the Provost's office promulgated a regulation that should solve the problem of intersession courses.
Pilot program in Technology: A pilot program developed by the Math, Science, and Technology collaborative will be initiated in the Fall of 1993. It is designed to promote inquiry relative to the roles, impacts, and possibilities of integrating technology into the educational process. It is not a new program per se, but it reconfigures courses to be taught through a transdisciplinary approach, and it plans to accept students on a cohort basis.

MISCELLANEOUS ACTIVITIES

1. New Mexico First: The Associate Dean for Program and Curriculum, with the assistance of Professor Tommie Hamner and Linda Orell, prepared the background research paper, Children and their Families in New Mexico, for the 11th Town Hall meeting of New Mexico First, held in April in Farmington, New Mexico.

2. Faculty positions: This office drafted the guidelines for requesting faculty positions and worked with the Faculty Policy Committee to implement a college-wide committee to review and rank proposals. Requests were received for 52 new faculty positions; 16 were awarded.

3. UNM Child Care Center: The Associate Dean for Program and Curriculum collaborated with the Director of the UNM Child Care Center to design new facilities and to develop academic links with programs in the COE.

4. Part-time faculty orientation: This office planned and implemented a three-hour orientation for part-time faculty and teaching assistants during the spring and summer semesters. Included in the orientation were issues of academic freedom, professional ethics, and diversity, as well as information on routine matters. This orientation will continue each semester.

5. Searches for new faculty: The Associate Dean for Program and Curriculum chaired the search committee for two early childhood faculty. One search was successful, and one was not.

6. Visiting dignitaries: This office met with visitors from Jordan and Australia about programs in the COE. She arranged an itinerary for the visitor from Australia.

7. AACTE grant: This office is facilitating the implementation of a grant received from AACTE on cross-training of pre-professionals from a variety of programs in the college.

PROFESSIONAL ACTIVITIES OF ASSOCIATE DEAN

The Associate Dean for Program and Curriculum participated in the following professional conferences during the 1992-93 year: State level—Total Quality Management Conference, New Mexico Child Care Conference (presenter); Regional level—Holmes Group (both Fall and Spring; panel participant at Spring meeting); National—IBM Eduquest, Holmes Group, AACTE, AACTE workshop on Knowledge Base, the National Association for the Education of Young Children, the American Educational Research Association, and the Kentucky conference on educational reform.

The Associate Dean completed a co-authored book to be released in September, 1993 by Allyn and Bacon and began the revision of a third edition of another co-authored book published by Prentice-Hall.
PRIORITIES FOR 1993-1994

1. Work with Faculty Policy Committee to define committee structure and charge for both the COE undergraduate and graduate committees. Address the need for, membership, and charge for the Curriculum Council.

2. Examine the curriculum for the Gallup teacher education program for relevance to students.

3. Continue to work with the Navajo Nation on an early childhood program at UNM-Gallup.

4. Establish local committee to address the State Board of Education's revised provisions on entrance/exit standards for teacher ed programs. Continue statewide participation in discussion of alternative assessment. Include appropriate COE faculty, representatives from the branch colleges and from A & S.

5. Organize task force to examine academic functions of COE centers, including Manzanita.

6. Facilitate continued discussions on the Natural Science courses with Science Ed faculty, Division C director and A & S.

7. Continue to pursue possibilities for establishing designation for professional development courses.

8. Facilitate graduate and undergraduate committees in proposing guidelines and monitoring the use of the EDUC prefix and propose to COE faculty.

9. Develop procedures and time line for implementing the knowledge base into all COE programs. Should same task force continue or should a new one be appointed? The work of this groups must be coordinated with the work on alternative assessment.

10. Pursue the development of a lower-division interdisciplinary pilot course on Introduction to Education. Is the old Ed Fdn 290 a possibility?

11. Schedule a full day for diversity training for faculty (A Campus of Difference) early in the fall semester.

12. Plan a coordinated program of professional development for faculty. The literature indicates that professional development is a key element of reform.

13. Distribute to faculty information on syllabus writing.

14. Continue work on Human Development and Research task forces. Make recommendations to general faculty.

15. Work with individual undergraduate programs to standardized the GPA requirement for admission across the College so that a logical Suspension and Dismissal policy can be implemented.

16. Submit Early Childhood Education program for approval through university system. Provide assistance to other programs on procedures for course and program changes.
Contract and Grant Activity

1992-93
Art Education

Nateman, David. "Identification and Development of Photographic Images." Holocaust Education Foundation. 4/25/93-12/31/93 $1,000

Nateman, David. "Crayola Dream Makers Exhibition Program." Binney and Smith, Inc. 9/1/92-12/31/93 $4,500

TOTAL: $5,500

Educational Administration

Bowes, Gregory. "Community College Leadership Project." New Mexico State Department of Education. 7/1/92-7/1/93 $50,000

Bowes, Gregory. "Adult Basic Education Staff Development." New Mexico State Department of Education. 7/1/92-6/30/93 $7,702

Krueger, Jo Ann. "APS/UNM Administrative Internship Program." The Albuquerque Public Schools. 7/1/92-6/30/93 $533,728

Krueger, Jo Ann. "BCS/UNM Administrative Internship Program." Belen Consolidated Schools. 7/1/92-7/1/93 $47,300

Krueger, Jo Ann. "MMS/UNM Administrative Internship Program." Moriarty Municipal Schools. 7/1/92-6/30/93 $52,432

Krueger, Jo Ann. "SFIS/UNM Administrative Internship Program." Santa Fe Indian School. 8/1/92-8/30-93 $25,240

Page, Bonnie. "Leadership in Educational Administration Departments." New Mexico State Department of Education. 7/1/92-6/30/93 $70,000

Page, Bonnie. "Leadership in Educational Administration Departments." New Mexico State Department of Education. 7/1/92-6/30/93 $8,248

TOTAL: $794,650

Educational Foundations

Atkins, Amy. "Diffusing Exemplary Educational Practices." U.S. Department of Education. 7/1/92-6/30/93 $102,174

Atkins, Amy. "An Art-Based Reading and Writing Curriculum." PNM Foundation. 6/1/93-6/30/94 $3,400
<table>
<thead>
<tr>
<th>Name</th>
<th>Project Description</th>
<th>Start Date - End Date</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Atkins, Amy.</td>
<td>&quot;Foreign Policy Association Issues.&quot;</td>
<td>1/1/93-12/31/93</td>
<td>$4,070</td>
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<tr>
<td>Schau, Candace.</td>
<td>&quot;Assessment.&quot;</td>
<td>1/18/93-5/15/93</td>
<td>$1,000</td>
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<td><strong>TOTAL:</strong></td>
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<td><strong>$110,644</strong></td>
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**Elementary Education**

<table>
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<th>Name</th>
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<th>Start Date - End Date</th>
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<tbody>
<tr>
<td>Auger, Keith.</td>
<td>&quot;Teacher Intern Exchange Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$313,000</td>
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<td>&quot;Teacher Intern and Induction Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$657,701</td>
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<td>&quot;Teacher Enhancement Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$573,041</td>
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<td>&quot;LLPS/UNM Teacher Intern/Induction Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$90,000</td>
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<td>&quot;Teacher Enhancement Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$50,762</td>
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<td>&quot;Teacher Intern/Induction Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$80,520</td>
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<td>&quot;Teacher Enhancement Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$72,225</td>
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<td>&quot;Teacher Intern/Induction Program.&quot;</td>
<td>6/1/93-6/30/94</td>
<td>$78,000</td>
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<td>Auger, Keith.</td>
<td>&quot;Teacher Intern Exchange Program.&quot;</td>
<td>7/1/92-6/30/93</td>
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<td>&quot;BPS/UNM Teacher Enhancement.&quot;</td>
<td>8/1/92-7/31/93</td>
<td>$27,980</td>
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<td>Mann, Marlis.</td>
<td>&quot;Experimental Site Re:Learning Teacher Education.&quot;</td>
<td>1/1/93-12/31/93</td>
<td>$4,988</td>
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<td><strong>TOTAL:</strong></td>
<td></td>
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<tr>
<td>Project Name</td>
<td>Amount</td>
<td>Funding Source</td>
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<td>------------------------------------------------------------------</td>
<td>------------</td>
<td>------------------------------------------</td>
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<td>&quot;Child Care Food Program.&quot;</td>
<td>$18,722</td>
<td>NM Health and Environment Program.</td>
<td>10/1/92</td>
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<td>&quot;Family Development Program.&quot;</td>
<td>$177,900</td>
<td>Bernard Van Leer Foundation.</td>
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<tr>
<td>&quot;Child Development Training Program.&quot;</td>
<td>$25,000</td>
<td>Bernalillo County.</td>
<td>7/1/92</td>
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<td>&quot;Child Development Associate Training Grant.&quot;</td>
<td>$1,500</td>
<td>NM Department of Human Services.</td>
<td>11/30/92</td>
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<tr>
<td>&quot;UNM Family Development Program.&quot;</td>
<td>$79,700</td>
<td>City of Albuquerque.</td>
<td>7/1/92</td>
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<tr>
<td>&quot;Individual Services Agreement.&quot;</td>
<td>$131,760</td>
<td>Department of Children, Youth, and Families.</td>
<td>1/4/93</td>
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<td>&quot;Family Learning Program.&quot;</td>
<td>$30,000</td>
<td>General Mills</td>
<td>1/1/93</td>
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<td>&quot;Family Support Services.&quot;</td>
<td>$50,000</td>
<td>NM Human Services.</td>
<td>7/1/92</td>
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<td>&quot;After-School Program.&quot;</td>
<td>$81,000</td>
<td>NM Department of Education.</td>
<td>9/1/92</td>
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<tr>
<td>&quot;Train the Trainers Program.&quot;</td>
<td>$50,000</td>
<td>NM Women's Foundation.</td>
<td>8/24/92</td>
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<tr>
<td>&quot;Parent-Infant Education Program.&quot;</td>
<td>$5,000</td>
<td>NM Women's Foundation.</td>
<td>11/1/92</td>
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<tr>
<td>&quot;Parent/Infant Education Program.&quot;</td>
<td>$41,667</td>
<td>U.S. West Foundation.</td>
<td>7/1/92</td>
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<td>&quot;NM Career Information System Project.&quot;</td>
<td>$43,810</td>
<td>State Occupational Information Coordinating Committee.</td>
<td>7/1/92</td>
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<tr>
<td>&quot;UNM Infant Information Specialist Training Project.&quot;</td>
<td>$75,751</td>
<td>U.S. Department of Education.</td>
<td>1/1/93</td>
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<td>&quot;Infant Intervention Specialist Project.&quot;</td>
<td>$75,043</td>
<td>U.S. Department of Education.</td>
<td>1/1/93</td>
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**TOTAL:** $886,853
Health Education

Kane, William. "Linking Schools and Health and Human Service Professionals." AACTE. 12/23/92-3/31/95 $250,000


Stivers, Cathie. "DWI Systems Analysis Program." NM Highway and Transportation Department 11/5/92-9/30/93 $10,000

TOTAL: $292,599

Math and Science Education

Kelsey, Craig. "Innovation in Undergraduate Science Teacher Education." PNM Foundation. 6/1/93-6/30/94 $1,000

Kokoski, Teresa. "Science/Math Initiative." U.S. Department of Education. 9/30/92-9/29/93 $10,000

Kokoski, Teresa. "Innovative Strategies in Teaching Science and Mathematics." Commission on Higher Education. 1/1/93-12/31/93 $15,909

Kokoski, Teresa. "SIMSE through Environmental Problem Solving." Commission on Higher Education. 1/1/93-12/31/93 $15,909

Kokoski, Teresa. "Natural History of the School Campus." Commission on Higher Education. 1/1/93-12/31/93 $15,909

Scott, Patrick. "Using Technology to Improve the Preparation of Math Teachers." PNM Foundation. 6/1/93-6/30/94 $4,350

TOTAL: $63,077
Physical Education and Exercise Science

DePaepe, James.  "Planning an Academy Concept for Education."  
New Mexico State Department of Education.  4/1/93-7/1/93  
$ 19,966

Griffin, Joy.  "Learning to Relate Concept to Action Experiences."  
PNM Foundation.  6/1/93-6/30/94  
$ 1,000

Robergs, Robert.  "Exercise Training in the Predialysis Renal Failure Patient."  
Ross Laboratories.  6/1/93-4/30/94  
$ 15,000

TOTAL:  $35,966

Recreation

Kelsey, Craig.  "Youth Sports Fitness and Recreation."  
NCAA.  1/1/93-12/31/93  
$ 67,600

Miko, Paul.  "NM Hispanic Land Grant Elders: An Educational Heritage."  
PNM Foundation.  6/1/93-6/30/94  
$ 1,450

TOTAL:  $69,050

Secondary Education

Kline, William.  "School-Writing Teams."  
PNM Foundation.  6/1/93-6/30/94  
$ 5,000

Mierzwa, Sigmund.  "Southwest Junior Science and Humanities Symposium."  
United States Army.  1/1/93-6/30/93  
$ 18,200

Mierzwa, Sigmund.  "Ford Teacher Education Program."  
Navajo Nation.  8/1/92-12/31/93  
$ 68,766

Mierzwa, Sigmund.  "UNM Peace Corps Fellows Program."  
DeWitt Wallace/Reader's Digest  11/18/92-11/30/93  
$ 265,751

Zancanella, Donald.  "Rio Grande Writing Project."  
Albuquerque Publishing Company.  3/1/92-6/30/93  
$ 1,800

Zancanella, Donald.  "Rio Grande Writing Project."  
National Writing Project.  3/1/93-6/30/94  
$ 13,000

TOTAL:  $372,517
## Special Education

<table>
<thead>
<tr>
<th>Name</th>
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<th>Amount</th>
<th>Agency</th>
<th>Start-End Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pohland, Paul.</td>
<td>&quot;APS Tuition Contract.&quot;</td>
<td>$27,840</td>
<td>The Albuquerque Public Schools.</td>
<td>8/20/92-6/30/93</td>
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<tr>
<td>Smith, Deborah.</td>
<td>&quot;Alliance 2000.&quot;</td>
<td>$1,300,000</td>
<td>U.S. Department of Education.</td>
<td>10/21/92-10/20/93</td>
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<tr>
<td>Van Etten, Carlene.</td>
<td>&quot;APS/UNM Collaborative Programs in Special Education.&quot;</td>
<td>$360,661</td>
<td>The Albuquerque Public Schools.</td>
<td>7/10/92-6/30/93</td>
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**TOTAL:** $1,688,501

## Training and Learning Technologies

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<th>Agency</th>
<th>Start-End Date</th>
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</thead>
<tbody>
<tr>
<td>Blackwell, Peggy.</td>
<td>&quot;Program for Assistance in Equity.&quot;</td>
<td>$104,011</td>
<td>NM State Department of Education.</td>
<td>7/1/92-6/30/93</td>
</tr>
<tr>
<td>Dalia, Jeff.</td>
<td>&quot;DWI Schools Adult Focused Training.&quot;</td>
<td>$5,000</td>
<td>NM State Highway and Transportation Department.</td>
<td>5/1/92-5/1/93</td>
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**TOTAL:** $109,011

## Bureau of Educational Planning and Development

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<tr>
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<th>Agency</th>
<th>Start-End Date</th>
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<tbody>
<tr>
<td>Colton, David.</td>
<td>&quot;Middle School Systemic Change Initiative.&quot;</td>
<td>$60,000</td>
<td>Carnegie Foundation.</td>
<td>10/1/92-9/30/93</td>
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<tr>
<td>Colton, David.</td>
<td>&quot;New Mexico Systemic Challenge.&quot;</td>
<td>$1,988,000</td>
<td>National Science Foundation.</td>
<td>8/17/92-8/31/93</td>
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<tr>
<td>Colton, David.</td>
<td>&quot;Sandia Educational Programs Evaluation.&quot;</td>
<td>$161,013</td>
<td>Sandia Laboratories.</td>
<td>9/18/92-8/31/93</td>
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<tr>
<td>Colton, David.</td>
<td>&quot;Statewide Systemic Initiative.&quot;</td>
<td>$300,000</td>
<td>NM State Department of Education.</td>
<td>9/29/92-6/30/93</td>
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<tr>
<td>Colton, David.</td>
<td>&quot;Connecting Curriculum to At-Risk Youth.&quot;</td>
<td>$104,245</td>
<td>Rockefeller Foundation.</td>
<td>1/1/93-6/30/93</td>
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**TOTAL:** $2,613,258
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<td>BIA.</td>
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<tr>
<td>Blackwell, Peggy.</td>
<td>&quot;ENAN.&quot;</td>
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<tr>
<td>U.S. Department of Education.</td>
<td>$25,000</td>
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<td><strong>TOTAL:</strong></td>
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<th>Latin American Programs in Education</th>
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<tr>
<td>Blood, Ronald.</td>
<td>&quot;Master's Program in Educational Administration.&quot;</td>
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<td>U.S. AID</td>
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<td><strong>TOTAL:</strong></td>
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<th>Multicultural Education Center</th>
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<tr>
<td>Ortiz, Leroy.</td>
<td>&quot;Bilingual Education Fellowship Program.&quot;</td>
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<tr>
<td>U.S. Department of Education</td>
<td>$90,575</td>
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<tr>
<td>Ortiz, Leroy.</td>
<td>&quot;U.S. West Teams Initiative.&quot;</td>
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<td>U.S. West Foundation</td>
<td>$124,851</td>
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<td><strong>TOTAL:</strong></td>
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<tbody>
<tr>
<td>Blackwell, Peggy.</td>
<td>&quot;New Mexico Geographic Alliance.&quot;</td>
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<tr>
<td>National Geographic Society.</td>
<td>$50,000</td>
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<tr>
<td>Blackwell, Peggy.</td>
<td>&quot;Options Newspaper.&quot;</td>
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<tr>
<td>NM Department of Labor.</td>
<td>$8,421</td>
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<td><strong>TOTAL:</strong></td>
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**COLLEGE TOTAL** $9,651,248
INTRODUCTION

The Division of Education in the Professions was organized in response to the College of Education’s Plan of Action as a step to significantly reform the various academic programs within the College. The Division consisted of approximately five of the former eight departments within the College as well as various support units. The academic programs included: Art Education, Art Therapy, Counselor Education, Counseling Psychology, Family Studies, Psychological Foundations, Training and Learning Technology, Nutrition, Athletic Training, Exercise Science, Physical Education, Sports Administration, and Parks and Recreation. The support units consisted of Leisure Services, the Human Performance Laboratory, the Employee Health Program, the Wellness Center, Masley Hall with associated art exhibits and studios, Johnson Center with associated equipment and custodial personnel, Simpson Hall, and the associated secretarial staffs assigned to the academic units.

There were 43 faculty members mostly tenure track or tenured with approximately 71 part time faculty and 58 teaching or research assistants.

DIVISION GOALS

The Division was assigned two global goals that structured the work of the faculty and each academic unit and associated faculty set agendas to correspond and support the Division Goals.

Goal One: To maintain and where possible increase the already existing level of academic program excellence, to meet the needs of students and the institution and to further the
work of the academic disciplines. The faculty worked very hard and made serious effort to offer courses that were essential for students, provide academic advisement and to support the efforts of students despite the significant change in organizational structure. There were no significant student complaints and the academic year is considered a success in program excellence. Many of the faculty made significant achievements within their academic disciplines (see individual faculty biographical information sheets) with the securing of research and training grants, publishing of their scholarship and the presentation of scientific papers at national conferences.

Goal Two: To extend efforts for each academic unit to self-study their mission, curriculum and structure as it related to the adopted College Plan of Action, and to propose initiatives for change where appropriate. Each academic unit and associated faculty spent much of their time this year actively involved in self-assessment, curriculum studies, interacting with the disciplines constituencies, debating and preparing initiatives for reform and restructure. Specifically:

- Art Education and Therapy completed a self study in which they suggest directions similar to those already in existence for their programs.
- Counselor Education and Counseling Psychology prepared an initiative to join the program faculty together and to reform a common curriculum.
- Family Studies and many of their faculty have prepared and participated in various collaboratives and initiatives suggesting ways in which family issues can cross cut the curriculums of the college.
- Psychological Foundations has prepared an initiative to reform their mission and curriculum toward a focus of cognition and the learning process.
Training and Learning Technology has had faculty within their area participate in various collaborations to extend technology across the curriculum of the college.

Nutrition has prepared a request to affiliate with the Division of Allied Health within the School of Medicine.

Physical Education, Sports Administration and Athletic Training have prepared an initiative to self study their mission and curriculum and look for linkage to the College mission statement and focus.

Exercise Science has prepared a request to affiliate with the Division of Allied Health within the School of Medicine but also to participate in the Physical Education self study initiative.

Parks and Recreation has proposed an initiative to reform their mission and curriculum toward a focus on environmental education and to extend linkages to the Math and Science Education curriculum.

**ACCOMPLISHMENTS**

One measure of successful accomplishment of the Division would be that **Goal Two** had been reached for the majority of the academic units and those approved initiatives would allow the academic units to relocate in the Division of Innovation in Education and hence depleting the need for this Division. In fact this has been achieved and with the 1993 academic year the following programs will administratively relocate to the Innovation Division: Counselor Education and Counseling Psychology (as the Counseling Initiative), Psychological Foundations (as the Cognition and Learning Initiative), Physical Education, Sports Administration, Athletic
Training and Exercise Science (as the Physical Education Initiative), Parks and Recreation (as the Environmental Education Initiative). Transferred to the Division of Teaching and Learning are the remaining academic programs which have indicated a need to continue self study before their initiative has been completed. These programs include: Art Education/Therapy, Family Studies, Nutrition, and Training and Learning Technology.

Support units that have been in the Division have also been realigned as appropriate. Leisure Services has transferred to the Student Affairs Department, the Human Performance Laboratory will remain with Exercise Science, The Employee Health Promotion Program will be overseen by the Department of Community and Family Medicine of the School of Medicine, the Wellness center will connect with the Health Education Program within the College, Masley Hall will be supervised by Art Education and Johnson Center with associated equipment and custodial personnel will report to the Johnson Center facility manager who will report to the Dean’s Office. Secretarial support staff will remain with the academic units and the Division Administrative Assistant will become the Administrative Assistant to the Division of Innovation in Education. Simpson Hall will be overseen by the Dean’s Office.
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 $18.44 per student, per year entitles each student to participate in over 218 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 $18.44 per student and with no additional cost to the faculty and staff, this program operates at a very cost effective rate.

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 1992-1993 was 100,575.

For the previous year the number of participations in the swimming pool was 131,135 which shows there was a decrease of 17,961 participations in the usage of the pool this year. The reason for this decrease was that the swimming facilities was closed because of maintenance and budget contraints.

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 1992-1993 number of participations for the recreational facilities were as follows:

<table>
<thead>
<tr>
<th>Facility</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tennis Center</td>
<td>565</td>
</tr>
<tr>
<td>Main Gym</td>
<td>37,501</td>
</tr>
<tr>
<td>South Gym</td>
<td>46,266</td>
</tr>
<tr>
<td>Weight Room</td>
<td>61,712</td>
</tr>
<tr>
<td>Faculty/Staff Weight Room</td>
<td>4,031</td>
</tr>
<tr>
<td>Racquetball Courts</td>
<td>14,565</td>
</tr>
<tr>
<td>Auxiliary Gym</td>
<td>43,294</td>
</tr>
<tr>
<td>Carlisle Gym</td>
<td>16,894</td>
</tr>
<tr>
<td>B-20 (Dance Room)</td>
<td>9,967</td>
</tr>
<tr>
<td>Wrestling Room</td>
<td>7,116</td>
</tr>
<tr>
<td>Swimming Pool</td>
<td>113,174</td>
</tr>
<tr>
<td>Grand Total for Open Recreation Programs</td>
<td>355,085</td>
</tr>
<tr>
<td>Turn Style Count</td>
<td>274,156</td>
</tr>
</tbody>
</table>

Detailed breakdown attached- Appendix I

Guests for 1992-1993 = 756

The number of participations in the recreational facilities was 355,085 which shows there was an increase of 33,252 in the total number of participations in the Open Recreation Program. This increase was mostly in our recreation facilities, specifically the Weight Room, Gyms and Racquetball Courts. There was also an increase in our Turn Style Count of 8,837 for this year.

2. Leisure Services, Getaway, and Rental Programs
B. The Leisure Services, Getaway, and Rental Shop Programs in 1992-1993 offered 218 activities. The same programs this year included 218 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 1992-1993 participation statistics are as follows:

<table>
<thead>
<tr>
<th>Participants</th>
<th>Particpations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer Program (June, July, August)</strong></td>
<td></td>
</tr>
<tr>
<td>Outdoor Shop</td>
<td>560</td>
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<tr>
<td>Men</td>
<td>30</td>
</tr>
<tr>
<td>Women</td>
<td>12</td>
</tr>
<tr>
<td>Co-Rec</td>
<td>82</td>
</tr>
<tr>
<td>Orientation/Tours</td>
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<tr>
<td>Getaway</td>
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<td>Special Populations</td>
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<td>Fitness</td>
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<td><strong>TOTAL (Summer Program)</strong></td>
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<table>
<thead>
<tr>
<th>Participants</th>
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<td>Fitness Classes</td>
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<td><strong>TOTAL</strong></td>
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Detailed breakdown attached- Appendix I

For the previous year the number of participants was 17,797 which shows that there was an increase of 629 participants in the Leisure Services Program this year.

Particpations for the previous year were 123,762 which shows there was a increase of
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/Bicycle Shop**

   C. The Leisure Services Program furnishes the University community with a wide variety of camping, skiing and recreational equipment that can be rented for a nominal fee. This program has met with great student approval and use. The Outdoor Shop continually expands and upgrades its rental equipment to ensure customer satisfaction. Recent additions to the inventory include high-tech cross country skis, expedition sleeping bags, lightweight backpack-specific camping gear and complete volleyball net systems. In addition to camping and skiing equipment, the Outdoor Shop also rents snowshoes, volleyball sets, badminton sets, softball sets, horseshoes, croquet sets, golf clubs, frisbees, stop watches, binoculars and other outdoor sporting and recreational equipment. The Shop now specializes in club and team sport rentals by offering soccer packages that include goals, nets and ball and softball packages that include the backstop, bases, home plate, bats, balls and gloves. Race timing systems, flag football sets and traffic cones are also included in club and team sport rentals. The Shop again experienced a record year in use and revenue due to an expanded inventory and more specialized equipment. The Outdoor Shop has outgrown its current location in Johnson Center and needs additional space. This need is being addressed in Phase III construction. The Outdoor Shop is located in the Northwest corner of Johnson Center, Room B-12.

   The addition of eight new upper level mountain bikes to the Outdoor Shop brought about the need for a qualified bicycle mechanic to perform routine maintenance and service to the bicycles. With a mechanic now on staff and visible to the patrons, the Shop started to receive requests from their customers as to whether they could have their bicycles serviced at the Outdoor Shop. Three additional mechanics were hired, tools and spare parts purchased, a store room converted into a repair shop and the Bicycle Shop was born. To keep costs low, the Bicycle Shop established itself as a parts dealer from several different suppliers. All types of bicycles and wheelchairs are now being serviced at the Bicycle Shop by a staff of five highly qualified mechanics. The Bicycle Shop operates all year and will begin to tune skis during the Winter months and ski season. The Bicycle Shop is located in room B-10 next to the Outdoor Shop.

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 lawsuit. 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. Due to an increase in participation this past year and a growing concern for safety, our budgetary needs for student employment surpassed our resources. We will experience a deficit in our student employee payroll account because of the growing success of our program. In order to provide a safe environment dedicated to customer excellence it will be necessary to allocate additional funds for this purpose in the coming years.

5. Staff Structure Changes

E. Ms. Julie Good, our Aquatics Director was upgraded to full time to assume additional responsibilities for Sports Club. Our proposal was approved for the additional position of Accounting Technician and Ms. Lee Ballew was hired to fill the vacancy.

6. Projected Growth

F. Our program continues to experience tremendous acceptance from the students, faculty, and staff of the University. The program continues to grow which has put a large demand on facilities and staff. The program is constantly making adjustments to meet the needs of the university community.

The Summer Leisure Services Program, Special Population, Fitness Classes, and Getaway Programs were again very successful along with the Outdoor/Bike Shop which will expand in the future. 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 has updated the Risk Management Program to address the program's future development. We will continue to work on the 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 1993 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 again nominated to run for president of his national association which he declined. He was again invited to conduct and coordinate various recreation clinics/workshops in Latin America for the Latin American Institute. Fred was involved in various committees for NIRSA and other university, city, state and national organizations. Mr. Perez attended NIRSA’s Executive Institute and was awarded his Executive Institute certificate. Fred V. Perez made various professional presentations during the year at local, state, national, and international professional organizations. He was also presented various awards such as; NIRSA Region IV Award of Merit; Albuquerque Public Schools distinguished Alumni Award; Appreciation Award from the American Diabetes Association; Staff council Recognition Award and various awards for service in Latin America. Pat Donovan was involved in various committees for NIRSA including: 1994 Conference Programming, 1993 t-shirt Judging, Consultant for NIRSA
Co-Rec Sports, Chair, NIRSA Region 4 Social, and Ad-Hoc for Pre-Conference Workshops. He was recognized as UNM's 1 on 1 program's 1992-93 Outstanding Volunteer. Laura Montoya was dedicated to many UNM committees including: Welcome Back Days, Safety Committee, One on One, Women and the Press, Drug and Alcohol Awareness, Mother-Daughter Day. She was also staff advisor for the Mountain Bike Club and Hiking Club, as well as Vice President for Hosteling International. She was involved with the NIRSA Special Events Manuel and the Natural High Committee. Nancy White, in addition to working on her Masters in Public Administration, also became certified or re-certified as an instructor in the following areas: American Red Cross CPR, Standard First Aid, Water Safety, Lifeguard, CPR for the Professional Rescuer and American Council on Exercise-Aerobic Instructor in order to better serve our program. Jim Todd was very active with NIRSA this year as he is State Director for New Mexico, Region IV and is also a member of the Soccer Rules Committee. He started the UNM Tennis Center and Bicycle Shop this year which have been very successful. Julie Good continued to pursue her doctoral degree curriculum in addition to be chosen for the National Red Cross Lifeguard Committee. She became certified or re-certified for American Red Cross training in WSI, Lifeguarding, Lifeguard Instructor, CPR, and First Aid. She is currently organizing the Lifeguard Superguard Competition. Keith Woods was involved on campus with various committees including: Safety, Lighting, Bike/Bike Path Ways, Campus Escort, and Whistle Campaign. Fred V. Perez, Pat Donovan, Jim Todd, and Keith Woods all attended the NIRSA National Conference in Houston, Texas this year. Pat Donovan, Jim Todd, and Tim Gutierrez published: "Risky Business: How Does Your Safety Audit Stack Up?" in NIRSA Preface to the Future. Laura Montoya and Fred V. Perez was also published in NIRSA Preface to the Future.

Our staff and university were selected to host the National Intramural Recreational Sports Association Conference in Albuquerque in 1995.
## APPENDIX I
CAMPUS RECREATION MONTHLY HEAD COUNT REPORTS
Total Participation 1992-93

### JUNE 1992

<table>
<thead>
<tr>
<th>Facility</th>
<th>Count 1992-93</th>
<th>September 1992</th>
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<tbody>
<tr>
<td>Main Gym</td>
<td>3,185</td>
<td>3,008</td>
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<tr>
<td>South Gym</td>
<td>2,772</td>
<td>4,031</td>
</tr>
<tr>
<td>Weight Room</td>
<td>3,491</td>
<td>5,724</td>
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<tr>
<td>Fac/Staff Weight Rm.</td>
<td>316</td>
<td>304</td>
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<tr>
<td>Racquetball Courts</td>
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<td>Carlisle Gym</td>
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<tr>
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<td>613</td>
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<tr>
<td>Swimming Pool</td>
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<td>11,296</td>
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**Turn Style Count:** 14,779

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<td>Main Gym</td>
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<td>South Gym</td>
<td>2,321</td>
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<tr>
<td>Weight Room</td>
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<td>Fac/Staff Weight Rm.</td>
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<td>B-20 (Dance Rm.)</td>
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### AUGUST 1992

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<td>South Gym</td>
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<td>Fac/Staff Weight Rm.</td>
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NCT - No Count Taken
# APPENDIX II

## SUMMER 1992

### ACTIVITY PARTICIPANTS

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<tr>
<th>Activity</th>
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M - Men  W - Women  CR - Co-Rec

### FITNESS CLASSES

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TOTAL........................................... 15  17
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APPENDIX III

STATISTICAL DATA
JOHNSON CENTER PARTICIPATION

![Bar chart showing participation by month from 1990-91 to 1992-93.]

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TOTAL: 237,234 200,698 241,912
SWIMMING POOL PARTICIPATION

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GETAWAY PARTICIPANTS

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STATISTICAL DATA
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Annual Report
The Division of Learning and Teaching
(Division B)

May 24, 1993
Paul Pohland, Director and Associate Dean
The Plan of the College is to create model inter-disciplinary programs in education that exemplify effective practice and scholarly inquiry.

The Plan of the College as stated was central to the mission of the Division of Learning and Teaching during 1992-1993. However, in addition to the act of creation was the task of sustaining programs for students already enrolled. For some the dual goals created serious tensions; for some it was a release; for all faculty it was a challenge. As Division Director I commend the faculty and staff for their accomplishments. They were hard won.

This Report is presented in three parts. In the first, Division accomplishments will be identified briefly. In the second, program developments will be reported. Appendices will describe particular program accomplishments in greater detail. Part III will speak to faculty issues.

I. Division Accomplishments
Division accomplishments include:

A. A massive relocation of faculty involving physical move for the majority of faculty in Division programs.

B. Installation of a computerized student record system for all Division programs. Enrollment management can proceed from this base. The system can call up student by advisor data.

C. Publication of Professional Preparation Programs for Educators: Our Presence in the Schools edited by Dr. JoAnn Krueger, and Reflections '93 celebrating the visit of nine British educators to New Mexico.

D. Creation of an administrative structure organized around programs (and their "conveners") rather around departments (and their "chairs").

E. Dissolution of CIMTE as a program unit with the result of permitting both elementary and secondary to pursue independent development. CIMTE remains for some administrative purposes.

F. Development of an admissions and admissions appeals process which substantially reduced the number of appeals and grievances filed at the college level.

G. Concerted efforts to develop a knowledge base for the College were undertaken.
II. Program Accomplishments

A. Educational Administration. Program faculty refined the new, field-based Ed.D. program and admitted the first cohort of 20 students in the spring of '93 via an Assessment Center. Classes for this group will begin June 17, 1993. Dr. Mike Milstein is program director. The "old" Ed.D. has been discontinued. A moratorium was placed on new admission to the Ph.D. program until that program can be re-examined. The CEAIP (MA/Ed.S.) continues to prosper under the direction of Dr. JoAnn Krueger and admitted 22 Cycle 6 interns in 1993.

The Spanish Language Masters Program suffered major set-backs as a function of staff losses. While the program continued to function with reduced numbers of students, no new contracts were successfully negotiated. Consequently, a moratorium was put into effect on the admission of new students to that program. Finally, the close relationship between LAPE, SLMP, and OITEC was breached as OITEC was administratively transferred to LAI.

B. Elementary Education. For the Elementary Education faculty, 1993-1994 is seen as a "transition" year. Given that, 1992-1993 is properly perceived as a "pre-transition" year. Some elements of that pre-transition included:

1. A decision to move from its award-winning block program to a totally field-based program in 1993-1994;
2. A costing out of the financial implications of such a move;
3. Generating initial designs for new staffing patterns for the undergraduate teacher education program, particularly the Jr. Block;
4. Stabilizing admissions processes and holding to admissions limits;
5. Raising the required admissions GPA from 2.5 to 2.75 effective Spring '94.
6. Engaging in preliminary discussions with the Special Education faculty with an eye to possibly combining the two programs under a full inclusion ethic;
7. Initiating College-wide discussion on the establishment of a Teacher Development Center; and
8. Under the leadership of Professors Suina and Smolkin and with the sponsorship of the All Indian Pueblo Council, establishing an alternative teacher education program with focus upon rural populations, ethnic diversity, and linguistic and cultural emphasis.

In brief, Elementary Education moved dramatically in transitioning to new initiatives.
C. Secondary Education. The faculty of Secondary Education engaged in intensive study of program re-structuring during 1992-1993 to the extent that it will be housed in Division C in 1993-1994 in order to bring the redevelopment efforts to closure.

The major problem for Secondary Education concerned the ESL and TESOL concentrations at the MA level. The pending resignation of two key faculty members at the end of the 1992-1993 academic year led to the decision to call a moratorium on the admission of new students to these programs. On a related issue, discussions were held with university officials regarding the "housing" of the ESL writing program. Complete resolution has not been achieved.

For both Elementary and Secondary Education faculties, issues of graduate education will need to occupy positions of priority in their respective 1993-1994 agendas.

D. Special Education. As noted, the Special Education faculty has joined in discussions with both the Elementary and Secondary Education faculties on issues of program revision in the context of full inclusion. Most of the faculty energies, however, were devoted to sustaining current programs under conditions of increased demand and diminished faculty resources. Such resource problems were most compelling in the Bi-lingual/Bi-cultural Special Education program, the Assistive Technology program, the under-graduate teacher education program, and the diagnostician program. The announced retirement of Dr. Bill Watson resulted in the placing of a moratorium on the admission of new students to that program.

E. Educational Thought and Socio-cultural Studies. Like Secondary Education, ETSC will be moving to Division C in 1993-1994. A working draft of a program reconceptualization document, "Educational Thought and Socio-cultural Studies: Program Overview and Analysis" will be the basis for further development work. The document draws heavily upon the work of the Council of Learned Societies in Education.

F. Educational Media-Library Science. In the general dissolution of the old department of Educational Foundations, EM-LS was cast adrift. Its closest program affiliate, ETSC, formally disengaged from involvement with EM-LS in August 1992 and no other program affiliation has been made. One part-time faculty member provides whatever program direction is given. The future of the program is uncertain. Clearly, new linkages need to be forged to make this a viable program.
III. Faculty

No attempt will be made to list all faculty activities, awards, committee work, etc. as all these are contained in the Annual Biographical Supplements.

A. Deceased
   1. Associate Professor Jon Facey, Educational Administration

B. Retirements
   1. Dr. Bill Watson, Professor, Special Education
   2. Dr. Tom Zepper, Professor, Educational Foundations
   3. Dr. Robert White, Professor, Secondary Education
   4. Dr. Dean Brodkey, Associate Professor, Secondary Education
   5. Dr. George Stoumbis, Professor, Secondary Education

C. Annual Review
   1. Dr. Isaura Barrera, Code 4, Assistant Professor, Special Education

D. Code 3 Evaluation (Positive)
   1. Dr. Laura Smolkin, Code 3, Assistant Professor, Elementary Education

Appendices
Elementary Resident Teacher/Teacher Induction Program
Teacher Enhancement Program
Secondary Resident Teacher/Teacher Induction Program
Puebla
Gallup
Auger
Linda Day
Elementary Resident Teacher/Teacher Induction Programs

During the 1992-93 academic year, nine Elementary Support Teachers worked with 34 Graduate Resident Teachers placed in three school districts: Albuquerque Public Schools, Jemez Valley Schools and Los Lunas Schools. In addition to working with Resident Teachers, the Support Teachers provided assistance to 109 beginning teachers in 69 schools in the Albuquerque Public Schools; 1 beginning teacher in 1 school in the Jemez district; and 20 beginning teachers in 7 schools in Los Lunas.

The assistance provided to all beginning teachers, including the Resident Teachers, covered a wide range of services from information regarding curriculum and instruction to emotional support (See attached list of Categories of Support). Elementary Support Teachers visit all beginning teachers on a weekly basis and work not only within the classroom setting, but also away from the school environment. The regular contact with teachers is begun in mid-July when the year round school calendar begins. About a fourth of all teachers receiving service are assigned to year round schools.

In addition to the regularly scheduled visits, the program provides regularly scheduled study groups for all participants and occasional workshops of special interest. (Please note attached advertisements). A monthly publication, The Link, is produced by the Support Teachers and is distributed to all individuals new to the districts. (Copy attached)

Support Teachers are also involved with other support services offered by the district and, when asked, provide assistance to APS Curriculum Support.

The graduate degree portion of the Resident Teacher Program begins in the summer with nine credit hours (CIMTE 563, 500, 542). During the fall semester participants enroll in CIMTE 595, 513, and 540. Coursework in the spring includes CIMTE 595, 591, and Ed. Fnds. 500. The final course, CIMTE 590, is offered in the summer. Some of the courses include a mix of elementary and secondary participants. All courses have been scheduled to adjust to the year round calendar of APS.

The Elementary Teacher Induction Program continues to be a focus of two research projects. One of the projects will continue with follow-up on the mentoring process. Both research efforts are comparative in nature, looking at other programs nationally and internationally.
TEACHER ENHANCEMENT PROGRAM (TEP) -- Teachers with five or more years of experience enter a fourteen-month program of studies culminating in a Masters Degree in either elementary or secondary education. The cohort group, consisting of twenty-eight teachers from the Albuquerque Public Schools and neighboring districts, works with the staff (made up of both UNM faculty and classroom teachers released to work in peer support roles) to build a curriculum uniquely suited to the needs of veteran teachers. An emphasis is placed on the emergence of teachers' voices in the shaping, interpretation and assessment of their own work. Autobiography -- especially the intersection of the personal and professional domains -- and description of classroom-situated events are at the center of ongoing conversations with peers. Teachers are released from their classroom teaching for one full day each week in order to meet with TEP colleagues. In addition, they are provided with ten professional days to attend local and national conferences and/or visit other schools. No other program in the nation provides weekly release time for a cohort of experienced teachers, ranging across grades levels and subject areas and including regular and special educators, to reveal and construct what they are coming to know about their craft.
Secondary Resident Teacher/Teacher Induction Programs

Participants in the 1992-93 Secondary Teacher Induction Program included 22 Resident Teachers, 6 Support Teachers, approximately 50 teachers who were new to teaching, and approximately 100 teachers who were new to the school district or to the subject/grade level. Participating districts included Albuquerque Public School, Las Lunas Public Schools, and Jemez Valley School District, each having new teachers at virtually every secondary school site. (During this year ground work has been laid for inclusion of the Belen Public Schools in the 1993-94 program.) Support services continue to center on regular one-on-one contacts between new teachers and Support Teachers. (Support Teachers report making an average of 65 individual contacts per month which include new teachers and Resident Teachers as well as school administrators and other support personnel.) Additional program activities have included the New Teacher Mini-Conference sponsored jointly with the APS Staff Development Unit, workshop series in both fall and spring semesters, and the TIP Sheet, a monthly newsletter for new teachers. This year both Support Teachers and Resident Teachers have also been involved in COE restructuring efforts plus participation in two research projects, one centered at Vanderbilt University and one sponsored by the National Center for Research on Teacher Learning at Michigan State University. All other program activities are varied, determined by the needs of individual teachers or schools, with the goals of socializing new teachers into the profession, providing assistance in solving the problems known to be common to beginning teachers, and reinforcing more thoughtful, effective, and collaborative teaching practices.
MEMORANDUM

TO:       Paul Pohland, Associate Dean/Director, Division of Learning and Teaching, College of Education

FROM:    Sara Dawn Smith, Professor/Coordinator of Elementary Teacher Education, Division of Learning and Teaching, College of Education

DATE:    May 15, 1993

SUBJECT: Division of Learning and Teaching -- Annual Report

The College of Education's program, "Teaching in Culturally/Linguistically Diverse Settings" (a semester abroad program for the University of New Mexico teacher education students) completed its initial program offering, Spring Semester, 1993. Sponsored by the COE Latin American Programs in Education (LAPE) and the Division of Learning and Teaching, the program was directed by Sara Dawn Smith. Six UNM teachers spent a semester in Puebla, Puebla, Mexico working with Mexican teachers at the Colegio Americana, and living with families whose children attend the school. The following is a letter written by the six teachers to describe their experiences.

SDS/jam
Dear Dr. Polland,

I am writing this letter on behalf of us six women (both graduate and undergraduate) who went south of the border to Puebla, Mexico to experience a semester of teaching in a multi-cultural environment. Our experiences were as varied as we are individuals, but we all agree that immersion in this different culture gave us new insights and an expanded perspective.

Mexico is our southern, next door neighbor, yet how little we understand the weavings of its colorful and fascinating culture. As students and teachers at the Colegio Americano we investigated the agenda of education in Mexico; nationally, statewide and locally. Coming to terms with a traditionally dictated system of education increased our own understanding of education in the U.S., and the understanding of the role of the teacher and the student in the Mexican classroom. Some of us whom are bilingual teachers, have a much greater understanding of our hispanic monolingual students. Their is no substitute for experience and we lived their culture inside and outside of the classroom.

Some of us taught in both the E.F.L. and the Spanish curriculum. What a wonderful opportunity to stretch one's language skills in both capacities. How would you say, "the whole is bigger than the sum of its parts", in Spanish or any other foreign language? We were further challenged as individuals to adapt to a school system unlike our own, to work with colleagues whose philosophy of education was different, and above all to be diplomats, representing our country, our educational philosophy and humanity. This we did to our utmost, and relished it in a spirit of comradery and generosity there at the Colegio.
Since August, 1993 the University of New Mexico has provided Upper Division Education courses in a teacher education program on site in Gallup and in Farmington. A Program Coordinator was hired during July, 1992. One full-time instructor was hired in September, 1992; another in January, 1993. The search is underway for the third full-time instructor, who will be on staff by August, 1993. In addition, part-time instructors were solicited and interviewed to provide students with exemplary educational experiences.

The UNM-Gallup Branch has provided a full-time advisor for education students since the inception of the program. Along with the advisor, students completed plans of study, and were able to begin their professional coursework towards a B.A. degree in education in the Fall, 1992 semester.

UNM has coordinated with Navajo Community College (NCC) to provide the Navajo Language courses necessary for bilingual endorsement.

All courses are held in the evenings and on Saturdays to accommodate the nature of our working students. During the summer, we hold courses in the evening and during the day since many of our students work in the schools and will be off work during this session.

A curriculum committee was formed with representatives from UNM faculty, Dine' Language and Philosophy Office, NCC Teacher Education, and the Zuni Pueblo. The curriculum will be implemented beginning during the Fall, 1993 semester. A copy of that curriculum is attached. We are in the process of determining appropriate forms of assessment by which to evaluate the curriculum and the program in general.

We have already placed student teachers in the community of their choice to complete that experience. In some cases, students who are educational assistants are able to complete the student teaching requirement while maintaining their assistant's positions.

During the summer session, we intend to coordinate once again with NCC in providing a laboratory school of children with which the students can work. That lab school will be made of students' children; thus, providing day care as well as an exemplary experiential situation for prospective teachers. The guest artist program is an integral component of the summer program. A program information sheet is attached.

Most importantly, we have begun to build the academic resource base that is most vital to the educational program. The UNM-Branch library $20,000. contribution has helped immensely in this endeavor. At present, approximately two-thirds of that money has been spent, with the remainder to be ordered by May, 1993. We will have an additional $20,000. for the 1993-94 academic year. To add an additional element to that resource, the Gallup-McKinley County School District has contacted us to receive the sample textbooks which they receive during a textbook adoption year. Those books will be placed in an Education Section in the UNM-Gallup library, along with the other academic resources that we have ordered.

In the next six months, we will have two more rounds of admissions. Judging from the files that are already in, we will probably increase our total number of students 100% to reach the total of 200 students projected in our proposal.

We will begin to offer one course per semester on-site in Zuni to a cohort group of approximately twenty students with whom I have met and discussed plans of study. We are planning a graduate level seminar specifically for first year teachers. This will serve as a support mechanism and networking system for our graduates. It will also enable us to compile qualitative and quantitative follow-up data.
Guest Artist Program
University of New Mexico - Gallup Teacher Education Program

The philosophy of the University of New Mexico - Gallup Teacher Education Program is that the culture of the community in which a child lives should be celebrated and integrated into the educational program of that community. Throughout each course, that philosophy is exemplified.

During the summer session, we provide courses in the Language Arts minor area -- Reading to Write and Creative Dramatics -- for students majoring in Elementary Education. At the same time, Navajo Community College (NCC) provides Navajo Language Courses for the UNM students who are pursuing bilingual certification. Students in those courses take advantage of the Guest Artist Program and the Laboratory School to build relevant curricula and to practice implementing that curricula with children.

Through the Guest Artist Program, we show students how to integrate the culture of their communities, via the arts, into the educational program and to make academic connections to the children’s prior knowledge through concrete experiences. The arts also become the avenue by which to incorporate all learning modalities into the curriculum. Navajo artists, writers, and storytellers work with the pre-service teachers at the beginning of each week of the six-week summer session. The teachers participate in experiential learning through an art project with the guest artist.

The remainder of the week is spent in building integrated units of study form the cultural experience. Students practice writing activities, find relevant children's literature, and incorporate other subjects into the thematic unit. In the Laboratory School, the pre-service teachers practice the art project that they have learned and incorporate reading and writing skills which they have connected with the cultural experience.

Following the summer session, students can take an additional curriculum writing course in which they develop a curriculum book consisting of all of the lessons created during the cultural experiences. We video-tape the Guest Artists, and that becomes a part of the curricular materials.
University of New Mexico  
UNM-Gallup Upper Division Teacher Education Program

1992 Fall Semester Report

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<td>FTE:</td>
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Breakdown by geographical area:

**Gallup**
- Admissions: 66
- Total Number of Students: 54
- Total Credit Hours: 354
- FTE Students: 29.5

**Farmington**
- Admissions: 34
- Total Number of Students: 32
- Total Credit Hours: 240
- FTE Students: 20

1993 Spring Semester

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Breakdown by geographical area:

**Gallup**
- Total Number of Students: 60
- New Admissions: 29
- Total Credit Hours: 431
- FTE Students: 36

**Farmington**
- Total Number of Students: 42
- New Admissions: 5
- Total Credit Hours: 306
- FTE Students: 25.5

Projections for Summer/Fall 1993

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<td>New Admissions:</td>
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<td>Gallup</td>
<td>69</td>
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<td>Credit Hours:</td>
<td>approximately 1200</td>
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<td>FTE Students:</td>
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1992-93 Totals

| Total Number of Students: | approximately 200 |
| Total Credit Hours:       | approximately 2531 |
Developmental, Psychological and Social Issues in Education (6 hrs.)

Division B: Learning and Teaching, College of Education
UNM-UNM Gallup Upper Division Teacher Education Program

The primary goal of the UNM-UNM Gallup Upper Division Teacher Education Program is to affect the lives of teachers and their students so that both are successful as members of a global society. We believe that all children can and will learn when directed in a positive manner by educational leaders who are academically prepared and sensitive to the culture, gender, individuality and needs of their students. Culture, emotion, and proven teaching practices equate into long-term memory, life-long learning, and ultimate success for both student and teacher.

Integrative/integrated, holistic education which develops and celebrates the richness of cultural values is the core of the learning experience. The emphases in the professional education courses are on the processes of learning and teaching. The program will develop individuals who are committed to and succeeding in improving the quality of education for youth.

This course, which combines EF 303, Human Growth and Development and EF 310, Learning in the Classroom, will serve as the holistic foundation for the Gallup Multicultural Teacher Education Program. Classroom and community observations will serve as the concrete learning experiences requisite for students to discuss and conceptualize the social aspects of a school and community and the philosophies and psychology of developmental learning.

The observations and community involvement are also aimed at immersing prospective teachers in the business of school from the onset of their educational experience. The series of "observations" will also include tutoring and working with children.

The following concepts will be accentuated throughout the term of this course, and reiterated throughout all other professional education courses.

- Multicultural and Gender Sensitivity
- Team Building
- Cultural and Personality
- Gender Acceptance
- Personal, Cultural, and Social Values
- Community Knowledge Base
- Experiential Learning
- Cross-Cultural Similarities/Gender Equity
- Integrated, Connected Learning
- Parental Involvement
- Authentic Learning
- Learning Styles/Modalities
- Writing and Reflecting
- Nonverbal Communication
- Teacher Expectations
- Modeling Cognitive and Affective Domains
- Literacy
- Social Issues
Each week of the course will consist of a school observation or community experience that will be utilized to move students from the known to the unknown, the concrete to the abstract during their team reflections and personal writing. Educational psychology and critical educational issues will be directed by the instructor as an outgrowth of the students' experiences.

At the onset of the course, multicultural teams of students will be built. Groups will consist of students with varying gender, cultural background, and geographical area. Likewise, the school observations and community involvement will be multicultural in nature. During reflections, teams will begin to build a cultural understanding of individual children and the more global society. Those concepts that are experientially based in the observations will be expanded and enhanced with readings, presentations, and instructor-directed discussions.

Team reflection of the observations will occur during each class with students discussing their observations and summarizing major concepts. Those concepts will be the catalysts for educational psychology, learning theory, and multicultural and gender equity issues to be discussed.

Structured school and community observations and studies are an integral component of the course. They will occur weekly and will serve as the basis for experiential learning from which the course concepts and objectives are addressed.

Students will begin to build a portfolio which will demonstrate their own academic ability, their philosophies of learning and of life, lesson ideas, etc.

Readings and classroom discussions will include the following Educational Psychology and Human Development Issues:

Theories of Cognitive Functions and Development
Language, Physical and Social Development during Childhood and Adolescence
Personal and Cultural Values
Behavioral Theories of Learning
Information Processing and Memory
Meaningful Learning with a Cognitive Perspective
Organizing Effective Instruction
Accommodating Student Differences/Learning Styles
Classroom Management and Discipline
Exceptional Students
Social Class, Ethnicity, and Gender
Student Assessment
Social Nature of School
Educational Psychology as a Tool for Teachers
Division B: Learning and Teaching, College of Education
UNM-UNM Gallup Upper Division Teacher Education Program

The primary goal of the UNM-UNM Gallup Upper Division Teacher Education Program is to affect the lives of teachers and their students so that both are successful as members of a global society. We believe that all children can and will learn when directed in a positive manner by educational leaders who are academically prepared and sensitive to the culture, gender, individuality and needs of their students. Culture, emotion, and proven teaching practices equate into long-term memory, life-long learning, and ultimate success for both student and teacher.

Integrative/integrated, holistic education which develops and celebrates the richness of cultural values is the core of the learning experience. The emphases in the professional education courses are on the processes of learning and teaching. The program will develop individuals who are committed to and succeeding in improving the quality of education for youth.

Participant observations and interactions in schools and community experiences will be a part of each course.

The following concepts will be accentuated throughout the term of this course, and reiterated throughout all other professional education courses.

- Multicultural and Gender Sensitivity
- Team Building
- Cultural and Personality
- Gender Acceptance
- Personal, Cultural, and Social Values
- Community Knowledge Base
- Experiential learning
- Cross-Cultural Similarities/Gender Equity
- Integrated, Connected Learning
- Parental Involvement
- Authentic Learning
- Learning Styles/Modalities
- Writing and Reflecting
- Nonverbal Communication
- Teacher Expectations
- Modeling Cognitive and Affective Domains
- Literacy
- Social Issues
CIMTE M.A. PROGRAM – UNM GALLUP

The following is the graduate student credit hours generated by the Gallup Graduate Program for the 1992-93 academic year.

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The projected 1993-94 student credit hour increase is estimated at a minimum of 144 or 44.4%.
RETURNED PEACE CORPS FELLOWS PROGRAM

Founded: Summer 1992. Fellows: 8 admitted in 1992, 12 admitted in 1993. Teaching Fields Sought: Elementary education; secondary education. Benefits: Successful applicants will be employed as elementary, middle, or high school teachers by Gallup-McKinley County School System; starting salary for teacher is approximately $22,000; tuition costs of approximately $70 per credit hour; $1,000 start-up stipend. Requirements: 3.0 GPA. Program Description: The program is recruiting RPCVs to teach full-time and pursue a master's degree and New Mexico Teacher Certification. Alternate degree programs are available in both elementary and secondary education with a variety of specializations. Areas of concentration include: American Indian education, teaching English as a second language, bilingual education, math education, science education and a wide variety of other fields. Successful applicants will be placed in Gallup-McKinley schools. UNM will offer teacher education classes at UNM-Gallup, 150 miles west of its main campus, to support the Fellows service Native American children. Most schools are located on or near American Indian reservations, some in remote desert areas, with significant numbers of Navajo students. The summer pre-service preparation includes a class in the culture and language of Native American children served.

The following is the proposed budget through 1996-97. The program is funded by a grant from the DeWitt Wallace - Reader's Digest Foundation.

UNM PEACE CORPS PROGRAM BUDGET

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinator*</td>
<td>6,000</td>
<td>13,000</td>
<td>13,650</td>
<td>14,333</td>
<td>15,050</td>
</tr>
<tr>
<td>Fringe Benefits (22%)</td>
<td>1,320</td>
<td>2,860</td>
<td>3,003</td>
<td>3,153</td>
<td>3,311</td>
</tr>
<tr>
<td>Mentor Teachers</td>
<td>1,750</td>
<td>4,750</td>
<td>6,312</td>
<td>6,628</td>
<td>6,960</td>
</tr>
<tr>
<td>Clinical Supervisors</td>
<td>1,400</td>
<td>4,000</td>
<td>4,200</td>
<td>4,410</td>
<td>4,630</td>
</tr>
<tr>
<td>Cross Cultural Orientation (summer course instruction)</td>
<td>1,500</td>
<td>1,575</td>
<td>1,654</td>
<td>1,738</td>
<td></td>
</tr>
<tr>
<td>Travel (Fellows supervision, conferences)</td>
<td>1,760</td>
<td>4,647</td>
<td>9,183</td>
<td>9,662</td>
<td>10,134</td>
</tr>
<tr>
<td>Stipends ($1000, for first year Fellows)</td>
<td>12,000</td>
<td>12,600</td>
<td>13,230</td>
<td>13,892</td>
<td></td>
</tr>
<tr>
<td>Program Enrichment ($50. per Fellow)</td>
<td>350</td>
<td>950</td>
<td>1,272</td>
<td>1,344</td>
<td>1,416</td>
</tr>
<tr>
<td>Tuition</td>
<td>5,880</td>
<td>7,481</td>
<td>9,954</td>
<td>10,458</td>
<td>10,962</td>
</tr>
<tr>
<td>Internet (Electronic Mail)</td>
<td>600</td>
<td>250</td>
<td>263</td>
<td>276</td>
<td></td>
</tr>
<tr>
<td>TOTALS:</td>
<td>18,460</td>
<td>51,788</td>
<td>61,999</td>
<td>65,135</td>
<td>68,369</td>
</tr>
</tbody>
</table>

Note: In addition to the 1992-93 budget above, the UNM Foundation has agreed to fund a summer relocation budget of $7000. for the first year Fellows (7 at $1000.) during the 1993 summer session.

*May be paid as Extra-Compensation
MEMORANDUM

TO: Paul Pohland
FROM: Keith Auger
DATE: June 22, 1993
SUBJECT: ANNUAL REPORT

Individual program coordinators have already submitted annual reports describing highlights of program activities for the past year. My brief comments will focus on the overall contributions of the programs to the division.

During this past year the collaborative programs (old CIMTE unit only) brought in approximately 3.7 million dollars. About 2.4 million of this was in fellowships, scholarships, stipends, tuitions, and faculty and staff salaries. About 1.3 million was in district released clinical supervisors, support teachers and peer support teachers. Over 125 graduate level and post-baccalaureate level students were supported on stipends ranging from $7,000 to $16,000 each. Taken together the programs produced over 4500 credit hours of graduate and post-baccalaureate work.

During the 1992-93 academic year, the collaborative programs serviced nine collaborative contracts with five school districts. The districts are the Albuquerque Public Schools (three contracts), the Belen Public Schools (one contract), the Jemez Valley Public Schools (two contracts), the Los Lunas Public Schools (two contracts), and the Santa Fe Public Schools (one contract).

These programs continue to be highly valued by the districts, the student participants and the faculty and staff associated with them. We are deeply appreciative of the districts' confidence in the programs and their continuing willingness to work with us in the preparation of new teachers and the continuing education of career teachers. We are especially indebted to Shelly Campbell, Jean Casey, Linda Day, Patty Kelliher and Tom Keyes for their excellent leadership of these programs, and to Lori Cadwell, Marilyn Davis, Julie McConnell and Monica Patchett for their excellent support work.
During the 1992-93 academic year, twenty-four interns successfully completed the University of New Mexico-Santa Fe Public Schools Intern Program. Following the intensive six-week preservice component during the summer, held at Jackson Middle School, interns completed field experiences at Del Norte High School and at three elementary schools in the Albuquerque area. The second component of the preservice preparation included eight days of orientation directly preceding the school year. During this time, interns were guided in preparing their environment, as well as in developing long-term plans for the academic year.

In the fall, thirteen elementary interns were placed at seven elementary schools in Santa Fe: Atalaya, Alvord, Chaparral, E. J. Martinez, El Dorado, Kearney, and Salazar. The interns at three of the elementary schools taught in bilingual classrooms. Eleven secondary interns were placed at all three middle schools or junior highs, and at Capital High School. Alameda Jr. High hosted interns in Communication Skills and English, as well as Science and Math. The intern placed at Capshaw taught Mathematics, while the interns at De Vargas were placed in U.S. History and in Communication Skills. Interns at Capital High School worked in the Gateways Program, forming the English component of an interdisciplinary team which included a former intern, as well.

The focusing problem, preparing teachers for diversity, formed the threads of the woof in the curriculum fabric for the year. Diversity was addressed as a component of learning styles, selecting content, developing relevant learning activities, storytelling, music, and in meeting needs of at-risk students. Additionally, recognizing and celebrating diversity was approached directly through the study of "deep culture" and through a workshop on "Classrooms of Difference." Field trips to Jemez Pueblo during the winter offered additional opportunities for interns to broaden their knowledge of cultural groups in New Mexico. Furthermore, eight interns were selected to participate in an ongoing study and discussion regarding diversity which resulted in a video-tape and an invitation to present at the Association of Teacher Educators in Los Angeles in February.

Dr. Peck's visit to Santa Fe to chat with administrators and interns, increasing his understanding of the goals of this teacher education program, was certainly a highlight. In addition, one major change for the program, in keeping with our commitment to support the Re:Learning effort in Santa Fe, was the inclusion of an end of the year exhibition/celebration for the interns. Board members, administrators, and other teachers were invited to view portfolios, projects and work samples. They were able to hear from the interns regarding their experiences both in the intern program and in the public schools. This successful event will be an essential component in future years.

During the spring semester, a new clinical supervisor was selected for the secondary position, an exceptional English/Language Arts teacher from Capshaw Middle School who has a great deal of expertise in performance-based assessment. The program staff completed and mailed an extensive survey to 160 former interns who completed the program since its implementation in 1985. This survey should provide useful information for the instructional staff while planning curriculum. Furthermore, twenty-eight interns were selected, from over 150 applicants, to participate in the summer of 1993. We are looking forward to a focus of interacting with agencies which serve children and families for the purpose of discovering linkages and potentialities for assisting at-risk youth in the coming year.

Submitted by Linda M. Day, Program Coordinator, UNM-SFPS Intern Program
NEW MEXICO RESEARCH AND STUDY COUNCIL
1992-93 ANNUAL REPORT
(FOR THE PERIOD JULY 1, 1992 THROUGH JUNE 30, 1993)

New Mexico Research and Study Council
The University of New Mexico
117-119 College of Education
Albuquerque, New Mexico 87131
Phone: (505) 277-2621; FAX: (505) 277-7976

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COLLEGE OF EDUCATION
THE ANNUAL REPORT OF THE
NEW MEXICO RESEARCH AND STUDY COUNCIL
JULY 1, 1992 - JUNE 30, 1993
Paul A. Pohland, Director

STAFF MEMBERS (F.T.E. = 4.50)  Employment  Separation  Date
Paul A. Pohland, Director  08-02-92
Patricia L. Tolley, Administrative Asst.  04-02-79
Penelope J. Perrigo, Clerical Specialist V  12-05-88
Sharon G. Christensen, Clerical Specialist V  01-02-92
Celia M. Hardekopf, Research Assistant  09-01-92  5-15-93
Elwyn C. Hulett, Research Assistant  08-01-92  5-15-93
Rafael M. Garcia, Work-study Employee*  10-05-92  5-17-92
Yolanda Martinez, Work-study Employee*  10-28-92  5-17-92

*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, 1992 - June 30, 1993

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. Paul A. Pohland, Director, NMRSC

Nominating Committee for Election of Officers for 1992-93:
Roman Garcia, Vaughn Municipal Schools
Joe Lopez, Cuba Independent Schools
Janel Ryan, Truth or Consequences Municipal Schools
COOPERATIVE PURCHASING PROGRAM
ADVISORY COMMITTEE
FOR 1992-93

Holly Adams
Lorraine Anglin
Richard Baca
Raymond Carr
John Emery
Alex Gabaldon
Benny Gallegos
Elroy Gallegos
Shelly Gasper
Elroy Gonzales
Tony Gonzales
Yolette Gonzalez
Nelle Guinn
Paul Griego
Melinda Hodge
Mark Lewis
Dionisio Lucero
Pauline McCormick
David Maestas
Pete MacFarlane
Chris Marquez
Sam Martinez
Carl E. Max
Mike Miller
Herrin Othole
Ernie Polansky
Ruth Porter
Francisco Sisneros
Alice Tarin
Robert Truitt
Rose Trujillo
Sharon Trujillo-Kollesus
Ruthie Widner
Charles Wilson
Ronald Yasattie

Los Alamos Public Schools
Silver Consolidated Schools
Albuquerque Public Schools
Zuni Public Schools
Los Alamos Public Schools
Belen Consolidated Schools
Zuni Public Schools
Penasco Independent Schools
Zuni Public Schools
Penasco Independent Schools
Socorro Consolidated Schools
Santa Rosa Consolidated Schools
Albuquerque Public Schools
Menaul School
Cibola County Schools
Cibola County Schools
Sandia Preparatory School
Los Alamos Public Schools
Espanola Public Schools
Sandia Preparatory School
Belen Consolidated Schools
Dulce Independent Schools
Los Alamos Public Schools
Cobre Consolidated Schools
Zuni Public Schools
Sandia Preparatory School
Hatch Valley Municipal Schools
Socorro Consolidated Schools
Hatch Valley Municipal Schools
Hatch Valley Municipal Schools
Bloomfield Municipal Schools
Belen Consolidated Schools
Bloomfield Municipal Schools
Estancia Municipal Schools
Zuni Public Schools
The restructuring efforts which characterized the College of Education at the University of New Mexico in 1992-1993 were reflected in the New Mexico Research and Study Council. By definition, restructuring implies changes in the way an organization attempts to achieve its goals. It is dynamic, challenging, and exhausting. This annual report will describe in summary how the New Mexico Research and Study Council went about its mission in FY 1992-93.

Restructuring began with staff. Dr. Paul Pohland, a long-time member of the Department of Educational Administration and currently Director of the Division of Learning and Teaching and Associate Dean of the College of Education was named to succeed Dr. David L. Colton as Director of the NMRSC. Also joining the Council as Research Assistants were Elwyn C. Hulett and Celia M. Hardekopf, and work-study students Yolanda Martinez and Rafael Garcia. Providing staff stability and knowledgeability were Patricia L. Tolley, Administrative Assistant, Penelope J. Perrigo, Staff Assistant, and Sharon G. Christensen, Clerical Specialist V.

Highlighting the activity structure of the Council as befits its historic mission was the Cooperative Purchasing Program. The major "restructuring" for this activity was the full implementation of a computerized system for submitting and aggregating bids from member schools and printing purchase orders. The problems encountered with training personnel, installing the system and implementing it are best left to the imagination! We would, however, be remiss in not acknowledging the services of Oscar J. ("Judd") Tibbets and Bruce Kuehnle in helping to install and debug the system. The Cooperative Purchasing Program is described in some detail in the body of this report. It was, in brief, another effort to serve the schools of the state, marred only by the unfortunate necessity of debarring a vendor from a prior year.

Other significant events of the year detailed in this report include the joint New Mexico Research and Study Council-Association of School Business Officials Conference in Las Cruces, the initiation of the Golf Tournament associated with the conference, the Quality Education
Awards Program and the awarding of scholarships, the Annual Legislative Seminar, and the Janitorial Fair. All of these activities were orchestrated and executed by the permanent NMRSC staff.

The research activities of the Council also received greater emphasis. As will be noted in this report, one research activity was brought to conclusion, another initiated, and sets of research abstracts were distributed to the membership.

The Council was also represented on the national scene. Dr. Pohland attended the Annual Meeting of the Board of Directors of the National School Development Council in Orlando, Florida and was subsequently elected to that Board. More importantly, NSDC awarded to Mr. Charles Ward, NMRSC President, one of its two national distinguished leadership awards. The award was presented to Mr. Ward by Director Pohland at the Annual Legislative Seminar.

Finally, as the report will note, several constitutional amendments were approved by the NMRSC membership.

In sum, the 1992-1993 year was busy and productive, and well-poised to advance education in New Mexico in the coming years.
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<td></td>
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<td>27</td>
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<tr>
<td>Appendix F, Member Satisfaction, Post-CPP Bidding Concerns, and a Research Agenda for the New Mexico Research and Study Council, Hardekopf, C. (5/1993)</td>
<td>30</td>
</tr>
</tbody>
</table>
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 for the membership. The president and other officers are elected by the Board members.

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.
FIGURE 1

NEW MEXICO SCHOOL DISTRICT MAP

- NMRSC MEMBER SCHOOL DISTRICTS FOR 1982-83

Other members include the following parochial and private schools: Messau, Queen of Heaven, St. Therese, and Sandia Preparatory, Albuquerque; Mesa Vista Head Start Program, El Rito; Armand Hammer United World College, Montezuma; and Zeni Christian Reformed Mission, Zenu.
The New Mexico Research and Study Council Constitution and Bylaws, revised December 31, 1992, 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 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 1992-93

The last increase in dues on June 21, 1991 established the following dues structure:

<table>
<thead>
<tr>
<th>District Enrollment (ADM)</th>
<th>Dues</th>
</tr>
</thead>
<tbody>
<tr>
<td>299 or less</td>
<td>$350</td>
</tr>
<tr>
<td>300 - 999</td>
<td>$550</td>
</tr>
<tr>
<td>1,000 - 1,499</td>
<td>$650</td>
</tr>
<tr>
<td>1,500 or more</td>
<td>$750</td>
</tr>
</tbody>
</table>
FIGURE 2.

ORGANIZATION
OF THE
NEW MEXICO RESEARCH AND STUDY COUNCIL

MEMBER SCHOOL DISTRICTS,
AGENCIES AND INSTITUTIONS

BOARD OF DIRECTORS

UNIVERSITY OF
NEW MEXICO

COLLEGE OF EDUCATION

DIRECTOR

EDUCATIONAL
ADMINISTRATION

GRADUATE ASSISTANTS

ADMINISTRATIVE
ASSISTANT

OFFICE STAFF

QUALITY
EDUCATION
AWARDS

BOARD &
MEMBERSHIP
MEETINGS

COOPERATIVE
PURCHASING
PROGRAM

INSERVICE
EDUCATION
ACTIVITIES

INFORMATIONAL
SERVICES

CONSULTATION
SERVICES

EDUCATIONAL
EMPLOYEE
DISCOUNT
SERVICE

PURCHASING
DISCOUNT
SERVICE

SEMINARS
CONFERENCES
WORKSHOPS

NEWSLETTERS

RECOGNITION
ACTIVITIES

FEATURE
MEMOS &
BOOKLETS

ADVISORY

RESEARCH

LIBRARY
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, 1992 - JUNE 30, 1993*

Note: This financial report is compiled from NMRSC records and the Financial Reporting System Documents dated August 1, 1993 for the twelve-month period ending June 30, 1993, from UNM's Pre-Audit Office.

REVENUES:

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPP Service Fees</td>
<td>$66,190</td>
</tr>
<tr>
<td>Membership Dues</td>
<td>$34,350</td>
</tr>
<tr>
<td>Vendor Reg. Fees, Workshop Registration Fees, and Other Income</td>
<td>$29,159</td>
</tr>
<tr>
<td><strong>Total Income, FYE 6-30-93</strong></td>
<td><strong>$121,851 a)</strong></td>
</tr>
<tr>
<td>Carry-over Balance, 6-30-92</td>
<td>$4,968</td>
</tr>
<tr>
<td><strong>Total Revenues, FYE 6-30-93</strong></td>
<td><strong>$134,667</strong></td>
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</tbody>
</table>

EXPENDITURES:

<table>
<thead>
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<th>Item</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Salaries, Wages, and Benefits</td>
<td>$80,718 b)</td>
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<tr>
<td>Supplies and Expenses</td>
<td>$31,500</td>
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<tr>
<td>Printing and Photocopying</td>
<td>$9,710</td>
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<tr>
<td>Communications</td>
<td>$1,963</td>
</tr>
<tr>
<td>Equipment</td>
<td>$0</td>
</tr>
<tr>
<td>Travel</td>
<td>$1,103</td>
</tr>
<tr>
<td>Tuition (Graduate Assistants)</td>
<td>$3,301 c)</td>
</tr>
<tr>
<td>Consultants (Computer, Workshops)</td>
<td>$5,750</td>
</tr>
<tr>
<td><strong>Total Expenditures, FYE 6-30-93</strong></td>
<td><strong>$132,995</strong></td>
</tr>
</tbody>
</table>

**Carry-over Balance 6-30-93** $1,672 d)

---

a) The actual income for this year was $5,998 more than the $128,668 estimated income. Membership dues are invoiced in mid-May to allow schools the option of paying from their FY 93 or FY 94 budgets. A very conservative estimate of $2,050 is included in the Membership Dues for FY 93, which are for the FY 94 budget.

b) 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.

c) 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.)

d) The carryover balance is less this year as salaries increased because the CS-V part-time position was for the full year compared to a half-year in FY 92, then because of the workload, was increased to full time in May 1993. The other CS-V position was upgraded to Staff Assistant, which increased salaries. Travel and graduate student salaries and tuition also increased.

*Fiscal year ends 6-30-93; this report was written in May 1993, so some expenses are estimated.
COUNCIL PERSONNEL

The Council work force this fiscal year consisted of two full-time employees (an administrative assistant and a clerical specialist V upgraded to Staff Assistant April 1), one part-time employee (clerical specialist V through April, at which time the position was changed to full-time), two .50 FTE graduate students, and two undergraduate, work-study student employees. These students worked from eight to twenty hours per week, for a collective weekly total of 30 hours.

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 NMRSC needs. 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, again this year, employed two student through the Summer Youth Employment Program/JTPA for a seven-week period beginning June 10, 1993. 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 again this year was extremely heavy, with the Cooperative Purchasing Program new computerization and related activities 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 Service also consumed much staff time.
SERVICE ACTIVITIES

The Council was again engaged in five major types of service activities during 1992-93:

1. Governance
2. Inservice education
3. Recognition
4. Purchasing
5. Research

1. Governance

Annual Membership Meeting

The annual membership meeting is scheduled for June 11, 1993 at the Holiday Inn Pyramid, Albuquerque. To save members' travel costs, it is being held during a New Mexico School Boards Association conference.

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 1992-93. 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.)

Constitutional Changes

Constitutional changes were proposed by the Board of Directors and approved by the membership allowing non-public schools Council membership. All changes were reviewed by the University Counsel's office and were found to be in compliance with state law.

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. Preliminary
discussions have been held with Project LEAD Director, Bonnie Page, on the feasibility and desirability of establishing jointly sponsored regional superintendent's academies during the '93-'94 fiscal year.

Joint NMRSC/ASBO Workshop

The tenth 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 Las Cruces, New Mexico at the Hilton Hotel, October 21, 22, and 23, 1992. The conference theme was "Success in our Schools... Personally and Professionally." 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. New Mexico Public Schools Insurance Authority Update
2. Budget Adjustment Requests (B.A.R.) Open Discussion
3. Safe Playgrounds for New Mexico Schools
4. Recycling
5. D.I.S.C. (Data Information Systems Committee)
6. Transportation
7. The Manual for Budget and Accounting Procedures
8. Chart of Account Structure
9. Budget Preparation and Maintenance
10. Fixed Assets
11. Federal Projects
12. Governmental Gross Receipts
13. Payroll
14. Purchasing
15. Regional Center Cooperatives
16. Textbook Credits
17. Investments
18. Internal Controls
19. General Ledger
20. Non-Instructional Activities
21. Records Retention/Disposition
22. Food Services
23. Site-Based Management

Harry Wugalter, former New Mexico Public School Finance Chief, now Director of University Relations, Department of Research, Rockwell International Corporation's Rocketdyne Division, Thousand Oaks, CA, returned to a welcoming crowd of many old friends as this year's keynote
speaker. His topic was "An Educational Experience." The motivational speaker for the conference was Murray Banks, Vermont 1983 Teacher of the Year, 4-time Triathlon National Champion, "Feeling Fit" radio host, and director of Peak Performance Presentations. Mr. Banks' address entitled, "Personal Peak Performance", was indeed inspirational and very well received.

The Honorable Ruben Smith, Mayor of Las Cruces, and Jesse Gonzales, Superintendent, Las Cruces Public Schools welcomed the group. Great entertainment for the banquet was provided by Las Cruces High School's "Modernaires." The banquet speaker, Ernie Mills, Syndicated Columnist, Santa Fe, presented an informative and entertaining speech entitled "Leave the Educational Driving to Us." A special presentation in memory of Jim Poston, Tremco, was made to Mrs. Debra Poston, Jim's widow, by Michele Woodard. Jim sponsored the social hour for the conference for many years until he died unexpectedly this past July. Michele also presented awards to ASBO's 1991-92 officers. Charles Ward, President, New Mexico Research and Study Council, and chair of the Golf Tournament, reported that the Quality Education Awards Program Golf Tournament raised $3,175 for a scholarship.

Legislative Seminar

NMRSC's Annual Legislative Seminar was held at the La Fonda Hotel, Santa Fe, March 4, 1993. Co-sponsoring this event were: Cooperative Educational Services, Eastern New Mexico University Research & Study Council, New Mexico School Administrators Association, New Mexico School Boards Association, Northern New Mexico Network for Rural Education, Project LEAD, and Southwestern Educational Council. The keynote address, entitled "Good Government," was given by Ernie Mills, Syndicated Columnist, Santa Fe. Other presenters included: 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; Ed Gaussoin, Executive Director, New Mexico School Administrators; Wesley Lane, Executive Director, New Mexico School Boards Association; Dr. Eugene P. LeDoux, Executive Director, New Mexico Public Schools Insurance Authority;
Frank Ready, Director, New Mexico Educational Retirement Association; Charles "Chuck" Spath, Special Assistant to the Governor, Office of the Governor; Dr. Luciano Baca, Senior Budget Analyst, Department of Finance and Administration; and Barbara Morrison, Director, Advanced Education Program, Las Cruces Public Schools. Legislative issues of concern to each organization, and all educators, were addressed.

3. Recognition

Quality Education Awards Program

The tenth annual Quality Education Awards Program was conducted in the fall and winter of the 1992-93 school year. Awards were presented February 10, 1993 at a noon luncheon celebration at the Albuquerque Marriott Hotel. Twenty-seven school districts submitted 64 entries. A team of 16 judges (college professors and other educators) selected "the best of the best." First, second, and third place winners received engraved plaques and cash awards (First Place - $250; Second Place - $150; and Third Place - $75). Administration winners were presented with engraved plaques. The 16 award-winning school program entries were:

1992 QUALITY EDUCATION AWARDS PROGRAM

FIRST PLACE WINNERS

**Elementary**
"Community Service Center"
Ann Parish Elementary School
Los Lunas Public Schools
Yolanda Denny, Principal; Charles Tafoya, Superintendent

**Middle**
"Live Poets Society"
McKinley Middle School
Albuquerque Public Schools
Anne Miller, Language Arts Teacher; Ms. Dennie Lee Paschich, Principal; Dr. Jack Bobroff, Superintendent

**High**
"Outdoor Science - A Bicultural Curriculum Approach"
Thoreau High School
Gallup-McKinley County Public Schools
Dr. Joe Keating, Science Teacher; James Pina, Principal; Ramon Vigil, Superintendent
FIRST PLACE WINNERS (continued)

District
"Transition Services Program"
Santa Fe Public Schools (Special Education Services)
Dr. Bob Detwiler, Transition Specialist; Barbara Ellis, Principal; Amos Melendez, Superintendent

ADMINISTRATION
All First-Place

Elementary
"School-Wide Plan for Excellence"
Armijo Elementary School
Albuquerque Public Schools
Marie Heitman, Delores Baca, Jo Peters, Rose Randall, Alvie Torres, and Linda Vane, Teachers
(Rockefeller Academy Team)
Mike Nuanes, Principal; Dr. Jack Bobroff, Superintendent

Middle
"Math and Science Monthly Magazine"
Dugan-Tarango Middle School
Lordsburg Municipal Schools
Fred La Marca, Principal; Phil DeFoor, Superintendent

High
"Connection Team"
West Mesa High School
Albuquerque Public Schools
Nancy L. Wood, Assistant Principal; Robert Henning, Principal; Dr. Jack Bobroff, Superintendent

District
"Comprehensive Annual Financial Report"
Silver Consolidated Schools (Business Office)
Michele Woodard, Business Manager; Herb Torres, Superintendent

SECOND PLACE WINNERS

Elementary
"The Adventure Continues"
MacArthur Elementary School
Las Cruces Public Schools
Irma Glover, Principal; Linda Kinkaid and Ann Guiffre, Advanced Education Program Facilitators; Rosemary Alvarado, Parent Involvement Assistant; Jesse Gonzales, Superintendent

Middle
"El Dia De Los Abuelitos" (Grandparents' Day)
Bernalillo Middle School
Bernalillo Public Schools
Ramona Salazar, Teacher; Dr. Patrick Lopez, Principal;
Gil Sena, Superintendent
SECOND PLACE WINNERS (continued)

High
"Turn on the Lights"
Questa High School
Questa Independent Schools
Ms. Chris Alvarez and Melissa Ortega, Teachers; Steve Archuleta, Principal; Dr. Levi Duran, Superintendent

District
"Enrichment/Remediation Program"
Floyd Elementary and High Schools
Floyd Municipal Schools
Craig Terry, Principal; George Langan, Superintendent

THIRD PLACE WINNERS

Elementary
"A Restructured, Rural Elementary School"
Cuba Elementary School
Cuba Independent Schools
Linda Lopez, Teacher; Edumenio Gurule, Principal; Joe A. Lopez, Superintendent

Middle
"Team Teaching of Literacy Skills"
La Plata Middle School
Silver Consolidated Schools
Karen Earlywine and Joan Fellingham, Teachers; Chris Drangmeister and Jesse Rogers, Coprincipals; Herb Torres, Superintendent

High
"Cultural Reporter"
Taos High School
Taos Municipal Schools
Nancy Jenkins and Kathy Cordova, Teachers; Gilbert A. Archuleta, Jr., Principal; Juan A. Aragon, Superintendent

District
"Advanced Education Program"
Las Cruces Public Schools
Barbara Morrison, Coordinator; Bonita Combs, Ann Guiffre, and Linda Kinkaid, Advanced Education Program Facilitators; Jesse L. Gonzales, Superintendent

Scholarship Awards

Scholarships to the state universities listed on the next page were given as grand award prizes.

First-place winning districts received scholarships. The New Mexico Research and Study Council Quality Education Awards Program presented two new scholarships this year: The Earl Nunn...
Scholarship, honoring Earl Nunn, a long-time New Mexico educator; and The Quality Education Awards Program Golf Tournament Scholarship, where school and business golfers joined forces to net $3,175 for this cause.

Without the services of the two scholarship committee members, these scholarships would not have been possible. Members were:

**Earl Nunn Scholarship Committee**

Melvin Cordova, Chair, Retired Educator

Thelma Coker, Superintendent, Cimarron Municipal Schools

William Horton, Superintendent, Central Consolidated Schools

Robert Parnell, Retired N.M. Superintendent

Hugh Prather, Retired N.M. Superintendent

Dr. Richard Tonigan (Professor Emeritus, UNM, Past NMRSC Director) President, Richard F. Tonigan & Associates Ltd.

**QEAP Golf Tournament Scholarship Committee**

Charles W. Ward (Tournament Director), Superintendent, Santa Rosa Consolidated Schools

Dr. Richard F. Tonigan, President, Richard F. Tonigan & Associates Ltd.

Tom Thigpen, General Manager, Colborn's of New Mexico

**Distribution of Scholarships:**

<table>
<thead>
<tr>
<th>Scholarships</th>
<th>Received by</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Mexico Highlands (four-year tuition)</td>
<td>Gallup-McKinley County Public Schools</td>
</tr>
<tr>
<td></td>
<td>(Student: Kara Lynna Yazzie)</td>
</tr>
<tr>
<td>New Mexico Institute of Mining and Technology</td>
<td>Los Lunas Public Schools (Student: David Keil Klein)</td>
</tr>
<tr>
<td>(four-year tuition)</td>
<td></td>
</tr>
<tr>
<td>New Mexico State University</td>
<td>Albuquerque Public Schools (Student: Wilfred Ortiz II)</td>
</tr>
<tr>
<td>(Presidential four-year tuition)</td>
<td></td>
</tr>
<tr>
<td>Earl Nunn Scholarship to the University of New Mexico ($2,000)</td>
<td>Silver Consolidated Schools (Student: Stephanie Grijalva)</td>
</tr>
</tbody>
</table>
Distribution of Scholarships (continued):

QEAP Golf Tournament Scholarship to the University of New Mexico ($3,175) 
Albuquerque Public Schools
(Student: Luciano Pacheco)

University of New Mexico ($1,000, one-year) 
Santa Fe Public Schools
(Student: Angelyn R. Davis)

University of New Mexico (three teacher summer school tuition scholarships) 
Lordsburg Municipal Schools
(Teacher: Lloyd Payne)
Albuquerque Public Schools
(Teachers: Marlene Brown and Joe Robinson)
*Bernalillo Public Schools
(Teacher: to be named)

*This scholarship was originally given to first-place winner, Silver Consolidated Schools. Because of the distance to UNM, none of their teachers could arrange to attend a summer session at UNM. It was then awarded to second-place winner, Bernalillo Public Schools.

Scholarship Golf Tournament Cash Donations:

Gold Donors ($500)  
Colborn's of New Mexico
BPLW Architects and Engineers
Espinosa Cartage Company
American Fidelity Assurance Company

Silver Donors ($250)  
The Principal/Eppler, Guerin, & Turner, Inc.

Bronze Donors ($100)  
Richard F. Tonigan & Associates
Southwest Distributors
General Office Supply
Gardenswartz Team Sales
School Equipment, Inc. (SEI)
Paxton Lumber Company
Waggoner Architecture

A special feature of the QEAP luncheon was the presentation of the first "Outstanding New Mexico Educator" award to Mr. Earl Nunn. This award will be given annually, and a plaque with names inscribed will be displayed prominently in the NMRSC offices.

College of Education faculty members again this year lent support by assisting NMRSC with this program. Ernie Stapleton (now semi-retired), long-time Educational Administration Professor, and well-known New Mexico historian, gave the Keynote address. Winners were very appreciative of Dean Peggy J. Blackwell's presence and words of support and encouragement. COE Professor Emeritus Dr. Richard F. Tonigan also assisted with plaque presentations to Dr. George Stoumbis (COE's CIMTE) and Mrs. Margaret Dike, retired APS School Community
Affairs Coordinator and past State PTA president, for judging Quality Education Awards Program entries eight of the ten years the program has been in existence.

Also appreciated was Chuck Spath's presence. Chuck, aide to Governor Bruce King, was there to represent Governor and Mrs. King.

We are also pleased to report that television station KOAT, Channel 7, filmed the proceedings. "Spots" were subsequently aired featuring award presentations.

4. Purchasing


Cooperative Purchasing Program

The historic function of the Council is the operation of the Cooperative Purchasing Program for its members. The program operates on the assumption that by consolidating a large portion of the annual school supply and equipment needs of member schools, and mass bidding these compiled quantities, substantial savings can be realized by the schools.

The Cooperative Purchasing Program has been in operation for 34 years and, as a result, the savings to schools and taxpayers in the state over the years have amounted to millions of dollars. Members who participate in the program typically save considerably more (about 30%) over the cost of annual membership dues and service fees they pay to the Council.

In addition to computerization and adding 654 new items, the CPP categories were increased from nine to eleven to include "Maintenance" and "Music Equipment and Supplies." Also new this year was the Joint Vendor/Advisory Committee meeting, described on the next page.

Member Schools' Advisory Committee

During the 1992-93 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 in October 1992 to
provide suggestions and guidance to improve the program’s utility and effectiveness. They also
updated catalogs by evaluating and adding new products and deleting obsolete items. Some
committee members also participated in the bid evaluations in March 1993, lending their time and
expertise to evaluate samples, technical data, and bids. They then made recommendations for bid
awards.

**Vendors’ Meeting**

On September 24, 1992, twenty-five representatives of twenty-three businesses participating
in the Cooperative Purchasing Program met to discuss concerns about the previous year’s program,
and to give input and suggestions for the coming year. For the fourth year, Allied School and
Office Products was voted by the school districts as “Vendor of the Year.” There was a three-way
tie for second place by Colborn’s of New Mexico, Western Paper Distributors, and Hammond and
Stephens. New Mexico Industries for the Blind (Albuquerque Training Center) was voted third
place Vendor of the Year. All businesses had representatives present to receive plaques except
Hammond and Stephens, Fremont, Nebraska. Distance prevented their sending a representative.

**Combined Vendors/School Advisory Committee Meeting**

Director Paul A. Pohland suggested that representatives from both the vendors and the schools
meet together to discuss mutual problems concerning the purchasing program. This first joint
meeting took place on November 18, 1992 at Hodgin Hall, University of New Mexico. Both
school and vendor representatives expressed satisfaction with this forum, stating that good feelings
were generated among those present, as well as an appreciation of one another’s problems.

**Computerization**

This past fall saw the continuation and expansion of computerization for NMRSC’s
Cooperative Purchasing Program. Thirty-six school districts’ personnel were involved in the
computerization process this year. Training for this process was provided by Mr. Judd Tibbets on
September 21, 23, 25, and 28, 1992. When fully operational, all schools will be able to place their
orders via computer diskettes. Awards information can also be transmitted on diskettes.
Janitorial Fair

NMRSC's Second Janitorial Fair was held at the Continuing Education Conference Center at the University of New Mexico, May 4, 1993. Attending were twenty-one school personnel representing nine school districts and nine vendors who participated in the Cooperative Purchasing Program this year. The Janitorial Fair allowed the vendors to exhibit their wares, and afforded the member school employees the opportunity to examine products, see demonstrations and ask questions about the products shown.

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 3,582 items in eleven 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, are 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, model, price, and successful vendor, is made available to the schools. Schools participating in the computerization program receive diskettes that print purchase orders to the successful vendors. Maintenance items are to be delivered in June; delivery of remaining items occurs prior to the start of the fall term in each district. Items available through the Cooperative Purchasing Program are updated annually. Typically, many item specifications need to be rewritten continuously.

Purchasing Commitments (Table I)

The total dollar volume of awards made in the Spring 1993 program was $2,262,507.71.

School System Savings (Table II)

In addition to savings on products (estimated at 30%) participants save personnel costs and material expenses for the many bidding documents. Moreover, the operations of the purchasing program provide exceptional staff development activities for participating district personnel.
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TABLE I
NEU MEXICO RESEARCH AHD STUOY CClJNCIL

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Total dollar


### Table II
#### SPRING 1993 NMRSC COOPERATIVE PURCHASING PROGRAM SAVINGS

<table>
<thead>
<tr>
<th>SCHOOL SYSTEM</th>
<th>AMOUNT ORDERED</th>
<th>ESTIMATED SAVINGS$^1$ FOR 1992-93 SCHOOL YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aztec</td>
<td>$23,657</td>
<td>$7,097</td>
</tr>
<tr>
<td>2. Belen</td>
<td>49,100</td>
<td>14,730</td>
</tr>
<tr>
<td>3. Bernalillo</td>
<td>116,126</td>
<td>34,238</td>
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<td>4. Bloomfield</td>
<td>66,307</td>
<td>19,892</td>
</tr>
<tr>
<td>5. Central</td>
<td>106,751</td>
<td>31,625</td>
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<tr>
<td>6. Cibola</td>
<td>110,845</td>
<td>33,260</td>
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<tr>
<td>7. Elizarran</td>
<td>46,077</td>
<td>15,223</td>
</tr>
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<td>8. Espanola</td>
<td>58,458</td>
<td>17,537</td>
</tr>
<tr>
<td>9. Corona</td>
<td>4,087</td>
<td>1,226</td>
</tr>
<tr>
<td>10. Cuba</td>
<td>48,905</td>
<td>14,672</td>
</tr>
<tr>
<td>11. Deming</td>
<td>123,759</td>
<td>37,178</td>
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<td>120,108</td>
<td>36,032</td>
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<td>13. Estancia</td>
<td>46,673</td>
<td>16,602</td>
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<tr>
<td>14. Floyd</td>
<td>6,620</td>
<td>1,929</td>
</tr>
<tr>
<td>15. Ft. Sumner</td>
<td>6,349</td>
<td>1,905</td>
</tr>
<tr>
<td>16. Hatch</td>
<td>46,770</td>
<td>14,031</td>
</tr>
<tr>
<td>17. Hondo</td>
<td>8,026</td>
<td>2,488</td>
</tr>
<tr>
<td>18. James Valley</td>
<td>55,518</td>
<td>16,655</td>
</tr>
<tr>
<td>19. Las Vegas City</td>
<td>96,236</td>
<td>29,221</td>
</tr>
<tr>
<td>20. Las Vegas West</td>
<td>53,562</td>
<td>16,069</td>
</tr>
<tr>
<td>21. Lordsburg</td>
<td>36,572</td>
<td>10,972</td>
</tr>
<tr>
<td>22. Los Alamos</td>
<td>92,690</td>
<td>27,747</td>
</tr>
<tr>
<td>23. Magdalena</td>
<td>12,322</td>
<td>3,712</td>
</tr>
<tr>
<td>24. Maxwell</td>
<td>5,195</td>
<td>1,590</td>
</tr>
<tr>
<td>25. Mesa Vista</td>
<td>35,333</td>
<td>10,600</td>
</tr>
<tr>
<td>26. Mora</td>
<td>43,601</td>
<td>13,080</td>
</tr>
<tr>
<td>27. Moriarty</td>
<td>63,616</td>
<td>19,025</td>
</tr>
<tr>
<td>28. Mountair</td>
<td>16,385</td>
<td>4,916</td>
</tr>
<tr>
<td>29. Pecos</td>
<td>31,603</td>
<td>9,481</td>
</tr>
<tr>
<td>30. Penasco</td>
<td>39,286</td>
<td>11,786</td>
</tr>
<tr>
<td>31. Pueblo</td>
<td>32,842</td>
<td>9,852</td>
</tr>
<tr>
<td>32. Quemado</td>
<td>7,104</td>
<td>2,132</td>
</tr>
<tr>
<td>33. Guests</td>
<td>17,563</td>
<td>5,263</td>
</tr>
<tr>
<td>34. Reserve</td>
<td>11,459</td>
<td>3,438</td>
</tr>
<tr>
<td>35. Roy</td>
<td>7,973</td>
<td>2,392</td>
</tr>
<tr>
<td>36. Ruidoso</td>
<td>25,918</td>
<td>7,775</td>
</tr>
<tr>
<td>37. San Jon</td>
<td>12,030</td>
<td>3,609</td>
</tr>
<tr>
<td>38. Santa Rosa</td>
<td>72,180</td>
<td>21,716</td>
</tr>
<tr>
<td>39. Silver City</td>
<td>78,555</td>
<td>23,861</td>
</tr>
<tr>
<td>40. Socorro</td>
<td>48,689</td>
<td>14,547</td>
</tr>
<tr>
<td>41. Springer</td>
<td>15,734</td>
<td>4,770</td>
</tr>
<tr>
<td>42. Taos</td>
<td>27,959</td>
<td>23,388</td>
</tr>
<tr>
<td>43. Truth or Consequences</td>
<td>76,367</td>
<td>22,364</td>
</tr>
<tr>
<td>44. Tularosa</td>
<td>33,822</td>
<td>10,147</td>
</tr>
<tr>
<td>45. Vaughn</td>
<td>20,540</td>
<td>6,168</td>
</tr>
<tr>
<td>46. Zuni</td>
<td>120,657</td>
<td>38,891</td>
</tr>
<tr>
<td>47. Menaul School</td>
<td>11,648</td>
<td>3,434</td>
</tr>
<tr>
<td>48. St. Therese</td>
<td>2,623</td>
<td>787</td>
</tr>
<tr>
<td>49. Sendia Preparatory</td>
<td>12,889</td>
<td>3,867</td>
</tr>
<tr>
<td>50. Zuni Christian Reformed Mission</td>
<td>2,105</td>
<td>632</td>
</tr>
<tr>
<td>51. NMRSC</td>
<td>1,893</td>
<td>568</td>
</tr>
</tbody>
</table>

**Total**$^2$) $2,262,508 $678,758

---

1) It is estimated that a school system purchasing through the NMRSC Cooperative Purchasing Program saves:

a) 20.4% on the purchase price of items
b) 9.6% on labor/office costs

2) Totals may vary slightly due to rounding.
Cooperative Purchasing Program Participation

Fifty New Mexico public and private schools participated in the 1992-93 Cooperative Purchasing Program.

Vendor Awards (Tables III and IV)

In 1993 the NMRSC received 135 bids in the eleven categories. Awards went to 65 businesses for supplies and equipment on behalf of Council members. Award amounts ranged from a low of $165 to a high of $393,078. Forty-one of the 65 vendors were in-state and 24 were out-of-state.

TABLE III
VENDOR AWARD INFORMATION
FOR SPRING 1993

<table>
<thead>
<tr>
<th>FISCAL YEAR</th>
<th>NUMBER OF VENDORS RECEIVING AWARDS</th>
<th>VALUE OF LOWEST AWARD</th>
<th>VALUE OF HIGHEST AWARD</th>
<th>VALUE OF ALL AWARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>65</td>
<td>$165</td>
<td>$393,078</td>
<td>$2,262,508</td>
</tr>
</tbody>
</table>

Purchasing Discount Service

The Purchasing Discount Service was a 1982-83 innovation of the Council. It was designed to supplement the Cooperative Purchasing Program. This program allowed member schools to buy items which cannot be legally purchased without advertising for bids at discounts ranging from 2% 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 3% 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>
<thead>
<tr>
<th>NUMBER</th>
<th>VENDOR</th>
<th>AMOUNT AWARDED</th>
<th>RANK ORDER BY DOLLAR VOLUME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Alamo Ironworks of New Mexico</td>
<td>$20,526.69</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Allied School &amp; Office Products</td>
<td>234,321.68</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>American Business Interiors</td>
<td>37,304.17</td>
<td>15</td>
</tr>
<tr>
<td>4.</td>
<td>Audio Visual Electronics</td>
<td>10,642.34</td>
<td>29</td>
</tr>
<tr>
<td>5.</td>
<td>*Baden Sports</td>
<td>5,622.92</td>
<td>51</td>
</tr>
<tr>
<td>6.</td>
<td>Border States Electric</td>
<td>9,864.30</td>
<td>62</td>
</tr>
<tr>
<td>7.</td>
<td>Broadcast Supply</td>
<td>5,370.30</td>
<td>52</td>
</tr>
<tr>
<td>8.</td>
<td>*Product Co.</td>
<td>7,288.58</td>
<td>48</td>
</tr>
<tr>
<td>9.</td>
<td>*Rex Sports</td>
<td>37,612.46</td>
<td>14</td>
</tr>
<tr>
<td>10.</td>
<td>*Cannon Sports Inc.</td>
<td>66,368.34</td>
<td>5</td>
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<tr>
<td>11.</td>
<td>*Carolina Biological</td>
<td>178.66</td>
<td>64</td>
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<tr>
<td>12.</td>
<td>Ceramic King</td>
<td>8,735.91</td>
<td>46</td>
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<tr>
<td>13.</td>
<td>Charles T. Siebenhal, Inc.</td>
<td>17,653.47</td>
<td>32</td>
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<tr>
<td>14.</td>
<td>Colborn's of New Mexico</td>
<td>238,646.32</td>
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<td>15.</td>
<td>Colby's Inc.</td>
<td>30,132.10</td>
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<tr>
<td>16.</td>
<td>Consolidated Electrical Distributors</td>
<td>34,273.60</td>
<td>19</td>
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<tr>
<td>17.</td>
<td>*Contract Brands</td>
<td>15,936.84</td>
<td>35</td>
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<tr>
<td>18.</td>
<td>*Custom Paint Center</td>
<td>53,587.60</td>
<td>7</td>
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<tr>
<td>19.</td>
<td>Davis Audio Visual</td>
<td>12,192.28</td>
<td>37</td>
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<tr>
<td>20.</td>
<td>Dick Block</td>
<td>2,029.41</td>
<td>54</td>
</tr>
<tr>
<td>22.</td>
<td>*Educational Marketing System</td>
<td>9,200.34</td>
<td>44</td>
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<tr>
<td>23.</td>
<td>Eddleman Industries</td>
<td>3,866.48</td>
<td>53</td>
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<tr>
<td>25.</td>
<td>Fleming Chemical Company</td>
<td>32,927.32</td>
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<tr>
<td>26.</td>
<td>Frank Paxton Lumber Company</td>
<td>10,610.40</td>
<td>40</td>
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<tr>
<td>27.</td>
<td>Gardenswartz Team Sales</td>
<td>85,178.25</td>
<td>6</td>
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<tr>
<td>28.</td>
<td>*Gaylord Brothers Inc.</td>
<td>9,696.72</td>
<td>45</td>
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<tr>
<td>29.</td>
<td>General Office Supply</td>
<td>185,626.10</td>
<td>3</td>
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<tr>
<td>30.</td>
<td>*Gill Sports</td>
<td>660.00</td>
<td>63</td>
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<tr>
<td>31.</td>
<td>*Gibbs Paint Co.</td>
<td>1,982.24</td>
<td>59</td>
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<tr>
<td>32.</td>
<td>*Hammond &amp; Stevens</td>
<td>10,690.97</td>
<td>38</td>
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<tr>
<td>33.</td>
<td>*Haysmith Company, Inc.</td>
<td>880.90</td>
<td>62</td>
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<tr>
<td>34.</td>
<td>Holmsted Inc.</td>
<td>2,260.48</td>
<td>57</td>
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<tr>
<td>35.</td>
<td>Hunter Ladder Co.</td>
<td>881.33</td>
<td>61</td>
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<tr>
<td>36.</td>
<td>J. E. Balswide Lumber Co.</td>
<td>13,795.95</td>
<td>36</td>
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<tr>
<td>37.</td>
<td>Elbas Enterprises, Inc.</td>
<td>40,051.37</td>
<td>13</td>
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<tr>
<td>38.</td>
<td>Laundry Dry Supply Co.</td>
<td>26,592.12</td>
<td>25</td>
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<tr>
<td>39.</td>
<td>Luchetti's Music, Inc.</td>
<td>22,165.04</td>
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<tr>
<td>40.</td>
<td>Meyer of New Mexico</td>
<td>39,351.08</td>
<td>21</td>
</tr>
<tr>
<td>41.</td>
<td>*Micro Bio Medics</td>
<td>10,579.55</td>
<td>41</td>
</tr>
<tr>
<td>42.</td>
<td>*NASCO West</td>
<td>21,681.13</td>
<td>30</td>
</tr>
<tr>
<td>43.</td>
<td>*National Audio Visual</td>
<td>6,591.35</td>
<td>49</td>
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<tr>
<td>44.</td>
<td>Nationwide Papers</td>
<td>7,778.13</td>
<td>47</td>
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<tr>
<td>45.</td>
<td>New Mexico Industries for the Blind</td>
<td>26,051.29</td>
<td>26</td>
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<tr>
<td>46.</td>
<td>New Mexico School Products</td>
<td>33,333.33</td>
<td>17</td>
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<tr>
<td>47.</td>
<td>Nobel/Sysco Systems</td>
<td>44,288.22</td>
<td>12</td>
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<tr>
<td>48.</td>
<td>*Pyramid School Products</td>
<td>50,657.95</td>
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<tr>
<td>49.</td>
<td>Reliance Steel Co.</td>
<td>1,005.21</td>
<td>60</td>
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<tr>
<td>50.</td>
<td>*Richard Young Products</td>
<td>2,628.23</td>
<td>55</td>
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<tr>
<td>51.</td>
<td>S &amp; S Worldwide</td>
<td>2,198.20</td>
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<tr>
<td>52.</td>
<td>Sergeant-Welsh Scientific Company</td>
<td>35,085.66</td>
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<tr>
<td>53.</td>
<td>Springtime/SEPCO Janitorial</td>
<td>22,043.94</td>
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<tr>
<td>54.</td>
<td>*Standard Stationary Supply</td>
<td>52,319.67</td>
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<tr>
<td>55.</td>
<td>Sunland Sanitary Supply</td>
<td>165.00</td>
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<tr>
<td>56.</td>
<td>Southwest Distributing</td>
<td>50,376.16</td>
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<tr>
<td>57.</td>
<td>Thomas A. Huey Mfg. Co.</td>
<td>17,800.06</td>
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<tr>
<td>58.</td>
<td>*Foxwell Communications Inc.</td>
<td>56,443.26</td>
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<tr>
<td>60.</td>
<td>Voss Electric</td>
<td>9,199.99</td>
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<tr>
<td>61.</td>
<td>Wellborn-DE Corporation</td>
<td>2,576.84</td>
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<tr>
<td>62.</td>
<td>Western Paper Distributors</td>
<td>30,077.64</td>
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<tr>
<td>63.</td>
<td>Willamette Industries</td>
<td>45,189.68</td>
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<tr>
<td>64.</td>
<td>Wise Supply Inc.</td>
<td>28,063.03</td>
<td>21</td>
</tr>
<tr>
<td>65.</td>
<td>*The Woodland &amp; Brasswind</td>
<td>17,211.70</td>
<td>34</td>
</tr>
</tbody>
</table>

*Indicates businesses NOT receiving In-state preference.

This report was prepared May 19, 1993. Any changes to awards after that date are not reflected. The total dollar amount awarded to vendors and the total amount ordered by schools vary because some items ordered by schools were not awarded to vendors for various reasons (no bids; bids did not meet specs, etc.).
5. Research

Three research efforts were completed or initiated during the year. In October, 1992, a Research Report entitled "Professional Development Today: Something New on the Horizon" was received and distributed to the NMRSC membership. The study was done by Mrs. Carolyn Plummer, a temporary Research Associate for the Council in the summer of 1992 (see Appendix E).

A second research effort was undertaken in 1992-1993. The study attempted to obtain information on overall satisfaction with Council membership, specific satisfaction with the Cooperative Purchasing Program and transportation costs associated with delivery of goods purchased through CPP. Secondary purposes of the study were to establish a research agenda for the Council as specified by the membership and to obtain insight into the professional journal reading of the membership. A copy of the completed study is attached as Appendix F.

A third, and new, research effort was the publication and distribution of research abstracts. The abstracts were produced in response to member requests for information on a variety of topics (see Appendix G). Celia Hardekopf, Research Assistant, was primarily responsible for the research study previously described and the abstracts.
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
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
12. Dr. Paul A. Pohland, August 17, 1992 to present

Past Presidents

<table>
<thead>
<tr>
<th>Superintendents</th>
<th>District</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Placido Garcia, Sr.</td>
<td>Socorro</td>
<td>1959-61</td>
</tr>
<tr>
<td>Manuel B. McBride</td>
<td>Grants</td>
<td>1962</td>
</tr>
<tr>
<td>Oliver Ortiz</td>
<td>Vaughn</td>
<td>1963</td>
</tr>
<tr>
<td>George Thompson</td>
<td>Magdalena</td>
<td>1964</td>
</tr>
<tr>
<td>Alfonso J. Garde</td>
<td>Belen</td>
<td>1965</td>
</tr>
</tbody>
</table>

... continued
## APPENDIX A (continued)

<table>
<thead>
<tr>
<th>Superintendents</th>
<th>District</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frank B. Lopez</td>
<td>Pojoaque</td>
<td>1966</td>
</tr>
<tr>
<td>William Dwyer</td>
<td>Jemez Springs</td>
<td>1967</td>
</tr>
<tr>
<td>Phillip Gonzales</td>
<td>Cuba</td>
<td>1968</td>
</tr>
<tr>
<td>Bernard Baca</td>
<td>Los Lunas</td>
<td>1969</td>
</tr>
<tr>
<td>Canuto Melendez</td>
<td>Pecos</td>
<td>1970</td>
</tr>
<tr>
<td>Pete Santistevan</td>
<td>Bernalillo</td>
<td>1971</td>
</tr>
<tr>
<td>John S. Aragon</td>
<td>Belen</td>
<td>1972-74</td>
</tr>
<tr>
<td>Horace Martinez</td>
<td>Questa</td>
<td>1975</td>
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<tr>
<td>E. V. Arvizu</td>
<td>Grants</td>
<td>1975-76</td>
</tr>
<tr>
<td>Eloy J. Blea</td>
<td>Pecos</td>
<td>1977</td>
</tr>
<tr>
<td>Mary B. Sanchez</td>
<td>Belen</td>
<td>1978-79</td>
</tr>
<tr>
<td>Jack Ward</td>
<td>Bloomfield</td>
<td>1980</td>
</tr>
<tr>
<td>Scott Childress</td>
<td>Gallup</td>
<td>1981-82</td>
</tr>
<tr>
<td>Silas Lopez</td>
<td>Las Vegas City</td>
<td>1981-82</td>
</tr>
<tr>
<td>Gordon L. King</td>
<td>Aztec</td>
<td>1983</td>
</tr>
<tr>
<td>Melvin Cordova</td>
<td>Zuni</td>
<td>1984</td>
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<tr>
<td>Dr. Howard Overby</td>
<td>Grants</td>
<td>1/1/85 - 6/30/85</td>
</tr>
<tr>
<td>Felix L. Duran</td>
<td>Penasco</td>
<td>7/1/85 - 12/31/86</td>
</tr>
<tr>
<td>H. B. Martinez</td>
<td>Mora</td>
<td>1987</td>
</tr>
<tr>
<td>Casey Martinez</td>
<td>Pojoaque</td>
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<td>Juan Aragon</td>
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<td>Charles Ward</td>
<td>Santa Rosa</td>
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## 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
- Mark A. Ortega, 1991-92
- *Celia Hardekopf, 1992-93
- *Elwyn Hulett, 1992-93

*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.
### Public School Members

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### Representative(s)

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<td>Jack Bobroff, Supt.</td>
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APPENDIX B (continued)

Public School Members (continued)
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 Association
5. University of New Mexico

Representatives (continued)
Mike Chambers, Supt.
Charles Ward, Supt.
Herb Torres, Supt.
Delbert Fraissinet, Supt.
Michael Dickson, Supt.
Juan A. Aragon, Supt.
Janel M. Ryan, Supt.
Susanna Murphy, Supt.
Roman Garcia, Supt.
Hayes A. Lewis

Representatives
Dr. Theodore D. Lockwood, President
Kurt Knoernschild, President
Mary Cunning, Principal
Abe Armendariz, Principal
Richard L. Heath, Headmaster
Brian Kruis, Principal

Representatives
Brigetta Slinger, SSJ, Supt.
Alan Morgan, State Supt. of Public Instruction, and
Michael Davis, Assoc. State Supt., School Management Accountability
Ed Gaussoin, Executive Director
Wesley Lane, Executive Director
Dr. Paul A. Pohland, Director, New Mexico Research & Study Council

*Charter Member

APPENDIX C

1992-93 NMRSC Publications

Educational Employees Discount Service Purchasing Guide, July 17, 1992
Purchasing Discount Service Booklet, July 17, 1992
Annual Report, August 18, 1992
Council News, January 1993
Council News, May 1993
Quality Education Awards Program Booklet, May 1993
APPENDIX D

1992-93 NMRSC Meetings

July 7, 1992, NMRSC-ASBO Golf Committee Meeting, Arroyo del Oso Golf Course, Albuquerque

July 16, 1992, NMRSC-ASBO Conference Planning Session, Bernalillo Administration Building, Bernalillo

July 22, 1992, Board of Directors Meeting, Quality Inn Four Seasons, Albuquerque

July 23, 1992, NMRSC-ASBO Golf Committee Meeting, Quality Inn Four Seasons, Albuquerque

September 8, 1992, NMRSC-ASBO Conference and Golf Tournament Planning Session, UNM Continuing Education Conference Center, Albuquerque


September 24, 1992, Cooperative Purchasing Program Vendors' Meeting, UNM Continuing Education Conference Center, Albuquerque

September 24, 1992, Board of Directors Meeting, Quality Inn Four Seasons, Albuquerque

October 14, 1992, Cooperative Purchasing Program Member Schools' Advisory Committee Meeting, Elks Lodge, Albuquerque

October 21, 22, and 23, 1992, NMRSC-ASBO Tenth Annual Joint Conference, Hilton Hotel, Las Cruces

October 21, 1992, NMRSC-ASBO Golf Tournament, NMSU Golf Course, Las Cruces

October 22, 1992, NMRSC-ASBO "Fun Run," Las Cruces

October 23, 1992, Board of Directors Meeting, Hilton Hotel, Las Cruces

October 23, 1992, Cooperative Purchasing Program Presentation, Hilton Hotel, Las Cruces

November 18, 1992, Cooperative Purchasing Program Vendor/School Advisory Committee Meeting, Hodgin Hall, UNM

December 4, 1992, NMRSC-ASBO Planning and Evaluation Committee Meeting, Holiday Inn Pyramid, Albuquerque

December 10, 1992, Quality Education Awards Program Judging, UNM Continuing Education Conference Center, Albuquerque

February 10, 1993, Quality Education Awards Program Awards Luncheon, Albuquerque Marriott Hotel

...continued
1992-93 NMRSC Meetings (continued)

February 10, 1993, Board of Directors Meeting, Herbs & Roses Room, Albuquerque Marriott Hotel

March 4, 1993, Seventeenth Annual Legislative Seminar, La Fonda Hotel, Santa Fe

March 12, 1993, Cooperative Purchasing Program Bid Opening, 119 College of Education, UNM

March 30 and 31, 1993, Cooperative Purchasing Program Bid Evaluation Committee Meetings, College of Education, UNM

April 6, 1993, NMRSC-ASBO Planning Committee Meeting, UNM Continuing Education Conference Center

May 3, 1993, Janitorial Trade Fair, UNM Continuing Education Conference Center, Albuquerque

June 10, 1993, NMRSC-ASBO Planning Committee Meeting, Holiday Inn Pyramid, Albuquerque

June 11, 1993, Annual Meeting, Holiday Inn Pyramid, Albuquerque

June 11, 1993, Board of Directors Meeting, Holiday Inn Pyramid, Albuquerque
APPENDIX E

Professional Development Today: Something New on the Horizon

A Research Report
Prepared by
Carolyn Plummer
for
The New Mexico Research and Study Council
The University of New Mexico
October 1992

29
Over the past twelve to thirteen years, while New Mexico was busy educating its children and youth, few educators had the time, the expertise, or the resources to step back a few paces from their work to scan the horizon to see the staff development changes that were developing. Educational policies that shaped preservice and inservice teachers underwent rapid and dramatic change, often leaving classroom teachers and administrators confused about which rules they were operating under. Many teachers, feeling powerless to stem the changes, resigned themselves to concentrating on the tasks before them, and responded to policy by saying, "I'll just do what they tell me."

Additionally, across the nation, the 80's was a decade during which development for teachers and administrators took dramatic leaps as both trial and error experience and careful research transformed early notions of development, shaping them to reflect a deeper understanding of factors that are necessary for teacher development that is linked to school improvement.

New Mexico teachers and administrators were aware, of course, of policies that directly impacted them, programs like teacher evaluation requirements of the early 1980's that have evolved into today's Professional Development Plan. They knew about and complied with the requirements for continuing licensure that went into effect in 1989. Additionally, they participated in earning, calculating, and reporting credits received for coursework at institutions of higher education, an option that is part of the state's Training and Experience Index.
Those teachers who earned undergraduate degrees from July of 1989 until the present became familiar with state requirements for licensure of preservice educators and the requirements for endorsement that were upgraded at the same time.

Despite the growing number of state mandates that emerged during the 80's, some educators and policymakers began to sense that professional development for teachers in New Mexico uncomfortably resembled the landscape: flourishing in locations where there were resources, struggling for life where there were none.

Anyone who surveys professional development for teachers across the state today might ask, "Why aren't present policies adequate to meet the state's needs? Why can't we assure that all teachers, in districts large or small, in regions near colleges and universities or far, neophyte or veteran, receive necessary development opportunities? Why can't we deliver ongoing training in current learning theories, current subject matter, and current knowledge of children's sociological realities?"

Part of the problem is that policies that were not intended to provide teachers with development opportunities nevertheless significantly affect the options that teachers exercise. When the T & E Index was created, for instance, the intent was to assist districts in being able to compensate teachers for additional coursework and experience. However, since only classes taken at institutions of higher education are included in the index, monetary incentives for receiving training from other providers are nonexistent even though the activity could be more appropriate for the teacher's needs than a
college course.

Just as this policy impacts whether teachers participate in development opportunities, so do the other regulations that govern the professional lives of teachers. A language arts teacher can demonstrate the six essential competencies while teaching the same lessons s/he prepared 15 years ago. A math teacher can ably meet the criteria for competency without providing students with lessons that utilize math computations for problem solving. Both teachers, under present rules, would be eligible for continuing licensure despite their inability to reflect knowledge of current thinking in their subject fields. Granted, present requirements go far toward the intended destination: teacher competency. But classroom management skills and effective instruction are not enough today even though no incentive or requirement to demonstrate more than that exists in New Mexico's continuing licensure policy.

FURTHER COMPLICATIONS

While policymakers were struggling to meet the state's needs by creating more stringent requirements for entering and practicing in the field of education, other forces were pushing education in directions that few, policymakers and educators alike, had anticipated. New technologies entered the scene. Subject matter knowledge shifted and grew, in subjects like geography and science, for instance. New insights into how people of all ages learn emerged. Additionally, the social realities that impact children and youth bubbled and churned
in schoolhouses as threateningly as they were outside school walls—poverty, abuse, drug use to name a few.

In some areas of New Mexico, aggressive response to new needs has become a familiar part of the educational terrain. Re:Learning, funded by the state legislature, provides leadership in Santa Fe, Tatum Municipal Schools, Zuni, Albuquerque, Bernalillo, Los Alamos, Mora, Moriarity, Penasco, Portales, Santa Rosa, and Silver City. Albuquerque also provides support for ongoing development for teachers, as does Roswell, through development centers. Central School District participates in regionalized inservice with Aztec, Farmington, and Bloomfield. Rockefeller Academies provide intensive training to teachers, administrators, educational assistants, and parents in Cobre School District, Las Vegas, Las Cruces, Albuquerque, Taos, Zuni, and Silver City.

Other efforts exist in the state, but the majority of districts are limited in their ability to provide the continuous training educators need to do the job required of them today.

People familiar with the New Mexico school district map and enrollment figures know why: 88 districts segment the state and the 1991-92 enrollment figures range from Albuquerque that serves 75,176 students to Mosquero that provides education for an enrollment of 59. Further exacerbating the problem is the distance between many districts and the state’s colleges and universities.

In light of these realities, what is a state to do in order to assure that all of its teachers stay current in their subject matter and in pedagogy?
SEEKING A SOLUTION

In 1991, after being made aware that the state does not have a comprehensive plan for professional development that assures that all teachers have incentives for and access to professional development opportunities that keep them continually prepared to meet students' needs, the legislature passed Senate Memorial 5, directing the Legislative Education Study Committee to conduct a study and make recommendations regarding teacher development. A Task Force has been working for nearly two years and will present a report to the LESC in November of 1992. The recommendations will take into consideration not only the local factors that impact professional development efforts, such as PDP requirements and T & E Index options, but will reflect the most current thought about the nature of professional development itself.

PROFESSIONAL DEVELOPMENT TODAY

Literature that addresses training for teachers who are working with students in the 90's does not casually substitute the term "professional development" for "inservice" and "staff development." The new "label" actually identifies a new way to conceptualize ongoing teacher learning. As the Encyclopedia of Educational Research says, only since the 1980's do the principles of professional development "outline a view of practice that is client-oriented and
knowledge-based." Just as we know more about how to teach kids, we
know more about what to teach their teachers to meet student needs.

One of the most significant shifts in training of practicing
teachers is the move away from activities that are done "to" or "for"
teachers in isolation from other educational reforms. Instead,
professional development creates a continuum in which teacher learning
is aimed at meeting the needs of their students by the teacher's
becoming highly knowledgeable about learning theory and highly skilled
at practicing what one knows—all for the benefit of students. Some
observers find it ironic that this approach makes the teacher more
accountable for student outcomes than earlier, more regulatory,
approaches to instructional quality. When the teacher becomes the
expert, s/he no longer follows prescriptions from the top of a
bureaucratic hierarchy.

But in order for teachers to have more authority and take more
responsibility for educational decisions, there must be a reform of the
way schools operate. As the Encyclopedia of Educational Research
puts it, "If teachers are to practice professionally, schools must seek
to support teacher knowledge and promote competence in a variety of
ways." Support will have to come in the form of workplaces that are
structured to reduce the isolation that too often and for too long has
characterized schools. Teachers must be able to share what they know,
seek immediate assistance for instructional problems they encounter,
and be able to observe the practice of others. Secondly, teachers have
to be involved in the decisions that affect teaching—matters such as
hiring, class scheduling, and program development, for instance.
It is with this awareness that states like Vermont, North Carolina, and Kentucky are engaged in dramatic educational renovation. In those places, and others, professional standards councils have been created to place the processes of professional development in the hands of stakeholders from all levels—higher education, administrators, teachers, business people, and parents. In Vermont, teachers evaluate and train teachers. In Kentucky, individual schools establish school councils that, among other duties, create professional development plans for their building.

The professional development efforts that are perceived as "working" elsewhere have been planned with generally agreed upon characteristics in mind. Most of the current literature on teacher development lists those characteristics similarly. The following is an example from Changing School Culture Through Staff Development an ASCD Yearbook published in 1990:

- Collegiality and collaboration
- Experimentation and risk taking
- Incorporation of available knowledge bases
- Appropriate participant involvement in goal setting, implementation, evaluation, and decision making
- Time to work on staff development and assimilate new learnings
- Leadership and sustained administrative support
- Appropriate incentives and rewards
- Designs built on principles of adult learning and the change process
- Integration of individual goals with school and district goals
- Formal placement of the program within the philosophy and organizational structure of the school and district.

On a local level, an attempt to meet the development needs of teachers while restructuring the district has been in existence in
Albuquerque Public Schools since late in 1988. The Professional Standards Council meets monthly to recommend standards for the professionalization of teachers. The Council, made up of administrators, school board members, parents, representatives of higher education, and a majority of teachers, is empowered to create administrative policy for professional development.

Their Professional Development Committee conducted a teacher attitude assessment that will give the district invaluable information in planning and providing development for teachers.

A significant number of respondents indicated in the survey that they wanted their development efforts to "count." Many preferred development activities that were tailored to their student/school needs, not university courses that presently tend to deal with more generic issues. Ranking high in importance is time to practice new learnings and have help in making changes. These kinds of responses echo what teachers nationwide have said they want development plans to provide, and the LESC Task Force working on this issue has listened and can be expected to base their recommendations upon this knowledge.

A comprehensive state plan for enabling, stimulating, providing incentives, and setting standards for the professional development of all of New Mexico's teachers should be forthcoming in the near future. The need has been recognized, pieces of the model exist on the local level in various places in the state, hundreds of hours have been invested in researching and studying the issue and making recommendations. By creating a comprehensive state policy for professional development, New Mexico has an opportunity not only to
meet its own needs, but to assume leadership in this domain since no other state in the region has a successful state plan for professional development for teachers.

Such a plan need not necessarily cost additional dollars, but will almost certainly require a reallocation of existing sources of supply. This will include not only money, but time and professional expertise. Regional centers are likely to be a key part of recommendations for the future, whether they are newly created or revamped versions of existing sites. Knowing that regional centers are the mainstay of several other states' success in setting standards, and sometimes even providing professional development activities, the Task Force has studied how implementation of regional centers can both facilitate and create accountability for the quality of the state's plan. Through this kind of structure, districts may find themselves collaborating rather than competing for resources.

In the months ahead, change in policies that shape New Mexico's teachers are nearly certain to occur. Now, however, unlike the requirements that were implemented in the previous decade, we know a great deal about what works in teacher development. We have models throughout the state and have studied what is successful elsewhere. We know that where opportunities for development have been meaningful and easily accessed, New Mexico teachers have participated enthusiastically and have asked for more. Even though one aspect of teachers' lives is still unchanged—their professional lives are busy still—this time, as change occurs, far more of them will be watchful and savvy when new policy appears on their horizon.
Member Satisfaction, Post-CPP Bidding Concerns, and a Research Agenda for the New Mexico Research and Study Council

A Research Report
prepared for
The New Mexico Research and Study Council
by
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INTRODUCTION

As indicated in its organizational name, research is an important New Mexico Research and Study Council function. Thus in the fall of 1992 the Council initiated a study designed (a) to assess member satisfaction with Council membership and participation in the Cooperative Purchasing Program; (b) to determine the extent and nature of post-bid concerns related to the Cooperative Purchasing Program; (c) to determine future NMRSC research agendas; and (d) to determine the most promising sources for research articles on topics of member interests which subsequently could be abstracted and distributed. Celia Hardekopf, Graduate Assistant, had primary responsibility for carrying out the study.

DESIGN

A twenty item questionnaire (see Appendix A) was developed in accord with the study's purpose. Fifteen of the items were Likert scaled with responses ranging from 5 (Strongly Agree, SA), through 4 (Agree, A), 3 (No Opinion, NO), to 2 (Disagree, D) and 1 (Strongly Disagree, SD). Responses were treated statistically. Five of the items were open ended and yielded qualitative data.

Questionnaires were mailed to the 54 NMRSC member units in November of 1992 with a follow-up in January of 1993. Ultimately 27 member units (50%) responded. Respondents included 20 superintendents and eight business managers.*

FINDINGS

A. Benefits

Table 1 (Perceived Benefits) summarizes the data relevant to research purpose one -- member satisfaction with Council membership with particular reference to participation in the Cooperative Purchasing Program.

*In one district the superintendent and business manager jointly responded.
Table 1. Perceived Benefits.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean Response</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Our district benefits greatly from participating in the Cooperative Purchasing Program (CPP).</td>
<td>3.9</td>
<td>.92</td>
</tr>
<tr>
<td>2. Our district gets lower prices for necessary goods by ordering from CPP.</td>
<td>4.3</td>
<td>.65</td>
</tr>
<tr>
<td>3. Quality of goods available from CPP is usually excellent.</td>
<td>3.4</td>
<td>.91</td>
</tr>
<tr>
<td>4. Our district receives more adequate attention from vendors when we participate in CPP.</td>
<td>3.1</td>
<td>.80</td>
</tr>
<tr>
<td>5. The reduction in labor time for our staff (particularly in the ordering cycle) is a significant benefit from NMRSC.</td>
<td>3.7</td>
<td>.98</td>
</tr>
<tr>
<td>6. The social network meeting together in NMRSC is a valuable benefit.</td>
<td>3.5</td>
<td>.51</td>
</tr>
</tbody>
</table>

Several observations can be made about the data displayed in Table 1. First, it is clear that there is overall member satisfaction with the CPP. The mean response for items 1-5 is 3.7. Second, the greatest perceived benefit of membership is the savings achieved through the CPP (Item #2). Third, perceived benefits in terms of vendor responsiveness is marginal (Mean=3.1, Item #4). Fourth, variation in terms of responses was unusually high. This is noticeable in the high standard deviations. Further research is necessary to determine the sources of variation.

Item #6 asked a broader, social relations question. Not surprisingly the social contact provided by membership in NMRSC was viewed positively. This is consistent with the literature on the superintendency. However, it should be noted that it is valued less highly than the fiscal benefits of NMRSC membership.

Item #7 was also related to the first research purpose but was phrased open endedly: What are the greatest benefits you find in NMRSC membership? Not surprisingly the responses mirrored those given for Items 1-5. Fiscal benefits were reported by 17 respondents. Three respondents referred to the Quality Education Awards Program, and one respondent noted the social benefits of...
membership. Seven questionnaires were returned with no response to this item.

B. Post-Bidding Concerns

NMRSC staff have repeatedly been made aware of a set of post-bidding problems and issues, notably transportation costs. In order to obtain more definitive purchase on those issues seven items were included in the questionnaire. Findings are reported in Table 2.

Table 2. Cooperative Purchasing Program Post-Bidding Concerns

<table>
<thead>
<tr>
<th>Questions</th>
<th>Mean Response</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. On-time delivery is often a problem with goods ordered in our district.</td>
<td>3.6</td>
<td>1.0</td>
</tr>
<tr>
<td>9. On-time delivery is often a problem with CPP orders.</td>
<td>3.4</td>
<td>1.0</td>
</tr>
<tr>
<td>10. The personnel logistics for receiving goods is a problem in our district.</td>
<td>2.5</td>
<td>.9</td>
</tr>
<tr>
<td>11. Adequacy of facilities for receiving goods is a problem in our district.</td>
<td>2.7</td>
<td>.9</td>
</tr>
<tr>
<td>12. It is a problem for our district to separate individual school orders from a bulk CPP order.</td>
<td>3.3</td>
<td>1.3</td>
</tr>
<tr>
<td>13. Shipping charges on CPP orders are higher than other shipping charges to our district.</td>
<td>3.2</td>
<td>1.1</td>
</tr>
<tr>
<td>14. Shipping charges for CPP orders tend to be about the same as other orders sent to our district.</td>
<td>3.1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Again, several observations can be made. First, the responses in general cluster around the "neutral zone" (NO), ranging only from 2.5 to 3.6. These mean responses, however, tend to mask a high standard deviation. Thus actual scaled responses for Item #8, for example, range from Strongly Agree to Disagree, and for #11 from Strongly Agree to Strongly Disagree. Further research into the sources of variation is needed.
Questions 15 and 16 returned to the satisfaction concerns of Items 1-7, but with specific reference to CPP. Item 15 read, "We receive prompt attention from the NMRSC staff when we call with a CPP problem," and Item 16, "We feel comfortable reporting CPP problems to the NMRSC office." These items received the most favorable responses on the questionnaire with means and standard deviations of 4.46/.58 and 4.5/.58, respectively.

Item #17 asked, "What are the greatest problems you have experienced in CPP?" Three categories of responses were derived from the responses. The greatest problem by a wide margin concerned delivery of goods. Eighteen of the 27 respondents noted concerns in this category. Subcategories included: untimely delivery (10 responses, e.g., "Some materials take up to six months to be delivered after the order is placed."); excessive shipping costs (4 responses, e.g., "Today we received an order, weight 110 pounds, price, $43.94, shipping, $55.98."); incomplete deliveries; discrepancies between date of delivery and date of invoice; and refusal of vendor to deliver goods.

The second most frequently noted problem was the inferior quality of goods received.* Typical comments included, "Poor quality in custodial supplies," "Questionable quality of products," "We have found the quality of some items to be poor." Seven comments of this order were received.

A third and miscellaneous category involved problems related to the post-delivery of goods. These included the disaggregating of bulk items for distribution (3 references) and problems associated with billing.

C. Research Agenda

The third section of the questionnaire asked a set of open-ended questions designed to provide insight into a potential research agenda. Question 18 asked, "What research topics do you wish NMRSC could explore? Please tell us what would be useful for your district." Only five of the 27 responding member units replied to this question. Responses, however, included:

*As the Annual Report notes, one vendor was formally debarred for delivering goods not in accord with product specifications.
- Funding sources for schools
- Special education
- Bilingual education
- Alternative energy
- CPP delivery/transportation (see previous section)
- Home Schooling
- Alternative assessment
- Peer evaluation of teachers and administration
- Strategic planning

Question 19 asked, "What professional journals do you read regularly?" The rationale for asking the question was related to the Council's intent to generate a set of journal abstracts for distribution. We simply wished to avoid abstracting articles from journals widely read by the NMRSC membership. The concern was unwarranted. Only six districts responded to the question, thus the list of journals generated, while fairly cosmopolitan, could not be said to be representative of the memberships' professional reading. It is of interest, however, that a unanimous choice of respondents was the *American School Board Journal*.

Item 20 of the questionnaire which asked for additional information on freight charges did not generate reportable data. Few respondents attended to the request for information.

**SUMMARY**

In the Fall of 1992 the New Mexico Research and Study Council initiated a study (a) to determine member satisfaction with the NMRSC with particular reference to benefits associated with the Cooperative Purchasing Program; (b) to isolate post-bidding issues and concerns; (c) to identify a future research agenda; and (d) to determine which professional journals respondents read. Additionally, a specific request was made (Item #20) for information on freight charges. A questionnaire was constructed to address these issues. Fifty-four questionnaires were distributed, 27 were returned.

Members of the NMRSC appear in general to be pleased with the Council. Particularly high marks were accorded Council staff for their responsiveness to CPP concerns. The major source of
satisfaction for Council members was the fiscal benefit derived from purchasing cooperatively. The Quality Education Awards Program and the social interaction among members was also noted.

Problems identified with the CPP were identified largely as those associated with the delivery (or non-delivery) of goods. High freight charges, internal disaggregation and distribution of goods, and billing problems were also noted.

Few districts responded to questionnaire items referring to a research agenda. However, a sufficient number of topics were identified which may provide focus for abstracts to be produced in subsequent years.
NMRSC QUESTIONNAIRE:
MEMBERSHIP BENEFITS / CPP CONCERNS / RESEARCH

Name__________________________________________
District________________________________________
Position________________________________________

Please circle the response that is closest to your opinion for each statement.
KEY:  SA - Strongly Agree
      A - Agree
      NO - No Opinion
      D - Disagree
      SD - Strongly Disagree

Part I. Benefits

1. Our district benefits greatly from participating in the Cooperative Purchasing Program (CPP).
   SA  A  NO  D  SD

2. Our district gets lower prices for necessary goods by ordering from CPP.
   SA  A  NO  D  SD

3. The quality of goods available from CPP is usually excellent.
   SA  A  NO  D  SD

4. Our district receives more adequate attention from vendors when we participate in CPP.
   SA  A  NO  D  SD

5. The reduction in labor time for our staff (particularly in the ordering cycle) is a significant benefit from NMRSC.
   SA  A  NO  D  SD

6. The social network meeting together in NMRSC is a valuable benefit.
   SA  A  NO  D  SD

PLEASE TELL US BRIEFLY:

7. What are the greatest benefits you find in NMRSC membership?
20. Please have your business office send us data about freight costs that you have paid this year for purchases in the Cooperative Purchasing Program. Other freight costs would also be useful information for comparisons.

You may send copies of invoices (We will compile the information.), or you may find it easier to make a list that includes:

Your school district name

Contact person concerning this questionnaire

INFORMATION ABOUT ORDERS MADE IN 1992-1993 YEAR:

Vendor receiving order

$ Amount of order

$ Charge for shipping

Carrier/Method used

Method charges determined (e.g., per pound, per mile).

Any other information we should know.
II. CPP POST-BIDDING

8. On-time delivery is often a problem with goods ordered in our district.

9. On-time delivery is often a problem with CPP orders.

10. The personnel logistics for receiving goods is a problem in our district.

11. Adequacy of facilities for receiving goods is a problem in our district.

12. It is a problem for our district to separate individual school orders from a bulk CPP order.

13. Shipping charges on CPP orders are higher than other shipping charges to our district.

14. Shipping charges for CPP orders tend to be about the same as other orders sent to our district.

15. We receive prompt attention from the NMRSC staff when we call with a CPP problem.

16. We feel comfortable reporting CPP problems to the NMRSC office.

PLEASE TELL US BRIEFLY:

17. What are the greatest problems you have experienced in CPP?

III. RESEARCH

PLEASE ANSWER BRIEFLY:

18. What research topics do you wish NMRSC could explore? Please tell us what would be useful for your district.

19. What professional journals do you read regularly?
VISION AND SUPERINTENDENTS


Superintendents must understand the differences between schools and business in developing management strategies. This study explores how superintendents exercise leadership and how others respond.

Fundamental features of schools are: a diverse constituency with multiple goals; disputed technology; a loose structure with self-directed staff; lay governance by elected political boards; and uncontrollable funding. The business environment contrasts to this picture, so leadership should also contrast.

Business literature stresses the importance of vision in bridging the present to the future. Superintendents interviewed in this study did not dispute the need for school leaders to have vision, and they identified two contrasting ways of developing their vision: self-made plans for a personal vision and collaborative visions. Both types have advantages and disadvantages and the choice is complicated by school realities.

A personal plan allows a clear articulation of the vision and speeds implementation. A collaborative vision developed in consultation with many people allows shared responsibility for advocating and implementing change. The choice is affected by school organization realities and demands. The complex school environment must be considered. "Visionary leadership must be integrated with political savvy and managerial skill to fit the current needs of schools and local realities of communities (p. 29)." A new leadership model is needed to be responsive to schools and communities.

SITE-BASED MANAGEMENT


Dr. Herman, from the University of Alabama, suggests that school districts can improve their chances for success with School-based Management by studying the
rules and methods before they begin. Four steps must be taken:

1) A clear definition of site-based management must be agreed upon;
2) Official decision-makers must be defined for buildings;
3) Methods to implement decisions must be developed;
4) Initial attempts must be modified over time.

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NEW FUNDING
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SLEDLETTER (September-October, 1992), V(4), 1.

The Southwest Educational Developmental Laboratory (SEDL) has won a $1.2 million/year U.S. Department of Education grant. For three years, SEDL will work with state-level organizations, regional consortia, and a national clearinghouse.

SEDL will place quality materials, practices, and testing strategies into classrooms in a five-state region.

This funding is to improve science teaching and learning in Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

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RESTRUCTURING
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Both random, holistic thinking and a methodical, step-by-step approach are needed in planning and implementing restructuring efforts. Formal and informal structures are founded on a conversation loop which involves everyone.

In the early planning stage, imaginative, diverse ideas for creating vision and focus are necessary. Holistic thinkers shine in this process. Sequential thinkers are needed for the middle stage of making adjustments and alterations. The next implementation stage combines the sequential suggestions for orderly transformation with a random, holistic vision.

The restructuring process is a combination of non-linear creativity and linear goal-accomplishment. Both formal and informal structures change and this model reflects the reality of how that change happens.

WHAT'S IN THE NEWS

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Division C Innovative Programs
College of Education
August 1992-June 1993

Submitted by Richard van Dongen,
Division Director


Significant developments in Division C of the College of Education during the academic year, 1992-93, are framed by the College of Education Action Plan. In Part I, I will describe: (A) The setting and the conceptualization of Division C in the College Action Plan and (B) Initiatives, Sites, Collaboratives and Centers. In Part II, I will describe the Division C Community and it importance to educational reform in the College. This will include: (A) Division Organizational Structure and (B) Faculty Assessment Review and Development. In Part III, I will describe significant developments in (A) Outside-sponsored Grants, (B) Faculty recruitment, (C) Difficulties and Changes, and (D) Taking Stock. Part III includes significant plans and recommendations. Outside professional activities are discussed throughout the activities of the Division.

Part I

The Setting, Conceptualization of Division C in the College Action Plan

Setting

The College began its restructuring/reallocation efforts after a year of study based on an Environmental Scan, a series of speakers, a series of discussions, town meetings, task forces, and consensus building efforts for a structure to initiate the emerging priorities, goals, and confirmation of needs for significant changes demanded by changing times in a place with culturally rooted communities and aspirations of access into the future. This led to a temporary administrative structure of three divisions rather than a traditional department structure. Division C, the Division of Innovative Programs in Education, became the division for proposed restructuring activities.

For the first year forty-six faculty in some fashion participated in the Division. Thirty-two found this division as their administrative home, four were associated
but budgeted elsewhere, and ten were affiliated but with primary appointments elsewhere. Faculty from different programs and disciplines were mixed across offices in three areas: Education Office Building First Floor, Education Office Building Second Floor, and Student Services Center Basement, although six or seven were housed near program units in other parts of the College. This creates a diverse mix of perspectives and interests. Most of the faculty were affiliated with program units in other Divisions; only one program area faculty, Health Education, was intact in the unit.

In addition, five centers were associated with the Division: (1) Educational Planning and Development (BOEPAD), (2) Multicultural Education Center (MEC), (3) Manzanita Center, and (4) Center for Technology, and (5) Latin American Programs in Education (LAPE).

Conceptionalization of Division C in the COE Action Plan

The focus of the College of Education Action Plan posits that the College "will engage in the development of educational theory and practice and in scholarship essential to the enhancement of collaborative learning and teaching in a multicultural society" (p. 1). Areas of priority are set: (1) Mathematics, science, and technology education and research, (2) Language, culture, and the arts, (3) Early childhood, elementary, and middle school, (4) Leadership and policy, and (5) Health Education. In addition goals are set: (1) To develop, study, practice and disseminate innovative approaches to learning and teaching, (2) To strengthen the research in the college of Education and to identify a research agenda that contributes to the purpose of the College, (3) 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, (4) To prepare a greater number of educational personnel from traditionally underrepresented populations, and (5) To create and sustain helpful attitudes and structures to enhance the professional environment of the College of Education. These were to be assessed against imperatives for change (Appendix A of COE Action Plan) by four touchstones for change: (1) The learner -- addressing breadth, depth, and diversity of learning, (2) The broader issues of education that situate education in the community/family context, (3) Technology -- both access through technology and impact of technology on learning across diversity, and (4) Changing expectations of educators.

Division C was conceptualized as the restructuring unit that would address the Areas of Priority through Initiatives, Sites, and Collaboratives. Initiatives were created to work on programs. Sites were examined to
determine how areas of priorities could be best met. Collaboratives were forums to discuss areas of priority that might lead to programs. In addition ongoing projects in the Centers had rich potential to inform a specific piece of the restructuring effort. Each Initiative, Site, Collaborative, and Center could frame its work around the five goals and could assess its progress around the four touchstones for change. It could be said that Division C was created to embrace all aspects of the College Action Plan for restructuring.

Initiatives, Sites, Collaboratives, and Centers

Initiatives

Initiatives were created and implemented as strategies to address the Areas of Priority and to meet Goal One: To develop, study, practice and disseminate innovative approaches to learning and teaching. Initiatives are composed of cohorts of faculty working on programs that are to be restructured and will promote: cohorts of students, interdisciplinary efforts, collaboration with constituencies, on-site connections with a variety of constituencies, and connections with programs and faculty across the University.

Three of the Initiatives, (1) Math, Science, and Technology in Education, (2) Early Childhood Education, and (3) Health Education, were built around cohorts of faculty. The fourth initiative, Elementary Education, was built around sites: Professional Development Schools. Each moved in different ways. Each is uniquely successful or blocked by attributes particular to that Initiative.

Math, Science, and Technology. The Math, Science, and Technology Initiative was quite divided possibly due to disparate interests, expectations, and connections with constituencies. However, the work in progress revealed groundwork that is likely to move the priority along the 1993-1994 year. Technology interests were broader and less connected directly to math/science education. This part of the Initiative worked on individual pieces that will later be important in building a college-wide effort in educational technology. An ongoing distance education project was supported by the purchase of a targa card audio graphics system; this led to further study of distance education potential. Assistant Professor Lani Gunawardena is to be commended. Another ongoing piece in assistive technology increased capabilities to explore the application of assistive technology to support the learning of severely handicapped individuals. We learned how networks of teachers and faculty throughout the state worked to serve
children, their families, and their schools. New state of the art equipment was added this year. This has led to a possible technology transfer application in the future. Professor Gary Adamson is to be commended. Another development through collaboration across programs has led to a cohort group of students in Albuquerque and Santa Fe entering a thoughtfully conceptualized masters program in Educational Technology approved by the Training Learning Technologies Program. Associate Professor Norton is to be commended.

Individual work in Science, likewise, led to some breakthroughs for the coming year. The Natural Sciences courses moved to more collaborative instruction between Arts and Sciences and the College of Education. Team teaching brought pedagogical content knowledge and discipline knowledge into interactive environments. Associate Professor Bel Campbell (Physics) and Assistant Professor Teresa Kokoski are to be commended.

The one year visiting professorship of Lois Folsom, a mathematics teacher and the director of FAME, a grant to change the mathematics teaching in schools, encouraged further ongoing collaboration with the Department of Mathematics. This collaborative work has led to the request for a classroom in which courses from the Department of Mathematics and Mathematics Education could be team taught with manipulatives and materials that will move University and College Mathematics as well as school mathematics to deeper inquiry rather than a focus on technical skill. This impetus could be lost if learning environment support is not forthcoming. Professor Rick Scott, Associate Professor Richard Metzler (Mathematics), and Visiting Assistant Professor Lois Folsom are to be commended.

The specific work of this year in each area will be important next year for the Initiative to move work as a whole in an interdisciplinary, integrated way. With additional faculty entering into the Initiative, it is likely that the faculty can move Math/Science/Technology Education quite a bit further in the College.

Early Childhood Education. The Early Childhood Consortium had several previous years of work behind them; this became the structure for the Initiative. Faculty from Family Studies, Elementary Education, and Special Education worked in concert with the new licensure requirements being recommended to the State of New Mexico: one licensure from Birth to Eight for all professionals working in a variety of sites from agencies and day care to schools. This effort is also in keeping with state government restructuring a Cabinet Department, Children Youth and Families. The consortium is a test of interdisciplinarity at its best and at its worst. Territory and cherished beliefs are challenged in such a
context. A successful retreat in the Spring and approval of the State licensure has set the stage for important work in the future. Assistant Professor Mary Patton is to be commended for these breakthroughs. In addition ongoing pilot work at East San Jose Elementary School will contribute to understanding the potential on-site nature of this work.

Health Education. Health Education is another approach for us to learn from in restructuring. This Initiative was the only intact unit of faculty to enter the Division. The program began a thorough review of its courses and developed an enrollment management plan. It sent its faculty out to connect with other Initiatives and Collaboratives. It brought in state agency leaders and applied much of its community development perspective to academic program structures and issues. The final report reveals successful collaboration with schools, agencies, and units across the state and within the University. I also see success in the Initiative through a diverse student body taking courses, connections with many communities in the state, some discussion of health education across the programs in the College, and successful grant proposals and publications of the faculty. The unit as a whole is to be commended.

Elementary Education. Division faculty explored changing demands of schooling through experimental site-based (schools) Elementary and Middle Level Programs. The College participates quite vigorously in the national debate about Professional Development Sites through the Holmes Group, a consortium of ninety-plus research universities. Some of the reports from this site-based work are valuable working documents for the College. Efforts include:

1. A. Montoya/Roosevelt Elementary Middle School site moved novice teachers into a culture of the state Re:Learning Initiative.
2. Van Buren Middle School was the site for a middle level year long program for elementary and secondary novices working together. Also study groups, a writing course, and teacher research efforts were important components.
3. Emerson Elementary School was the site for a year long novice program with collaborative work between the school-based faculty and the university-based faculty.
4. Chaparral Elementary School was the site to focus on teacher development of career teachers through their collaborative work with novices.
5. LBJ Middle School was the site for secondary intern novices to team in a full immersion into the school culture.
6. Los Lunas Middle School created on-site humanities and science/technology blocks for a year experience of novices.
All of these efforts were discussed, summarized, and evaluated during an all day retreat in April and monthly meetings of the Experimental Schools. These Experimental Schools 'Taking Stock' meetings suggest: (1) novices are able to enter more fully into the entire school culture and work successfully from this stance, (2) teachers at schools feel like professionals and value the work, and (3) the on-site facilitator for professional development has been effective. However, the cost factor of supporting the on-site facilitator and working with school professionals without credit hour production is not a feasible direction for the College. How to stabilize the gains through more formal agreements will be an important issue for 1993-1994. Much has been learned, but there are many challenges. The early tensions of this work between elementary and secondary licensure programs in the College, in my opinion, have diminished; more intense collaboration should be possible in the coming year.

In addition, other faculty efforts at professional development schools included courses in organization and teaming and teacher as researcher. This work provided new insights and support to all five goals of the College Action Plan. All in all, Professors Auger, Kelly, Maggart, and Scott, Associate Professors Blalock, Mann and Nihlen, and Assistant Professors Anderson, Boverie, Nateman, Oshima, Patton, and Riftenbary, and Holmes Scholar Frances Sanchez, and Graduate Assistant Michele Raisch are to be commended.

Collaboratives

Strategies to meet Goal One of the COE Action Plan for two other priorities were implemented through Collaboratives. These were opportunities for groups of faculty to build a forum to explore priorities that may lead to restructuring and building of programs in the future. The two Collaboratives were: Language, literacy, culture, and the arts (LLCA) and Leadership and policy (POL). These provide the stage for future work through a good deal of debate and conceptual work.

Language/Literacy/Culture/Arts. The LLCA developed a document building out of the long history in the College to address education for the linguistic and cultural diversity of the communities in the State. An important, but subtle shift emerged: to address education with (not for) linguistic and cultural diverse communities. It is a forward document that could lead to a focus of strength in the College through Language and Cultural Studies. A diverse faculty wrestled with this over the year. There are likely to be two emphases enriching each other: Language/literacy and Cultural Studies. A good deal of groundwork has been set. Visiting faculty member, Ernie Stringer, Professors David
Bachelor, Assistant Professors Jan Gamradt and Lani Gunawardena are to be commended for their leadership.

**Policy/Development/Leadership.** The PDL was a looser collaborative with some changing directions and membership. The faculty successfully developed an interdisciplinary course for the Fall of 1993. Discussions about whether the PDL will be situated in the College to develop its own program, or to integrate into other programs, or to influence other programs will provide a lively context for the coming year. Professor David Colton is to be commended.

**Centers**

As Director of the Division, I do not take credit for the work of the Centers but because they report to the Division in varying ways, each one in one way or another has been an integral part of the Division. They have pushed the restructuring issues and conversations through their projects. The influence of the Centers should continue to be an important dimension of the College's restructuring.

**Bureau of Planning and Development (BOEPAD).** BOEPAD has provided important stimulation and support to ongoing restructuring discourse and action in the Division. Of particular note, the state Systemic Initiative in Science and Mathematics Education (SIMSE) has provided opportunity for some faculty to participate in reinventing teaching that is deep and characterized by collaborative inquiry. Summer workshops of Professor Rick Scott and Assistant Professors Teresa Kokoski and Mary Patton were particularly rich. "Systemic" has been the symbolic catalyst for the developing collaboration with content disciplines. It nags at all of us to push reinvention.

The Rockefeller project in the middle schools has provided important conversations and opportunities for many faculty. Again, it compels us to heed the reform agenda of education. It has provided important links with professional development schools as well. Director David Colton, Project Coordinator Roberta Smith, Research Associate Mary Nordhaus, and Holmes Scholar Rosalita Mitchell all are to be commended.

**Multicultural Education Center (MEC).** The MEC continues to provide service to the state through the Multicultural and Gender Equity Resource Center. The curriculum materials are a treasure documenting the efforts of culturally and linguistically rooted communities in the Southwest to shape education to maintain tradition and to provide entry into the future. Director Joe Gonzales is to be commended for the preservation and acquisition of multicultural education materials. The MEC participates in a Training Alliance grant
with other universities in Texas, Arizona, and Colorado to study how to improve teacher preparation for bilingual and multicultural education. The Consortium has provided a cutting edge discourse for rethinking teaching and learning in Southwest communities. A fair number of the division faculty have brought back work to the College debate from this experience. Plans for bringing in consultants from the Alliance are underway for the 1993-1994 year. Associate Professor Leroy Ortiz and Senior Project Director Jim Bransford are to be commended. In addition the MEC sponsors Bilingual Training grants that bring bilingual students into teacher endorsements, Masters programs, and doctoral programs. Seven students at the doctorate level in Bilingual Education represent an important effort to bring cultural and linguistic diversity into the education professoriate in the future.

Manzanita Center. Manzanita Center houses demonstration and training opportunities for a variety of programs across the College. Its mission is also to include a research focus. Space conflicts and efforts to keep afloat the current training programs are at odds with the possibilities of the Center. Outgoing Director Roger Kroth was directed to require a "taking stock" report from each program: Day Care, Assistive Technology, Counseling, Tests, and Reading. These should be useful for long term planning. The training programs in the Center cross divisions and create some difficulty in my role as Division director to facilitate discussions and directions.

Center for Technology. The Center is an important resource in the College’s effort in educational technology. Certain list servers created by the Center have been groundbreaking in building networks in education communities; these will need attention as the College moves along. The labs serve many groups of students almost to capacity throughout the day and evening. Coordinator Paul Terrazas is to be commended. The Center’s future must be built into a College plan for educational technology.

Latin American Programs in Education (LAPE). The Center continued building connections with educators in Latin American and New Mexico. Of particular note were the Puebla Teacher Training Program and the Summer Rio Grande Writing Project in Spanish. Elementary novices were able to spend part of the classroom experiences in a school in Puebla, Mexico. Teachers from Latin America and Bilingual Teachers in New Mexico worked together in the Rio Grande Writing Institute during July. Both of these projects seem to hold the best of what UNM’s relationship with Latin American can offer. In both cases Latin American and New Mexican students profited immensely from the cultural/linguistic environments. These offered good models for planning in the future.
Professor Sara Dawn Smith and Assistant Professor Gary Anderson are to be commended.

Part II

Division C Community

A strong focus in the educational reform of teaching and learning to meet future demands centers around communities of diverse learners working together on compelling problems. The culture of the University is not one of collaboration, integration, and partnerships. Such experiences demand collegial roles with a variety of professionals. Such partnerships require time and nurture. These are not part of the reward structure of the University. Nevertheless, within the Division, the vitality of debate, the breadth of conversation, and diversity of colleagues and sites, in my opinion, are healthy conditions for the future. This dimension of community can sustain Goal Five of the College Action Plan: To enhance the professional environment of the College of Education.

The Division focus on community building was promoted through the dimensions of (1) organizational structure and (2) faculty assessment review and development.

Organizational Structure

The division operated around a loose, informal structure. Division meetings were held at a minimum. These centered around good events and crises. Good events included: an examination of the theme, "Reinventing Teaching", outside constituencies, College updates, and community-based processes applied to the development of the Division to determine what it wanted to achieve and how could these determinations be achieved. Crises usually involved problematic issues in the College restructuring.

Early on, a personnel committee was formed to assist and advise the director in decisions for sabbatical leaves, faculty mid-point reviews, tenure reviews, and promotion reviews. Two sabbaticals were granted: Eli Duryea Spring 1993 for the study of teenage pregnancy in New Mexico and Cathie Stivers Fall 1993 for research, evaluation, and writing. The one mid-point review, Deborah Rifenbary, led to a positive decision. One tenure review, Bill Kane, led to a positive decision. One promotion review, Carolyn Wood, led to a promotion to full professor. The strength of the personnel committee was in that it represented different programs and disciplines within the division.

After some tinkering, an Advisory Committee, representing a member of each of the Initiatives,
Collaboratives, and Conversations (other emerging groups) was formed. The major theme of this Committee was to push what the Division wanted to achieve and how could this be achieved. The recommendations from this Committee were taken by the Director to the Dean’s Council. This with a few modifications is likely to be the structure for the next year.

**Faculty Assessment Review and Development**

Some effort with mixed results was applied to encourage the study of teaching. This effort led to some teaming, some on-site work, and some changes in courses. Some changes in teaching are noted in the faculty engagement in on-site teaching. The dynamics of theory and practice occurring simultaneously are noted in some of the professional development reports. Also, some discussions and evaluations of professional scholarship including public demonstration of the profession were successful. The use of new technologies also contributed to changes in teaching.

Faculty development was promoted through annual review for faculty on code and tenure review. Ten reviews were conducted in the Division. All delved into long term study of teaching, scholarship, and service. I am hopeful that these will be constructive in the future development of faculty: Sam Hicken, Teresa Kokoski, Jan Naslund, Mary Patton, Mary Bentley, Patricia Boverie, Jan Gamradt, Lani Gunawardena, Gary Anderson, and Don Zancanella.

Faculty development was also encouraged through a year long conversation with visitors to the University and the presentation of faculty work in interdisciplinary seminars, colloquia, and discussions groups. The many presentations by candidates for College faculty positions this year also provided a rich discourse around topics and ideas stretching the profession at this time. Professors Bob Weber, Ann Taylor, Mary Harris, Assistant Professors Tania Ramalho and Donald Zancanella are among a host to be commended.

The Holmes Scholars were involved in projects in the study of education for diversity in New Mexico. They too contributed to a rich discourse across the division. Rosalita Mitchell and Frances Sanchez are to be commended.

Periodically socials were held to further foster the development of community.

All of this has contributed, in my judgment to more collegial, collaborative, interdisciplinary ways of working. It can be done in the University environment. It takes time, it is easily upset by regulations and perceived, if not real, ways the University conducts itself.
Part III

Significant Developments

Outside-sponsored Grants

The Division collectively has been fortunate in being awarded a number of grants. The effort going into the proposals is of high quality; but I think the success also indicates that the College's shifting stance is meeting critical issues of educational reform. The Division has sponsored and received a $250,000 grant in inter-professional education from AACTE and the De-Witt Wallace Foundation. The Division has sponsored and received a $250,000 grant for diversity and collaborative education from U.S. West. The Division has sponsored a relationship with the Center for the Study of Early Adolescence. The Division has sponsored and received a $250,000 grant for Middle Level Education awarded by the Carnegie Foundation. There are potentially others in the future. All of these have stressed partnerships with a variety of agencies and professionals, and have demanded rethinking long held beliefs that are fraying in a changing world view. Professor Don Kelly's, Associate Professors William Kane's and Leroy Ortiz's, and Project Director Jim Bransford's leadership are to be commended as well as the Dean's Office for technical support.

Faculty Recruitment

Faculty recruitment, in my opinion, was influenced and enhanced by a conceptual stage in which faculty groups, many of them from Initiatives and Collaboratives in Division C, created proposals for faculty needs as addressed in the College Action Plan. Successful hiring was in some part due to the position descriptions addressing educational reform. The positions in mathematics and science, counseling, psychological processes, culture/family studies/pds, early childhood/pds, assistive technology, educational policy/development, liaison with children/youth/family advocacy, post-baccalaureate/pds, bilingual/esl, and the university director of distance education were all shaped by discourse and activities in the Division. Through the entire college effort, fourteen new faculty associations have been connected to Division C for the 1993-1994 year. These include Phillip Bacon, Robertta Barba, Rebecca Benjamin, William Bramble, Susan Cameron, Victor Delcios, Katherine Herr, Alfred James, Janet Levine, Anne Maasen, Michael Morris, Elizabeth Nagel, Michele Raisch, and Quincy Spurlin. Six of these fourteen positions are tenure line positions. Five of the six tenure line faculty bring to the College linguistic and cultural diversity that is underrepresented.
Difficulties and Changes

I have suggested that faculty ways of working, faculty discourse, and faculty connections with outside constituencies is part of our community. An important question is will this be sustainable in our College/University environment?

Faculty discourse has been changed and sparked also by the large number of faculty on edivc distribution electronic mail list. A great deal of sharing and discussion now occurs through this community.

In addition to such ongoing activity in Division C, proposals for restructuring for the coming year were accepted for Physical Education/Exercise Science, Educational Thought and Sociocultural Studies, Psychological Foundations, Counseling, Secondary Education. The projections suggest a faculty size of seventy plus. This will be problematic in sustaining community, offering faculty support, meeting student needs, relationships with programs and agencies in and outside of the College.

A number of challenges and difficulties have been touched upon in this report. A few of them seem quite critical for moving on: (1) emerging planning process and cross program pressures, (2) Division C emerging programs and how they link with licensure and graduate programs currently available, (3) changes in state licensure programs, (4) students, and (5) staffing.

An emerging planning process

The stance has been set in the work of this year for movement. To what? to where? and with what constituencies? become important questions. There will always be some unknowns, but the tensions between maintaining what we are doing and what we are becoming must avoid an add on quality. We are stretched further than we should be. A plan to close down some options, to consolidate some options, and to invigorate changing options must be a top priority of the College. This is critical to sustain the vitality of the momentum. This is also critical for faculty who are members of program units that are stressed in trying to maintain established programs when faculty interests and collaboration are shifting. A mechanism to make these transitions and shifts possible while holding to integrity in faculty roles in programs must be developed.

Emerging programs and how they link to licensure and graduate programs

A new tension is likely to appear as emerging entities develop voice and authority. Particular tensions are likely
in relationships to licensure programs with emerging pedagogical content clusters such as Math, Science, and Technology Education and Language/Literacy/Culture/Arts. Also in the potential rethinking of such programs as physical education or counseling there must be found a way to bring these resources to bear on what it means to become a teaching professional. If restructured units do not find ways to connect and support, yet not be subsumed by licensure/professional programs, we won't be able to achieve the Goals of the College in educational reform.

Changes in state licensure

Changes in state licensure to Early Childhood, Elementary, likely Middle Level in November of 1993, and Secondary have enormous ramifications for traditional units of elementary and secondary and for graduate programs across the College. Will it be possible to move in a fairly collaborative way or will it only be possible to be divisive and territorial?

Students

Students are the reason for being of the College. It has been difficult to live up to that fully in this transitional year. It is my goal that this will become the center theme of next year. Graduate students particularly seem to need to be reassured that programs are in tact and the division structure is only a temporary device to move to more interdisciplinary thought as a cornerstone for the learning experience.

Staffing

Staffing the fluid structure emerging has been difficult. The College will need to keep track of a large picture in which all students, faculty, and programs are supported by staff. In addition, a good environment is essential for staff; one that provides development of human potential and values effort individually and collectively.

Taking Stock

How are we doing? The Touchstones for Change (College Action Plan) are a good place to begin: (1) The Learner, (2) The broader issues of education, (3) Technology, and (4) Changing expectations of educators.

The Learner

There is much to be done, but there are many hopeful signs. I listen to faculty and students in classes contextualizing their work in the broader view of society.
Learning styles, race, gender, class, and the changing realities of schools are in the discourse. Are they in the action? It is an enormous effort to move from presenting surface knowledge towards the kind of teaching that is required to promote deep inquiry that challenges both the teacher and the student. It is inexcusable for any faculty member to tell me as happened this year: "I am an expert in teaching; there is nothing more to learn about that". Teaching is complex; there is always more for close study.

The broader issues of education

The Initiatives and Collaboratives both by design and by developments do contextualize education in broad issues. They do draw on the varying stances of disciplined-based careers; each stance views a slice of the world differently. They are in small areas addressing the needs for comprehensive services. Again is this sustainable? What will it require?

Technology

I sense a shift from disinterest to compelling moments. A Technology day this early summer indicated more than passing interest. There is some ongoing work in the division on cultural styles and technology influences which are absolutely the right contributions we can offer. Our support in equipment and assistance is meager or uncoordinated; faculty development is a goal of next year. Rethinking the unsuccessful searches for faculty in technology education is absolutely critical.

Changing expectations of educators

I may be too hopeful here, but I sense at least acceptance of changing expectations if not downright exhilaration about the possibilities. The discrete specialist is not feasible both economically and conceptually in a changing world. A touchstone here is the energy level required to collaborate and work across specialties. If there is not exhilaration in such change efforts, there is only burnout. I feel on the whole that the Division C faculty are frequently exhausted, but not down; they are living in compelling ways in compelling times.

Respectfully Submitted
HEALTH EDUCATION PROGRAM

Health Education/Health Promotion Faculty

Mary K. Bentley, Ph.D.
Assistant Professor

Elias J. Duryea, Ph.D.
Professor

Michael J. Hammes, Ph.D.
Associate Professor

William M. Kane, Ph.D.
Associate Professor

Cathie Stivers, Ph.D.
Associate Professor

Note: Professor Duryea was on sabbatical leave Spring term, 1993.
Professor Stivers spent one-third of her time as the search coordinator for the COE during the 1992-93 year.

Beginning in the fall of 1991, the Health Education Faculty of the University of New Mexico College of Education entered into a series of on-going activities designed to position the department to better respond to the future needs of children, youth and families of New Mexico. These activities coincided with the College of Education's efforts which resulted in the development of an Action Plan and an administrative structure to stimulate change within the College. Planning during 1991-92 lead the Health Education Faculty to request to join the newly formed Division for Innovation in Education.

The Health Education faculty's request to enter the College of Education's newly established Division C: Innovative Programs in Education was accepted. This provided additional incentive to continue efforts and resources to reshape the health promotion program to better respond to the needs of New Mexico.

These activities included:

* Establishing a working definition of the practice of health education and health promotion.

* Identifying collecting and establishing demographic, health status and behavioral risk factor data to describe trends to which the health education and health promotion professional preparation program could respond.

* Establishing a visionary mission for the health education program.

* Delineating the knowledge, skills and experiences needed by health educators in their professional practice. Special attention was given to the needs of health educators working with New Mexico's diverse ethnic and cultural populations and the unique health problems of
the poor and disenfranchised.

* Identifying the role of university health education faculty in preparing professionals to meet the health education and promotion needs of children, youth and families of New Mexico.

* Developing strategies for recruiting students who are representative of the cultures of those being served by health education and health promotion programs.

* Identifying the role of university health education faculty in supporting other faculties and programs in their efforts to prepare professionals to deal with the complex and interrelated health, education, social issues and needs of New Mexico's children, youth and families.

* Defining research agendas for each faculty member and for the faculty as a unit which addresses improvement in preventive health behavior interventions.

Definitions

The health education faculty agreed on the following operational definitions by Green and Kreuter (1991) which defines the relationship between health education and health promotion.

Health Education is any combination of learning experiences designed to facilitate voluntary actions conducive to health.

Health Promotion is the combination of educational and environmental supports for actions and conditions of living conducive to health.

Health Promotion Needs of New Mexico’s Children, Youth and Families

A first step in conceptualizing the future direction of health promotion programs within the College of Education was to conduct a needs assessment of children, youth and families in New Mexico. In addition, a review of the pertinent emerging literature related to the interaction of schools, families and communities was conducted to gain a perspective on opportunities available.

Demographically, New Mexico is a state with a very young and growing population, rich in cultural diversity, and with large geographic distances between most communities. The state has 88 public school districts and 35 Bureau of Indian Affairs (BIA) schools. Although the large majority of New Mexico's school districts serve less than 2,000 students, Albuquerque Public Schools (APS) has more than 85,000 students, ages 5-17, living
within its boundaries.

New Mexico has a young, growing and poor population, with a per capita income which ranks 47th in the nation. Over three-fourths of the state's counties have a per capita income less than 75% of the national average (U.S. Department of Commerce, 1992). One in seven New Mexican families has an income below the federal poverty level; 14% of the State's families live below the poverty level, nearly twice the national average (New Mexico Department of Health, 1989). Poverty is more prevalent among non-Anglo's, with 44% of New Mexico's American Indians and 23% of the Hispanics below the poverty level (U.S. Department of Commerce, 1992).

New Mexico has the highest total percentage of ethnic minorities, in relation to the total population, of any state in the nation. The ethnic mix of New Mexico consists of 50.2% non-Hispanic White, 38.2% Hispanic, 8.9% American Indian, and 2% African-American. The ethnic diversity of the state is even more apparent in schools. The New Mexico State Department of Education student enrollment data for 1990-91 shows 45% Hispanic students; 42% non-hispanic White; 10% American Indian; 2% African-American; and less than one percent Asian/Pacific Islander (U.S. Department of Commerce, 1992).

New Mexico is the home of 25 American Indian tribes including the Navajo Nation, 21 Pueblos, two Apache Tribes and the Zuni. At least seven different Indian languages and several regional Spanish dialects make inter-tribal and inter-regional communications challenging and issues of cultural sensitivity and diversity important.

Health Status In New Mexico

New Mexico also is poor in terms of health status. The state ranks 51st in access to prenatal care and third highest in teenage birth rate in the nation (New Mexico Department of Health, 1989). Alcoholism rates are nearly three times the national average. The motor vehicle fatality rate is the highest in the nation with Hispanic men dying at three times, and American Indian men at 8.5 times the national average (NM Department of Health, 1989).

Premature death is recognized as a major indicator of quality of life. Thirty-three percent of New Mexico American Indian males and 24% of Indian females die before age 35; only one third of the Indian males and one half of Indian females live to age 65. Twenty-five percent of the population of New Mexico has no form of third party health care coverage (NM Department of Health, 1989).

Although health status data accurately measure the current morbidity and mortality rates in the population, future morbidity and mortality is measured by the presence of risky or health compromising behaviors in which individuals are currently engaging. For example, the magnitude of tobacco use among the young is directly predictive of future heart disease, cancer and respiratory
ailments. According to the 1990 Centers for Disease Control (CDC) Youth Risk Behavior Survey, 32% of New Mexico high school youth report use of cigarettes during the preceding month; 13% use smokeless tobacco; 61% use alcohol; and 11% use marijuana. Forty-five percent report having five or more alcoholic drinks on one occasion (NM Department of Education, 1991).

Among younger students, 26% of New Mexico fourth grade students have tried alcohol one or more times and 12% have used alcohol within the past month. Forty percent of New Mexico seventh grade students reported use of alcohol within the past month; 30% use cigarettes; 10% use chewing tobacco and 6% use marijuana. All substance use rates among fourth and seventh grade students were higher in 1991 than in the same survey reports conducted in 1986 (NM Department of Education, 1991).

The Student Alcohol and Drug Use Survey asked questions pertaining to violence in schools and reported that 36% of seventh grade students claimed they "physically hurt someone on purpose" at least once; 21% "hung out with a gang" at least once; and 14% "carried a weapon at school" at least once. One-third of New Mexico seventh grade students reported that they are bothered by "feeling life is worthless" and by "not having anyone to talk to" (New Mexico Department of Education, 1991). Suicide and homicide are the second and third leading causes of death among teens in New Mexico (NM Department of Health, 1989).

The Role of Schools, Families and Community Agencies

Isolation, poverty, poor health status and an escalating health risk profile for children and youth are direct threats to the future of New Mexico. Preparing children and youth to make healthy choices and to establish health promoting behaviors comprise an important role of schools. Families with support of communities have a major role in providing for the child's basic needs of love, safety, food, clothing and shelter (Maslow, 1970). Communities and families also are responsible for providing health care services, including screening and evaluation, diagnosis, treatment and rehabilitation. Many of the services targeted toward families are fragmented because of little cooperation and collaboration among agencies (Raspberry, 1991).

Schools can assume their responsibilities by assisting students in acquiring health knowledge and skills and by providing an environment in which students have opportunities and reinforcement, including modeling, for the practice of healthy behaviors. Schools need to be safe a environment where children can learn and grow. Schools cannot, however, be successful in isolation. Reforming schools to create healthy communities requires recognition of the fact that teacher education, schools and other community agencies are interrelated and interacting components of one system (Corrigan, 1991). Family and community cooperation and support are
essential if schools are to be successful in helping children develop healthy lifestyles. Healthy role models provided by teachers, family members and community leaders are essential. Clear expectations and healthy norms within the family and community provide guidance for children and youth. Consistent, sustained opportunities to practice healthy behaviors and reinforcement for those behaviors provided by families, peers, teachers and community members increase the likelihood that children and youth will establish health-promoting habits.

Responsibilities of families include establishing clear expectations for their children and providing them with the love, security and guidance that enables children to develop in healthy ways. Families also do not act in isolation. The interaction between families and schools is critical during the developmental years. Community health, justice and social service agencies have important roles in supporting families in their efforts.

Community health, justice and social service agencies provide a wide range of programs and services to individuals and families in New Mexico. These include housing, health care, protection, legal and rehabilitative services, food and nutrition, and social, psychological and crisis support services. Many families with school-aged children are the recipients of these community sponsored health, justice and social service programs.

Collaboration among schools, families and community agencies is essential for the healthy development of children and youth in New Mexico. Health and social services delivered in isolation to individuals can result in "...disjointed policy development, fragmented service delivery, lack of accountability, and a generally weakened public health efforts" (Future of Public Health, 1988). This effort will require new systems of pre-service and in-service education which includes collaboration skills and knowledge of other agencies (Corrigan, 1990). Systematic collaboration that focuses on the needs of families and their children has great potential for improving the health and quality of life for future generations of all New Mexicans.

Developing and piloting strategies for systematic and efficient collaboration among school, family, and community is one approach the health education faculty is attempting to enhance the healthy development of New Mexico’s children, youth and families.

Mission

The primary mission of the Health Promotion/Health Education Program is to:

1. Prepare health promotion professionals who build on the strengths of New Mexico’s rich and diverse cultures and work
to improve the health status of children, youth and families in New Mexico.

2. Work in collaboration with faculty in the College of Education and communities to prepare professionals who understand the importance of and strategies to support the healthy growth and development of children, youth and families in New Mexico.

In order to accomplish this mission, the undergraduate and graduate program faculty in health education:

* Prepare health educators to work in schools, communities, worksite and health care settings. Graduates are proficient in development, implementation and evaluation of interventions and initiatives whose goals are to reduce morbidity and mortality within New Mexico’s diverse populations.

* Work with communities, agencies and schools to design and conduct multi-cultural health education and health promotion programs, and develop and implement research and evaluation protocols, relevant to needs identified by the communities.

* Work collaboratively with other COE faculty to design strategies which increase future and practicing teachers health knowledge, skills and behaviors enabling them to support the healthy development of children, youth and families.

Knowledge, Skills and Experiences

The health education faculty has been involved in self-study, reflection and future planning related to the knowledge, skills and experiences needed by graduates in the program. Healthy People 2000, the nations plan for improving the health of citizens through health promotion and disease prevention is serving as one basis for program revisions. The New Mexico Vital Statistic, New Mexico First, Healthy Communities 2000: Model Standards, Adolescent Health: Summary and Policy Options, Fateful Choices: Healthy Youth for the 21st Century, Code Blue, Turning Points, Beyond Rhetoric: A New American Agenda for Children and Families, and other related state and federal documents have served as the basis for curricular changes.

Program changes have included efforts to develop a series of one credit topic courses to replace traditional three credit seminars. The topics courses are designed to better meet the needs of teachers and other non-health education majors, as well as create an interdependency among COE programs. Additional curricular changes include exploring the option of removing classes from the health education curriculum which are duplicated elsewhere in the
College. The faculty has invested considerable effort and time exploring collaborative opportunities with agencies, other academic programs, newly developed collaboratives and initiatives and communities. The desire and interest in working collaboratively to strengthen the College's program offerings has been one of the major motivations for these efforts.

Faculty Role in Professional Preparation, Recruitment and Collaboration

The role of the faculty in preparing health promotion professionals, strategies for the recruitment of students representative of cultures being served by the health education programs, and the role of health education faculty in collaborating with faculty of other programs is addressed within each of the five goals of the COE Action Plan. The Action Plan became the basis of efforts by the health education faculty to collaborate with other members of the faculty to strengthen the role of the College in meeting the needs of New Mexico's Children, Youth and Families.

GOAL 1: TO DEVELOP, STUDY, PRACTICE AND DISSEMINTATE INNOVATIVE APPROACHES TO LEARNING AND TEACHING.

The majority of the students in the health education program are pursuing degrees in community health education/promotion. This provides a natural entry to community-based learning activities and serves as a basis for health education faculty to explore new approaches to learning and teaching. Leadership provided by the health education faculty related to this goal are described in the following activities. Of particular interest is the exploration of opportunities for faculty to mentor students through professional involvement in ongoing programs as well as research projects. During this year, more than 15 graduate students have been hired to work on projects which are lead by graduate faculty. This opportunity for observation; working with professionals; interacting with committees; and direct work under the supervision of graduate faculty has provided graduate students with professional learning experiences which has been described by them as the highlight of their graduate studies.

Leadership provided the health education faculty related to this goal are described in the following activities.

Teaching Comprehensive School Health Education

Professor Bentley has worked collaboratively with the Department of Health, Department of Education and the Indian Health Services to develop a one credit course titled "Teaching Comprehensive School Health Education. The course will be first offered in Summer, 1993 and is designed for teachers and community health educators who are
in the field. Two of the most commonly used curriculums in New Mexico, Teenage Health Modules and EZI Education for Zero Infection will be presented.

Linking School and Community Health and Social Services Agencies--A Professional Preparation Model

Professor Kane and the College of Education has been awarded $250,000 to establish a 30 month pilot project to develop and field test a collaborative services model for community-based programs that will enable schools, community health, justice and social service agencies to work together to better serve the needs of school-age children, youth and their families. This model will build on existing collaborative efforts of the University of New Mexico, Albuquerque Public Schools, and the New Mexico Department of Children, Youth and Families, in concert with the call for integrated school and community health promotion efforts (Healthy Communities 2000, 1991). Three graduate students are employed on this project under Dr. Kane's supervision.

Utilizing this grant the College of Education is:

1. Developing and pilot testing a community-based pre-professional program that prepares: A) prospective teachers to work with community health, justice and social service professionals and B) prospective community health education and family studies professionals to work with teachers and schools to enhance opportunities for children and youth to develop healthy behaviors and to reach their full potential.

2. Establishing and pilot testing a community-based professional development component that will increase the knowledge, skills and opportunities for school personnel, health, justice and social service personnel to work cooperatively to support children in their efforts to grow up healthy.

3. Developing and pilot testing strategies at the school-site that enable schools, health, justice and social service agencies to work together to strengthen support for healthy development of children and youth.

4. Disseminating the findings related to the models of these collaborative service pathways through reports, professional journals, and presentations at state/regional/national professional meetings.

Beginning in July, 1993, twelve student teachers, 4 community health educators and 2 family studies students will be involved in the implementation of the project at Emerson School and agencies supporting the families of children attending that school.

Elementary Teacher Education Initiative
Professors Hammes and Kane are working with the other faculty in the College of Education to re-conceptualize teacher preparation programs. This initiative which involves more than 15 faculty is recently underway.

Abiquiu Series on Women

Professor Bentley has developed a series of 5 1-3 credit offerings pertaining to Women's health. The series is taught in collaboration with faculty from Psychology, Art History and Medicine, through the Santa Fe Graduate Center. All classes are retreat style and are located at the Ghost Ranch in Abiquiu, New Mexico. The series was designed to meet the needs of women in Northern New Mexico who are trying to pursue graduate or undergraduate degrees. The series is in it's third year and has drawn both faculty and students from all across the state and the U.S.

Secondary Teacher Education Initiative

Professor Bentley is working with faculty in secondary education to re-conceptualize teacher preparation programs at that level. Dr. Bentley and colleagues from secondary education are working with Albuquerque's LBJ middle school exploring mechanisms for infusing health education into the existing curriculum.

Health Promotion and the Young Child

Health education faculty has worked with early childhood faculty and the State Department of Education to shape the developing early childhood certificate. The need for early childhood educators with understanding of the role they play in the healthy development of children is highlighted in that document. In addition, health education faculty have been involved in a series of meetings and retreats designed to develop a new COE degree offering in early childhood. Health education is both infused into this curriculum and is being proposed as a course offering for prospective early childhood educators.

Policy and Leadership Initiative

Health education faculty have been involved in the COE policy and leadership initiative. One product of that initiative is the development of a new graduate course Ed. AD/H.E./EDFND/F.S. 593 Educational Policy I. This course is designed for people who will be involved in policy development and implementation in educational, public and private sectors: schools, post-secondary institutions, government, health and human service agencies, and corporations.

Children, Youth and Family Activities
Professor Kane, Mark Jager (Doctoral Candidate, Health Education), Retta Prophet (Doctoral Candidate, Health Education) and Jon Woodland (masters student, health education) are currently working with the New Mexico Children, Youth and Families Department to explore employment and field-based learning opportunities for students. In addition, they are exploring the implication of this state initiative for the professional preparation of students in the College of Education. The Health Education faculty has just received word from Wayne Powell, Secretary for CYF that his office will provide half-time employment for four graduate health education graduate students this fall.

Field Experience in Research

During the Spring of 1993, the health education faculty develop a pilot project to establish a research-based field experience. Three graduate students are currently involved in this field experience where they are paired with a professor or advanced doctoral student (under the supervision of a professor). The faculty will be evaluating this innovative approach to provide additional research experience for interested graduate students.

GOAL 2: TO STRENGTHEN THE RESEARCH IN THE COLLEGE OF EDUCATION AND TO IDENTIFY A RESEARCH AGENDA THAT CONTRIBUTES TO THE PURPOSE OF THE COLLEGE.

The health education faculty has spent the year pursuing opportunities for research related to the College of Education Action Plan. Research of the health education faculty related to this goal are described in the following activities.

Research On Alcohol Use and Mis-Use Among American Indian Youth

Professor Hammes is involved with a multi-state research project funded by the National Institutes of Health, National Institute for Alcoholism and Alcohol Abuse: Center for Alcoholism, Substance Abuse Programs (CASAA). That study is examining the etiology of alcohol use and mis-use in American Indian adolescents.

Prevention of Breast Cancer in New Mexico

Professors Bentley, Stivers, and Kane along with several graduate students are involved with evaluation of the New Mexico State Department of Health Breast and Cervical Cancer Project. That project in its second year is serving low income, uninsured, Hispanic and American Indian women. The contract award for 1993-94 will be approximately $50,000.

Prevention of Teen Pregnancy in New Mexico

Professor Duryea has initiated a teen pregnancy survivorship prevention trial in the Cibola and Sandavol County Schools. This
Diabetes Prevention Among American Indians

Professor Kane and Marcy Rodman (Doctoral Student, Health Education) are working with the White Mountain Apache Tribe as technical consultants on a Prevention of Diabetes Project funded by the U.S. Office of Minority Health.

Prevention of Driving While Intoxicated in New Mexico

Professors Stivers, and Kane and Marcy Rodman (Doctoral Student, Health Education) are working with the New Mexico Department of Transportation and communities throughout the state to establish and evaluate health promotion efforts aimed at preventing driving while intoxicated (DWI).

Behavioral Risk Factors Among Youth Rural Children

Retta Prophet (under direction of Dr. Kane, Hammes and Duryea) has developed a behavioral risk factor survey for use with elementary children in the Jemez Valley, Jemez Pueblo and Zia Pueblo schools. The instrument which was developed in conjunction with teachers and community leaders is a first attempt at measuring health knowledge, behaviors and beliefs of rural Hispanic and American Indian children.

Five a Day Nutrition Education

Professor Duryea is working with the State Department Health, Public Health Division to develop and implement a "five a day" nutrition education program in several Northern New Mexico Pueblo's and comparable communities in the border region of southern New Mexico. This proposal has been submitted to the National Cancer Institute.

GOAL 3: 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 epidemiologic and social needs data of New Mexico provides compelling evidence for the need to involve children, their families and communities in efforts strengthen the programs of the College of Education. The health education faculty has attempted to provide impetus for program change which embraces the multiple community stakeholder in its efforts to shape programs. Leadership provided by the health education faculty related to this goal are described in the following activities.

Establishment of Faculty for Children, Youth and Families

The health education faculty developed the rationale and request for a two year position for a faculty member who in addition to teaching would have responsibilities for interacting with non-university organizations and programs including the State Departments of Health, Education, and Children, Youth and Families, the Indian Health Service, public schools and community agencies. The search committee is currently reviewing applicants for this position.

Community-based Development of Middle Schools

The health education faculty has been working the middle school faculty in an attempt to infuse programs which help adolescents develop in healthy ways. Professors Hammes and Kane were involved in a series of regional meetings held throughout New Mexico. These meetings brought together junior high and middle school students, parents, faculty, and administrators to explore issues related to the development of middle schools in New Mexico.

New Mexico Proposal for Strengthening Middle Schools

Professor Kane worked with COE faculty in middle school education and the New Mexico Department of Education, State Department of Health, and middle school administrators throughout the state to develop a proposal in response to a request for proposals from the Carnegie Foundation. The State Department of Education and the College of Education has been the recipient of a Carnegie funding for the past several years to develop support for and implement the concept of middle schools in New Mexico. The new round of Carnegie funding was targeted for infusing health into the middle school concept. The health component is developed around a comprehensive school health model which provides for the curriculum, services, environmental and school/community health promotion needs of early adolescents. Tentative word has been received that the project will be funded.

Community and Family Wellness Programs

Professor Hammes is working with the State Department of Health and
the Esponola Middle School Family Wellness Program to establish a program to strengthen communication between children and their families.

New Mexico School Health Advisory Committee (SHAC)

Professor Bentley has been involved in the reshaping of the SHAC, which is an advisory committee to the Department of Health and the Department of Education on issues pertaining to school health. This committee will provide leadership to agencies with regard to a comprehensive approach to meeting the health needs of children and youth in New Mexico.

GOAL 4: TO PREPARE A GREATER NUMBER OF EDUCATIONAL PERSONNEL FROM TRADITIONALLY UNDER-REPRESENTED POPULATIONS.

The health education faculty is committed to shaping a program which draws strength from New Mexico's rich cultures. Attempts are being made to give high priority to New Mexico's cultures when planning curriculum, recruiting students, teaching and learning, creating learning opportunities and offering courses. These considerations represent a shift in the perspective of the health education program faculty in its desire to build on the strengths of New Mexico. Leadership provided the health education faculty related to this goal are described in the following activities.

Health Education Outreach to Northern New Mexico

Professor Hammes has worked with middle school faculty to develop a health education track for the Santa Fe Graduate program which is offering a health education classes for middle school teachers in Northern New Mexico. This outreach is designed to better meet the professional development needs of teachers in rural communities.

LLCA

Professor Bentley has been involved in a year long process of developing a new college initiative around issues of Language Literature, Culture and the Arts. New COE course offerings designed to inform prospective community and school health educators about issues of language, literacy, and culture, and to better meet the identified needs of communities will become a vital part of professional development at both the undergraduate and graduate levels. This initiative has conducted focus groups and identified the health of children and families as an integral part of its efforts.

Preparation of Teachers to Prevent Drug Mis-Use Among At-Risk Children

Professor Kane is working with the Association for the Advancement
of Health Education providing training to state level trainers throughout the United States who will in turn train elementary school teacher in the utilization of health education video’s designed to encourage alcohol and drug mis-use prevention. Teachers of children experiencing multiple stressors are a primary focus of this prevention program. Professor Duryea has been prepared as the trainer for New Mexico under this project.

Drug Mis-Use Prevention Training for Rural New Mexico Teachers

Professor Duryea was been working with the Association for the Advancement of Health Education and the BEST Foundation initiating a series of drug prevention training workshops. More than 75 teachers from Farmington, Questa, Jemez Springs, Rio Rancho, and Albuquerque were trained in utilization of drug abuse prevention programs for elementary schools. As a result of this outreach to the state, numerous schools, (mostly rural schools) are implementing these programs.

Comprehensive Health Education Programs in Jemez Valley

Professors Hammes, Duryea, and Kane and Retta Prophet (Doctoral Candidate, Health Education) are working with the Jemez Valley Public School and the Jemez and Zia Public School professionals to develop a school-based comprehensive approach to improving the health of children and youth.

Recruitment of Culturally Diverse Students

Health Education Faculty has taken several steps to strengthen its ability to recruit students representative of the cultures of New Mexico and the Southwest. Professor Duryea participated in the UNM African American student recruitment effort held at the SUB during spring semester. Professor Kane and graduate students Retta Prophet and Mark Jager participated in the American Indian recruitment day hosted by the UNM at the SUB during the fall semester.

GOAL 5: TO CREATE AND SUSTAIN HELPFUL ATTITUDES AND STRUCTURES TO ENHANCE THE PROFESSIONAL ENVIRONMENT OF THE COLLEGE.

Each faculty member has taken on the responsibility of interfacing with collabatives and initiatives within Division C. Faculty are attempting to articulate the health education programs interests, concerns and plans, as well as identify opportunities for collaboration. This interdisciplinary approach, while time consuming has been very rewarding for health education faculty. This new opportunity for us as a faculty to work with colleagues has significantly increased our perceptions of potential the College has for successfully meeting the needs of children, youth and families of New Mexico. We are genuinely excited about of new
professional relationships and opportunities which have open up as a result of the organizational changes within the College. As a result of these opportunities and the rewards we receive from working in an interdisciplinary fashion, the faculty will continue to put in an extraordinarily amount of time into fostering the development of the College.

Bibliography

MEMO

To: Richard van Dongen
From: Michele Raisch and Charleen Ayres
Date: June 30, 1993
Subject: LBJ Program Report

Please find the LBJ report attached. We continued to collaborate right to the end! What you find here represents both our voices. We joined our notes and perceptions to create a description of where we began and how the semester unfolded. The report itself, or perhaps the process of writing it, illustrates the collaboration we experienced.

The reporting style here is much different than the one used for the Van Buren report. This had to do with the type of experience it was and the process of collaborative writing. We can create a more traditional report if you would like. Please just let us know.
The LBJ Professional Development School

Teacher Education Project

1992-1993 Report

June 30, 1993
Background

LBJ opened as a new school during the 1992-93 school year. The principal was mandated to build an exemplary model for middle school education based on the eight principles of *Turning Points*, a report written by the Carnegie Foundation on American education for young adolescents in the 21st Century. During the planning phase, the University of New Mexico, who belongs to the Holmes Group, invited LBJ to become a Professional Development School. One of the purposes of Professional Development Schools is to provide a site for developing new teachers and encouraging professional growth among experienced teachers. With this in mind, a team of two student teachers were assigned to work with a teacher at LBJ, Charleen Ayres, who organized staff development opportunities for the school staff in addition to full-time teaching responsibilities. The decision was made to place two student teachers together as a team in the same classroom, so they could support one another when Charleen needed to leave them alone while she worked on staff development.

Fall, 1992

Preceding the first semester, several meetings took place between the student teachers and Charleen to discuss philosophies about: teaming, collaboration, integration, cooperative learning, and interdisciplinary study. The purpose of the discussion was to establish how teams work together, and they were given the option to accept the offer or refuse it. After they made their decision to come, the student teachers met again with Charleen during the summer to find out more about each other, to discuss
possibilities for presenting curriculum, to investigate how their prior experiences could be utilized and to talk about how they would interact as a team with the students. They speculated about how the three would work as a team in the classroom and with their technology block teammate. Discussion focused on how they would open the year, the importance of working as a cohesive group, problem-solving situations which would occur within the team and the classroom, and how they would deal with misunderstandings that occur when people work together.

The student teachers agreed they wanted to begin immediately so they could become part of the class community and help establish a collaborative learning environment. From the beginning, all three participated in the teaching by contributing to or leading the lesson. Afterward, Charleen and the student teachers discussed the experiences of the class, reflecting on what had happened; was it what had been anticipated or did it need to be revised for the afternoon session. Often their teammate would join the discussion as well as teachers from other sixth grade teams. Everyone joined in the conversation offering their experience, perceptions, suggestions, and reflections.

In the beginning of the semester, the student teachers attended the weekly university seminar required of all secondary student teachers. Early on, they discovered that their experience was different from the other student teachers who taught alone and in the traditional program. The student teachers found that questions the other student teachers who were in more traditional settings asked of clinical supervisors were
being answered by Charleen and other LBJ faculty as they collaborated. Therefore, the university asked Michele Raisch to act as clinical supervisor and incorporate the student teaching seminar into their work at LBJ.

After Michele's initial contact with Charleen and the two student teachers, she sensed a working relationship had already evolved, and it would be best if she began by observing them teaching and planning together. In order to get them to reflect on their teaching, Michele asked them to keep a journal where they could record their feelings, thoughts, ideas and questions. She acted as a liaison between the university and the student teachers, keeping them informed of helpful meetings they needed to attend. One day each week Michele observed and scripted the student teachers as they taught. Then Charleen and Michele would talk about each other's observations and decide together what would be addressed in conferencing with the student teachers. This is different than the traditional clinical supervisor's role. Typically, the clinical supervisor makes contact with the cooperating teacher, but the supervisor usually conferences with the student teacher alone and establishes the agenda for that meeting. Rather than this, Charleen and Michele collaborated on the conference. In other words, they were able to speak to issues as they appeared rather than from a pre-planned course syllabus; seminar topics formed themselves.

The team experimented with the philosophy from Re:Learning that "less is more;" choosing a few themes to deal with instead of whole textbooks. They introduced group work, incorporating curriculum competencies required by the state and district. To
help with behavior control, they used groups which also helped build a democratic classroom community where students helped establish appropriate rules. One of the student teachers was intrigued with the idea of a class meeting and took it upon herself to instigate this. Eventually, student officers were elected, an agenda book was established, and students took over the running of the meetings. It became an example of social studies in real life. This became a forum for analyzing the social climate in the classroom and for making changes.

About mid-semester, Charleen worried they were not covering all the topics which were discussed in the traditional student teaching seminar. Therefore, she made a list of all the items that had been covered and the traditional topics of planning and management were there as well as many more. Some of the not so obvious topics included: smile, laugh, are we trying to "cram" a lot into a little bit of time, give positive verbal feedback, don't take ourselves too seriously. These, too, are some of the kinds of things that student teachers need to have a cooperating teacher think through with them. It's similar to helping students see how teachers think by thinking aloud as they analyze a piece of writing, so they see how thought processes work or how people go about solving problems. With Michele's help, the team was able to bring genuine meaning and value to theory by incorporating it immediately into practice.

In order to meet individual student teacher needs, just as teachers try to meet the needs of the students in their classrooms, it was decided as a group that it would be beneficial
for the two student teachers to teach independently with each taking responsibility for a humanities block. They each felt they needed to have the experience of establishing ownership and authority with their own class. In this situation, the emphasis changed from building a team to being able to function independently in the classroom. However, they continued to plan together but tried different strategies for presentation and classroom management. Although they were teaching separate classes, they continued to grow in the ability to appreciate each other's styles and to critique each other's lessons. The two student teachers maintained communication as they met together and continued to conference with Charleen and Michele, yet the situation for collaboration changed. They were no longer teaching as a team, but they had formed the basis for collaboration which continued throughout the semester. Their teacher preparation gave them experience in peer coaching which could ultimately enhance their future teaching careers. At this point, Michele's observations focused on the individual student teacher's lesson, but the conferences continued to be done as a group because it offered time for the student teachers to share their experiences and give each other ideas.

As Michele and Charleen reflected over the conference times together, it became evident that immediate feedback for novice teachers was as important as it was for students. The group discussed such things as how the class flowed, the need to anticipate how to introduce material so that kids get "hooked," the importance of giving clear directions, offering examples, and establishing expectations for outcomes. The student teachers
recognized the importance of receiving input and feedback from the students also.

At the end of the semester, the student teachers presented their portfolios to the teaching team which included all of the sixth grade teachers. They compared ideas in preparing the portfolios but their presentations were independently given. Expectations for the portfolios included reflections on: lesson and unit plans, personal journals, our observations, Charleen's weekly growth plans, and their evaluations of their own growth. They shared student work as well as their reflections. Teaming was described by one of the student teachers as a "challenge" and she appreciated having one class for herself. The other student teacher focused his presentation on using technology "to expand our knowledge" and the importance of "participating in the learning process." Neither emphasized the value of teaming but rather the gains they made in their individual interest areas.

Spring, 1993

The experiment continued but with two new student teachers. This time two different content areas were included. One student teacher had a social studies major and one an English major. Since Charleen taught a humanities block encompassing both areas, this could give them expertise to share. As with the first semester, the student teachers met with Charleen before concluding fall semester in order to meet the students and get acquainted with the classroom structure and curriculum. During Christmas break, Charleen and Michele met with the student
teachers and Charleen's team partner to establish communication and expectations for the university and the school. From that point on, the group met weekly.

In contrast to the fall, these student teachers collaborated from the beginning which led to a strong team attitude. This was also the case with Charleen and Michele as they discussed their work as cooperating teacher and clinical supervisor. Their roles were not as defined as those in the traditional program. They shifted in and out of supervising and mentoring to one another. Because Charleen was with the class daily, she had much more insight into the problems the student teachers experienced as well as their successes. She made a much more thorough supervisor. In reality, Charleen and Michele shared their expertise, Charleen with the practice and Michele with theory. As they discussed ideas, Charleen's world informed Michele's and vice versa. They grew professionally, as well as jointly, planning their agenda for the student teachers.

The student teachers listened to Charleen and Michele as they shared ideas, examined the possibilities, and used their combined efforts to problem solve. Charleen and Michele modeled their belief in teaming and thereby extended a value in it. Embracing this model the student teachers planned together consistently and preferred to team teach together:

She [the other student teacher] has played a very important role in helping me establish my style and personality as a teacher. The reflective conversations and hours of planning I have shared with her have boosted my confidence and raised
my comfort level in the classroom. We have given each other useful ideas as well as the space to try some of those ideas within our content areas...Because of these established and constantly developing roles, we are able to offer different perspectives and observations when we discuss how a certain lesson went or how things should be adjusted for the afternoon class. (from one student teacher's midpoint self-evaluation)

These two student teachers never elected to teach alone; they wanted to continue to team teach for the entire semester. When asked whether they felt confident taking over their own class independently, they both stated emphatically that their experience in this situation had given them a broader understanding of the diverse ways in which a classroom can provide learning experiences. Furthermore, they expressed that they would feel comfortable seeking out colleagues in their school setting with whom they could converse and share.

The student teachers described how they reflected daily about their teaching and how they would repeat or alter their plans. They also shared how they had learned a variety of strategies for dealing with student issues by observing all the teachers on the team. The student teachers shared the responsibility for gathering or making materials for the integrated lessons they taught. They worked through ideas for integrating social studies and language arts with "both of us at the computer together." Ultimately, they created projects for
the students which not only integrated subjects but also gave the
students opportunities to collaborate with one another. Just as
they were involved in integration and collaboration, so were
their students. The student teachers were given opportunities to
make choices, and they provided similar freedom to their
students. Learning was people-oriented not subject-oriented; so
were the learning centers they prepared for their students.
Collaboration encompassed learning and teaching for both students
and teachers.

Similar to first semester, the student teachers presented
their portfolios. Unlike the student teachers from fall
semester, they chose to present as a team. They described their
growth from subject focused, lecture style teaching to integrated
and participatory teaching. As they looked to the future, they
each used phrases like, "seek out teachers who are willing to
help you" or "find more to draw on--a lot of teachers to talk
to."

Conclusion

The student teachers second semester collaborated to a
greater degree than the student teachers from first semester.
They also integrated subject matter more than the student
teachers from first semester. But the question remains, what
caused the difference second semester. Charleen and Michele
collaborated both semesters. The reason the first semester
worked differently than second, could have been individual
student teacher personalities, or that it was the beginning of
the year. Or part of the reason could have been that the first
semester student teachers chose to each teach a class
independently. In one sense, they wanted to see "if they could do it alone," yet the spring student teachers talked about how they gained "self-confidence" and learned to be less "fragmented" from collaborating. The second semester the student teachers did not appear to need to "go it alone" in order to prepare for the "real thing." Just the opposite seemed true. They took risks -- a social studies teacher working with literature reports and an English teacher designing and grading "China centers." Such successes led to confidence and a desire to collaborate, leading them to take more "risks." With strong confidence, such a student teacher should have few problems teaching alone.

However, even though the student teachers developed different teaching styles, the experiences for both teams were productive. Each had the unique experience of working with a team of teachers in an integrated classroom. Collaboration and integration were two of the vital principles guiding both the school and teacher education curricula. These student teachers had the opportunity to implement both principles in their preservice field experience preparing them to utilize this knowledge as they enter the teaching profession.
TEACHER DEVELOPMENT IN THE PROFESSIONAL DEVELOPMENT SCHOOLS

A Synopsis of the Collaboration on March 27, 1993

Michele Raisch

The following is a summary of the main points as reported by eight collaborative groups of teachers, administrators, UNM faculty, and student teachers on March 27th. Our intention that day was to identify our purpose as a PDS program and discover problems with possible solutions. The final section of this report describes my experience as a member of one group.

Question 1: Critical Attributes of the PDS Program

The critical attributes of the PDS program include: (1) an opportunity to engage in continual learning opportunities, (2) a high degree of collaboration between all participants in the school and at the university, (3) a respect for diversity which shapes growth efforts, (4) an allowance for ownership to include those with immediate involvement such as teachers and students, and (5) a commitment from UNM to have an active presence in the schools.

On-going learning requires a commitment to continuous learning and intentional attempts to change. This requires a willingness to take risks without pre-established boundaries. The active involvement of all participants in attempts to change is crucial in the process of learning.

More can be learned from collaborative efforts, so one of the critical attributes becomes engagement in collegial teaming both with practitioners and university faculty. This requires setting aside time for all participants to meet and engage in dialogue geared toward developing a body of knowledge of what is good teaching. The PDS program models a belief that the sum is greater than the parts, so time for the diverse constituents to talk and reflect is necessary for all to be heard and their views considered.

Just as the "sum" is valued so is the uniqueness of the individuals. There should be an eagerness to build on diversity by each person's open-minded approach to change. A respect for individual diversity requires a flexible approach both in the way decisions are reached and the execution of those decisions. By such consideration, a high percentage of individual ownership is possible. Management of the program is equally share by all the participants, and the school becomes the base of operations.

Finally, the university faculty must be committed to keeping an active presence in the schools where their presence helps make them part of the school community. This will require flexibility in how the teacher education program is shaped. If there is to be a new way of thinking about classrooms, one involving teachers in group reflection, then there also needs to be a new way of thinking about how we educate beginning teachers for those classrooms. The university voice becomes one among the group and, therefore, present and active in the restructuring process.
The critical attributes shape a program committed to change one involving learning at all levels. Student teachers are no longer apprentices, but learners on equal footing. The reform includes all voices, equally. Growth opportunities are available for beginners and veterans alike if the school is seen as a community of learners with all members taking on new roles and equal ownership. Career teachers look at their own teaching and learn from their reflections as they work with others in the school community to develop the bigger picture. Teachers learn from student teachers just as the opposite is true. Everyone is involved equally in creating learning environments.

All of the active investment of time and energy into self-growth and teacher education provides professional development. Those within the school community talk and that dialogue extends out to the larger professional community through conferences and journals.

Question 2: The Goals of Our PDS Program

The goals are continually evolving as participants discuss and redefine them. Some goals remain undefined since not all the discussions have taken place. Efforts to bring people together in dialogue helps formulate goals and reach new levels of consciousness, a goal in itself as consciousness raising precedes change. The pace in establishing goals and reaching them is slow and thereby frustrating for some. Through it all, listening plays a vital role even if the destination may not always be clear. Who the participants should be is also not clearly visible, but each diverse group needs to be represented to avoid being driven by a curriculum untouched by the voices of all.

Preparing learners for the twenty-first century demands examination of the diverse goals in the school and community alike. Professional development should be shaped to fit into the school’s goals, and it will be necessary to identify whose goals are being defined and whose needs are being met. If the outcomes revolve around the "learner," and adults as well as children are considered "learners," then the goals need to mirror that belief. The culture of the school as not yet changed, but the process of collaboration and respect for diversity can inform thinking during the process.

The university’s goal includes getting professors into the schools, but their involvement remains limited. In spite of this, the schools’ process goals have become more clearly defined because of the collaboration with the university through the novice teachers. The "cooperating teacher" is becoming more a part of teacher education and not an isolated entity. A commitment to careful selection of cooperating teachers is vital to the success of this role extension. Those teachers become role models for student teachers and the link toward understanding how to change theory into reality.

All stakeholders need to be involved in the conversation, linking all voices in defining their diverse goals. Communication helps the participants understand the needs of the others and common goals are born from the diverse ones. The question can then move from "Whose goals?" to "How do they overlap?"
Question 3: Types of Needed Institutional Support

Support comes from each of the players: UNM, the schools, the school district, and the community. The university is expected to commit money and expertise to developing partnership with the schools. Faculty should be encouraged to spend more time in the schools by making it a legitimate means to tenure. This time would be dedicated to helping teachers "engage" and grow professionally. One direction for professional growth could be teaching on-site university courses. Another could be university faculty guiding the cooperating teachers in educating student teachers, possibly team teaching such a course as teaching methods. The responsibility becomes creating a true interchange of ideas and expertise. Teachers want to be valued for their knowledge of students and learning. "Territorial" issues have hampered this open interchange, so the boundaries need loosening.

Communication which attempts to bring diverse goals together toward a common goal such as life-long learning, can be an important step in diminishing barriers. The teachers describe this as a time of growth and reflection, but they want to be recognized for their efforts and expertise. A commitment from the school administration and district to increase honest communication could lead toward the involvement of all the "players." Teachers have experienced the frustration of beginning programs of change and growth only to be yanked to a halt by a change in administrative leadership. The commitment toward professional development needs to come from the district and the community alike.

Commitment is conveyed in several forms, one being in the form of money; this can be perceived as a way to "formalize" the commitment. Another form is to open the channels of communication. The district was not part of the original dialogue and remains somewhat distant. Continuing, open dialogue among all the "key players" would be a long-term goal. Such interchange could provide opportunity for collaboration in setting the criteria for the Professional Development Schools.

"Professional development" includes the on-going growth of veteran teachers as well as the beginning education of the novices. Some schools could be designated as "teacher development centers" where teaching resources could be housed. Communication among schools would be important for one school to benefit from the success at another. The teaching center schools would offer an opportunity for teachers to exchange ideas creating a "bowling pin effect." In some ways, the professional development would evolve rather than be clarified before beginning.

Commitment to professional development extend beyond the initial preparation of teachers; it is life-long learning. Finances can drive the desire by formalizing the commitment, but once the school community unifies its efforts, the empowered feelings fuel the continued commitment.
The smell of coffee was in the air on this brisk Saturday morning. Chatter filled the room as people greeted old friends and met new ones. Andrew asked us to take our seats, and everyone shuffled to their assigned tables. Group six met near the coffee table, a perfect location for when the sweet rolls arrived. We were an integrated group: a student teacher, a UNM faculty member, an APS administrator, a middle-school assistant principal, an elementary teacher, and myself. Our group began by introducing ourselves and describing our involvement in the PDS program. It struck me from the start that there were three of us directly involved with Van Buren Middle School. I wondered if that would be helpful or not.

Our first task was to distinguish how Professional Development Schools differed from student teaching centers. This presented a problem in that we had to first define what a student teaching center was. We each had a slightly different understanding of the concept based on our own experiences. As a matter of fact our diverse perspectives became clear from the struggle with this first question. Our collaboration depended on our ability to listen and then see it from someone else's point of view.

The elementary teacher described their involvement in the program and her frustration with not having a university faculty person on their campus regularly. As others spoke of the time UNM faculty spent at their schools, she vocalized her frustration. I sensed she felt there was inequality in the design of the program. As a matter of fact, she was the one who brought up Kozol's talk several days prior to our meeting and put forth the question.

This brought out discussion on the difficult position university faculty find themselves. The faculty member and myself addressed the dilemma of needing to do research and publish in order to achieve tenure. Field work is exciting and what we like doing, but it remains outside university expectations. The reality is we must find a way to connect the two because as it is now it is very difficult to find the time to be in both places. The university identifies the work in the schools as "clinical." These teachers were not satisfied with that; they wanted "real" professors on their campuses.

The conversation was emotional as each person sensed the importance of the collaboration between the school and the university, but the APS representative pointed out the irony of the discussion. We were here discussing important issues, but the people who could make changes, such as "higher ups" in APS, were not there. We felt a sense of frustration as we wondered if such dialogue was beneficial toward change or just more conversation making us feel like we could be making a difference. As someone pointed out, part of the problem is money and those who make the decisions about how funds are spent were not present.

The exchange among us varied depending on the interest of the individuals. The student teacher described feeling overwhelmed by the amount of work involved in the program, but
she approached the subject carefully as she kept in mind her
tenuous position. She asked me to introduce her to the other
middle school principal; she was thinking of future job
possibilities. Her interest in making this program work in the
future was limited.

The APS representative spoke candidly, but her interest was
second-hand. Another had been invited and she was filling in.
The school representatives obviously had their school's best
interest in mind and wanted to build their involvement and
continue collaborating with the university in an even bigger way.
That leaves me. I have had the opportunity to enter into several
school communities. I came with the expectation that we were to
enter into dialogue with all parties involved in the PDS program
and outline our future plans for collaboration. We did converse
and share our ideas, but in the end I heard others say, "But now
what?" Did this time together bring any design plans? These
people will want to know.
MEMO

To: Richard van Dongen
From: Michele Raisch
Date: June 24, 1993
Subject: Van Buren Program Report, Spring of 1993

The report of our work at Van Buren during spring semester of 1993 is attached. I followed the format Don Zancanella used in his midpoint report dated January, 1993. My goal was to identify changes which were made to the program second semester either by necessity or by choice and to begin some evaluation of the collaboration which evolved between the school and the university. Over the coming months I hope to delve deeper into the data I collected during the entire year, but this report can serve as a beginning.
The Van Buren Professional Development School
Teacher Education Project

Spring Semester Report

June, 1993
This report describes the second semester (Spring 1993) of the experimental Professional Development School teacher education/teacher development program at Van Buren Middle School. In the first section, the overall program is described as it changed from fall to spring semester. This is followed by an evaluation of each component of the program. The final section suggests possible changes for the future.

PART I: PROGRAM DESIGN FOR SECOND SEMESTER

The Pre-service Teacher Education Program

The second semester of this year-long design was the student teaching component of the UNM teacher education program. The novices (hereafter used to refer to student teachers) spent the entire day teaching and involved in planning activities with their mentor teachers/teams. Since the midpoint report, a number of changes evolved:

* Not all the required courses were available on-site. The elementary education majors attended courses on the UNM campus in math and science teaching methodology. All the novices participated in a weekly on-site seminar which was team taught by Sherry McCarty (Van Buren MS faculty & clinical supervisor) and Michele Raisch (UNM staff). Those novices who needed the special education class required of all education majors met on-site with two Van Buren faculty, Dee Little and Chris Curan, who team taught with Ginger Blalock (UNM faculty).

* Elementary and secondary students continued to be mixed, but three novices chose to do some part of their student teaching at other schools. Two selected to spend half their teaching time at high schools. The third novice opted for a full-time experience at an elementary school, but he continued to attend seminar and remained part of the core novice group based at Van Buren.

* Since four of the ten novices attended campus courses separate from Van Buren, it was more difficult to achieve content integration. The weekly seminar provided time for the novices to make connections between what they were learning at the university and their classroom experiences. In addition, the novices' work in Van Buren classrooms provided the focus for their teacher research which encompassed all their work. Because the special education class was taught on-site and by Van Buren faculty who aimed toward a full inclusion model, the novices received an integrated orientation to teaching special education students.

* University/school collaboration continued but with a new
configuration. Two UNM faculty members, Don Zancanella and Ginger Blalock, visited the Van Buren campus regularly. Dr. Zancanella facilitated a bi-weekly meeting with the mentor teachers. This gave the teachers opportunity for discussion about the program and their novices. Dr. Blalock taught the special education class with the two teachers from Van Buren's faculty. This class met weekly. Michele Raisch continued to guide teachers in conducting their own classroom research bringing her to Van Buren two to three days per week. Dr. Raisch also team taught the weekly seminar with Sherry McCarty. McCarty and Raisch met weekly and taught the seminar together both in planning and teaching. There continued to be a regular exchange of perceptions, approaches and needs between the two academic communities.

* Scheduling during the second semester was more traditional. The novices taught and planned with their mentors each day for the entire school day. The novices attended seminar and other scheduled courses after school. Since the seminar and the special education classes were held at Van Buren, the novices and teachers had input as to the best times for those meetings. Dr. Raisch scheduled individual meetings with the novices to discuss and help guide their teacher research projects which were presented with the novices' portfolios at the semester's conclusion. Meetings were arranged as needed by the novices; some needed more guidance than others. As with first semester, two weeks at the end of the semester were devoted to reflection on their experiences as they prepared and then presented their portfolios.

* Field placement varied depending on the needs of novices and mentors. Two novices remained with the same mentor and cross-disciplinary team. Two others chose to stay with the same Van Buren mentors but elected to spend half of each day at a high school with a new mentor. One novice stayed with the same team but divided her time between two mentor teachers. Several novices were placed with new mentor teachers, and four completely changed schools (only one of which continued to meet with the Van Buren novice group). Due to their departure, two new novices were brought to Van Buren. The decisions surrounding these changes were determined in collaboration. The needs of the novices and mentors were considered as well as the combined judgments of the UNM faculty and Sherry McCarty.

* Portfolios were again utilized for evaluation. The teacher research project was included as a means of utilizing the semester's reflection toward the novices' own self-assessment. The novices selected their own topics and with Dr. Raisch's guidance they determined how to best collect data and use their own reflections toward analyzing that data. A description of their teacher research project was a large part of their portfolio presentation. The
portfolios were collaboratively judged by Raisch and McCarty. See Appendix A for the portfolio requirements.

The Teacher Development Component

The writing-across-the-curriculum workshops were designed for only one semester, so they were not part of the professional development at Van Buren during second semester. Other changes included:

* Support for teacher research

Michele Raisch continued to guide Van Buren teachers with their classroom inquiry by meeting with them at scheduled times outside of teaching time. The difference this semester was the involvement of the novices in their own research. Dr. Raisch worked with both the beginning and experienced teachers as they developed their ideas. In one case, a mentor and novice began the semester working on the same project.

* Mentoring

The Van Buren teachers continued to act as mentors both to the novices to whom they were assigned and to other novices informally. Opportunities for mentoring came in the form of team meetings and casual contact during the school day. Many of the novices reported associations with other teachers in addition to those on their team because they needed their expertise. During second semester, the novices appeared more at ease in seeking help from other teachers. Another difference this second semester was the absence of the study groups. The weekly seminar and special education class were the only scheduled meetings.

* Bi-weekly mentor teacher meetings

Don Zancanella visited Van Buren once every two weeks to meet with the mentor teachers. This continued the university/school collaboration as well as offered the mentor teachers an opportunity to talk to one another about working with novices.

PART II: EVALUATION

In Don Zancanella's midterm report, January 1993, he discussed the need for continued work in "the building of a collaborative culture." Such work continued during second semester. With a continued visible presence at Van Buren, the
university became more a part of that school community. Communication increased through the acceptance of collaborative structures such as the teacher research and mentor teacher meetings. Small steps were taken toward shared ownership as Van Buren teachers and university faculty developed trust and experienced growth from their work together.

Pre-service Component Evaluation

* The "on-site" nature of the program provided opportunity for the novices to support one another. They shared problems and explored solutions together. As one novice stated in her final seminar reflection, "It [seminar] provided a 'safe' place to vent frustrations, to discuss problems, to appeal for ideas and help." They encouraged each other to take risks which they did. Over the course of the year they came to know one another well, and the trust they developed helped them see the value of collaborating with their colleagues: "It [seminar] presented an opportunity for us to ease into the realm of functioning as collaborative professionals," another novice reported. What slowed this work down was a lack of sufficient time together. Weekly seminar meetings were never long enough to give adequate time for the novices to share and problem solve thoroughly. Wanting more time and not having more time to give was a dichotomy felt by teachers and novices. One novice commented candidly: "I do wish we had a longer seminar time, but considering my hectic schedule this semester, I would have probably been complaining very loudly if it was longer."

The novices also observed the Van Buren teachers collaborating and they took part in the cooperative teaching and planning by being members of the teams. They brought their reflections on these experiences to seminar and openly discussed what they were learning. For one novice this sharing gave insight she was not viewing in her mentor teachers: "I am not part of a team that deems cooperative learning important, so the seminar helped me to discover the importance and value in using cooperative learning in the classroom."

* Incorporating teacher research as an axis for the novices' work in seminar gave them an opportunity to use their reflections toward a specific goal. Their research topics varied but in their final presentations the novices consistently described a process of learning not only about their own teaching but about teaching and learning in general. For instance, one novice focused her research on only one student. She observed him and talked to him at length, but she also explored the other parts of his world outside her classroom, like his parents and other teachers. Eventually she had a complete picture and could better understand his learning process. This close-up view not
only helped her in working with this one student but it also enlightened her understanding of the influences affecting everyone's learning.

Another novice was growing frustrated with student behavior in one class. As she investigated the other parts of the students' daily activity, she gained a new awareness of the effect of transitions on learning. This led her to consider, "As we restructure our educational system and do it in different ways and at different times the children we teach will always be making transitions similar to this tiny one they make every day during 5th period...They will be exposed to different models of integration and different levels of integration."

The teacher research process helped them develop their own ideas about how teaching and learning takes place: "This research inquiry answered many questions for me concerning my teaching style and educational philosophy. I now know that I am the type of teacher that wants to involve my students in what goes on in the classroom." For some, it led to further questioning as these two examples from novices' final teacher research reports demonstrate: "Would a classroom management structure which encourages cooperation and collaboration also teach responsibility?" or "Would increased computer time encourage them to begin experimenting more with content revision?"

The inquiry assignment gave them the freedom to experiment and try new ideas. It validated their efforts. "I was reinforced from this research that my hard work and planning was not in vain" as one novice explained. Only time will tell if this inquiry focus will affect their future teaching and learning.

* Although the full-year nature of the program was viewed as beneficial by the novices who completed it at Van Buren, the novices who left did so because they felt they needed a variety of experiences. There was a tension between whether to seek variety or continuity. Those who stayed with the program for the entire year spoke of the benefits of "experiencing the cycle of teaching and seeing the kids from start to finish." They became part of the school community.

* More Van Buren teachers voiced a desire to be involved in educating the novices, especially through the study groups which were not used second semester. The special education class team taught by Van Buren faculty and UNM faculty provided one opportunity for teachers to become teacher educators. The novices gained valuable insight from teachers actively teaching and the teachers benefited from a professional growth experience. This could be an important element in "building a collaborative culture."

* Having a clinical supervisor on-site provided novices and
Van Buren faculty daily support. Problems could be addressed immediately and stopped before they escalated. As was stated earlier, Ms. McCarty provided invaluable connections between the school and the university. There was regular communication between Ms. McCarty and Dr. Raisch as they planned the weekly seminar, guided the teacher research and observed in classrooms. Each learned from the other as well as informing their separate academic communities.

One problem Ms. McCarty described was that she was not always taken seriously. The school faculty had preconceived images of what a UNM professor is and does; therefore, she was not always perceived as the final answer. A dichotomy existed when the Van Buren faculty wanted her to give them answers and turned to her for support, yet they did not view her as the ultimate authority.

**Teacher Development Component Evaluation**

The strengths of the teacher development component continued to be the teacher research and the professional growth which came from working with the novices. The latter was less structured and the results are less defined. Since the study groups were dissolved, collaborative learning opportunities were less formal.

* The teacher research work remained voluntary. Those six teachers who continued to work with Michele Raisch did so on a weekly or bi-weekly basis. During the first semester, they defined their questions and began collecting data. This data led the discussions with Dr. Raisch and new sources were explored. Several teachers had the goal of publishing their findings as well as improving their teaching. A team of special education teachers wanted to determine the effects of their program and provide confirming data to support its continuation. Another teacher investigated how he could better work with his fellow teachers. Only one teacher started her research second semester; the others began first semester. Her involvement with Dr. Raisch developed after they began to share ideas from a UNM course they were both attending.

In each case, the teachers followed through to the stage of analysis. Some expressed a desire to work during the summer to complete their work by identifying conclusions. All have stated an interest in continuing their work during the next year.

Dr. Raisch was described as "support" and a "sounding board" by one of the teachers. This collaboration appeared to not only be for the sake of the research but also a means of validation. For several other teachers, sharing their data with someone else was important. It became a way to
make sense of it and discover ways to move from it to other data sources or strategies. Every teacher needed information on how to proceed with the research. Collaboration took the form of sharing expertise, Dr. Raisch with knowledge of research and the teachers with their classroom experiences.

* Support for the mentor teachers was increased this semester through the bi-weekly meetings with Dr. Zancanella. They talked about their experiences as they worked with the student teachers and discussed the project's design now and in the future. Through such discussion, they were given another avenue to impact the teaching profession. They were eager to share their thoughts, and they appeared pleased at being asked.

Scheduling times varied in an effort to accommodate everyone during either a planning period or when the novices were teaching. This remains a problem since it would be best to have everyone in attendance.

* The special education class has been mentioned before in this report. It crosses both components. It was professional development just as much as it was teacher education. These Van Buren teachers were in the role of teacher educators and gained this professional perspective.

Part III: FUTURE RECOMMENDATIONS

As this model is used to guide future ones, several issues should be considered:

1. The Van Buren faculty and students were enthusiastic about the university's presence on their campus. Communication was possible and the university was viewed as accessible just by mere visibility at the school. The potential for collaboration increases the more the university can open those channels of communication. Two recommendations made in the midpoint report should be considered.

* As a "student teaching center" more mentor teacher involvement could enhance the university/school communication. However, for visibility to remain and collaboration nurtured, a university professor should be directly involved on-site.

* The courses taught at Van Buren first semester dissolved and the elementary education novices had to travel to UNM two to three days a week after school. This was overwhelming for them and affected their learning. Therefore, exploring ways to consolidate
courses on-site would help lessen this burden. Plus this could be a possible way to gain university visibility.

2. Second semester, many faculty members expressed an interest in continuing the study groups or something similar, so they might be more involved with the novices. Both novices and experienced teachers could benefit from using regular sessions to explore the literature and discuss the relevance to the classroom. Both could receive course credit and a university professor could oversee the running of such sessions. On-site faculty could collaborate with the university faculty in much the same way the special education class was team-taught this past semester. Another possibility would be to include the mentor teachers as participant consultants in the student teaching seminar. This configuration would provide connections between theory and practice as well as give the novices opportunity to hear the experienced teachers "talk" to one another. With university guidance, it also could become an opportunity for the mentors to learn about teacher education. The key to any of these options is developing university/school collaboration so the on-site work is a team effort.

3. In addition to beginning teacher education, there is a need for professional growth opportunities. This can be embedded in the work mentors do with novices, but it can also be focused projects centered around the experienced teachers' interest. The teacher research component this year is only one example. Many teachers are not interested in more university credit but want to continue to explore their profession. On-site support for such projects could offer opportunities for teachers and university faculty to learn from the expertise of the other.

4. It all begins with a positive attitude. As pointed out in the midpoint report, middle school teaching has received bad publicity. A program designed to educate middle school teachers could help change that attitude. Middle school faculty input on the design of such a program would be invaluable. Here again, sharing our expertise has unlimited potential.
MAY AGENDA
AND
PORTFOLIO PRESENTATIONS

AGENDA FOR MAY:

May 3-7
You are excused from your regular teaching duties for one half of the school day. Michele and I prefer that you are out mornings, but understand that may not be best for everyone. I have notified your mentor teacher that you will be out of the classroom. Please confirm this information with your mentor and work out details together.

May 10-14
Everyone will present portfolio contents during this week. Sign up sheets will be posted so you can choose when you wish to present. If it is at all possible, please try to present on Tues., Wed., or Thurs. of this week. You will turn in your completed portfolio immediately after making your presentation. Everyone in seminar class is expected to attend ALL presentations. We learn as much from other people as we do from our own efforts. Also, your classmates need your support. Plan to keep your presentation between 10-15 minutes in length. If you need any AV equipment or other materials, see me and I'll help. When you are not presenting your project or listening to another presenter, you are to be in your regular teaching assignment.

May 17-28
Return to regular teaching routine. I will meet with each of you individually to return your portfolio.

PORTFOLIO REQUIREMENTS:

Journal Writing
a. Minimum of two entries per week for each week this semester.
b. One or two page reflection on your journal. What patterns emerge? What themes or overarching ideas are in your journal?

Assigned Readings
a. Write a short summary of each assigned work.
b. Include a short reflection on what you've read.

Lesson/Unit Plan (Complete)
a. If you taught this lesson: What would you do differently? What did you learn from this lesson? What would you keep or repeat? Why?
b. If you didn't teach this lesson: Describe the process you went through as you put this lesson together. Why did you choose these materials? This room arrangement? What other things did you think about as you prepared this lesson?
Class Notes
Think about the speakers, activities, ideas, and materials presented in class. After looking through your notes, write a one or two page reflection paper on the Seminar.

How was the Seminar helpful to you? How was it not helpful? What other information did you need? What would you add to this Seminar? What would you omit? Why?

Research Project
This is the heart of your portfolio. Be sure to:
   a. Describe the question
      1. What was it?
      2. Why did you choose it?
   b. How was data collected?
   c. How was data analyzed?
   d. What did you learn?
   e. What other questions did the research uncover?

Community Study
   a. Include the complete study.
   b. Tell, in a page or two, why this study benefits you as a teacher. Did the knowledge we gained from the community study change anything for you? What? Why? How?

Personal Reflection
In 3 to 5 pages, reflect on your growth as a professional teacher. How are you different from the beginning of this semester? From the beginning of the school year? Have your beliefs about teaching changed? How? Where are your strengths and talents as a teacher? What do you wish you knew how to do better?

The weekly growth plans written by you and your mentor may be of use as you write this paper. Also, you may wish to consult portfolio work from pre-student teaching first semester.

Two Items of Your Choice
May include: student work, a second unit plan, a system for organizing a gradebook, posters or a bulletin board you've created, a discipline policy you've found effective, puzzles, games, books, etc., based on a theme, a video tape, and so on. This is your chance to express who you are.

From May 3-7, Room 312 will be open from 8:00 to 12:00 each morning for you. You may work alone or in a group. Michele and I will be available by appointment.
10 February 1993

TO: Experimental Schools Faculty (Marlis Mann, Mary Patton, Don Kelly, Don Zancanella, Keith Auger, Ann Nihlen, Michelle Raisch)
Peggy Blackwell, Dean, COE, Division Directors, COE Associate Deans for Research, Curriculum, Students.

FROM: Richard van Dongen, Associate Dean, Division C

These reports are valuable in documenting the work of Experimental Schools.

Perhaps these can be direction giving for the other schools to complete reports. Also any feedback to the Associate Dean for Curriculum and the Dean will be useful in our future planning. Please let me know how I can assist. Thanks.
<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Details</th>
<th>Activities/Research</th>
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<tr>
<td>Fall 1990</td>
<td>Pre-Service (A. Montoya/Roosevelt)</td>
<td>Statewide Training/Participation Statewide Training Task Force member (Mann) CIMTE 593 Restructuring Schools K–12 Re:Learning Cadre (Mann &amp; Kline)</td>
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<td>Summer 1991</td>
<td>1 Day discussion with group of teachers who wanted to explore the essential logical operations in their classrooms</td>
<td>Research Coded and Analyzed 1988–89, 1989–90 teacher surveys (400ss)</td>
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<td>Fall 1991</td>
<td>CIMTE 595 Advanced Field Experience (3)</td>
<td>Coded and Analyzed 4500 student surveys (107 items for 1988–89 and 1989–90)</td>
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<td>Spring 1992</td>
<td>CIMTE 400 Student Teaching – 8 students</td>
<td>Whose in control of teaching and learning?</td>
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<td>CIMTE 598 Directed Readings in Elementary Education (3)</td>
<td>Student locus of control</td>
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<td>Re:Learning Cadre (Mann &amp; Kline)</td>
<td>Student interns essential questions</td>
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<td>Amount of teacher vs. student control in the classroom</td>
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<td>Summer 1992</td>
<td>3 workshops at summer Elem Re:Learning Institute &quot;Essential Logical Operations&quot;</td>
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<td>Fall 1992</td>
<td>CIMTE 400 Student Teaching (15hrs) 12 students</td>
<td>Student interns essential questions</td>
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<td>CIMTE 593 T/Developing Int. Curriculum K–8 (3)</td>
<td>Student locus of control</td>
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<td>CIMTE 694 Practicum of Instruction (3)</td>
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<td>CIMTE 513 Process of Teaching &amp; Learning (3)</td>
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<td>Fall 1993</td>
<td>CIMTE 400 Student Teaching (12) 12 students</td>
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Prepared by Martha Mann
MEMO

To: Richard van Dongen
From: Don Zancanella
Date: January 22, 1993
Subject: Van Buren program report

Here's a report I've written on the Van Buren work. It's not very well-written because I did it in two sittings, just sort of dumping my thoughts out, but it may suggest some issues for further discussion.
The Van Buren Professional Development School
Teacher Education Project

Midpoint Report

January, 1993
The following is a report on the first semester (Fall 1992) of the experimental Professional Development School teacher education/teacher development program at Van Buren Middle School. The purpose of this report is to describe the program as it developed over time, to evaluate the program, and to make projections about the future of the program and others like it.

PART I: PROGRAM DESIGN

The Inception of the Program: Spring 1992

Throughout 1991-92, the faculty and administration at Van Buren Middle School met with University of New Mexico College of Education Faculty to discuss what form the Professional Development School collaboration might take. During those discussions, two possibilities for collaboration were endorsed: (1) locating some form of teacher education program on-site at Van Buren; and (2) locating an array of teacher development opportunities at the school. The Van Buren faculty indicated a number of needs and interests such as work in the areas of writing-across-the-curriculum and teacher research. In April UNM professors Don Zancanella and Lyn Oshima proposed a year-long collaborative experiment which included the following elements:

* A collaborative, on-site pre-service teacher education program which would bring twelve UNM students to Van Buren for their last year of teacher education course work including methods courses and field experience. Six students were to come from elementary education and six from the secondary education areas of language arts and social studies.

* Support for Van Buren faculty in the areas of teacher-research and writing-across-the-curriculum.

Staff for the program, selected during the summer of 1992, included the Zancanella, Oshima, Professor David Nateman (UNM Art Education), Michele Raisch (UNM graduate assistant), Sherry McCarty (Van Buren MS faculty), and Judy Gibbon (Rio Grande Writing Project teacher-consultant and Eisenhower MS assistant principal).

The Pre-service Teacher Education Program

The pre-service program was designed to bring approximately 15 credit hours of coursework to the Van Buren site. For the elementary education students, this included the courses which make up the on-campus "junior block": reading, language arts, and social studies methods, children's literature, and field experience. For the secondary students this included their subject area methods course (either social studies or language arts),
reading in the content areas, pre-student teaching (with an expanded field experience component), and writing-across-the-curriculum. Both groups also enrolled in an arts integration course. The pre-service program included a number of innovations worth noting:

* It was entirely on-site. The program was given a room at Van Buren and all courses were conducted there. Students moved directly from work in VB classrooms with middle school students to their university courses and back again.

* Elementary and secondary students were mixed. Because New Mexico teaching licensure has an "overlap" at the middle school level, both elementary and secondary licensees are eligible to teach at the middle school level. The program attempted to combine elements of both elementary and secondary programs to create a program which would focus on the middle level but also prepare students to teach across the grades of their chosen licensure (k-8 for elementary and 6-12 for secondary).

* Content integration. Partly because Van Buren is attempting to move toward a more integrated curriculum, an attempt was made to integrate the teacher education curriculum so that the various methods courses and field experiences did not appear as separate entities. Four themes which provided the core for this integration were (1) the characteristics and needs of middle level children; (2) biography--the life stories of teachers and students; (3) literacy; and (4) the arts. Another way the program was integrated was through the field experience. In many respects, the novices' work in Van Buren classroom provided the center around which the methods coursework revolved. (The term "novice" will be used from this point on to describe the UNM students at Van Buren.)

* University/school collaboration. Sherry McCarty, the VB faculty member who was released half-time to work with the program participated as part of the teaching/supervisory team so that there was continual interchange between UNM perceptions, approaches, needs, and traditions and VB perceptions, approaches, needs, and traditions.

* Flexible scheduling. Because one of the goals was to create a program characterized by interaction between theory and practice, between novices' experiences with university faculty and their experiences with VB teachers and children, regular daily and weekly scheduling of the methods courses was replaced by a schedule which included
daily methods sessions for approximately six weeks early in the semester; a subsequent block of six weeks during which students were immersed in VB classroom life, with formal methods instruction provided through study groups and one-on-one coaching from university faculty and Sherry McCarty; and a concluding two week session involving reflection on the semester's experience and preparation of oral and written portfolios which documented novice growth during the program.

* Study groups taught by site-school faculty. In addition to the integrated block of courses taught by the staff team, each novice was a member of two study groups. These study groups, led by Van Buren teachers, were meant to provide focused work in areas chosen by the novices, including emergent literacy, literature for adolescents, and social studies in the secondary school. While an initial set of readings was provided by the UNM faculty, each study group was largely autonomous and independent.

* Field placement with mentors and teams. The Van Buren faculty is organized in six cross-disciplinary teams, so two novices were placed on each team. Although a specific mentor was named to monitor and support each novice's field experience, they were assigned to the team with the expectation that they would work with multiple teachers in the team and would be viewed not as the responsibility of a single teacher but of the entire team.

* School-wide induction. During the first two weeks of the semester, the novices spent approximately four hours per day in the school, away from the methods classroom, rotating to a new setting every two days. For example, one novice spent the first two half-days with an ESL teacher, the next two with a sixth grade science teacher, the next two with a Chapter One teacher, and so on. Thus, by the end of the second week, the novices had been exposed to a broad cross-section of the school community.

* Portfolio evaluation. Novices were evaluated for the entire block of courses through portfolios which were holistically graded by the teaching team. The portfolios were judged by Don Zancanella and Sherry McCarty. See Appendix A for the detailed description of the portfolios.
The Teacher Development Component

The teacher development component of the collaboration included three elements:

1. Support for teacher-research

Michele Raisch, a UNM graduate student who was concluding her dissertation which focused on teacher-research, worked with VB teachers who wished to explore teacher-research. This was done on an as-requested basis.

2. Writing-across-the-curriculum workshops

Coordinated by Rio Grande Writing Project teacher-consultant Judy Gibbon, the workshops included presentations by RGWP teachers (teachers who have been recognized as outstanding teachers of writing in a variety of grades and subject areas) and opportunities for participants to write and share their writing. The eight workshops were open to all VB teachers.

3. Mentoring and study groups

Van Buren teachers served as mentors for the novices both formally and informally. This included the traditional work performed by "cooperating teachers"-- working directly with novices to shape their classroom performance. However, because the novices were placed on teams, it also included numerous opportunities for informal mentoring. In addition, as previously mentioned, Van Buren teachers led the focused study groups. These activities, which cast Van Buren teachers in the role of teacher educators, were viewed as part of the array of teacher development opportunities.

These opportunities were innovations upon the traditional university/schools teacher development relationships in the following respects:

* They were not structured as classes, but rather as opportunities and experiences. Only the writing workshops were scheduled as regular weekly sessions in a somewhat class-like format. Some teachers earned credit through "problems" courses for their work in these experiences, but most chose not to pursue university credit.

* The "menu" of experiences was a response to the stated needs of teachers. Both the teacher-research program and the writing workshops grew out of requests made by VB teachers during the UNM/VB discussions held in the spring of 1992.
The teacher development opportunities and the pre-service program were viewed as symbiotic, mutually supportive enterprises. For example, the study groups allowed teachers to bring themselves up-to-date on the literature in a given field, while at the same time helping novices place that literature in the context of classroom practice. Similarly, some of the teachers engaging in teacher-research involved novices in their work so that the novices could begin to see the advantages to be gained by taking an "inquiry stance" toward one's teaching.

PART II: EVALUATION

To the extent that this program was viewed as an experiment which would teach us much about the design and conduct of collaborative, university/school teacher education/teacher development it was an unqualified success. However, as expected, there are both many aspects of the program that should remain in place as well as many that must be revised. In general, work needs to continue across a broad area which can be termed "the building of a collaborative culture." This involves, among other things, habits of communication, shared responsibility and ownership, and the building of structures which enable collaboration. An additional lengthy report might be written on these issues but a few specific remarks may be enough for now:

Communication

To some extent, the communication necessary for a project such as this must link the entire UNM College of Education (or even the entire University) and the entire Van Buren school community (including parents and even the rest of APS). It was not unusual during this project for us to encounter a teacher on the VB staff or a UNM faculty member saying "I didn't know anything about this program/opportunity/meeting/problem." Although we first thought such encounters stemmed from insufficient memos or meetings, we realized later that, to a large extent, the problem is that new programs such as this lack a context into which those not directly involved with the program can place them. There is no mental or physical "file folder" into which information on the program is placed. We expect that improvement of communication will occur through diligence on the part of the program staff but also through simple longevity. This semester, for example, most VB staff know what "novices" are and will not have to re-learn that concept. Similarly, most College of Education faculty know that some sort of teacher education program is going on at Van Buren Middle School.
**Shared ownership**

Despite the origin of this program in joint VB/UNM discussions, in some respects it continues to be perceived as "UNM bringing its teacher ed. program to Van Buren" instead of the co-creation of a new, collaborative teacher education/teacher development program. This is partly because university faculty did not draw on VB faculty (other than the one released person, Sherry McCarty) enough in the design and administration of the program, partly because it took time (most of the semester) for both the VB and UNM faculty to move beyond the traditions of the old "student teaching" relationship, but mostly because of a lack of time to collaborate. In general, we feel that shared ownership and significant collaboration will increase slowly, over months or even years, but that substantial blocks of time—in the summer perhaps—would allow for much more rapid progress.

**Collaborative structures**

If there is an area in which little progress has been made, it is in re-casting old university/school structures so that collaboration is less difficult. We are still at the stage where the university does teacher education, asking VB staff, more or less as a "favor" to help, and VB staff see most of what they do in conjunction with the university as an "add-on" which is not integrally related to their teaching responsibilities. For university faculty, a critical problem is that the reward structure and teaching load expectations tend to discourage on-site work. The lack of structures which encourage collaboration becomes evident when one reflects on the fact that if one or two key participants were to lose interest in the programs begun this semester, they would probably disappear. A critical question is how does university/school collaboration become institutionalized enough so that it may grow and endure.

**VB Faculty Coordinator**

Whatever successes in communication, shared ownership, and collaboration which did occur are largely attributable to VB faculty member Sherry McCarty's participation in the program. She provided extensive information about the Van Buren school community, helped the UNM faculty negotiate among competing interests in the school, and contributed valuable teaching expertise. One possible improvement to the VB faculty member's involvement would be the identification of the school faculty partner(s) in May and funding of summer planning time so that collaborative program development could take place during the summer.
Pre-service Component Evaluation

The most important evaluative criterion for this pre-service program will be the success the twelve novices' as teachers in the early years of their careers. However, there are aspects of the program about which we can raise questions and make judgements, even at this early stage.

* The placing of the program on-site increased the students' opportunities for significant experiences with children, teachers, and other professionals but also increased the traditional tension in teacher education between theory and practice. Students spent many more hours in classrooms with children than in the traditional pre-student teaching or junior block programs (two or three times the amount). They also spent a somewhat smaller amount of time studying teaching and schooling in ways other than their classroom apprenticeships (reading, reflecting, analyzing, etc.) than is typical in the on-campus programs. Placing a program on-site creates a strong pull toward the apprenticeship model of teacher education. What isn't clear is whether or not the apprenticeship model is the best model for teacher education, or, whether there are ways to shape on-site programs so that students aren't so strongly pulled toward the apprentice model. (The most frequent criticism of the apprentice model is that it preserves the status quo--teaching knowledge is handed down from one generation to another with no clear avenue through which new knowledge can enter the system.)

However, in addition to increasing the traditional tension between university coursework and field experience, the Van Buren program also offered some insight into how we might move beyond this dichotomy. Although there was a pull toward the apprentice model, toward valuing novices' time with children over time for reflection and analysis, some of the most powerful parts of the program appeared to be the contact with school personnel the novices had outside the classroom, especially in the study groups and team meetings. Each novice spent two-three hours per week in the small group settings provided by study groups and team meetings. Consequently, they had far more opportunity than is typical to see teacher planning and problem-solving in action, to ask questions and share concerns.

It is also important to note the cost- and labor-intensive nature of the program. Student:teacher ratio was 12:1--substantially lower than in on-campus pre-service courses. Furthermore, the UNM faculty involved found that working on-site dramatically increased the time they spent on the courses. The primary reason for
this is because the program attempted to fully coordinate the various aspects of the student work and experience—all courses and field experiences—and such coordination takes a great deal of meeting time. Some of the extra time involved is also attributable to the fact that this was a new, experimental program with little existing foundation from which to build.

The mixing of elementary and secondary education students creates few programmatic difficulties, but students fear they are not being well-trained for the far ends of the grade range of their licensure (K-2 for the elementary ed. students; upper high school for the secondary ed. students). While we entered the program with some uneasiness about the mixing of elementary and secondary students, they proved to be quite compatible. True to stereotype, the elementary novices were more willing to move across content areas and tended to be interested in the developmental needs of children, while the secondary students tended to have a passion for their subject that rubbed off on the elementary novices. They appeared equally successful in their field experiences and the program staff sometimes forgot which licensure program a particular novice was in. However, the elementary novices expressed the fear that they were not learning enough about early literacy and the secondary students expressed a like fear that they were not learning enough about teaching English or social studies in the high school. (This despite the fact that study groups were created for these areas.) Indeed, all four of the students who chose to leave Van Buren this semester might be viewed as casualties of this fear. They did not feel they would be sufficiently "well-rounded" and employable if they spent their entire year in a middle school.

The attempt to integrate the traditional university course work was one of the most difficult but also one of the most rewarding aspects of the Van Buren work. How, for example, does one teach social studies methods and reading in the content areas simultaneously? Our solution was to take as our overall themes—"literacy(s)," for example—and to try to model language-rich instruction in whatever we did. We see real possibility for integration, but real challenges as well. One regret about this semester is that the UNM faculty did not draw upon the expertise of the VB faculty in integration as well as they might have. For example, in retrospect it is possible to see how the thematic approach being used by the VB 6B team might have served as model for the university course integration.
The school-wide induction provided the novices with important insights into schools as institutions, the teaching profession, and the characteristics of adolescents. We suspect that these novices may view schools and teaching as more complex than students at comparable stages in junior block or pre-student teaching do.

The portfolio evaluation conducted at the end of the semester was a first step toward revising the evaluation of novices so that evaluation becomes a thoughtful dialogue among (at least) the novice, the school mentor, and university faculty rather than a mechanical checking off of rudimentary competencies. We found the portfolios impressive and left with a thorough sense of not only the novice's teaching competence but also of his or her ability to reflect and analyze teaching and schools and of his or her attitudes toward the profession.

**Teacher Development Component Evaluation**

At this point we would argue that the two most powerful parts of the teacher development component have been the teacher-research work led by Michele Raisch and the teacher development that occurred through VB teachers working with UNM novices. The writing workshops were less successful.

The teacher research work was voluntary and took a somewhat different shape for each teacher involved. Because the concept of classroom-based inquiry was new to most, some teachers (approximately five) met informally with Ms. Raisch a few times over the semester, learning what teacher research involves and how they might begin to do it themselves. Others became more deeply involved, beginning research projects that extended through the semester and meeting extensively with Ms. Raisch. These included one teacher who focused on cooperative learning in the math classroom, a group of special education teachers who focused on the effect of working at the VA Hospital on their students, and one teacher/novice pair who focused on student conceptions of their own reading strategies. A total of seven teachers were involved in actual research. Although this is a small percentage of the total VB faculty, we would argue that this is a case in which the involvement of a small number of teachers in an experience of real substance is preferable to the involvement of large number of teachers in a more superficial experience.

Proponents of the Professional Development School concept have argued that much of its potential for success hinges
on transforming perspectives on teacher development so that working with novice teachers is viewed as a highly significant development opportunity. This appeared to be a present in the VB project. Most teachers who served as mentors or led study groups saw their work as an opportunity to refine and reflect upon their own practice. What was largely missing, however, was support for this growth. The university faculty concentrated their efforts on the novices, realizing only near the end of the semester that support for the mentors and other teachers working with the novices would have significantly improved the program. The important teacher/novice conversations outside the classroom described earlier could have become both more frequent and even more of a factor in the novices' growth.

* Only five VB teachers participated in the writing workshops. Although we felt they were well-publicized, our conclusion was that, given the busy schedule most VB teachers have, few were willing to commit to the ten sessions required by the workshop series. This might be corrected in the future by doing more surveying of the teachers about their needs and interests before the series is scheduled.

Second Semester

The second semester of the program is more conventional than the first, with the novices moving into full-day field experiences which parallel the on-campus student teaching semester. Innovative aspects of the program include the following:

* The group of nine novices (four left the program and we added two) remains as a cohort in the school. We hope that having a large group at one site provides more peer support than is typically part of student teaching. The novices will meet together on a weekly basis.

* Supervision is being done by VB teacher Sherry McCarty and UNM staff member Michele Raisch. We hope that the involvement of a school faculty member (other than the mentor) in supervision will increase the overall quality of the program.

* The mentor teachers will meet together on a bi-weekly basis. We view this as an opportunity to bring VB teachers more fully into the program and also as an opportunity for the mentors to discuss how best to support the novices.

* We intend to continue the experimentation with portfolio evaluation this semester.
Future Directions

At this point, we recommend that the following three issues be considered carefully as we look to the future of the Van Buren program and others like it:

1. Of the three UNM faculty, two were junior faculty nearing tenure decisions and the third had just moved into a new administrative position. All three felt that the time necessary for on-site programs such as this one makes long term operation problematic. We tried to decrease the oft-cited tension between the demands for teaching and research production by including a research component, but the more severe tension proved to be between maintaining on-campus programs and working in the Van Buren program. Possibilities for the future include the following:

* Viewing the PDS pre-service component primarily as "student teaching centers." The clustering of student teachers at a single site, the empowering of mentor teachers to help shape the program, etc., all worked well at LBJ Middle School this semester. The same could be done at VB. This would mean that a "full menu" of courses would not have to be offered on-site.

* Consolidating on-site course work. This semester, on-site programs were being offered at Los Lunas MS, Van Buren, and Emerson Elementary. It may that the courses being taught by UNM faculty could be consolidated. Emerson students might have come to VB for work in social studies, for example, while Van Buren students might have gone to Emerson for children's literature. Work in middle school curriculum might have alternated between Los Lunas and Van Buren. This would increase the teacher:student ratio without losing the benefits of on-site course work.

2. School faculty should become a more prominent part of the program. They should continue in their mentor/cooperating teacher role, but programs should also include support and development opportunities for the teachers so that they may become more expert at teaching teachers. Site-based programs should also include frequent, regular opportunities for novices to meet with school faculty beyond the traditional cooperating teacher/student teacher situation. The study groups and team meetings, as mentioned previously, were a pleasant
The Policy/Development/Leadership Collaborative (PDL) was conceived during the College-wide restructuring process in the spring of 1992. Architects of that process noted that (a) there was some state-level interest in focusing College resources on policy issues in education, and (b) several faculty members in the College were active in the policy realm, but were scattered among several Departments and did not have any forum for exploring matters of mutual interest. The Collaborative was to provide such a forum. The forum was established in April, 1992, but its membership, mode of operation, and agenda were left undefined. The following report, based on the available record of PDL meetings (5 in the waning weeks of 1991-92, and 18 during 1992-93), and on brief statements prepared by members of the Collaborative, summarizes its progress in identifying membership, establishing a mode of operation, and building an agenda.

Membership

Inquiries and conversations in the late spring and early fall of 1992 identified more than a dozen College faculty members interested in "policy." For some, the policymaking process was the focal point. Others were interested in specific policy domains, including child and family policy, higher education, technology, health, mental retardation, school improvement, teacher education, and measurement. Both groups were invited to PDL meetings, and remained on the mailing list.

Interest is one thing; membership is another. There is a considerable body of social research on "membership." Where membership is voluntary, as in PDL, interest is weighed against other considerations. Lack of time, worries about charges of "disloyalty" leveled by colleagues, and the availability of other professional opportunities inhibited active membership by some faculty who originally expressed interest. Logistics also were a problem; schedule conflicts, regular and episodic, limited participation. For some, the agenda did not develop in ways that tapped their interests.

Against these difficulties, benefits also accrued. According to the individuals who became "regulars" of the PDL Collaborative, the primary benefit was the stimulation gained from idea-sharing among diverse colleagues. By the end of the year, half a dozen faculty members were attending meetings on a regular basis.
Mode of Operation

Without much consideration of other strategies, the PDL Collaborative designated one of its members to serve as convener, minute-maker, and moderator. Meetings were scheduled on a bi-weekly basis. At one point a subcommittee format was employed; however scheduling difficulties limited success. Members occasionally expressed the need for longer retreat-like formats which would permit in-depth analyses and closer personal relationships; however no such meeting was scheduled. At times there were calls for engaging a facilitation expert to foster group-forming norms; here too there was no follow-up.

Agenda Formation

In finding an agenda, the Collaborative at first mirrored the "ready-fire-aim" strategy embedded in the larger College restructuring process. In the fall semester, several types of activities were tried. One involved an incubator approach: ideas for College programming in "assistive technology" and "middle school teacher preparation" were brought to the Collaborative for its "endorsement." Once the ideas were described, discussed, and endorsed however, their proponents vanished -- presumably to engage in the task of translating an idea into a real program. A second activity, driven by administrative demands, required attention to organizational maintenance chores, particularly in the budgeting, hiring, and scheduling domains. It is possible that these chores inhibited the group's capacity to develop its own ideas. A third activity was an attempt at policy analysis, invited by an external group (the Commission on Higher Education.) Closure was not attained, perhaps because the time-line for response was too short relative to the Collaborative's meeting schedule. A fourth activity, undertaken sporadically, involved group formation efforts, i.e. getting acquainted with each other as faculty members. Widely-spaced meetings, the short duration of meetings, and constantly-shifting membership thwarted progress in this area. Still another activity, periodically apparent, was scanning: was there some "they" out there, with an agenda which the group might discern, or who might inhibit achievement of the group's own agenda, if it had one? Cutting across these approaches was a continuing issue of focus: was the Collaborative's focus to be on policy per se, or on a broader conceptualization embracing "development" and "leadership" themes?

By late fall an external event -- the resignation of the Provost and the concomitant threat to the College's continuing restructuring process -- had heightened pressure for the production of some kind of "result." The Collaborative reduced attention to the preceding agendas and began considering creation of some sort of policy-oriented doctoral program or concentration. However reality considerations soon forced a
narrowing of this agenda, ultimately to the point of focusing on a new interdisciplinary doctoral seminar to be taught jointly by several members of the PDL Initiative. During the spring, the Collaborative developed a seminar structure and outlined content. A case study approach was adopted. The seminar format was to provide for both a common experience and sub-group work in specialized areas. Both "policy" and "implementation" were to be addressed. The seminar will be offered in the fall, 1993. (See Appendix for preliminary Seminar schedule.)

Unfortunately, bureaucracy has threatened the Seminar’s prospects. Catalog publication deadlines and fall scheduling deadlines arrived and passed weeks before the Seminar could be described. The College’s "EDUC" course prefix was no longer available; thus a cross-listing process was necessitated. This cumbersome process could not be completed in a timely fashion, with the result that many faculty members and potential students did not become aware of the seminar. When the fall schedule finally appeared, the requested time for offering the Seminar had been inexplicably changed. When the correction was made, the registration system listed the Seminar as "cancelled" rather than "rescheduled." Under the circumstances, enrollment is likely to be low.

Although the bulk of the Collaborative’s spring effort was devoted to the design of the foregoing seminar, some long-range planning did occur. Specifically, the Collaborative agreed to (a) meet for an extended period in August, and (b) consider a joint exercise in policy analysis, taking the College’s own policies as the object of analysis.

In 1993-94 the Collaborative may decide to give more attention to logistics and group development issues. In addition it may be desirable to consider basic function questions: Is the Collaborative an intellectual forum, aimed at advancing the quality of faculty and student work in the policy arena? Is it to be a program development unit designed to improve the College’s teaching and service capabilities in the policy area? Should the Collaborative be self-contained, or should it reach out to other policy-related units at UNM? Should it seek resources inside the College? outside? Clarification of these issues may result in evolution of the Collaborative’s membership, mode of operations, and agenda in the year ahead.

--David Colton, Convener
Appendix

Interdisciplinary Seminar: Educational Policy I
EdAd 593; EdFdns 593; FS 593; HE 593
Fall Semester 1993
Wednesdays, 4:00-6:45 p.m.

Tentative Schedule

The Seminar will be team-taught by members of the College faculty. Students will participate in the core sessions, and in sub-sections aligned with their field of study. Readings will be assigned by each faculty member.

08/25 Introduction. (Jan Gamradt and David Colton)

09/01 & Top-down v Bottom-up: California's Frameworks and New Mexico's FAME Project. (Carolyn Wood)
09/08

09/15 & Child and Family Policy in New Mexico. (Polly Turner)
09/22

09/29 & University-based Leadership Development Initiatives: The Danforth Program. (Mike Milstein)
10/06

10/13 & The Research Basis of Public Health Policy. (William Kane)
10/20

10/27 & A New Definition of Mental Retardation: Effects on Programs, Policies, Politics, and Judicial Decision-Making. (Ruth Luckasson)
11/03

11/10 "Systemic" Change: Is it Possible? The Case of the National Science Foundation's Math/Science Initiative. (David Colton)
11/17

12/01 & (1) Student case reports. (2) Toward Synthesis.
12/08 & (Staff and Students)
12/15
The Bureau of Educational Planning and Development (BOEPAD), funded by the College, the Provost, and external grants, fosters school improvement initiatives throughout New Mexico. BOEPAD's work supports Goals 1 and 3 in the College's Plan of Action:

**Goal #1:** To develop, study, practice and disseminate innovative approaches to learning and teaching.

**Goal #3:** To enlist and support the ability of constituents to be interactive partners in the process of learning and teaching and to address the needs of at-risk students.

In 1992-93, BOEPAD concentrated on school-based professional development initiatives in two of the five "Areas of Priority" in the College's Plan of Action: (a) mathematics and science education, and (b) leadership and policy. The first of these coincides with national and state goals. The second emphasizes the University's special role in New Mexico education. Both are relevant to growing national interest in university engagement in school improvement.

**Programs**

**Leadership Development Academy**

Since 1989 the Rockefeller Foundation has awarded more than $1 million to BOEPAD to design, operate and evaluate an "Academy Model" of school leadership development suitable for use in schools with high proportions of at-risk youth. Pilot Academies
were offered in 1990-91, 1991-92, and 1992-93. The 1992-93 Academy served seven school-based development teams located in Taos, Albuquerque, and Silver City. Each team included several teachers and an administrator. Team-building activities, change-agent skills, and vision-building were emphasized during the three-week summer residential portion of the Academy. During the ensuing academic year, BOEPAD staff provided on-site technical assistance to the Academy teams. Distinctive features of the 1992-93 Academy included reduction of the summer program from four weeks to three weeks, intensified post-summer monitoring and technical assistance, and inclusion of both elementary and middle schools in the same Academy.

During 1992-93 there was major national dissemination of BOEPAD's work in developing the Academy model. A book (Maeroff, 1993a); articles in *Phi Delta Kappan* (Maeroff, 1993b), *The School Administrator* (Maeroff, 1993c), and *The Journal of Staff Development* (Smith et al, 1993), and BOEPAD's own reports on Academy operations and effects (Nordhaus, 1992, 1993) provided the education profession with multiple perspectives on the Academy approach to staff development.

**Leadership Cadre**

There is increasing recognition that teachers can and should be teachers of teachers. Their credibility with their peers, and their familiarity with local conditions, normally is greater than that of university-based or commercial trainers, while their costs are lower. However, teachers normally have only limited adult training and facilitation skills. A supplemental
grant from the Rockefeller Foundation permitted BOEPAD to select twelve participants from the 1990-91 and 1991-92 Academies, work with them in a week-long summer training workshop in August 1992, and then provide organizational and technical support for "Cadre" members to lead inservice programs throughout the state during the academic year. A year-end evaluation report (Mitchell, 1993) reported considerable success.

**Systemic Initiative in Mathematics and Science Education**

In 1991 BOEPAD was heavily involved in the design of a statewide "systemic" initiative in mathematics and science education. That effort, led by the Governor’s Office, bore fruit in mid-1992 when the National Science Foundation announced an award of $10 million for New Mexico’s five-year plan of action. First-year matching funds were provided by the legislature ($300,000) and the Commission on Higher Education ($350,000). The University serves as fiscal agent for the NSF and legislative funds. BOEPAD, in concert with Re:Learning and the Sandia National Laboratories, manages the initiative, dubbed "SIMSE" (Systemic Initiative in Mathematics and Science Education).

The core of SIMSE is initiation of school-based professional enhancement programs (in math and science) in 450 of the state's schools during a five-year period. Leadership development and policy change are critical concomitants of this process, and are encompassed in SIMSE’s plan of action.

By June, 1993, staffing of the central and regional offices of SIMSE was largely complete. Ninety elementary and middle
schools had been selected for participation. Twenty-two week-long summer institutes had been launched. Fiscal management systems were in operation. An evaluation sub-contract was approved. A governance structure was established. Negotiations for second-year state and federal funding were under way.

**Middle School Reform**

In collaboration with the State Department of Education and the College’s Division C, BOEPAD provided management support for the implementation of the second year of the Carnegie-funded Middle Grade State School Policy Initiative. The goal for 1992-93 was to help schools throughout the state design middle schools based on concepts outlined in the Carnegie “Turning Points” report. Activities included four regional forums (Gallup, Roswell, Taos, and Las Cruces) for middle school educators from 86 of the state’s 88 districts. Follow-up visits and training were provided by Project staff.

BOEPAD assisted with the writing of a continuation grant for the years 1993-95. A favorable decision was announced in May. The administration of the new award, which emphasizes health-related matters, will move, appropriately, to Division C.

**Evaluation: Sandia National Laboratories Education Outreach**

BOEPAD’s 1991-92 contract for evaluation of three of the Labs’ Education Outreach programs was completed in August (Nelson, et al, 1992). A new contract for 1992-93 provided for evaluation of two programs and for technical assistance to the Labs’ overall evaluation of its education outreach program. Several work products, including a comprehensive framework for
managing the evaluation of all of the Labs' educational outreach programs, were created and provided to SNL during the year. Throughout, BOEPAD's role has been to help the Lab -- potentially a major partner in the improvement of math and science education both in schools and at the University -- to acquire useful feedback about the effectiveness of its initiatives in education.

**Tomorrow's Schools of Education**

The College is a charter member of the Holmes Group, which provides policy and program leadership to research universities in the field of teacher education. Unfortunately, plans for participating in the Holmes Group's "state case studies" (of schools of education) had to be shelved when it became apparent that the national group's research plan was not aligned with the UNM College of Education's plans. Instead, an area of particular interest to the College -- multiculturalism -- was pursued with internal funds. In cooperation with the Faculty Policy Committee, two graduate students affiliated with BOEPAD initiated a study utilizing Bailey Jackson's conception of "multicultural organizations." A report is forthcoming.

Discussion of the College's work on multicultural organizations has spread to two national forums: the Holmes Group Equity Panel, and the American Association of Colleges for Teacher Education.

**Collaborations**

BOEPAD uses some of its resources to support development and policy initiatives sponsored by other agencies. In 1992-93
these included the Governor’s Youth Summit; the House Memorial 63 Task Force (coordination of systemic change initiatives); the Senate Memorial 5 Task Force (teacher professional development); the APS Human Resources Collaborative (interagency collaboration pilot project); the APS Professional Standards Council (post-licensure standards for employment and assignment); and the New Mexico Council for Vocational Education.

Prospects

The College of Education’s Plan of Action challenges the traditional "Ed School" paradigm’s narrow emphasis on initial teacher preparation, discipline-based research, campus-based inservice training, and institutional autonomy. The College’s Plan stresses site-based school improvement programs, problem-based research and development, continuous professional growth programs, and collaboration with schools, communities, families, government, business, and the teaching profession. These activities are not viewed as second-priority "service;" they are fundamental to a professional school’s mission.

BOEPAD concentrates its work on these emerging themes. It attempts to do so on a state-wide basis, transcending the "University of Albuquerque" image frequently ascribed to UNM. Thus BOEPAD is in some ways an organizational anomaly at UNM. BOEPAD is not a research center, not a continuing education unit, not a service center, and not a contract shop -- functions which have well-established routines at the University. Its success is not measured by numbers of patents or publications,
grant and contract awards, or size. Instead, BOEPAD seeks to stimulate and create, in concert with others, programs and knowledge which are used for school improvement. The measure of BOEPAD's success is the adaptation and institutionalization of its work by schools and other educational organizations, particularly in New Mexico.

By that standard, BOEPAD can point to some successes. New Mexico's math/science systemic initiative, for example, was designed in part by BOEPAD, and embeds BOEPAD's Rockefeller-funded work. A 1993 grant from USWest to the College's Multicultural Education Center was stimulated in part by the SIMSE project. The College's award from AACTE for interagency preprofessional training has roots in BOEPAD's earlier work supporting the establishment of Professional Development Schools. The State Board of Education's adoption of an "employability model" for vocational education can be traced, in part, to a 1991 study completed by BOEPAD. Influences from other BOEPAD initiatives are found in state and local "human service" collaboratives sponsored by APS and the Children, Youth, and Families Department in Santa Fe. The Carnegie Middle School project, which BOEPAD inherited from the state education agency, has been refounded and will be relocated in the College's Division C. The Rockefeller Foundation is reorienting its national agenda in education, based in part on BOEPAD's work with Academy and Cadre approaches to professional development. Sandia National Labs is developing an evaluation management plan based, in part, on BOEPAD's work with the Labs'
education outreach programs.

Such a list should not be viewed as a brag sheet. In each case, in fact, BOEPAD’s influence depended on initiative and effort by other entities which should take and receive credit. The point to be made is that BOEPAD seeks to transcend traditional indicators of success: articles published, credit hours generated, dollars received. Learning is the measure of a teacher’s success, but cannot be achieved without active and willing student engagement; in the same sense impact is the measure of BOEPAD’s success, but it cannot be achieved without active and willing partner participation.

Universities, and particularly Colleges of Education, find themselves in an unfortunate position in which credit-taking, rather than credit-sharing, seems to matter. Thus it remains to be seen whether BOEPAD can be viable if its success is measured through the works of others. So far, College and University support for BOEPAD has been excellent. For 1993-94, the Dean of the College of Education and the Vice-President for Research both have allocated scarce resources to support BOEPAD’s core operations. During 1993-94 those resources, coupled with outside funding, will be used to support:

Strengthening of SIMSE,
Implementation of a community-based curriculum project,
Continued technical assistance to Sandia National Labs,
Consultation with Rockefeller Foundation urban school staff development initiative,
Completion of Leadership Cadre program,
Support for New Mexico Task Force on Systemic Change,
Transition of Carnegie work from BOEPAD to Division C,
Continued study of multicultural organization concept,
Continued work on human service collaboratives, and
Other initiatives consistent with the mission of the
Bureau, the College, and the University.

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BOEPAD Personnel, 1992-93*

Colton, David L. ....(01/90- / )....................Director
Smith, Roberta.......(01/90- / )..................Program Coordinator
Nelson, Chris........(09/91- / )...............Evaluation Specialist
Nordhaus, Mary......(06/90- / )...............Research Associate
Mitchell, Rose.......(06/92- / )...............Research Associate
Pelissier, Catherine.(09/91-09/92)..............Research Associate
Conover, Elizabeth...(02/92- / )...............Research Associate
Intress, Clare.......(01/93- / )...............Research Associate
Johnson, Negleatha...(01/93-04/93)..............Research Associate
Haynes, Jeanette.....(01/93- / )...............Research Associate
Lappin, Christine ... (11/90- / )...............Office Manager
Plunkett, Leonard....(02/93- / )...............Clerk/Specialist

*SIMSE personnel not listed

New Grants and Contracts, 1992-93

Rockefeller Foundation, Community-Based Curriculum Project:

Carnegie Foundation, Middle School State School Policy

National Science Foundation, Systemic Initiative: $1,988,000.

New Mexico State Board of Education, Systemic Initiative:
$300,000. (September 1992 - June 1993).

Sandia National Laboratories, Evaluation Assistance Contracts:

Total: $2,618,557.
During the 1992-93 academic year, Manzanita Center continued to facilitate higher learning and community service with unique programs. These programs include the: Day Care Lab. Reading Program. Counseling Program. Testing Materials Library and the Assistive Technology Program. Manzanita provides equipment, subjects and supervision to support all levels of advanced education. In addition, community services are provided in day care, tutoring, counseling and assistive technology.

Director: Dr. Roger Kroth
Graduate Assistant: Tarrae A. Bertrand-Hines
Counseling Program

The mission of the counseling program is to provide an environment of professional supervision to enable counseling students to apply the skills they have learned, gain experience and improve their effectiveness.

In response to this goal, free counseling services are provided to the community. These services are provided to adults that are either students or non-students. Counseling services are provided in blocks of four hours on Tuesday through Friday. The sessions are under continuous observation and supervision. Two doctoral student graduate assistants are used to supervise a total of eight student counselors. In addition, the practicum professor is always available for problems and to provide additional supervision. This professor also conducts a training seminar each week for all practicum students. These students total sixteen for each semester.

The number of sessions held for the academic year '92-’93 include:

Fall 92 - 16 sessions per week for 16 weeks = 256 sessions
Spring 93 - 20 sessions per week for 16 weeks = 320 sessions

576 total

The approximate number of clients seen over two semesters:

Fall 92 - 30 clients
Spring 93 - 40 clients

70 total

The approximate dollar value at private sector cost:

Fall 92 - $75 per session for 256 sessions = $19,200
Spring 93 - $75 per session for 320 sessions = $24,000

$43,200 total
The counseling program supports the *Plan of Action* for the College of Education at several points. These points include:

* **The Focus** - The purpose is to advance the quality of education, with model programs that exemplify effective practice and scholarly inquiry and support educational theory and practice that will enhance collaborative learning and teaching. This is evident by the unique structure of the counseling program that combines a professional and learning environment.

* **Goal One** - The counseling program provides a model of effective learning conditions. The program develops critical thinking, problem solving and inquiry skills through natural settings. In addition, the students learn to connect knowledge of facts to a broader understanding of application and synthesis.

* **Goal Two** - The counseling program is an excellent environment for research and observation.

* **Goal Three** - The counseling program is an example of collaborative teaching, research and service. This is evident in the services provided and the working arrangements of faculty and students.

* **Goal Four** & **Goal Five** - The counseling program is structured to provide an environment that promotes communication and a sense of professionalism among all students.

* **Characteristics of the College of Education** - The counseling program is an example of several characteristics listed in Appendix C. While the program is innovative and dynamic, the studies provided are basic to the professional education of students.

The counseling program continues to be a benefit for the students and the community. In addition to the benefits, the structure and administration of the program has matured to the degree that few changes are needed or anticipated for the next year. Plans of the counseling program for the academic year 1993-94 include: 1) to continue with the success to date of supporting students in a professional environment. 2) to improve the physical environment in the counseling rooms and 3) to advertise available services more effectively in the community and on campus.

*The Practicum Professor for the '92-'93 year was: Dr. George Leone.*

*The Graduate Assistants for the '92-'93 year were:*

*Pam Miller, Theresa Miller, Beatrice Narcisco-Baca and Gary Plank.*
Day Care Program

The mission of the day care program is to offer a holistic approach to caring for and teaching young children in a developmental laboratory setting. This approach focuses on integrating the development of the child into a whole with an emphasis on process rather than product.

The center offers care for twenty-six children who are two to five years old. Services are provided year round. Monday through Friday from 7:30 AM to 5:30 PM with the exception of university holidays. Children are selected from a waiting list to provide a heterogeneous balance according to age, gender, ethnicity and socio economic status for keeping an optimum research base. The observation deck provides an opportunity for individuals to observe children and teachers in an unobtrusive manner for research purposes in child behavior, child development and teaching techniques.

Manzanita Day Care Program demonstrates a developmentally appropriate approach to teaching young children through interactive play and learning centers as recognized by the National Association for the Education of Young Children (NAEYC). The program is recognized by the community and state as a model child care setting where individuals of different organizations can observe and learn techniques on how children should learn and how teachers should teach. These organizations include: child care directors and teachers, state officials from Human Services, the Health and Environment Dept., university students and parents.

Manzanita Day Care also demonstrates family style eating in a child care setting according to the Child and Adult Care Food Program (CACFP) guidelines. In 1986, Manzanita was featured in a videotape produced by CACFP to demonstrate appropriate family style eating. This videotape is still used for training purposes by the state of New Mexico.

The Day Care Center is set up to be a teaching facility for UNM students to learn about child behavior, child developmental stages and child assessment by direct observation of integrated age groups and by interaction with these children and teaching personnel. For example, the Speech and Hearing department has used Manzanita children to train their students in assessing
young children. Academic use of the Day Care Program includes: Family Studies, Sociology, Child Art Therapy, Psychology, Special Education, Art Education and N.M. School for the Blind. The community also uses this Manzanita program. Paramedic trainees have learned how to get personal information from young children in emergency situations.

One of the Center's goals is to provide a setting that is conducive to research of young children. Graduate assistants are available for gathering information and statistics in on-going research by faculty and students at UNM. The psychology department will take advantage of this opportunity in the Fall '93 semester. Manzanita will contribute to their study on child stress. When parents enroll their children they understand that in the interest of research and education these possibilities exist: their child will be under observation, can be videotaped, or a participant in assessments and testing. In the future, a memo should be sent to each relevant department at UNM to inform and encourage faculty and students to use the Manzanita Child Care Center facility for research purposes.

The Manzanita Day Care supports the Focus of the College of Education Action Plan by providing an environment that supports high quality interdisciplinary training, community involvement and multidisciplinary research. By so doing, Manzanita Day Care contributes to the high levels of achievement that are called for in the goals of the Action Plan.

*Goal One - The environment of the Day Care is ideal for students to make the connection between theory and practice. It is a model of effective learning conditions and demonstrates cultural diversity as an integrated and central aspect of classroom experience. Students are provided with the opportunity to address real problems in a natural setting.

*Goal Two - The Day Care Program supports research by facilitating an environment for the conduct of research and scholarly inquiry. The enhancement of research is undertaken by graduate students.

*Goal Three - The Day Care Program supports interdisciplinary and integration by providing an environment that supports students from a variety of programs and research opportunities for the university and community purposes.

*Goal Four & Goal Five - The Day Care Program supports a diverse professional environment by providing a natural setting of professional standards where all students can work and learn.
Characteristics of The College of Education - The Day Care Program collaborates with schools, state agencies and the private sector. It is a center of expertise and an excellent educational model. The Center continues to have a commitment to equity, diversity and cultural pluralism.

The future of Manzanita could be enhanced by offering a wider variety of care possibilities for children which would provide a wider subject base for research purposes. One possibility would be to include special needs children into the program. Albuquerque has an excellent program for integration of special needs children into the public school system. It is hard to find such a program for children under five years of age. Manzanita could be used to help train teachers, help educate the community and help mainstream special needs children into a child care setting. A special education teacher would be needed to implement this goal.

Another possibility would be to develop an infant/toddler program. There are some courses at UNM which require observations of infant development and students have to go off campus to find a center which offers this age group. Appropriate care is also very hard to find for this age group. The community could benefit by having a model program to teach how infants should be cared for and interacted with in a child care setting.

The Director for the year '92-'93 was: Dr. Guillermina Englebrecht
The Assistant Teacher/Interim Head Teacher: Sharon Blessing, B.S.H.E.
Food Technician: Judy Kramer
Staff Assistants: Rosa Stewart, B.S.F.S., Loni Crowder, B.S., and Stephanie Sertich
Graduate Assistant: Karl Garcia
The mission of the Assistive Technology (AT) Training Program is to educate professionals in the field of special education and related services in the use and application of assistive technology devices with individuals with disabilities. Within this program is included research, parent counseling and dissemination of information.

The AT Training Program provides programs and services for the community, university students and rural areas. Courses are offered to undergraduate and graduate students in the College of Education. Graduate level training in assistive technology is provided for professionals living and/or working in rural areas of New Mexico. Information and referral services are provided for consumers and caregivers in regards to their use of assistive technology. School districts around New Mexico benefit from workshops on various aspects of assistive technology. In addition to these academic and service contributions, the AT Training Program has provided students with an environment for practical application. This is possible through a contract with the Speech Pathology Department at the UNM Hospital for assistive technology assessments.

The AT Training Program maintains two computer labs at Manzanita Center: one is a Macintosh lab and one is an IBM lab. These labs are available for demonstration use by other departments and the community. Types of demonstrations include:
- Hypercard Demonstration
- Telecommunication Demonstration
- EyeGaze Systems Demonstration

Departments and organizations who have made use of these demonstrations include: UNM (Training and Learning Technologies, Special Education, Medical School & Engineering), UNM Hospital, Sandia National Laboratories, Albuquerque Public Schools and IBM Corporation.

Tuition waivers were provided for all participants in the AT Training Program funded by a federal grant. This is approximately $18,000.00 in funding for one year. This funding covers:
1.) 12 Assistive Technology Specialists will have completed program requirements by August, 1993.
   1 at the Masters level
   10 at the Educational Specialist level
   1 at the Doctorate level

2.) 9 Assistive Technology Specialists will complete program requirements by May, 1994.
   2 at the Masters level
   7 at the Educational Specialist level
Also, the AT Training Program is dedicated to research. The research need of this field offers a unique opportunity. This is a young field with a wide variety of questions to be answered. Three studies were developed in the AT Training Program for '92-'93:

2. Case studies on children using assistive technology in the school setting.
3. Development of an assessment procedure for determining the need for assistive technology.
4. Two to three research or developmental projects are completed by each graduate from the AT Training Program.

The Plan of Action for the College of Education sets academic and application goals of high standards. The AT Training Program supports these goals in the following areas:

The Focus - Assistive technology is a state-of-the-art field and the AT Training Program is a prime model to advance education quality and exemplify effective practice and scholarly inquiry.

Goal One - Within the AT Training Program, innovative approaches to learning and teaching abound. It is an excellent environment for scholarly and professional development and integrates different university departments with the community. In addition, this program promotes the use of technology within the classroom.

Goal Two - Research in the assistive technology field is limited. Therefore, the research area is positioned with increasing opportunities of study and external funds.

Goal Three - The use of assistive technology attracts the cooperation of professionals from diverse fields to provide for the needs of at-risk students.

Goal Four and Five - The rural role of the AT Training Program provides an excellent opportunity to prepare a greater number of educational personnel from traditionally underrepresented populations and to prepare them to teach students who have different learning styles, abilities and backgrounds. The coherence of the students in the program promotes positive attitudes and structures to enhance the professional environment of the College of Education.

Characteristics - The AT Training Program supports the characteristics of the College of Education with the commitment to intellectual growth and scholarship, collaborating with schools, state agencies and the private sector and by striving to be a center of expertise and a national model of excellence, innovation and program improvement.
The future for the AT Training Program will include continued projects and new projects.

1. Continue rural training program for Assistive Technology Specialists.
2. Continue to offer and develop Assistive Technology curriculum for undergraduate and graduate students.
3. Formation of the New Mexico Institute for Assistive and Training Technologies.
4. Joint venture with Sandia Laboratories and industry for the benefit of technology transfer to further the research and application of technology for individuals with disabilities.

The application of assistive technology does not begin and end with school aged children. The age of need ranges from 0 - 100 years. The future of assistive technology will be found in the nursery, the classroom, the workplace, the home and consumer environments. Some of the fields effected by this innovation will include geriatrics, adult/industrial education, and rehabilitation. As our nation increases awareness of need and application, assistive technology is positioned to begin dramatic upswing growth. Clearly, the fast pace that new technology is developed contributes to the dynamics of this field and the need to define new applications.

C) Personnel

Director of Assistive Technology Programs: Gary Adamson
Graduate Assistants:
Director of Assistive Technology Training: Janet Levine
Director of Research: Karen Morrison
Director of Development: Tim Healy
Technology Lab Coordinator of A.T.: Nancy Krbec
Graduate Assistant: Ronda Lepak
The Reading Clinic at Manzanita Center has as its purpose the training of pre-service teachers and graduate students in the teaching of reading and writing to children, youth, and adults who have had problems in learning to read and write in the past. The Clinic employs a theme-based/literature-based approach to teaching reading and writing. Students from the CIMTE program and from special education make up the majority of the persons who tutor at the Clinic.

Tutors are enrolled in either CIMTE 435 (Remedial Reading Problems) or CIMTE 537 (Practicum in Learning Disabilities in Reading), and on occasion a student enrolled in CIMTE 591 (Problem) or CIMTE 595 (Field Experience) will tutor in order to gain further experience in working with disabled readers and writers. It has been the practice in recent semesters that students may enroll for an additional hour of CIMTE 391 or CIMTE 591 when they tutor two children.

The Clinic is staffed by two Graduate Assistants who have extensive experience in the teaching of reading. Continuing from the previous year have been Sriura Loylom, a dissertation level doctoral student in reading and TESOL, and Sandra Player, an entry level doctoral student with experience in teaching reading in the public elementary school setting. In addition, Connie Gonzales serves as the 1/2 time secretary to the program, handling scheduling, appointments, many parent contacts, record keeping, and billing of tutorial fees.

The costs to parents for the tutoring services are established based on a sliding scale. The fee is determined by number of persons in the family and the annual income of the family. In needy cases, fees are severely reduced so that no client is turned away because of inability to pay. It is important that tutors have experiences in working with the widest possible range of children in preparation for teaching in New Mexico's schools.

The program meets recommended course needs in the undergraduate elementary education "Reading" teaching field and in the undergraduate special education program. It is a requirement in the Reading Teacher endorsement for New Mexico and if often elected as a course in the CIMTE M.A. program if the student is interested in literacy issues. Doctoral students in CIMTE who have a reading/literacy emphasis take either CIMTE 435 or 537.

Students also work as supervisors on occasion, taking either CIMTE 591, CIMTE 595, or CIMTE 596 for credit.

The following data show the University student enrollments and the client enrollments for Summer 1992, Fall 1992, and Spring 1993.
The design of the tutoring program is in change each semester. This year was marked by a new handbook for tutors prepared by a Graduate Assistant. The Clinic acquired some new software for our computer room. Five computers with printer capacity are available to tutors. New lesson plans were developed which would make planning somewhat simpler and simultaneously more specific. The newspaper, Under the Appletree, which contains client writings only and has been published since 1977, flourished during this year. The "Great Manzanita Book Fair" was held each semester as usual to celebrate the books the clients have written. We have begun to use portfolios as a means of evaluation so that prospective teachers in particular may gain familiarity with this idea.

In Fall, 1992, one tutor served a child from the Day Care Program at Manzanita Center. This child was able to profit from early literacy activities.

The Clinic views cooking as a major activity in working with themes. This year saw a major upgrade in the kitchen equipment available to tutors. The old refrigerator donated by a former tutor was replaced by a new Sears model during the semester break in December. A new microwave and table and a new toaster oven to replace the 1970s model and allow for baking were purchased. Other kitchen materials were also acquired.

The Graduate Assistants have developed collections of teaching supplies (markers, pencils, glue, scissors, etc.) for each tutor. These are kept in plastic storage boxes; a box is checked out to each tutor at the beginning of the semester. The financial burden of tutoring costs for tutors is greatly relieved.

In addition to training pre- and in- service teachers and working with a group of Albuquerque-area clients, another goal of the
Clinic is research. One study was in the planning stage at the end of the Spring, 1993, semester. An additional computer has been purchased and will be put into operation during Summer, 1993, to allow the Graduate Assistants and the secretary to build a database of present and past client records which would encourage more efficient day-to-day operation of the Clinic and also encourage research based on this mass of information. A course in Research in Reading was taught in the Clinic during Spring, 1993.

Literacy issues loom large in the public's mind. Increasing numbers of children enter school bringing with them a wide assortment of serious problems imimical to school success. Teachers report that 1/2 or more of their students have problems of such nature that they interfere seriously with school learning. The training of teachers to face the needs of these growing numbers of children is important in a College of Education. The Reading Clinic sees itself as important in meeting the needs of teachers who will work with many children with reading/writing problems.

The clients who come to the Clinic represent a cross-section of New Mexico's ethnic, cultural, and linguistic populations. Teachers who work at the Clinic learn first hand to work with a broad spectrum of New Mexico's children. The Clinic staff sees this learning as important as the learning of the more technical aspects of the teaching of reading and writing.

What do we want to do next? Our library is becoming dated and rather worn, and tutors no longer have the readily accessible children's literature collection at Timeman. We need to spend a considerable portion of our resources in expanding and upgrading the children's book collection. We need to add more software to model for teachers the possible range of uses computers may serve in the teaching of reading and writing. We need to involve parents more so that the tutors have increased opportunities to interact with them. Tutors conduct a parent conference each semester, and communicate in writing at mid-semester now. These formal contacts need to be increased to provide experiences in this area. The fee schedule must be updated to more accurately reflect the current economic status; the schedule must be set so that even the poorest children can attend and so that those who can pay more do so. The highest fee charged will be less than half of the current tutoring charges of properly qualified reading tutors in the private sector. Finally, the goal is to conduct two or more studies in the Clinic in the upcoming year.

Zelda Maggard
Date: June 7, 1993

To: Richard van Dongen

From: Gary Anderson

Re: Report of LAPE activities

Latin American Programs in Education

This year I chose to concentrate on five major projects. All four of these projects are exemplary projects for division C and could serve as prototypes for future division projects. All of the programs are characterized by their interdisciplinary and multicultural characters. None of these projects would have been possible without the considerable talents of Ana Nolla, the LAPE graduate assistant. I will describe each briefly:

A. The Puebla Teacher Training Program

During the spring semester eight COE teachers-in-training spent a full semester at the American School of Puebla under the supervision of Sarah Dawn Smith. One teacher did her student teaching and the others did a semester of internships and coursework. The students received cross-cultural coursework while living in another culture. Students worked with teachers at the American School of Puebla while they were there.

It is hoped that this project will be an annual offering in the COE. It represents a cross-division collaboration between LAPE and CIMTE and provides a relevant cross-cultural experience new in the COE. The program is fiscally self-sufficient. Although LAPE provided some funds for first year start-up costs, it is hoped that with 12-15 students participating in future semesters, the program will pay for itself.
B. The Rio Grande Writing Project in Spanish

This project is an attempt to bring Latin American teachers together with bilingual New Mexican teachers to participate in the Rio Grande Writing Project. This is the first writing project nationally to be offered in the Spanish language, and the first to include Latin American teachers. This project represents a collaboration between LAPE and Don Zancanela (CIMTE/LLCA) who used part of his writing project grant to subsidize the project. It is hoped that the project will strengthen bilingual programs in New Mexico, as well as, promote the writing project philosophy in Latin America. This summer five Latin American teachers will be participating, one coming from as far as Buenos Aires, Argentina.

C. The Masters Degree Program in Educational Administration designed for the University of Guadalajara.

The above programs are examples of innovative programs that can be done with few resources. Some projects, however, require massive resources to implement. The "Guadalajara Program" was initiated by John Facey shortly before his death and then taken over by LAPE. The curriculum for the program came out of a meeting with administrators from the University of Guadalajara. Together we designed a highly innovative masters program which fit nicely into the recently revised COE educational administration program in English. The masters included several innovative components:

1. **A constructivist philosophy of learning.** Although most colleges of education talk about interactive and constructivist models of teaching and learning, most programs consist merely of set of courses that faculty feel represent the "knowledge-base" of a field. These courses often relate only loosely to each other and are generally taught through a transmission or conduit model of teaching and learning. At the core of the Guadalajara program is a notion of learning as a form of praxis through which learning accurs through an interactive relationship between coursework and action research carried out on site. This can be uniquely achieved in this program because half of the coursework is done in Guadalajara and half at UNM. Students will work on action research projects at their sites in Guadalajara and will be supervised by UNM faculty.

2. **Study of Cross-Cultural Transfer.** Our current curriculum for Latin Americans assumes a superiority of North American models and fails to problematize the tranference of ideas and technologies accross cultures and national systems. The Guadalajara program incorportes this notion into all coursework, as well as, a special capstone seminar.

3. **Technology Immersion and distance education.** Early immersion workshops in technology use will make students adept at the use of word processing, data bases, teleconferencing, and electronic mail.
On-site action research projects in Guadalajara will be supervised in part via email and teleconferencing will be used extensively in courses.

Although this program might have become a prototype for future innovative masters programs in division C, it became a victim of COE's internal politics and apparently the Dean has decided against accepting the Guadalajara contract for the COE.

D. The Masters Degree Program for Ecuador

This program was designed much like the Guadalajara program. Huge amounts of time and energy were poured into these contracts, but again internal politics have caused this program to be moved from the domain of LAPE to the Associate Dean of Curriculum. This project was moved out of the educational administration program and into CIMTE where it is being redesigned.

E. An experimental teacher training program

This project (see appendix) was developed in collaboration with the Multicultural Education Center. The National Endowment for the Humanities has expressed interest in the program, but due to internal politics and a general confusion as to how to proceed with this type of program, it has not been pursued beyond this stage.

Several other projects were maintained:

We continue to work with the organizing team of the annual Inter-American Ethnography in the classroom conference. This summer it will be held in Mexico City and several faculty will be attending (Guillermina Engelbrecht, Gary Anderson, Kathryn Herr, Ann Nihlen)

We continue to sponsor the Inter-American E Mail conference on qualitative research.

We have designed a course on Latin American education to be taught by Maria Coes, Ph.D. (a Brazilian educator). The Latin American Institute will pay for this course.

In conclusion, despite the generous fiscal and moral support that LAPE has received from division C, I feel the general political atmosphere in the COE is currently hostile to the development of innovative programs. Therefore, as of the end of the summer, I am removing myself from any official role with LAPE. I will continue, however, to be supportive of Latin American programs in general and the promotion of innovation within the division.