
School of Law Dean

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REPORT OF THE
SCHOOL OF LAW

July 1, 1987 - June 30, 1988

Theodore Parnall, Dean
INTRODUCTION

The Law School was privileged to participate in several events of importance to both the legal profession and legal academics during the July 1, 1987 – June 30, 1988 academic year. The recent New Mexico Judicial Conclave, held at the law school for the first time, was a fitting close to a year that included a dynamic mix of law professors, students, and members of the bench and bar. The ABA National Conference on Professional Skills, the 13th Annual Indian Law Conference of the Federal Bar Association, the New Mexico Court of Appeals' sessions in the Moot Courtroom, the national finals of the client counseling competition, over 30 continuing legal education programs, and the regional finals of the moot court competition are only a few of the events that drew upon the best of all members of our legal community.

The Law Faculty enjoyed a particularly eventful year. Publications, conferences, research projects, in addition to classroom teaching, occupied virtually all of the members of the faculty. Despite several of our colleagues being on leave, and the resignation of three valued colleagues, the School produced a significant flow of work. We have also had the good fortune of adding several new members to the faculty whose
contributions to service, teaching and scholarship are already being noted.

The law students were also successful during the past year: victories in regional competitions, a good rate (82%) of passing for first-time takers of the Bar Exam, and success in the job market were notable achievements for the year.

A. Significant Achievements

1. Bicentennial Symposium

   Over 600 people attended the Law School's symposium on the Constitution and the Rule of Law. The series of five public lectures was held September 8-12 in celebration of the bicentennial of the Constitution, the 75th Anniversary of New Mexico's statehood, and the School's 40th birthday.

   Samuel Dash, chief counsel to the Senate's Watergate Committee headlined the symposium as the John Field Simms Memorial Lecturer. He was joined by former California Supreme Court Justice and former UNM law professor, Cruz Reynoso and UNM law professors G. Emlen Hall, Tom Farer, Ruth Kovnat and William Dixon. Kovnat and Dixon were joined by Debbie Hill, third-year law student and editor of the New Mexico Law Review, in a
panel discussion of current issues in constitutional law.

Dash, a law professor at Georgetown University Law Center, spoke on "Congressional Investigations of the Executive: Constitutional Powers and Limitations." In addition to his lecture, Dash met informally with alumni, faculty, and students throughout his one week visit. He also delivered the closing lecture of the series following a luncheon and dedication of the Bondurant Lecture Hall.

2. International Transboundary Resources Center

The efforts of Professor Al Utton and others from a number of institutions who have worked for many years on border water, air, and transportation problems culminated during 1987-88 in the establishment of the International Transboundary Resources Center. The Center meets a critical need to deepen the understanding of transboundary resources and facilitates international cooperation in their use. Professor Utton is the director of the center.
Alberto Szekely, a law professor and associate of the Mexican think tank, El Colegio de Mexico is Professor Utton's counterpart. Szekely is the Center's research director.

3. ABA National Conference on Professional Skills

Lawyers and legal educators including many law deans and American Bar Association (ABA) officials convened in Albuquerque for a conference on professional skills and legal education, October 15-18, 1987. Sponsored by the American Bar Association's section of Legal Education and Admission to the Bar and the UNM School of Law, the conference focused on the development of professional skills instruction and its role as a method of legal education in American law schools. The three-day conference was the first National ABA conference to be hosted by the Law School. It began with remarks by The Honorable Rosalie E. Wahl of the Supreme Court of Minnesota and Chair of the ABA Section of Legal Education and Admissions to the Bar. Robert MacCrate, president of the American Bar Association, delivered the
keynote address. MacCrate stressed the importance of the teaching of professional skills by law schools. MacCrate was introduced by Dean James P. White, Consultant on Legal Education to the American Bar Association. UNM's Clinical Law program was praised as a model for the teaching of professional skills.

Concluding remarks were made by Professor Robert B. McKay, New York University School of Law. McKay summarized the conference themes and gave his view of their implications for the future development of the law school curriculum.

4. Continuing Legal Education Program

New Mexico lawyers can now return to the classroom and receive required minimum continuing legal education (MCLE) credits. This unique program, offered for the first time in 1987 by the UNM School of Law and CLE, Inc. of the State Bar of New Mexico, places students and practicing lawyers together in full semester or in four-week, mini-courses. Nine courses were offered during 1987-88. Five courses are being
offered for this fall semester. The courses are a part of the law school curriculum. Students receive law school credit, and attorneys receive MCLE credit for their participation. The Law School draws upon the expertise of many New Mexico attorneys, as well as professors, for this program.

In February, 1988 a live video and 2-way audio broadcast by UNM law professor Sheryl Scheible and adjunct professor Barbara Shapiro (UNM J.D. '78) of Poole, Tinnin & Martin, fundamentally changed the nature of continuing legal education in New Mexico.

Legal Ed, an innovative teleconferencing education system, is the first of its kind, allowing instructors, studio audience, and those attending in remote sites to interact. Legal Ed is being used to make live Continuing Legal Education equally accessible to all members of the New Mexico bar. It was developed under the direction of Linda MacDonald, executive director of the State Bar, who worked with the Law School, Legal Net and the Instructional Television Department of UNM. The programs, telecast the second Saturday of every month,
are simultaneously broadcast to receiving centers across the state.

Chief Judge Thomas A. Donnelly of the Court of Appeals, along with UNM law professors Bill MacPherson, Jr. ('66) and Maureen Sanders ('79) participated in April and May, 1988 programs.

5. Judicial Conclave

The University of New Mexico School of Law was the site of the Judicial Conclave, June 8-10, 1988. Judges from the District Court and the Court of Appeals, and New Mexico Supreme Court Justices participated in this year's program presented at the Law School for the first time, by the American Academy for Judicial Education, Washington D.C. The program focused on hearsay, philosophical ethics in judicial decision-making, fact finding, and confessions.

6. Resumption of Summer Pre-Law Program for American Indians

In 1967 there were less than 25 Native American lawyers in the United States. Today there are more than 600. Part of the credit for this dramatic increase must go to the initiation of, in 1967, the UNM-based
American Indian Law Center's Pre-law Summer Institute.

Federal support for the program resumed in June, 1988 under the AILC's director, Sam Deloria, after a two-year hiatus. Twenty-two Native Americans were admitted from an applicant pool of 40 into the intensive eight-week course. Out of 22 students, 19 tribes were represented.

The course replicates the first semester of law school and covers advocacy, property, torts, and Indian law. Students present Moot Court arguments, write briefs, and are exposed to intense legal analysis. The program is preparatory in nature.

7. Interviewing and Counseling Competition

UNM School of Law hosted the 1988 national finals of the Client Counseling competition, March 11-12. Fourteen schools participated in the 4-round final. They advanced from a field of 93 schools at 12 regional competitions held in February. Willamette University College of Law won the competition with William Mitchell College of Law placing second, and the University of North Carolina School of Law finishing
third. A reception and awards banquet honoring the regional winners was held at the Hilton Inn, Friday evening. Robert Raven, president-elect of the American Bar Association was a featured speaker and one of the Judges of the competition. Approximately 30 other friends and alumni also volunteered to serve as judges. The competition, which help students learn techniques for interviewing and counseling, originated in 1969 at the University of Southern California Law Center. UNM won the national competition in 1973, with the team of Kester Oman and Tom Grisham.

8. Moot Court Competition

UNM law students competed against thirteen other teams from seven different law schools and won the 38th Annual Moot Court Competition for the western region, held November 19-21, 1987. UNM has won the regional competition thirteen out of the last sixteen years. The UNM team defeated the Brigham Young University team in the final round of the three-day competition. A UNM student was also named the best oral advocate in the
finals. The team advanced to the national competition in New York in January but was eliminated in the preliminary rounds. UNM competed against Arizona State University, Brigham Young University, Denver University, the University of Arizona, the University of Colorado, the University of Utah, and the University of Wyoming. The competition was sponsored by the Young Lawyers' Division of the State Bar and the American College of Trial Lawyers. The final round was argued before Juan Burciaga, U.S. District Judge from Albuquerque; Richard E. Ransom, Justice of the New Mexico Supreme Court; and Earl H. Carroll, U.S. District Judge from Arizona.

9. Faculty Notes

b. Professor Tom J. Farer's book on U.S. foreign policy in Latin America, *The Grand Strategy of the United States in Latin America*, was published by Transaction Books in January 1988. He has also published "International Law: The Critics are Wrong," in *Foreign Policy*, Summer 1988. With his research interest in human rights, Professor Farer was also appointed to a group of experts meeting under the aegis of the University in Japan to examine the impact of developments in science and technology on human rights. He presented a paper to this group at a meeting in Geneva in November. The group's efforts are a response to a resolution of the UN Human Rights Commission. Forthcoming from Plenum Publishers is a book-length debate between Farer and Professor Ernest van den Haag of Fordham University and The Heritage Foundation on US policy in Central America. Professor Farer is on leave at American University.

c. W. Garrett Flickinger attended the AALS workshop on Property Tax, September 17-20 in Chicago. Professor Flickinger is working on
a comparative study of English and American Finder's Law.


f. Emlen Hall has had two articles and a chapter accepted for publication. "Tierra y Agua: Statehood Fails to Resolve Land and Water Issues" appeared in the September 1987 issue of the *New Mexico Magazine* and "Land Litigation and the Idea of Progress: Roque Conjuebes Through the Ages" will be published in *Journal of the West* in July 1988. Professor Hall's essay "The Pueblo Grant Labyrinth" was published in *Land,*

g. Fred Hart published a new book, A Student Guide to Sales, Letters of Credit and Documents of Title. He continues to supplement the Matthew Bender & Co. publications, Forms and Procedures Under the Uniform Commercial Code and Commercial Paper Under the Uniform Commercial Code. Professor Hart serves on several boards and committees. He is a member of the board of trustees of the Law School Admissions Council and a member of its Audit Committee. He serves on the Law School Accreditation Committee of the American Bar and the skills training committee and the nominating committee of its Section on Legal Education and Admission to the Bar.

h. Sudeeun Kelly spoke on the changing nature of federal and state regulation of natural gas at a conference in Chicago and at a second conference in Salt Lake City sponsored by the University of Utah. She presented remarks on "Natural Gas Policy in the Western U.S." at a symposium of the UNM Institute for Public Policy. She also spoke
on "The Historical and Legal Origins of Regulation" at the Ninth Annual Conference of New Mexico State University's Center for Public Utility Regulation.

Professor Kelly has also published, "Regulatory Reform in U.S. Natural Gas Industry: A Summing Up," *27 Natural Resources Journal*, 1987. She has completed a draft of, "The State of Natural Gas Deregulation in the States" and is working on "Regulation in New Mexico," a chapter to be included in *New Mexico Government*, Garcia and Hain, 3RD ED. 1988.

i. Antoinette Sedillo Lopez has published "Privacy and the New Reproductive Technology: A Decision-Making Process" the *Journal of Family Law*. She is working on a draft of "Problemas legales con el uso de la nueva tecnologia reproductiva" for the University of Guanajuato.

j. Dean Theodore Parnall's article "License and Distributorship Agreements in Developing Countries: An Analysis of the Key Provisions," written with Pamela P. Hamblin, was published by the United Nations Centre on Transnational Corporations. Dean

k. Professor Fred Ragsdale spoke in Spring semester, 1988 at the UCLA School of Law on "Modes of Tribal Government," sponsored by the American Indian Cultural Center.

l. Professor Leo Romero is returning to the law school after a year's leave of absence at George Washington University in Washington D.C. As the Visiting Howrey Professor of Trial Advocacy, an endowed chair, he taught trial advocacy, evidence, and advanced criminal procedure. Professor Romero was one of four UNM professors who received the Regents' special "Outstanding Teacher" award in 1987.

m. Associate Professor of Law Robert L. Schwartz recently participated in the seminar on the Issues in Civil Procedure: Advancing the Dialogue. The seminar was co-sponsored by the Yale Law School Program in Civil Liability, the Connecticut Bar Foundation and Aetna Life & Casualty.
Schwartz responded to "Science in the Courtroom: 'Peer Review' Testimony on Experts is Suggested," presented by Yale law professor E. Donald Elliott. Elliott's proposal on scientific evidence calls for a neutral "peer review expert" to testify on the scientific community's view of the approaches used by the parties' expert. An initial provision in Elliott's rule requires pretrial submission by all scientific experts of reports summarizing their data, analysis, and conclusions. Schwartz' basic argument to the proposal was that it had too great a respect for the notion of scientific truth - the notion of right and wrong in science. He argued that traditional techniques - cross examination, rebuttal, and use of opposing experts - allow juries to evaluate scientific testimony just as adequately as any other kind of testimony.

n. Sheryl Scheible's article "Defining 'Support' Under Bankruptcy Law: Revitalization of the 'Necessaries' Doctrine" has been submitted for publication. Professor Scheible has also
completed the first draft of a four-year survey of estate and trust law development in New Mexico, which is scheduled for publication in the New Mexico Law Review.

do. Professor Scott Taylor (on leave) was one of two "Professors in Residence" in the Washington D.C. office of the Internal Revenue Service.


q. **Associate Dean Peter Winograd** continued to be involved with the activities of several national legal education organizations. He chaired American Bar Association accreditation teams this past year at the law schools of Georgia State University and the University of Montana, and he was a member of the teams which visited DePaul University and St. Thomas University. He currently chairs the Governmental Relations and Student Financial Aid Committee of the ABA's Section of Legal Education and Admissions to the Bar and is a member of its Affirmative Action Committee. Dean Winograd also serves on the Federal Aid Programs Committee of the National Association of Student Financial Aid Administrators, and the Joint Committee on Recruitment and Placement of the
Association of American Law Schools and the National Association for Law Placement.

B. Significant Plans and Recommendations

No significant changes in Law School policies, programs or procedures are contemplated. We will continue to place emphasis on the areas that have traditionally been of special interest to the Law School:

1. Clinical Law
2. Natural Resources
3. Indian Law
4. Laws affecting New Mexico's economic and social development

The Law School may also, depending upon faculty interest, increase its involvement in the following areas:

1. Alternative dispute resolution
2. U.S./Mexico legal issues
3. Continuing Legal Education
4. Health/Aging legal issues

C. Appointments to Faculty

1. Barbara Bergman (joined UNM during Fall, 1987): Professor Barbara E. Bergman joined the faculty from private practice in Washington, D.C. For the past three years, she had been associated with the firm of Bredhoff & Kaiser representing labor unions and individual employees. Her areas of expertise include labor law, criminal law
and procedure, juvenile law, and trial advocacy.

Before joining UNM, Professor Bergman served as the co-chair of the Criminal Jury Instructions Committee for the Bar Association of the District of Columbia Young Lawyers Section. Under her direction, this committee is publishing a comprehensive edition of the D.C. Criminal Jury Instructions. In addition, she served as chair of the D.C. Bar's Committee on Legal Representation for Needy Civil Litigants. Professor Bergman has also been an adjunct professor of juvenile law for seven years at Catholic University Law School.

Before joining Bredhoff & Kaiser, Professor Bergman was a criminal defense attorney for five years with the District of Columbia Public Defender Service and served for a year as associate counsel to President Jimmy Carter.

Professor Bergman received a B.A. degree from Bradley University in 1973 and a J.D. degree from Stanford Law School in 1976. She is a member of both the District of
Columbia and New Mexico Bars and an assistant professor of law.

2. Christian G. Fritz (joined Fall, 1987):
Professor Christian G. Fritz comes to the University of New Mexico from Hastings College of Law in San Francisco where he was an adjunct professor. He received the Henry E. Huntington Library Post-Doctoral Fellowship and a Fellowship in Legal History from the American Bar Foundation. In 1986 he was appointed to the board of directors of the Ninth Circuit Historical Society and also serves on several legal history societies.


Professor Fritz received a B.A. in 1975 and a Ph.D. in 1986 from the University of California, Berkeley. He received the J.D. degree from the University of California, Hastings College of Law in 1978. He is a member of the California Bar and an assistant professor of law.

3. Anita Morse: Professor Anita L. Morse joined the faculty in November, 1987 as the director of the Law Library and professor of law. She is the former director of the Law Library at the University of Wisconsin Law School. She has also served as the director of the law libraries at Cleveland State University, the University of Detroit Law School and the Albany Law School, and has been on the law faculty at the University of Kentucky College of Law, and the University of Florida Law School. Before her career in legal education, Professor Morse was an attorney for the Federal Trade Commission in Washington, D.C.
Professor Morse has published numerous articles. Her latest publication, "Criminals in Nineteenth and Twentieth Century American Law and Literature," will appear in the Law Library Journal.

Professor Morse received a B.S. from Purdue University, 1963; the J.D. degree in 1968, Indiana University; an LL.M. George Washington University, 1970; a M.S.L.S., University of Kentucky, 1974; and an M.P.A. from Cleveland State University, 1981. She is a member of the Indiana Bar.


Before coming to the law school, she clerked for The Honorable Thomas Tang, U.S. Circuit Judge, Ninth Circuit Court of Appeals, and was associated with the law firm of Pillsbury, Madison and Sutro in San Francisco. Professor Burr received a B.A. from Mount Holyoke College in 1981, the J.D. from Yale Law School in 1985, and an M.P.A.
from Princeton University in 1988. She is a member of the California Bar.

5. **Visitors**

a. **Professor Huang Huikang**: Professor Huang Huikang, one of China's new group of legal scholars, was a Visiting Professor at the law school in the Spring, 1988 semester. Huikang taught "Introduction to China's Law and Politics." He also presented "Some Aspects of the Chinese Legal System," to members of the Albuquerque Bar on Law Day, April 29.

An associate professor of international law and deputy director of the Institute of International Law at Wuhan, Huikang is a participant in an exchange program between UNM and Wuhan University in Hubei Province People's Republic of China. He will be teaching in the political science department this fall.

The exchange program was initiated with the help of Dolph Barnhouse (UNM JD 83), now a visiting professor in China. He is on leave from the Phoenix firm of Brown and Bain.

b. **Honorable Edward S. Godfrey**: The Honorable Edward S. Godfrey returned for the
spring semester, 1988 as a Visiting Professor of Law. Professor Godfrey was the Hatch Professor of Law at UNM in 1983-84. He was also a visiting professor in the fall of 1985.

Professor Godfrey began his teaching career 39 years ago at Albany Law School in New York. Before his appointment in 1976 to the Supreme Judicial Court of Maine, Godfrey served as law professor and dean at the University of Maine Law School in Portland, and also held the position of acting provost. Professor Godfrey's teaching and research interests include appellate procedure and argument, property, decedent's estates, jurisprudence, and insurance law. He received the A.B. from Harvard College, 1934, and the LL.B. degree from Columbia Law School, 1939, and is a member of the New York and Maine Bars.

c. **Salvadore Beltran-Del Rio M.** joined the UNM School of Law as an adjunct professor during 1987-88. He was a professor at the Universidad de Monterrey last spring. In addition to teaching with Professor Charles T. DuMars, he was engaged in researching
and writing about Air and Water Quality Laws in Mexico, Foreign Investment Laws in Mexico, and on a new trade agreement between the U.S. and Mexico. He also worked on a draft agreement between the U.S. and Mexico relating to the exploration and exploitation of geological structures in the Gulf of Mexico. Beltran-del-Rio did a joint study of Border Copper Smelter Development for the State of New Mexico Environmental Improvement division with Charles T. DuMars in the spring of 1986.

He received his law degree (Licenciatura en Derecho) in 1981 from the Universidad de Monterrey (Mexico), and the M.A. in Latin American Studies, University of New Mexico 1986.

d. William S. Dixon was a visiting professor of law during the 1987-88 academic year. He has been a member of the Albuquerque law firm of Rodey, Dickason, Sloan, Akin & Robb for eighteen years and specializes in media law, commercial litigation and antitrust law. He holds an A.B. degree from Princeton University and his J.D. (1968) from Yale.
D. Separations

Joseph Goldberg, who taught contracts, poverty law and commercial law, had been on the faculty since 1971 prior to his departure for private practice in Albuquerque. Before coming to UNM, Goldberg clerked for U.S. District Judge M. Joseph Blumenfeld, and taught at the University of North Dakota. He was the Secretary of the New Mexico Human Services Department in 1983-84 and of the Health and Environment Department in 1984.

Berta Hernandez, who joined the UNM law faculty in 1983, left to join private law practice in New York City. Karl Johnson taught at the Law School since 1981. He is currently in private practice in Albuquerque.

E. Sponsored Research on Other Projects. The Law School's efforts in the area of sponsored research are directed principally through the following divisions or related entities:

1. The Institute of Public Law (Research Professor Paul Nathanson, director): was founded in 1969 as the public service arm of
the Law School. It operates on funds from the university, and contracts and grants with various state agencies and other organizations. Total external contracts and grants and sales of materials for 1987-88 were: $250,000. The Institute's annual report is annexed as Exhibit A.

2. The International Transboundary Resources Center (Professor Al Utton, director) has received external funding for the two-year period 1987-1989 from both the Ford Foundation and the William and Flora Hewlett Foundation in the total amount of $232,000.

3. The Clinical Law Program (Professor J. Michael Norwood, director) was awarded a one-year grant in the amount of $54,200 for its alternative dispute resolution project. The project involved teaching alternative dispute resolution skills in the classroom and alerting students to alternatives to litigation in appropriate cases. A Clinic-based mediation service with students serving as mediators was also part of the project.
4. The Natural Resources Center (Co-directors: Professor Lee Brown (Econ), Professor Charles DuMars (Law)) is an organization for the advancement of interdisciplinary education, research, and public service programs focused on resource and environmental issues, with offices in both the Law School and the Department of Economics. It operates on funds from the University and contracts and grants with state agencies and other organizations. Total external contracts and grants for 1987-88 were: $269,388 from the Ford Foundation and the U.S. Geological Survey. The NRC's annual report is annexed as Exhibit B.

5. The American Indian Law Center, formed in the 1960's as a unit of the Law School, gained independent status as an Indian-controlled non-profit organization in 1976. The Law School and the Center continue to work together closely in many projects. In 1987-88, the Center generated a total of approximately $870,000, of which $170,000 was for the re-established pre-law summer program (See item A (6) above).
F. Affirmative Action.

1. Faculty. Of the four permanent faculty described in part "C" above, three are women. One of the three women is black. The Law School now has the following number of women or minority faculty members:

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<td>Black</td>
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<td>Hispanic</td>
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<td>Women</td>
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<td><strong>Total Number of Faculty</strong></td>
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2. Students.

a) entering class

Of 110 entering students in the 1988-89 School year, 57 are women; 29 are Hispanic, 2 Black, 3 Native American and 1 is Asian-American; minority students account for approximately 32% of the 110 members of the entering class.

b) total

Of 331 law students at the commencement of the 1988-89 academic year, 169 are women; 84 are Hispanic; 5 are Black; 14 Native American; and 5 are Asian-American. Minority students account for approximately 32% of the 331 law students.
### INSTITUTE OF PUBLIC LAW

#### ANALYSIS OF REVENUES AND EXPENDITURES

**For FY 1983-84, FY 1984-85, FY 1985-86, FY 1986-87 and FY 1987-88**

**REVENUE SOURCE**

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<td>Public Schools Insurance Authority</td>
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<td>American Law Institute</td>
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The idea that originally inspired the creation of the Natural Resources Center (NRC) is reasonable and easily stated: problems of developing, using, and conserving natural resources require strategies that clarify and integrate the perspectives of everyone who holds a stake in their solution. Stated more specifically with regard to its home base at UNM, this idea translates into collaboration among faculty and students who teach, learn, and research resource and environmental subjects. In fiscal year 1987-88 the NRC staff was occupied almost exclusively with structuring opportunities for such collaboration.

MAJOR ACCOMPLISHMENTS

ORGANIZATIONAL AND PROGRAMMATIC CHANGES

Increased Faculty Participation. The composition and role of the NRC faculty associates group changed substantially in the past twelve months. Until this year, the associates group had consisted largely of resource-oriented members of the law, economics, and public administration faculties, and had been consulted by the Center's directors infrequently and only on an ad hoc basis. As a result of NRC initiatives during FY 1987-88, however, the associates group has been expanded to include members of the biology, civil engineering, geology, geography, political science, and community & regional planning faculties. Further, as a result of decisions at the first NRC planning retreat (see below), faculty associates henceforth will convene twice
a year as a steering committee to decide priorities for the Center.

*Five Year Plan.* At the suggestion of Vice President for Research Paul Risser that the Center develop a five-year plan, NRC co-directors F. Lee Brown and Chuck DuMars organized a two-day retreat for this purpose. Held in February, 1988 at a downtown Albuquerque hotel, the retreat was attended by fifteen faculty members from nine academic units as well as by the Center's directors and staff. John Arango, a management consultant from a private firm, acted as facilitator of the meetings. Participants were asked to look at the NRC in its present form, consider what it might do and become as it evolves, and consolidate proposals for action.

The retreat discussions led to a consensus on the outline of a five-year plan, which was later drafted by the NRC staff, submitted to the retreat participants and other faculty members for comment and revision, and, finally, presented to Vice President Risser. The draft plan, included as the last section of this report, proposes specific programs of research, curriculum development, and public service to be implemented on a 1988-1993 timetable. As a related outcome of the retreat, participants who were not already associates of the NRC chose to become associates, and, as was mentioned above, created a mechanism for direct and ongoing faculty involvement in determining the Center's future.

*NRC Newsletter.* To discover and inform its constituency on campus, the Center this year produced the first three issues of *Re:Source*, a six-page newsletter for and about UNM faculty members and graduate students engaged in
resource and environmental research. In addition to announcing conferences and other events of interest to its readership, each issue of the newsletter features a faculty interview. Ecologist Jim Gosz, economist Ron Cummings, and geographer Susan Place have been the interview subjects to date. *Re:Source* articles are compiled and edited by Michele Minnis, NRC programs director.

**TEACHING**

Almost every project undertaken by the Center properly could be called "educational" and "interdisciplinary." Ultimately, however, NRC projects closest to the core of its mission are those that have a direct, positive impact on what happens in the University's classrooms. The first entry in this section is one of those projects. It has exhibited sustained forward movement on the strength of faculty commitment.

*Design of Interdisciplinary Water Curriculum (IWC).* In late spring of 1987 Vice President for Academic Affairs Chris Garcia appointed a twenty-one member* faculty committee to conduct a feasibility study for a graduate curriculum in water resources administration. F. Lee Brown and biology professor Jim Gosz served as committee co-chairs, NRC staff member Robin Morgan as committee coordinator. Provided the study results warranted it, the committee was to design the curriculum and, by June 1988, prepare a plan for implementing it.

* Members of the IWC committee are noted with an asterisk in the list of NRC faculty associates on page 13.
Meeting regularly throughout the year, the committee fulfilled its charges. After composing a rough draft of the curriculum, the committee broke into subcommittees that then presented the draft for review by prospective applicants to the program and prospective employers of the program's graduates. One subcommittee administered a questionnaire survey about the draft curriculum to participants at a statewide conference on water management. Other subcommittees solicited criticism and comment on the draft at meetings with New Mexico water resources professionals from both the public and private sectors. While they differed somewhat in their opinions about what the program should emphasize or include, almost every person surveyed or interviewed commended the University for anticipating the need for such a program and strongly endorsed the committee's efforts to see it implemented.

In mid January 1988, having completed the investigations described above and having determined that there were at present no similar, potentially competing programs available to students in the southwestern area, the committee voted unanimously to proceed. Taking account of suggestions by survey and interview respondents, the committee produced a second working draft of the curriculum. This second and current version proposes a 36 credit hour master's program designed to be taken in a three-semester (fall, spring, summer) sequence.

The curriculum would comprise a balance of courses, most of which are now offered at UNM, in the natural and social sciences, engineering, law, administration, and communication. To facilitate integration of material covered in strictly disciplinary courses, the program also would include three
new interdisciplinary courses: one that provided an overview of water resources, institutions, and issues in New Mexico and throughout the West, one that focused on design of multivariate models for analyzing problems in water availability and quality, and one that engaged students in a field research project. Finally, a communications skills lab course would accompany each of the interdisciplinary courses as a co-requisite.

It is planned that all three interdisciplinary courses and their labs will be offered on an experimental basis during the coming year. The first interdisciplinary course, "The Rio Grande Basin: An Interdisciplinary Survey," will be offered this fall through the Department of Geography. In this initial version, the course has no prerequisites and is open to all graduate students. Professors Steve Thompson (geography), Chris Nunn (economics), and Jim Gosz (biology) will teach the course; Dr. Michele Minnis of the NRC staff will teach the communications skills lab. The second and third interdisciplinary courses will be pilot tested, respectively, in the 1989 spring and summer semesters.

In August, 1988, the committee will begin meeting again to complete the following matters of unfinished business: draft a final revision of the curriculum based upon comments by outside reviewers and prospective students, determine which campus unit will house the program, explore possibilities for collaborative relationships with NMSU and Tech, and petition for review and approval of the program by the UNM faculty, the UNM administration, and the New Mexico Commission on Higher Education.

NRC Certificate Programs. During the 1987-88 school year, twelve
students, more than in any previous year, completed course requirements for a Natural Resources Center certificate. The certificates were earned by eleven law students and one public administration student.

NRC certificates recognize students who, while pursuing advanced degrees in regular academic programs, complete a certain number of elective credits in natural resources courses offered in their own and other fields. Certificates are jointly awarded by the NRC and the dean or head of the recipient's primary department, division, or school. Last September, the certificate program, previously available only to law students, was opened to graduate students in economics and public administration. At the meeting convened to announce this change, Vice President Risser spoke to students from the three units on the global character of resource and environmental problems and the imperative need for interdisciplinary cooperation in solving these problems. Extending the certificate programs to other university departments is one of the Center's objectives for the coming year.

American Indian Lawyer Training Program. Professors Fred Ragsdale (law) and F. Lee Brown (economics, public administration) were on the faculty of the American Indian Lawyer Training Program held at UNM in July and August, 1987. The program is conducted every summer by the American Indian Resources Institute of Oakland, California, and is attended by Native Americans from around the country. The NRC was the local host for the 1987 program, which consisted of a month-long course on tribal water management.
RESEARCH

The Natural Resources Center receives and administers several research grants, assembles investigative teams for research supported by these grants, actively supports the research proposals of sister institutes at UNM and other universities, and, often, is called upon for referrals of able research consultants.

Water Rights Transfer Study. Lee Brown is principal investigator from New Mexico in a study of the procedures and costs entailed in transferring water rights in six western states. The study is sponsored by the U.S. Geological Survey and is being conducted simultaneously in the six states by a team of lawyers and economists in each state. The New Mexico Water Resources Research Institute and UNM have provided matching funds for New Mexico's team, which includes Chuck DuMars (law) and Tim DeYoung (public administration), as well as Sue Anderson, a graduate student in public administration. Issues addressed by the study are of immediate concern in that the limited water resources of the western U.S. are subject to growing and changing demands. Besides documenting water rights transfer costs, the study teams will identify factors affecting costs, and methods of reducing these costs that are consistent with the protection of other interests and values.

Natural Resources Journal (NRJ). Last year the Natural Resources Journal celebrated its 28th year in publication, and, in addition to publishing its quarterly issues, published two special issues: Natural Gas Regulation in the Western U.S.: Perspectives on Regulation in the Next Decade (fall, 1987) and Environmental Dispute Resolution (winter, 1988). The NRJ has a circulation of
approximately 1,600, which includes subscribers throughout the United States and in many foreign countries. Ten years ago the journal's editor-in-chief Al Utton and colleague Chuck DuMars founded the Natural Resources Center. With financial support from the Hewlett Foundation, Professor Utton and Alberto Szekely, a Mexican legal scholar, have since established an affiliate to the NRC, the International Transboundary Resources Center.

International Transboundary Resources Center/Centro Internacional de Recursos Transfronterizos (CIRT). In spring 1988, CIRT produced and mailed to all NRJ subscribers a brochure that presents its history, activities, and publications. The cover and format of the CIRT brochure were intentionally patterned after those of the NRC brochure, to underscore the common origins and close ties that link the two centers.

Like the NRC, CIRT publishes a triannual newsletter. Appropriately, considering its focus and readership, articles in the CIRT newsletter, Transboundary Resources Report, are more topical, less oriented to local persons and events, than are articles in Re:Source. A recent issue of the Report included, for example, an article about American citizens dumping hazardous wastes in Mexico and an article about the struggle to enforce the Clean Air Act in the copper smelter, "Triangle," a region encompassing southerly parts of New Mexico and Arizona and northerly parts of Sonora and Chihuahua provinces in Mexico.
Canary Islands International Water Conference. The NRC is an American co-sponsor of an international seminar, "Problems of Land and Water Use," to be held in the Canary Islands next May. Chris Nunn and Ron Cummings are both involved in planning the conference, Nunn as U.S. Project Director.

PUBLIC SERVICE

Because so many of its projects in past years have been directed to community-level or statewide concerns, the Center concentrated this year on establishing a base of activity at the University. Even so, a variety of activities in the public service category continued or were completed. Moreover, according to the NRC five-year plan, appointment of a citizen's advisory board is slated for 1988-89, and expansion of the board to include national representation is planned for 1991-92 (year 4 of the plan).

Upper Rio Grande Working Group/Conference on Traditional Water Use. The Center's Ford Foundation grant for the Upper Rio Grande Working Group concluded in June, 1988. Ford funding, begun three years earlier, provided for establishment and support of the working group, a coalition of northern New Mexico Hispanic and Pueblo leaders formed to address water and economic issues facing traditional communities in the upper Rio Grande basin. Establishment of the group was an achievement in itself, for, historically, Hispanic and Pueblo communities of northern New Mexico have been competitors, sometimes antagonists, in disputes over water and other resources in their region.

In its first two years, the Working Group conducted a symposium and produced a widely circulated report explaining shared concerns. Last October,
as the culmination of its efforts, the Working Group organized a two-day statewide conference on traditional water use, coordinated by NRC staff member Robin Morgan. The conference was held at St. John's College in Santa Fe and was co-sponsored by the NRC, the Native American Studies Center, and the Southwest Hispanic Research Institute. A number of New Mexico water specialists collaborated with the Working Group in developing the conference program, which was highlighted by panel discussions and eight workshops on various aspects of water advocacy and community action. One hundred thirteen (113) people attended the conference. Attendees included water resources professionals and interested citizens from northern New Mexico and elsewhere. Copies of the conference proceedings, Upper Rio Grande Water: Strategies, are available ($10) through the Center's offices.

At a meeting with Ford Foundation personnel in December, 1987, representatives of the Working Group were invited to seek Foundation support of the group in its own right. Accordingly, this past spring, the Working Group prepared a grant proposal and submitted it to Ford, where it is currently under consideration.

**Regional Water Planning Legislation.** At its 1988 session, the New Mexico Legislature renewed its support of regional water plans by enacting a bill that appropriated $250,000 to the Interstate Stream Commission for planning assistance grants. A similar bill, passed by the 1987 legislature, enabled the Interstate Stream Commission to fund the preparation of water plan proposals by the Eastern Plains Council of Governments, the San Juan Water Commission, and the Santa Fe Metropolitan Water Board.
In setting aside funds for water planning—and through a regionally-based rather than a statehouse-based program—the legislature endorsed the recommendations of a statewide groundwater study it had commissioned in 1985. NRC Co-director Chuck DuMars chaired the research team that conducted the study and, by his testimony in legislative committee hearings, was instrumental in securing passage of the initial, 1987, regional water planning bill. During the 1988 legislative session, Interstate Stream Commission Chairman Al Utton and representatives of the eight organizations with pending applications for water planning grants testified on behalf of the second bill. In addition, Utton and the NRC's Michele Minnis spent many hours informing senators and representatives of the bill's provisions and implications.

New Mexico First Town Hall Meeting. Chuck DuMars, Lee Brown, and Chris Nunn were among the 74 participants at the Town Hall meeting "Water: Lifeblood of New Mexico," held May 16-18, 1988, in Angel Fire. This Town Hall was the second in a series sponsored by New Mexico First, a non-profit firm established to organize discussions of policy questions facing the state.

In preparation for the Angel Fire meeting, New Mexico First commissioned NMSU's Water Resources Research Institute to write a background report on six pressing water issues. DuMars, a specialist in water law, was asked to assist in preparation of the report and played a key role in its production. The report served as the reference document for the meeting's central task, the development of a consensus statement on New Mexico water policy.

Natural Resources Law Clinic. In spring, 1988, student and faculty
participants in the Natural Resources Law Clinic, a division of the law school's program in clinical law, won a longstanding water-related law suit that had been filed by its client, the Chaparral Girl Scouts. The case has since been appealed, and thus will continue. The Natural Resources Law Clinic has also been serving as counsel to the Nature Conservancy and to the Assessment Payers Association of the Middle Rio Grande Conservancy District.
## NATURAL RESOURCES CENTER STAFF

F. Lee Brown,* Co-Director  
Director, Public Administration  
Professor of Economics  

Charles T. DuMars,* Co-Director  
Professor of Law  

Michele Minnis*  
Programs Director  

Robin Morgan  
Program Specialist  

## NRC FACULTY ASSOCIATES/STEERING COMMITTEE

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<td>H. Stuart Burness*</td>
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<td>G. Emlen Hall*</td>
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SUMMARY OF DRAFT FIVE YEAR PLAN

Teaching

- develop interdisciplinary curriculum in water resources administration
- expand natural resources certificate program to all University graduate students who are specializing in this field
- conduct feasibility study for second interdisciplinary resource administration curriculum

Research

- develop resource management models
- sponsor conference and publication on management of natural resources in cross-cultural environments
- develop Rio Grande Laboratory concept for natural resources research

Public Service

- develop series of short courses on natural resources topics
- develop curriculum for primary and secondary schools

Management

- establish faculty steering committee
- establish public advisory board
PROGRAMS OF INTERDISCIPLINARY EDUCATION, RESEARCH, AND PUBLIC SERVICE ON NATURAL RESOURCES AT THE UNIVERSITY OF NEW MEXICO

A Five Year Plan Proposed by the UNM Natural Resources Center

INTRODUCTION

The Natural Resources Center (NRC) is an association of University of New Mexico faculty and professional staff who share interests in natural resource and environmental issues and a desire to work together in teaching, research, and public service activities devoted to these issues. Among the currently active faculty associates there are representatives of nine fields of study: biology, civil engineering, community and regional planning, economics, geography, geology, law, political science, and public administration. This spectrum of representation cuts across areas of natural resource specialization that have developed independently. That persons who are expert in these varied specialities should now seek opportunities for collaboration is indicative of a growing appreciation of the breadth, complexity, and urgency of contemporary resource and environmental problems. This document expresses the consensus of NRC directors, associates and staff about the rationale for our affiliation, the direction in which we want the Center to move as it evolves in the next five years, and specific projects that can serve as the vehicles for that evolution. We begin by noting the global context of our professional work and the unusual opportunity available to the University of New Mexico for contributing significantly to the solution of global problems.

In the past three decades or so in the United States, as well as other nations, there has emerged an increasing public consciousness of the interrelatedness and finiteness of the world and its resources—minerals, energy, water, environment, and the various life forms themselves. This consciousness has been intellectually crystallized into the notions of "spaceship earth" and "the limits to growth."*

It has found active and fervent expression in the environmental movement, recycling drives, wilderness preservation, and pressures for conservation of materials and energy. It has led nationally to the clean air and water acts, mandated controls on auto emissions and gasoline consumption, and many other measures. It has been reenforced by international events such as the oil embargo of 1973 and the dramatic shifts in energy prices since that time. Its global dimension has been emphasized by the decline in atmospheric ozone, deforestation in many regions, and the portending and emerging change in global climate.

The issues raised by these developments have generated strong conflicts,

* Much of the discussion that follows in this section is adapted from The Southwest Under Stress, Allen V. Kneese and F. Lee Brown, Johns Hopkins Press for Resources for the Future, Inc., 1981.
which even after heated debate, often remain unsettled. What is clear, however, is that the historical human practice of solving societal problems by expanding geographical frontiers and thereby enlarging the resource base available for use will no longer work its magic, at least for a humanity that remains almost exclusively earthbound. Although the hope and adventure of space exploration will surely be pursued, future courses of action, to be successful, must accept the existing and developing environmental and resource constraints on human activity and work within them to find solutions that are compatible with both nature and society.

At the same time, however, that awareness of the constraints upon human action has increased, the world's population has continued to expand greatly. One result has been the abject poverty in which much of the world still lives. In a world or regional society that possess such extremes of affluence and poverty, the seeds of conflict will not permit this disparity to be ignored on pragmatic grounds, even apart from the ethical norms that compel the search for solutions. Just as it has in the past, humanity resists any Malthusian perspective in which a bleak future is seen as inevitable. Instead there are impulses to concentrate productive forces in society on the creation of a future in which improvement, both material and spiritual, is the expected condition. It is these impulses that provide the motive force for finding and implementing solutions, and it is the vitality of this force that will interact with nature to determine the future.

In the context of this planetary perspective, the Southwest region of the United States and the northern region of its neighbor Mexico provide a microcosm in which many of the global patterns stand in relief. Pertinent regional features include its aridity, its ecological diversity, its large stock of natural resources, its aesthetic environment, and the distinct cultures that have shaped its modern society. The juxtaposition of these factors and others suggests a societal role for the region as a laboratory for confronting the global issues described above and crafting ways of solving them.

Given its location and the wealth of expertise concentrated in its faculty the University of New Mexico is uniquely prepared to exercise a critical role in articulating the region's potential as a prototype. If the University is to seriously accept this opportunity by asserting leadership, its commitment must be long-term and comprehensive. Its efforts must include teaching programs which inform students of the interrelatedness of the problems and challenge their ingenuity in devising solutions, research programs which address natural resource related problems in all of their facets, and public service programs in which ideas are linked to events and decisions are shaped with forethought of the possible and likely consequences.

Pragmatically, we see the possibility for linking and cross fertilizing all of these programs by focusing on the Río Grande Corridor, or rather an expanded definition of the Corridor which would range from the mountains of southern Colorado where the Río Grande arises to the river's first conclusion just below El Paso. Due to a peculiar combination of events in both geologic and human time, this river basin area is unique in ways that, oddly, give it generality. Within the Río Grande basin, a tiny patch on the surface of the whole earth, one can observe an astounding variety of patterns—topographical,
geological, climatological, intercultural, institutional—that bear similarity
to many other socially and ecologically stressed regions of the world.

Other regions of the country may outbid New Mexico or the Southwest for
major high technical research facilities in which capital and specialized
expertise are the major factors. With respect to its prototypic potential,
however, the Southwest has a comparative advantage. The universities
associated with the Corridor and the cities and states which support them have
both special indigenous advantages which cannot be duplicated elsewhere and
established expertise in the particular disciplines most relevant to the
research, teaching, and public service functions critical to integrated
approaches to resource related problems.

In the following sections of this paper we lay out a plan of steps in
organizing this expertise to address these opportunities on an
interdisciplinary basis. Although we present lines of development for each of
the University functions as though they were separate, in the final analysis
the lines must become so interwoven as to be one cloth. The plan will also
include an NRC management structure which will in itself serve to bring
together the various disciplines necessary to address this developmental task.
In addition, we suggest a role for the University in bringing together a
consortium of universities linked to the Corridor to undertake the tasks
involved.

As a final word, the programs and projects identified below are owned by
the University, its faculty and staff. These programs are only feasible, and
will only succeed, if they become the decentralized responsibility of the
faculty and staff throughout the University rather than some large professional
staff of the NRC. The role of the NRC, and the developing expertise of its
staff, lie in its ability to make the necessary interconnections and provide
the leadership essential to the development of these programs rather than to
their operation.

TEACHING

There are two thrusts to the Center's plan for interdisciplinary
educational programs: 1) structure opportunities for interdisciplinary
coursework and exchange for students pursuing graduate degrees in a single
discipline, and 2) develop new graduate degree programs that are inherently
interdisciplinary. The first thrust is exemplified in the three existing NRC
certificate programs. In the next five years other University academic units
will be invited to join the Center in devising similar certificate programs for
their graduate students. The second thrust is exemplified in the work of the
committee that is designing the interdisciplinary master's program in water
resources administration. The Center will continue to provide staff support to
the committee through the implementation of the program and, once that is
steadily underway, will initiate development of a second interdisciplinary
program.
Expand NRC Certificate Programs

The Center presently coordinates programs of interdisciplinary coursework for graduate students in law, economics, and public administration. These programs provide a means of recognizing a student's decision to concentrate electives in natural resources areas while pursuing the more general degree offered in his or her primary unit. The content and number of credit hours in each program has been worked out and jointly approved by the NRC and the faculties of these three units. Students who complete the requirements of a program are awarded a certificate signed by the NRC directors and the head of the unit in which they are earning their primary degree.

Year 1: 1988-89
Pursue the establishment of NRC certificate programs for graduate students in political science, geography, geology, biology, civil engineering, and community and regional planning.

Year 2: 1989-90
While continuing to administer the certificate programs, organize a jobs fair where students who are earning NRC certificates can meet with prospective employers. Offer students in NRC certificate programs the opportunity to participate in and help plan the NRC-sponsored short courses and the work of the legislative consulting team (Public Service, below).

Years 3-5: 1990-93
Maintain and refine procedures and other activities related to certificate programs and annual jobs fair.

Continue Development of Interdisciplinary Degree Programs

Year 1: 1988-89
Continue to provide staff support to the Interdisciplinary Water Curriculum (IWC) Committee by 1) coordinating development and implementation of the three new interdisciplinary courses that will be the integrating elements of the curriculum, and 2) coordinating completion of the committee's work.

The committee's work during the past year has produced a plan for a master's degree in water resources administration. According to this plan, students enrolled in the program would earn 24 credit hours in courses offered in several departments and 12 hours in three new interdisciplinary courses that are coupled with work in communications skills. The new courses are envisioned as genuinely interdisciplinary in that they would be designed and taught by at least three faculty members, each of whom would represent a different discipline.
In addition to designing the overall plan for the water administration program, the committee has several remaining tasks essential to completion of its charge. The NRC will continue in its role as facilitator to the committee through the accomplishment of the following tasks: approach the administrations of NMSU and Tech concerning their interests in offering similar interdisciplinary water administration programs in conjunction with UNM; present the proposal for the new program for review and approval by the UNM administration and the New Mexico Commission on Higher Education; oversee arrangements for administration of the new program; and supervise advertising and student recruitment for the new program.

Year 2: 1989-90
Coordinate implementation of the water administration program for first cohort of students. Monitor and report on inter-university activities related to the program. Conduct program evaluations and facilitate corrective revisions.

Year 3: 1990-91
Coordinate and evaluate activities as above for second cohort of students in water administration program. Establish an alumni/ae association for graduates of the program and participants in NRC short courses (Public Service, below).

Year 4: 1991-92
Continue program coordination, evaluation, and alumni/ae activities as above for third cohort of students in water administration program.

Year 5: 1992-93
Continue program coordination, evaluation, and alumni/ae activities as above for fourth cohort of students in water administration program. Initiate planning of second interdisciplinary curriculum in, possibly, one of the following areas: conjunctive development of land and water resources during rapid population growth, energy resources, and air resources.

RESEARCH

There are two major goals for the research component of the plan. They are: 1) the development of a Rio Grande laboratory for analyzing natural and social responses to changing water quality and quantity conditions, and 2) the development of a program of study for cross-cultural values and perspectives associated with natural resources. In both cases the expanded Rio Grande
Corridor provides an excellent geographical setting for the research as well as an organizing device for linking the research capacities of a number of universities.

The Rio Grande Laboratory

Climatically, the Rio Grande basin has been initially identified as a region which may experience major reductions in precipitation due to shifting global weather patterns. More certain, and perhaps more immediate, are the reductions in the surface flow of the river due to increased municipal pumping of groundwater in the metropolitan areas of Santa Fe, Albuquerque, Las Cruces, El Paso, and Juarez, Mexico.

The implications of these prospective changes, for both natural and social systems, are poorly understood yet are potentially major, even catastrophic in the case of global climatic changes. The development of an interdisciplinary and inter-university research capacity for scientifically analyzing the effects of changes in the surface and ground water budgets of the basin offer substantial benefits regionally and, prototypically, nationally and internationally.

We propose two dimensions to this effort. First, there is need for small area studies encompassing both social and natural systems in which the effects of changes in water budgets can be examined in detail. At least two such sites must be identified, one rural and one urban. The most likely candidate for the former is the Sebeyeta site near Socorro already under study by an ecological team and prospectively the location for an LTER (long term ecological research) designation by the National Science Foundation. An urban site would also need to be selected.

The second dimension would involve the development and operation of an integrated set of basinwide models encompassing ground and surface hydrologic models linked to economic, demographic, and other models for which the technical capacity either exists or can be developed. Previous versions of such models were constructed during the 1970s by an interdisciplinary team from UNM, Tech, and NMSU. Once constructed, and adequately verified, these models would provide a capacity for interdisciplinary analysis at the management level and be applicable to a wide variety of resource related questions.

Year 1: 1988-89

Make use of the three interdisciplinary courses in the emerging interdisciplinary water curriculum to explore with the help of students potential small area sites and the previous experience with basinwide modeling. Also prepare the conceptual design for a new version.

Year 2: 1989-90

Begin use of the site(s) for field based research at least as part of the instructional experience and for other projects as funds and conditions permit. Begin development of a system of models utilizing students from a variety of disciplinary programs and the interdisciplinary program. Aim for first working versions. Convene conference
focused on the Rio Grande laboratory concept involving representation from, at a minimum, UNM, Tech, NMSU, and UTEP, and other universities, particularly Mexican universities, which may be interested.

Year 3: 1990-91  
Continue use of sites for both classroom and research activities. Apply models to first set of questions or issues and refine them based on experience. Publish special issue of Natural Resources Journal based on the Rio Grande laboratory conference. Begin development of a proposal for Rio Grande Science and Technology Center (STC) on natural resource based systems.

Year 4: 1991-92  
Continue use of sites for both classroom and research activities. Seek external funding under which models can be applied to the analysis of specific policy or research questions. Submit proposal for Rio Grande STC to National Science Foundation.

Year 5: 1992-93  
Continue use of sites for both classroom and research activities. Continue application of models to externally funded policy and research questions. Begin operation of Rio Grande STC.

The Program in Cross-Cultural Values and Perspectives on Natural Resources

Different cultures bring different values and perspectives to the use and preservation of natural resources. To illustrate with water at the risk of oversimplification, Native Americans view water almost literally as "the lifeblood" of our mother earth in a naturalism not too distant from the Gaia concept which is receiving increasing scientific attention. Hispanic culture, at least in the northern reaches of the Rio Grande, perceives water to be a unifying force which holds the society and community together. While water rights are held individually rather than collectively as with the Pueblos, the conveyance systems are held and operated by the community acequias, and community disapproval is aimed at anyone who would sell the rights themselves. Anglo values, particularly in urban settings, tend to treat water as a commodity having utilitarian value which can be separated from its attachment to use on the land or from its connection to individual communities.

With such different perspectives and values associated with water and other natural resources, it is not surprising that conflict arises as particular policies or practices are applied which emanate largely from one or another of the separate cultural perspectives. Consequently, in order for a socially well-grounded and stable set of resource management institutions to emerge, there must either be an effective dominance by one value system over the others, or better, there must be some accommodation among the distinct perspectives. The plan presented here proposes a program to explore ways of reconciling the competing perspectives and transferring the broadened perspective to society at large.
Year 1: 1988-89
Prepare a proposal and seek funding to hold a conference on cross-cultural values and perspectives on natural resources in conjunction with the Southwest Hispanic Research Institute and the Native American Studies Program.

Year 2: 1989-90
Convene the conference and collect the papers presented. Use the papers and the conference as the beginning point for a special semester of the Faculty Scholars program devoted exclusively to natural resources. All faculty participants would be selected for their expertise in resources and the contribution they could make to the theme of managing natural resources in a multi-cultural environment.

Year 3: 1990-91
Publish the original conference papers and additional ones prepared by the Faculty Scholars in a book or another special issue of the Natural Resources Journal. Begin development of a curriculum on resource management in a multi-cultural setting for primary and secondary classrooms.

Years 4-5: 1991-93
Continue the curriculum development activity and create short courses and workshops for public school personnel (See Public Service).

PUBLIC SERVICE
The Center proposes the phased introduction of a public service program consisting in the development of 1) short courses for professionals in resource related fields and in middle school and high school education, 2) interdisciplinary consulting teams, and 3) the natural resources model (See Research).

Sponsor Short Courses
Year 1: 1988-89
(spring 1989) Plan the first of a series of self-supporting interdisciplinary short courses for state, federal, and private sector employees who work with resource problems on a regular basis. Structure the courses along the lines of continuing legal education courses, but rather than concentrate strictly on legal subjects, focus on the consequences of various developmental, contractual, and extractive industry activities.
Year 2: 1989-90  (fall 1989) Advertise, conduct, and evaluate the first short course for resource professionals; design a second course for production in spring of 1990. (spring 1990) Initiate work with a team of local middle and high school teachers on the development of a summer workshop for area teachers at these levels. Workshop would present various perspectives on current resource problems as well as discussions of methods for communicating to students the substance and impact of these problems.

Years 3-5: 1990-93  Continue production of short courses for professionals; offer annual summer workshop for teachers.

Organize interdisciplinary consulting teams

Year 1: 1988-89  (fall 1989) Begin organizing interdisciplinary consulting teams to provide support to communities and state agencies in analyzing particular resource problems. These teams could help in situations where decision makers in local governments and agencies are faced with natural resources issues requiring a great deal of combined technical expertise and have no one to consult even as to basic matters such as drafting a request for proposed research.

The statewide regional water planning effort now taking place offers an example of how this review process might work. Under the regional water planning program communities throughout the state have been funded to draft plans concerning future water needs and sources. In many areas of the state community leaders simply do not know where or how to start this drafting process.

Interdisciplinary consulting teams could meet with these leaders and, in a one-day session, provide them tremendous help at very little cost. Both the affected communities and the University of New Mexico would benefit as a result of the teams' efforts.

Finally, the legislature provides an excellent source for potential public service interaction. In every annual legislative session bills concerning natural resources are introduced. Sometimes these bills are little understood. The legislature would gladly provide space for a review team that could be available to analyze resource legislation from both legal and technical...
standpoints. This legislative review team, which could be staffed by graduate students and supported by both junior and senior faculty, would fill a void that currently exists by offering apolitical information on a nonpartisan basis to all who sought help. The legislators would appreciate the effort, the students would gain invaluable experience, and the University of New Mexico would be giving a tangible product to those who fund it.

Years 2-5: 1990-93 Continue to coordinate work of consulting teams.

Develop Natural Resources Model

Years 3-5: 1991-93 (fall 1990) Transfer and expand the model developed in the Rio Grande laboratory for analyzing information on resource problems to use throughout the state. Although the University already has a data bank containing a great deal of general information, it lacks a system for providing that information as input to a model that would project the effect of resource related changes on natural and social systems.

The NRC has already developed a study of the potential impacts of the interstate water market on New Mexico water supplies and predicted dates when the decrease in water supply would impact particular communities. Efforts such as this should be expanded to include changes in water quantity and quality in relation to changes in demographic patterns and in the extractive industries—particularly the oil, gas, coal, and copper industries.

MANAGEMENT STRUCTURE

Background

From its beginnings in the late 1970s as, in effect, the educational, research, and public service counterparts of the UNM Law School's Natural Resources Journal, the NRC has been conceived of, ambitiously, as a vehicle for cross-disciplinary interchange among all UNM faculty members and academic units engaged in the study of natural resources and environmental subjects. Realization of that potential, which has advanced gradually in the intervening years, seems increasingly possible, if no less arduous.

The Center now has offices in both the School of Law and the Department of Economics, has opened a communications channel linking the resources faculty in the School of Law, the Department of Economics, and the Division of Public Administration, has established programs of interdisciplinary coursework for
for graduate students in these three academic units, has obtained grants for and successfully undertaken several interdisciplinary research projects, and, in the past two years, as a result in large measure from having received its first direct funding allocations from the University, has increased its visibility and involvement in campus affairs. Among other recent accomplishments of the Center, we note the production of an NRC brochure and the first two issues of a newsletter for UNM resources faculty and graduate students, the completion of major phases of NRC projects with the Upper Rio Grande Working Group and the legislative groundwater study team, and NRC initiation of and support for the efforts of the interdisciplinary water curriculum committee. Also, during the same period, law professor Al Utton, editor-in-chief of the Natural Resources Journal and a co-founder with Chuck DuMars of the NRC, has formed an International Transboundary Resources Center with Mexican law professor Alberto Szekely. This Center, known as CIRT, is an affiliate of the NRC and publishes its own triannual newsletter.

The process of working through these various projects has served to clarify the purposes and prospective scope of the NRC in a way that has made imperative the need for the faculty associates group to become more broadly representative of the resource related units on campus and more directly involved in decisions concerning the Center's future. Accordingly, early this spring, in anticipation of the production of this five year plan, the Center held a retreat attended by many of its associates as well as members of the interdisciplinary water curriculum committee who had expressed interest in associating with the Center. The attached management chart and the following elaboration of the elements and relationships displayed in the chart is a product of the retreat and a blueprint for a number of changes, some of which, with the collaborative production of this document, have already taken effect.

### Membership and Organizational Structure

Because it was formed in the School of Law as an element of the law program, the NRC remains administratively located within the School of Law. The Center's Co-directors report to the Dean of the School of Law who in turn reports to the University's Vice President for Academic Affairs.

**Directors and Staff.** Directorship of the NRC resides in two persons who serve as co-directors, professor of economics Lee Brown and professor of law Chuck DuMars. In the past the co-directors and the Center's two half-time staff members, Robin Morgan and Michele Minnis, have had primary responsibility for the management of the Center and, in matters concerning it, have consulted its faculty associates informally or, when formally, on an ad hoc basis.

**Faculty Associates.** The group of NRC faculty associates, limited until recently to members of the resources faculties in law, economics, and public administration, has been expanded to include members of the interdisciplinary water curriculum committee who have not previously been but wish to be associated with the Center. Together with the existing faculty associates, this latter group, which includes professors of community and regional planning, civil engineering, biology, geology, geography, and political science, will henceforth act as the "founding" Steering Committee of the NRC.
Members of this "founding" Steering Committee will remain in office until spring 1990 (Year 2 of plan), at which time the academic units they represent and any other units which have since joined the NRC will select Steering Committee representatives. After 1990, in other words, the Steering Committee will be composed of members chosen by and representative of the faculties of the various academic units associated with the NRC. The "founding" Steering Committee will draw up by-laws for the NRC and will meet at least once a semester (including the annual spring retreat). In making important decisions about programmatic or other affairs of the Center, the NRC co-directors will seek the counsel of the Steering Committee.

Members of the university's resources faculty who want to be affiliated with the Center but not directly involved in its decision making processes will be considered NRC faculty associates for, if they wish, purposes of inclusion in the NRC brochure, and will be kept informed of the Center's business.

Advisory Board. In 1988-89 (Year 1 of plan), with the advice of the "founding" Steering Committee, the co-directors will appoint an Advisory Board composed of persons from outside the University who can speak for the concerns of New Mexicans generally. In 1991-92 (Year 4 of the plan) the Advisory Board will be expanded to include national representation.

Routinely Occurring NRC Activities

The NRC will hold an annual retreat at which the Steering Committee, the Advisory Board, the co-directors and staff will set goals and plans for the upcoming year. In spring 1989 (Year 1 of the plan) and in spring 1992 (Year 4 of the plan) the Center will revise its brochure to reflect changes in membership and activities as described here. The NRC will continue to publish a newsletter, Re:Source, three times a year and will expand circulation of the newsletter as the Center's development warrants.
Addendum: An Even Broader Perspective

We late 20th century inhabitants of the earth can see, in a way impossible to our parents at our age, that our planet's continued ability to sustain life is to a large degree a matter for us, humans, to decide. While this awareness is widespread, its implications are not deeply apprehended. Confronting it we are like groggy children roused from sound sleep by a fire bell. We smell smoke, hear crackling, wince at the uncommon brightness of our surroundings, observe with seeming detachment that the room is ablaze and yet slide again into slumber, certain that it is not reality, but only a dream or a fantasy or, conspiratorially, an elaborate hoax.

Not having been raised with the understanding that our species may control the fate of the earth, we lack a niche for this information in the conceptual schemes that, from infancy, our experiences and training have led us to construct. Indeed, there is no niche for this knowledge; it is the foundation for a new perspective and value system yet to be fully discerned or internalized. Those of us who have chosen as our life's work the study of natural resources—or natural systems, or human interaction with these resources and systems—are both privileged and obliged to assume leadership in the creation of this new scheme.

The thought of leading a trek into an uncertain future is fearsome. If we cannot say precisely where we are headed—cannot comprehend a world in which humans have intelligently, or less so, assumed planetary stewardship—neither can we be sure what we are leaving behind. That is the predicament of transition to the unknown; there are no guideposts. In contemplating the prospect, we sense, uneasily, that we may discover that much of what we now take to be necessary is contingent, much of what we now consider reasonable is unreasonable (or vice versa), and much of what has made us feel secure is illusory.

The major implication of this perspective is that the enterprise of natural resources exploration and stewardship cannot be limited to the natural or social sciences nor to the professions of engineering, law, and planning. In addition to such disciplines as psychology and such professions as education, it must also embrace the humanities and the arts which both reveal and shape value systems. Essentially, it is a task for the University as a whole, and the initial threads of this expanding fabric were identified in this first five year plan. The second five year plan should weave larger and more variegate portions of the tapestry. But, then, the design of this stage is beyond our current reach and should be left for the future.
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<td>IWC Publicity Recruit.</td>
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<td>Revise NRC Brochure</td>
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1990-91 (Year 3)

**FALL**
- Jobs Fair

**WINTER**
- Establish Alumni Assoc.

**SPRING**
- Second Student Cohort (Water) 2nd Grad.
- First Model Application/Continued Use of Sites
- Begin Develop. of Science/Tech. Proposal

**SUMMER**
- Curriculum Development for Primary and Secondary Schools (Education)

1991-92 (Year 4)

**FALL**
- Jobs Fair

**WINTER**
- Third Student Cohort (Water) 3rd Grad.
- Continue Work at Sites and on Model

**SPRING**
- Fourth Student Cohort (Water) 4th Grad.
- Explore Possible Second Curriculum
- Submit Sci/Tech Proposal
- Begin Operation of Sci/Tech Center

**SUMMER**
- Curriculum Development for Primary and Secondary Schools (Education) (continued)

1992-93 (Year 5)

**FALL**
- Jobs Fair

**WINTER**
- Fourth Student Cohort (Water) 4th Grad.
- Continue Work at Sites and on Model

**SPRING**
- Fifth Student Cohort (Water) 5th Grad.
- Maintain Alumni Association
- Expand Advisory Board to national representation

**SUMMER**
- Curriculum Development for Primary and Secondary Schools (Education) (continued)
- Revise NRC Brochure
LEGEND:

- provides input to
- select
- reports to
- interacts with