

B. *Resume*

1. General

a. *April L. Ulery*

b. *Educational Background*

Ph.D., Soil Science, 1992 University of California, Riverside, CA
Areas of Specialization: Soil Mineralogy and Chemistry

M.S., Soil Science, 1985 University of California, Riverside, CA
Areas of Specialization: Soil Physical Conditions and Salinity

B.S., Geology, 1980 University of Redlands, Redlands, CA
Areas of Specialization: Petroleum Geology.

c. *Present Position*

Assistant Professor (Dec., 1997 - present) Department of Agronomy and Horticulture,
New Mexico State University, Las Cruces, NM

d. *Previous Experience*

Environmental Soil Scientist (Jun., 1997 - Dec., 1997) Komex H2O-Science
Environmental Consultants, Westminster, CA

Postdoctoral Research Scientist (1993 - 1997) U.S.D.A.-A.R.S. Salinity Laboratory,
Riverside, CA (*except Sept. 1994 through June 1995*).

Postdoctoral Research Scientist and Teaching Assistant (1994 - 1995) Department of
Environmental Engineering, Massachusetts Institute of Technology, Cambridge, MA

Postdoctoral Research Scientist (1992 - 1993) Department of Soil and Environmental
Science, University of California, Riverside, CA

College Instructor (1991 – 1992, part-time) Department of Physical Sciences,
Fullerton College, Fullerton, CA

Graduate Research and Teaching Assistant (1987 - 1991) Department of Soil and
Environmental Science, University of California, Riverside, CA

Staff Research Associate (1985 - 1987) Department of Soil and Environmental
Science, University of California, Riverside, CA

Laboratory Assistant and Graduate Teaching Assistant (1980-1984) Department of Soil and Environmental Science, University of California, Riverside, CA.

2. Teaching

a. Teaching Responsibility

(1) General instructional area is soil science, specializing in soil chemistry.

(2) Nature of courses taught:

Environmental Soil Chemistry (SOIL/GEOL/CHEM 424/479) fulfills a major requirement for soil science graduate and undergraduate students. It also serves students in other disciplines such as geology, engineering, horticulture and environmental science.

Advanced Soil Chemistry (SOIL 551) is a graduate course for M.S. and Ph.D. students in soil science, agronomy, engineering and geology.

Introduction to Soil Science (SOIL 252) is an undergraduate class taught in rotation with other soil science faculty. This class is a requirement for soil, horticulture, and environmental science majors as well as several other disciplines in the College of Agriculture. Additionally, it serves students from disciplines across campus including geology, biology, and engineering.

Emergency Response to Hazardous Material Incidents (ES/ET/WERC 312) was developed to fulfill a major requirement for undergraduate environmental science students. It also serves other majors (particularly chemistry and engineering) as well as off-campus customers. It satisfies the OSHA 29 CFR 1910.120 training requirements. Co-taught with Mr. Bryan Swain, WERC.

Special Problems (ES/SOIL 449), **Master's Thesis Research** (SOIL/AGRO 598, 599, 600), and **Doctoral Dissertation** (AGRO 700) are only offered to majors in this department.

(3) Special instructional aids and facilities utilized:

Environmental Soil Chemistry (SOIL/GEOL/CHEM 424/479) covers the solid, solution, and gaseous components of soil. To illustrate the structure of soil minerals, rock, soil and mineral samples are used as well as ball-and-stick models, computer simulations, and common items such as Oreo® cookies and sugar cubes. In-class demonstrations are done to illustrate solution chemistry concepts and soil chemical processes. Lectures are accompanied by detailed outlines and handouts containing example problems, references for optional readings, website information, etc. Quantitative problems are solved during lecture and on homework assignments.

Advanced Soil Chemistry (SOIL 551) takes a more in-depth look at the applications of soil chemistry to agriculture and the environment. Class time is essentially all spent in the lab with the students learning techniques, procedures, and equipment use through demonstrations and practice on local soils. Classic soil chemistry publications are discussed and recently submitted manuscripts or textbook chapters are reviewed. Greenhouse experiments have been conducted in conjunction with EPWS 314L to demonstrate soil salinity and plant salt tolerance concepts. Detailed lab reports are an important component of the grade as well as in-class participation in discussions and problem solving.

Introduction to Soil Science (SOIL 252) is a required course for several majors in and outside of our department. This class is available on WebCT (Web Course Tools), although students should attend lectures regularly to excel. WebCT is mostly used to track grades, provide on-line examples and guidelines for homework assignments, and to relay scheduling information. Dr. Lindemann constructed the initial WebCT design for SOIL 252. This means that all I, or the other soils professors, have to do is update and revise class lists, assignments, or examples as needed.

Demonstrations, videos, and soil, rock and mineral samples are utilized to illustrate concepts in class. This is likely to be the only soil science class taken by most of the students, so I try to make it interesting and I assign a lot of practical problems that will be of use in a variety of disciplines. There is a laboratory for this course that includes routine soil property measurements, field trips, and mapping exercises. While it is optional for many majors, the lab is highly recommended.

Emergency Response to Hazardous Material Incidents (ES/ET/WERC 312) is a handy little course taught over two weekends to satisfy OSHA requirements for working on hazardous field sites such as oil fields, mines, and EPA Superfund sites. This is the same course taught by commercial companies at \$500 to \$1,200 per student and makes our Environmental Science students immediately marketable for a variety of jobs and internships. The class utilizes Powerpoint presentations, videos, classroom demonstrations, and exercises. There are several 'dress-out' exercises where the students learn how to don, doff, and work in Self-Contained Breathing Apparatus (SCUBA), Respirators, Class A through D clothing, and how to use radiation and gas detection instruments.

Special Problems (ES/SOIL 449), **Master's Thesis Research** (SOIL/AGRO 599 and 600), and **Doctoral Dissertation** (AGRO 700) all require special equipment, analytical instruments, greenhouse or field facilities, and intense supervision. Field, lab, and greenhouse work is required as well as presentations of research at professional meetings.

(4) Nature of subject matter:

Course notes, handouts and assignments are updated every year to incorporate new information and examples into **Environmental Soil Chemistry** (SOIL 424/479). This

class includes both environmental and agricultural applications, so I teach the basic principles but show they can be used for either soil decontamination or improved plant productivity. Often, numerical examples are derived from the research conducted in my laboratory so that the students can see real-life applications of environmental soil chemistry. Reports from commercial laboratories are presented to the students so they can compare the variety of tests, results, and units that are supplied by analytical labs and how these data can be verified and interpreted. I use the soil chemistry section of the sample professional examination written by the Soil Science Society of America as a guide to organizing and teaching my class. This gives the students an organizational framework that should be similar for soil scientists taught around the world.

Advanced Soil Chemistry (SOIL 551) is more specialized and typically a smaller class. I try to accommodate the students' research interests and professional goals by incorporating readings, lab exercises, and presentations in specific areas of soil chemistry. We often utilize the student teaching lab for this class, but are just as likely to work in the soil chemistry research lab. My favorite part of this class is questioning the written word in soil textbooks. We challenge some of the 'broad-brush' statements that are made about pH, salinity, organic matter, etc. using local soils and established methods. The students write up their procedures and results in detailed reports that could be the basis for research manuscripts or expanded into larger projects. Informal presentations and discussions are used to help the students improve their communication skills and professionalism.

The subject matter in **Introductory Soil Science** (SOIL 252) is well established, although new exercises and problems are incorporated every semester. Additionally, WebCT must be modified for every class and the students' background dictates to some extent what material is emphasized (e.g., how much guidance is provided in solving quantitative problems).

The academic subject matter presented in the **Emergency Response to Hazardous Material Incidents** class (ES/ET/WERC 312) is quite elementary and for most college science students a review of their chemistry, toxicology, and basic physical sciences. The course is restructured from time to time in accordance with changes in the Code of Federal Regulations and amendments or to reflect new toxicological and contamination limits. The opportunity to dress out in SCUBA gear and full Class A safety clothing is one of the most useful aspects of this class. The students learn teamwork and communication skills as they work together to respond to and attempt to mitigate a fabricated hazardous chemical spill.

The subject matter in **thesis** and **dissertation research** courses (AGRO/SOIL 598, 599, 600 and 700) is always changing and being modified as new data are collected and interpreted. The undergraduate students taking special problems (ES/SOIL 449) typically require close supervision and guidance in the lab or field. Additionally, both graduate and undergraduate students require time-consuming direction during the writing phases of their research.

b. *Teaching Load*

(1) Undergraduate courses taught at New Mexico State University.

Semester	Course Number	Course Title	Credit ⁽³⁾	Student Number	SCH ⁽⁴⁾
Fall 1998	CHEM/GEOL/SOIL 424 / 479	Soil Chemistry	3	10	30
Fall 1999	CHEM/GEOL/SOIL 424 / 479	Soil Chemistry	3	5	15
	SOIL 252	Introduction to Soil Science	3	34	102
Spr. 2000	SOIL 252	Introduction to Soil Science	3	43	129
Fall 2000	CHEM/GEOL/SOIL 424 / 479	Soil Chemistry	3	11	33
Spr. 2001	ES/ET 312	Emergency Response to Hazardous Materials Incidents (HAZMAT)	2	9	18
SS I 2001	SOIL 391	Internship	3	1	3
	SOIL 449	Special Problems	3	1	3
Fall 2001	CHEM/GEOL/SOIL 424 / 479	Soil Chemistry	3	11	33
	SOIL 450	Special Topics	1	1	1
Spr. 2002	ES/ET 312	Emergency Response to Hazardous Materials Incidents (HAZMAT)	2	11	22
SS I 2002	SOIL 391	Internship	3	1	3
SS II 2002	SOIL 449	Special Problems	3	1	3
Fall 2002	CHEM/GEOL/SOIL 424 / 479	Soil Chemistry	3	9	27
Spr. 2003	ES/ET 312	Emergency Response to Hazardous Materials Incidents (HAZMAT)	2	15	30
Fall 2003	CHEM/GEOL/SOIL 424 / 479	Soil Chemistry	3	11	33
	SOIL 252	Intro. to Soil Science	3	38	114
	SOIL 252L	Soil Science Laboratory	1	24	24
Total			47		623

⁽³⁾ Number of course credits.

⁽⁴⁾ Student credit hours produced.

(2) Graduate courses taught at New Mexico State University.

Semester	Course Number	Course Title	Credit ⁽³⁾	Student Number	SCH ⁽⁴⁾
Spr. 1998	AGRO 599	Master's Thesis	3	1	3
Fall 1998	AGRO 599	Master's Thesis	3	1	3
Spr. 1999	SOIL 551	Advanced Soil Chemistry	3	9	27
	AGRO 600	Doctoral Research	4	1	4
Fall 1999	AGRO 600	Doctoral Research	9	1	9
Spr. 2000	AGRO 700	Doctoral Dissertation	3	1	3
	AGRO, SOIL 598	Directed Research	2, 3	1, 1	5
Fall 2000	SOIL 600	Doctoral Research	3	1	3
	SOIL 698	Topics in Agronomy	3	1	3
	AGRO 700	Doctoral Dissertation	9	1	9
Spr. 2001	SOIL 551	Advanced Soil Chemistry	3	6	18
	SOIL 600	Doctoral Research	4, 3	2	7
	AGRO 700	Doctoral Dissertation	9	1	9
SS I 2001	AGRO 700	Doctoral Dissertation	4	1	4
Fall 2001	AGRO 700	Doctoral Dissertation	8, 3	2	11
	AGRO 599	Master's Thesis	6	1	6
	SOIL 600	Doctoral Research	3	1	3
	SOIL 500	Special Topics	3	1	3
Spr. 2002	AGRO 700	Doctoral Dissertation	8, 3	1, 2	14
	AGRO 599	Master's Thesis	3	1	3
	SOIL 598	Special Res. Problems	3, 1	2	4
SS I 2002	AGRO 700	Doctoral Dissertation	4	1	4
SS II 2002	AGRO 700	Doctoral Dissertation	4	1	4
Fall 2002	AGRO 599	Master's Thesis	3	2	6
	AGRO 700	Doctoral Dissertation	4, 3	2	7
	SOIL 600	Doctoral Research	4	1	4

Spr 2003	SOIL 551	Advanced Soil Chemistry	3	5	15
	SOIL 598	Special Res. Problems	1	1	1
	AGRO 599	Master's Thesis	8	1	8
	AGRO 700	Doctoral Dissertation	3, 6	2, 1	12
SS 2003	AGRO 599	Master's Thesis	1	2	2
Fall 2003	AGRO 599	Master's Thesis	1	1	1
	AGRO 700	Doctoral Dissertation	3, 9	1, 1	12

⁽³⁾ Number of course credits.

⁽⁴⁾ Student credit hours produced.

(5) Percent teaching time for the last five years averaged 31%

1998: 20%

1999: 40%

2000: 36%

2001: 36%

2002: 26%

c. Teaching Performance

(1) Peer Evaluation.

Dr. Jill Schroeder (EPPWS) and Dr. Antonio Lara (CHEM) both sat in on my Soil Chemistry class for the entire semester in different years. Dr. Jim Fisher (AGHT, Chair) made a visit to my Advanced Soil Chemistry class in 1999. Mr. Bryan Swain (WERC) co-teaches the HAZMAT course with me each spring. Letters by Dr. Schroeder and Mr. Swain in support of my teaching are included in the Appendix.

(2) Evaluations from former students.

Letters from current and former students have been submitted directly to the department chair. As an indication of what students learned in my class, all of the Ph.D. students I've taught in Soil Chemistry passed their written comprehensive examinations, which were based on the Soil Chemistry section of the Professional Soil Science Society of America Examination.

(3) Student course evaluation.

Student evaluations for each course are summarized in the following tables. Some comments from the student course evaluations for each class are included after each summary table. Copies of the evaluation summaries are included in the Appendix.

Summary of Student Evaluations for **Soil Chemistry 479/424** from 1998 to 2002.

1. Teacher's apparent familiarity with subject.	Year	Extensive	Average	Limited
	1998	5	5	0
	1999	4	0	0
	2000	7	2	0
	2001	7	3	0
	2002	8	0	0
2. Teacher's ability to convey knowledge about subject.		Above Average	Average	Below Average
	1998	3	7	0
	1999	3	1	0
	2000	7	2	0
	2001	5	5	0
	2002	7	1	0
3. Teacher's ability to stimulate interest in the subject.		Above Average	Average	Below Average
	1998	4	5	1
	1999	3	1	0
	2000	7	2	0
	2001	7	3	0
	2002	5	3	0
4. Teacher's apparent attitude toward the subject.		Enthusiastic	Average	Bored
	1998	8	1	1
	1999	4	0	0
	2000	9	0	0
	2001	8	2	0
	2002	8	0	0
5. Teacher's apparent attitude toward the students.		Sympathetic	Average	Unsympathetic
	1998	9	1	0
	1999	4	0	0
	2000	8	1	0
	2001	9	1	0
	2002	7	1	0
6. Teacher's impartiality in grading.		Fair	Average	Biased
	1998	6	4	0
	1999	4	0	0
	2000	8	1	0
	2001	7	3	0
	2002	8	0	0

(Soil Chemistry student evaluations continued)

7. Annoying mannerisms in the teacher.		Seldom exhibits	Average	Often exhibits
	1998	5	5	0
	1999	3	1	0
	2000	7	2	0
	2001	5	4	0
	2002	6	1	0
8. Organization of the course.		Excellent	Average	Poor
	1998	2	8	0
	1999	3	1	0
	2000	7	1	0
	2001	5	5	0
	2002	6	2	0
Contrast the teaching of this course with the teaching of other courses you are taking this semester.		Superior	Average	Inferior
	1998	6	3	1
	1999	2	1	0
	2000	7	2	0
	2001	5	5	0
	2002	5	1	0

Selected Remarks:

Very good course and professor. The extra time spent answering questions in office hours was much appreciated.

It was evident throughout the semester that Dr. Ulery put forth a lot of effort to provide a great educational experience for the students and her efforts are very much appreciated.

She presents material using as many visual aids as possible and that's a big help.

I enjoyed this class and I would like to take another course taught by Dr. Ulery in the future.

This is the best chem. class I have taken. The "real world" examples made it applicable.

This course needs to have a lab!

There should be an undergraduate and graduate soil environmental chemistry course.
(Instructor's response: This comment reflects the frustration and difficulty of teaching undergraduate and graduate students together.)

I enjoyed the class. It was worth the 1-hour travel time to take the course!!

Summary of Student Evaluations for **Advanced Soil Chemistry (SOIL 551)** from 1999 to 2001.

1. Teacher's apparent familiarity with subject.	Year	Extensive	Average	Limited
	1999	3	4	0
	2001	4	1	0
	2003	5	0	0
2. Teacher's ability to convey knowledge about subject.		Above Average	Average	Below Average
	1999	3	4	0
	2001	3	2	0
	2003	4	1	0
3. Teacher's ability to stimulate interest in the subject.		Above Average	Average	Below Average
	1999	3	4	0
	2001	4	1	0
	2003	4	1	0
4. Teacher's apparent attitude toward the subject.		Enthusiastic	Average	Bored
	1999	5	2	0
	2001	5	0	0
	2003	4	1	0
5. Teacher's apparent attitude toward the students.		Sympathetic	Average	Unsympathetic
	1999	5	2	0
	2001	4	1	0
	2003	2	2	0
6. Teacher's impartiality in grading.		Fair	Average	Biased
	1999	5	2	0
	2001	5	0	0
	2003	4	0	0
7. Annoying mannerisms in the teacher.		Seldom exhibits	Average	Often exhibits
	1999	3	4	0
	2001	4	1	0
	2003	2	1	0
8. Organization of the course.		Excellent	Average	Poor
	1999	2	4	0
	2001	3	2	0
	2003	2	2	0
Contrast the teaching of this course with the teaching of other courses you are taking this semester.		Superior	Average	Inferior
	1999	3	4	0
	2001	3	1	0
	2003	3	1	0

Summary of Student Evaluations for **Introduction to Soil Science (SOIL 252)** taught in Fall 1999 and Spring 2000.

1. Teacher's apparent familiarity with subject.	Year	Extensive	Average	Limited
	1999	25	6	0
	2000	36	1	0
2. Teacher's ability to convey knowledge about subject.		Above Average	Average	Below Average
	1999	23	6	2
	2000	27	10	0
3. Teacher's ability to stimulate interest in the subject.		Above Average	Average	Below Average
	1999	17	11	3
	2000	26	9	1
4. Teacher's apparent attitude toward the subject.		Enthusiastic	Average	Bored
	1999	28	3	0
	2000	37	0	0
5. Teacher's apparent attitude toward the students.		Sympathetic	Average	Unsympathetic
	1999	20	9	0
	2000	34	3	0
6. Teacher's impartiality in grading.		Fair	Average	Biased
	1999	20	9	0
	2000	35	2	0
7. Annoying mannerisms in the teacher.		Seldom exhibits	Average	Often exhibits
	1999	20	7	4
	2000	24	10	2
8. Organization of the course.		Excellent	Average	Poor
	1999	19	10	2
	2000	28	8	1
Contrast the teaching of this course with the teaching of other courses you are taking this semester.		Superior	Average	Inferior
	1999	17	11	2
	2000	28	6	1

Selected Remarks:

If you find another teacher with this dedication, aptitude, knowledge, caring and organization with a sense of humor – for another class, HIRE immediately.

She teaches the subject of Soils very well and does a good job making it interesting.

I have truly enjoyed this class and would recommend Dr. Ulery to others.

Dr. Ulery is enthusiastic and funny. I enjoyed the Soils class and am amazed by the subject. Thanks!

Teacher is enthusiastic about subject and creates a good environment to learn.

Summary of Student Evaluations for **Emergency Response to Hazardous Materials Incidents (ES/ET/WERC 312)** for 2001 through 2003.

1. Teacher's apparent familiarity with subject.	Year	Extensive	Average	Limited
	2001	7	2	0
	2002	13	2	0
	2003	13	8	0
2. Teacher's ability to convey knowledge about subject.		Above Average	Average	Below Average
	2001	8	1	0
	2002	15	0	0
	2003	15	5	1
3. Teacher's ability to stimulate interest in the subject.		Above Average	Average	Below Average
	2001	7	2	0
	2002	11	3	0
	2003	13	8	0
4. Teacher's apparent attitude toward the subject.		Enthusiastic	Average	Bored
	2001	8	1	0
	2002	14	1	0
	2003	18	3	0
5. Teacher's apparent attitude toward the students.		Sympathetic	Average	Unsympathetic
	2001	9	0	0
	2002	14	0	0
	2003	15	6	0
6. Teacher's impartiality in grading.		Fair	Average	Biased
	2001	4	1	0
	2002	12	0	0
	2003	13	5	0
7. Annoying mannerisms in the teacher.		Seldom exhibits	Average	Often exhibits
	2001	8	1	0
	2002	11	3	0
	2003	14	6	0
8. Organization of the course.		Excellent	Average	Poor
	2001	7	2	0
	2002	14	1	0
	2003	12	9	0
Contrast the teaching of this course with the teaching of other courses you are taking this semester.		Superior	Average	Inferior
	2001	6	2	0
	2002	12	3	0
	2003	9	10	0

Selected remarks:

I think I learned a lot and I feel I have developed the right attitude toward hazardous situations.

She is a fun, energetic teacher. She conveys the knowledge well. Her attitude was awesome.

I learned more than I expected.

d. *Teaching Services*

(1) Academic advising:

The Soils and Environmental Science faculty share in the task of advising undergraduates. There are some students that I advise regularly, but they can meet with any Soils faculty as needed. I regularly participate in both College and Departmental advising workshops, often on weekends (1998 – 5 times; 1999 – 4 times; 2000 – 2 times; 2001 – 2 times; 2002 – 4 times; 2003 – 3 times).

I have written letters of reference for job applications, graduate school, scholarships, and awards. In addition to course selection, I advise on career plans, job or internship placement, and resume preparation.

I conduct degree checks for many of our graduating seniors and write memos to facilitate the transfer of credits from other institutions and substitution of classes.

I occasionally participate in the weekly chat room of the Environmental Science Student Organization and help as needed on Earth Day and other special events.

To advise graduate students, I maintain my graduate faculty status.

(a) Number of undergraduates advised: Environmental Science (>20 per year); Soil Science (2)

(b) Number of graduates: I have four current graduate students and co-advise three others. One Ph.D. and one M.S. student have graduated under my program.

Major advisor for:

Magdalena Villa-Castorena (Ph.D., May 2003): Salinity and nutrient effects on chile pepper growth and yield

Ramona Parra (Ph.D.): Behavior of depleted uranium in calcareous, arid zone soils

Marco Huez-Lopez (Ph.D.): Organic fertilizer effects on the growth and yield of chile pepper under saline conditions

Yohei Hashimoto (M.S., Aug. 2003)

Victoria Anne (M.S.)

Co-advisor for:

Ahmet Kurunc (Ph.D., 2000) – Nitrogen from dairy lagoons for sustainable crop production, environmental protection, and effect on soil properties. With Dr. Flynn

Devon McNeal (M.S.) with Dr. Monger

Elena Sevostianov (M.S.) with Dr. Lindemann

Angie Sells (M.S.) with Dr. McCaslin

Committee member for:

AGHT:

Marco A. Inzunza (M.S. & Ph.D.)	Gordon Michaud (M.S.)
Sergio Guerrero-Morales (Ph.D.)	Mark Richer (M.S.)
Naomi Assidian (Ph.D.)	Sharon Bruce (M.S.)
Julia O'Hallorans (Ph.D.)	Margery Paroissien (M.S.)
Alfonso Serna-Perez (Ph.D.)	Mohammed Tahboub (M.S., Ph.D.)
Ernesto Catalan (Ph.D.)	Casey Johnson (M.S.)
Murray Stepro (Ph.D.)	Alex Rey (M.S.)
Yoshi Ikemura (Ph.D.)	

CAGE:

Dino Bonaldo (M.S.)	Jeanne Carroll (M.S.)
James Roberts (M.S.)	Heriberto Torres (M.S.)
Christopher Payne (M.S.)	Shafiqul Abed (M.S.)

GEOL:

Lynn Sabido (M.S.)	Gregory Wheeler (M.S.)
Lawrence (Sam) Bothern (M.S.)	

ANRS:

Steven Perkins (Ph.D.)	Lans Stavast (M.S.)
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(c) Number of international students: Major advisor for 3 international graduate students.

(d) Special activities involved with international students: I mentored and directed the senior research project of a German undergraduate student, Sonja Duerr-Auster.

(e) Other advising services to students: *Mentoring Activities*

Duties include advising students on academic and career issues as well as writing letters of recommendation for jobs and/or graduate school.

McNair advisor to a Native American student in Environmental Science
WERC mentor to Engineering and Environmental Science students
Mentor to a first generation Hispanic student in the Agricultural Science Student Undergraduate Research and Education Development (ASSURED) program sponsored by CAHE and the Chili Pepper Institute
Mentor to two undergraduates in the College of Agriculture
NM-AGEP mentor to a graduate student in Interdisciplinary Studies

e. Honors or awards

2000 Outstanding Student Mentor in the WERC Undergraduate Fellowship Program (for work with Amber Keenan).

f. Professional Service to Teaching

(1) Development of instructional resources

As part of a Special Problems course (SOIL 449) a Soil Science undergraduate developed some classroom demonstrations to illustrate key concepts in soil chemistry. These demonstrations will be used in Introductory Soil Science, Soil Chemistry, and Environmental Science classes. I have worked with our teaching assistants to prepare and present in-class demonstrations on soil properties.

I modify and add to the WebCT material for Introductory Soil Science whenever I teach that course. I have provided critical reviews of four chapters in a new soil chemistry textbook that will be published this year. I have helped professors in developing soil science exercises for the Internet. Soil science professors at other institutions have requested my course notes, exams, and problem sets.

(2) Guest lectures and evaluation of students' presentations

HORT 100 (10/01, 4/02) – Properties of soils

HORT 533 (10/01) Soil salinity and plant salt tolerance

AGRO 447 (5/02; 5/03) – Evaluation of oral presentations

HORT/SOIL 505 (11/98, 12/01, 12/02) – Evaluation of posters and oral presentations

ES 470 (1/98, 3/98, 4/98 4/99, 3/00, 4/00) – sampling contaminated sites, oilfield remediation, and careers in environmental consulting

CE 330 (9/98) – Dairy wastewater land application and biodegradation

SOIL 252 (2/98, 4/03) – Soil structure; soil pH

SOIL 447 (5/01) – Conducted mock job interviews

ES 110 (10/01) – Environmental contamination and remediation

WERC Environmental Academy (7/98) Soil chemistry, nitrogen cycling, and soil properties; helped evaluate student projects; organized a field trip to a local dairy and land application site.

Graduate Research and Arts Symposium (5/99) Judge of oral and poster presentations by graduate students in several fields.

Statewide Undergraduate Student Research Conference (9/99) Judge posters.

(3) Committee memberships

AGHT Department Student Recruitment and Retention Committee

Curriculum Committee (as part of the Soils/ES faculty under Dr. Lindemann)

Advisory Board of the NMSU Teaching Academy

Direct Assessment of Learning Committee

(4) Recruitment

Soil Chemistry and Teaching Lab Tours in Skeen Hall:

SIPI (Southwest Indian Polytechnic Institute) on 5/18/00 and 3/14/01.

Visitors at the McElyea Courtyard dedication celebration (10/19/02)

University Women's Association (2/01)

Margaret Cunha and her parents (convinced her to come to NMSU for E.S. degree instead of Rutgers University)

TVI (Technical Vocational Institute of Albuquerque) students (7/20/00)

Representing NMSU, CAHE, or AGHT at Career Fairs and Visitor Days:

Presentation to high school counselors and principals with Dr. Mexal (11/5/98)

Student Visitor Day (2/16/98) with Dr. Wall

Gadsden Middle School Career Day (2/25/99)

El Paso Community College Career Fair (4/21/99)

Open or undeclared advising workshop at the NMSU Corbett Center (6/21/99)

Workshops Presented:

“Careers in Agriculture” presented to ASSURED students (7/30/03)

Soil chemistry for 115 6th graders from Sierra Middle School (10/13/00) with Drs. Cantrell and Bosland

“Getting the Dirt on Soil” for high school teachers in Silver City (6/25/98)

“Hands-on” soil properties for Central Elementary School students (2/3/00)

“Meet the Faculty” for new freshman in the College of Agriculture (6/30/03, 7/21/03). Panels of three CAHE professors answered questions and discussed strategies for successful transition from high school to college.

Graduate Student Recruitment:

Organized and helped fund visits by potential graduate students Kelli Camara, Devon McNeal, and Brooke Mason.

NMSU Agronomy and Horticulture recruitment table at Soil Science Society national meetings (1999 and 2000).

(5) Self Improvement

ITAL (Institute for Technology-Assisted Learning) WebCT class July 6 through 17, 1998

Consulted with Branson Library to arrange class and individual tours of the library, get reference materials for students, and have materials put on reserve

Peer Coaching: biweekly workshops during Spring 2000 plus teaching evaluation visits between classes for my peers and I.

CED (Center for Educational Development) Teaching seminars:

“Teaching Portfolio” by Tom Cyrs (11/13/98);

“Who are adult students and what motivates them to learn?” By Enedina Vazquez (4/7/99);

Teaching Academy Forums (2/7/03, 2/28/03 and 3/20/03);

“Never a Dull Moment: Teaching and the Art of Performance” by Jyl Lynn Felman (4/3/02)

“The Four Scholarships: Discovery, Integration, Application, and Teaching by Charles E. Glassick (8/28/03)

Short course on conflict management at DABCC (5/4/99 and 5/6/99)

Invited Felicia Zamora Abeyta from the Center for Learning Assistance to present a guest lecture in SOIL 252 on learning styles, study tips, and time-management.

Attended CHEM 371, Analytical Chemistry taught by Gary Rayson in Spring 2002 to observe class content and style for the purpose of advising my students and improving my own knowledge base.

Attended EPWS 520 Pesticides in the Environment taught by Drs. Tracy Sterling and Jill Schroeder in Spring 2001 to enhance my understanding of plant-soil-pesticide interactions and chemistry.

3. Research and Other Scholarly Activity

a. Research Responsibility and Load

(1) Creative Activity

The overall theme of my research program is soil quality and how to get the most out of this precious resource – both in terms of agricultural productivity and environmental issues. Whether the function of the soil is crop production or recycling of wastes, I am interested in quantifying soil properties including salinity, nutrient status, contaminant concentrations, and other physical and chemical characteristics that will help define soil quality as well as plant-soil interactions.

Specific focus has been given to chile pepper yields when grown under saline conditions, potentially an increasing problem in New Mexico soils as our water resources dwindle. Characterization and remediation of soils contaminated with hydrocarbons, radionuclides, and dairy wastes have paid my bills most recently. A common thread that runs through all of my work is the desire to understand and improve the soils of New Mexico specifically and arid lands in general.

(2) Research Areas – I am the principal investigator for the following areas of research:

(a) **Soil quality** of irrigated agriculture in the southwestern U.S. including specific projects relating to salinity, nutrients, and organic matter in soils.

- (i) Soil Quality of Irrigated Agriculture. Funded by the USDA-NRCS-Soil Quality Institute: \$12,942 (Project complete, one book chapter published and another manuscript is in preparation). Supported one M.S. student and two undergraduate lab assistants part-time.
- (ii) Salinity and Nitrogen Effects on Chile Pepper Growth and Yield. Funded by the NM Chile Commission: \$4,400 (Project complete and two manuscripts are in preparation, one has been accepted for publication in 2003.) Partially supported one Ph.D. student.
- (iii) Improving the Soil Quality of New Mexico and Arid Land Soils. Funded by New Mexico Agricultural Experiment Station and Hatch program (5 years at \$10,000/yr). Supporting analytical, computer, and statistical interpretations as well as part-time graduate and undergraduate students as needed.

(b) Characterization and **remediation** of arid zone soils with projects including phytoremediation of metal and hydrocarbon-contaminated soils, firing range and oil field reclamation, and restoration of rangeland ecology.

(i) Impacts of Alpha Biocatalyst on pollution in dairy wastewater and on soil chemistry. Funded by WERC as a Seed Project for \$7,227. (Project complete and technical report submitted).

(ii) Phytoremediation of Depleted Uranium Contaminated Soils. Funded by the Department of Defense through NMSU Physical Science Laboratory for \$509,775. (Project on going, several manuscripts in review, and several graduate theses and dissertations in progress). Supporting one technician, at least three graduate students and several undergraduates.

Collaborative research projects: I am, or have been a co-investigator on the following interdisciplinary projects.

(a) Phyto-Extraction Technology in Arid Environments and Army Metals Technology Support (with Bobby McCaslin, AGHT). Funded by DoD (Army) through Physical Science Laboratory for \$491,783 including equipment.

(b) Dairy Wastewater Biodegradation and Odor Control (with Fernando Cadena, CAGE). Funded by WERC: \$83,045 (Project complete, technical report submitted, and journal publication is in press).

(c) Ecological Role of Fungal Endophytes in Water and Nutrient Relations of Black Grama: Implications for Desert Grassland Restoration (with Laurie Abbott, (ANRS), Jerry Barrow (ARS), and Steve Smith, (U.AZ.)). Funded by Southwest Consortium on Plant Genetics and Water Resources for \$26,576 (Project is in second year, we have presented two posters).

(d) Copper Tailings as Fertilizer Iron Source (with John Mexel, Connie Falk, and Geno Picchioni). Funded by SCERP: \$40,000 (Project is complete and a proceedings paper is in preparation).

(e) Identification and Detection of Problem and Noxious Weeds on Irrigation Canals will Lead to Effective Weed Management Programs and Increase Water for Irrigation (with Jill Schroeder, Bob Sanderson, and Richard Lee) – funded by USDA through the Rio Grande Initiative: \$20,000 for my part of the project (Project started in summer of 2002 and a “white” paper has been submitted and revised; Cooperative Extension bulletin has been drafted).

(f) Instrument Acquisition to Analyze Water, Soils, and Biomass for Environmental Research, Monitoring, and Assessment (with Sam Fernald, Laurie Abbott, and Clint Loest, ANRS). Funded by NSF Major Research Instrumentation Grant for \$216,922.

(3) Nature and scope of research areas

(a) As Principle Investigator (PI) in the above projects, I have the direct responsibility of executing the proposed research, completing specific deliverable tasks, and reporting the results in the form of technical reports, scientific journal articles, and/or proceedings. I have supported several graduate students and full- or part-time technicians on these projects. One Ph.D. dissertation and one M.S. thesis have been completed on the projects listed above.

(b) The scope of research covered in all of the research projects listed above revolves around soil quality and remediation. One central theme has emerged in my research program: the improvement of New Mexico soil quality is beneficial for both agriculture and the environment. My approach is two pronged: 1) arid zone soils could benefit from more organic matter (to enhance water holding capacity, nutrient levels, and soil structure), and 2) animal wastes are a plentiful source of organic matter. New Mexico is one of the ten largest dairy producing states in the country and produces large amounts of animal wastes, high in nitrogen, phosphorus, and salts. By *carefully* disposing of these organic wastes we could potentially take care of two problems at once – waste disposal issues and poor soil quality. Thus, my research projects include the use of organic wastes and the evaluation of soil quality, especially salinity and nutrient levels.

(c) One fundamental question behind much of my research is whether organic matter helps mitigate soil salinity and specifically does organic matter affect plant response to soil salinity or other soil contamination? Extensive research has revealed that inorganic sources of salinity are well understood and accounted for, but organic matter interactions with salinity are neither reported nor understood.

(d) As co-PI on several interdisciplinary projects, I am often the only soil scientist. Thus my responsibility is to design and supervise soil sampling, analytical protocols, and interpretation of the data. I assist in reporting the results in technical reports or scientific journal articles. Interdisciplinary research, particularly for ecological issues, is highly valued at all levels and as a soil scientist, I have been approached by my colleagues in several departments in CAHE, as well as departments in the university, and environmental consulting firms, to participate in research covering a variety of subjects. I believe I have shown a high degree of ability and enthusiasm in working with other scientists on their projects to the benefit of my own department. Evidence of this teamwork includes manuscripts published in a variety of journals with my colleagues as coauthors.

When my students prepare at least the first draft of a manuscript, I list them as first authors and usually make myself the last author. For any research done in my laboratory or under my funding, I act as corresponding author on manuscripts and handle all submission details and revisions.

(4) Percent research time averages 69% but ranges from 60 to 80%.

(5) Other:

(a) Responsibility for research equipment and facilities.

Participated in new laboratory planning with the Soils faculty and coordinated the relocation of the Soil Chemistry research lab to Skeen Hall from Gerald Thomas Hall. I assisted the Soils faculty in organizing the Carbon and Nitrogen lab, Soil Preparation Lab, and the ICP Spectrometry Lab in Skeen Hall. The radiation permit allowing our work with depleted uranium is in my name.

The Soils greenhouse (2D) at Fabian Garcia Horticulture Farm was cleaned and repaired in preparation for several graduate student projects. After a former period of underutilization, the greenhouse is now clean, fully functional (including grow lights and automatic irrigation systems) and used for a variety of interdisciplinary projects. We also have a special use area in the greenhouse for radioactive research involving depleted uranium.

Special equipment includes an ICP-OES spectrometer (with Dr. McCaslin), Atomic Absorption spectrometer (with Dr. Lindemann), Nitrate/Ammonia microplate reader (with Dr. Flynn), microwave digesters (with Dr. McCaslin), electrical conductivity and pH meters, benchtop centrifuge, muffle furnace, drying oven, computers and geochemical software.

An NSF major instrument grant funded in Fall 2002 allowed us to purchase a carbon/nitrogen analyzer, portable X-ray fluorescence meter, particle size analyzer, and an ion chromatograph (with Drs. Fernald, Abbott, and Loest of Animal and Range Science). All equipment is housed in Knox Hall and available for environmental, soil, and watershed research. I co-fund a student employee to maintain and use this equipment.

(b) Research Services

Manuscript reviews: 20 internal peer reviews and 24 external peer reviews.

Reviewer for several scholarly journals including Soil Sci. Soc. Am. J., HortScience, HortTechnology, J. Agric. Food Chem., Soil Science, Agron. J., Geoderma, J. Plant Foods for Human Nutrition, Clays and Clay Minerals, Restoration Ecology, and Environmental Pollution.

Associate Editor for Soil Science Society of America Journal (1997-1999).

Chair-Elect of the Soil Science Society of America Book Series Committee S370, (will chair from 2004-2006).

Project outline reviews: 3 internal and 1 external.

Grant proposal reviews: USDA Water Quality Program panel member for three years (2000 – 2002) including at least 30 proposal reviews and travel to Washington, DC for a week each year. Served as reviewer for five Arid Land Consortium or other proposals as requested.

(c) Self-improvement, training and workshops

Grant writing seminar on 1/9/98 hosted by the Engineering College.

Grant-writing workshop on 6/22/98 through 6/23/98.

Visited Auburn University Soil Chemistry Laboratory and received training on nitrogen analysis using microplate techniques.

Traveled to Mora, NM to visit Agricultural Experiment Station and the Unocal Questa Molybdenum Mine (2/98) in anticipation of research collaboration.

Toured the Alcalde Agricultural Experiment Station with Steve Gulden (4/98).

Completed UXO (Unexploded Ordinance) training and field tour of White Sands Missile Range (12/18/98).

Time Management seminar at NMSU (2/14/03).

b. *Professional Communications*

(1) Publications

Refereed Journal Articles

Ulery, A.L., R. Flynn, R. Parra. 2003. Dairy Wastewater Sample Preservation Using Sulfuric Acid. *Environmental Monitoring and Assessment*. (In Press).

Villa, M., **A.L. Ulery**, E. Catalan, and M.D. Remmenga. 2003. Salinity and nitrogen effects on chile pepper growth and yield. *Soil Science Society of America Journal*. (In press).

Wellman, D.E., **A.L. Ulery**, M.P. Barcellona, and S. Duerr-Auster. 2001. Animal waste-enhanced degradation of hydrocarbon-contaminated soil. *Soil & Sediment Contamination*. 10:511-523.

Sternberg, P.D., **A.L. Ulery**, and M. Villa-C. 2001. Salinity and boron effects on growth and yield of tepary and kidney beans. *HortScience*. 36:1269-1272.

Reid, D.A., D.E. Wellman, **A.L. Ulery**, and S. Jones. 2001. Variation in petroleum hydrocarbon chain lengths with depth at a former crude oil and natural gas production facility. *Journal of Soil and Sediment Contamination* 10: 593-609.

Ulery, A.L., S. Stewart, D.A. Reid, and P.J. Shouse. 2000. Vacuum method for field installation of pipes and casings in sandy soils. *Soil Science*. 165:269-273.

Wellman, D.E., D.A. Reid, and **A.L. Ulery**. 1999. Elevated soil arsenic levels at a former crude oil storage facility - Assessment, remediation, and possible sources. *Journal of Soil Contamination*. 8:329-341.

Publications prior to joining NMSU:

Ulery, A.L., J.A. Teed, M.C. Shannon, and M. Th. van Genuchten. 1998. SALTDATA: A database of plant yield response to salinity. *Agronomy Journal*. 90:556-562.

Ulery, A.L. and F.F. Ernst. 1997. Sorghum response to saline industrial cooling water applied at three growth stages. *Agronomy Journal*. 89:392-396.

Swartz, C.H., **A.L. Ulery**, and P.M. Gschwend. 1997. An AEM-TEM study of the nanometer-scale mineral associations in an aquifer sand: Implications for colloid mobilization. *Geochimica et Cosmochimica Acta* 61:707-718.

Ulery, A.L., R.C. Graham, and L.H. Bowen. 1996. Forest fire effects on soil phyllosilicates in California. *Soil Science Society of America Journal*. 60:309-315.

Ulery, A.L., R.C. Graham, O.A. Chadwick, and H.B. Wood. 1995. Decade-scale changes in soil carbon, nitrogen, and exchangeable cations under chaparral and pine. *Geoderma*. 65:121-134.

Ulery, A.L. and R.C. Graham. 1993. Forest fire effects on soil color and texture. *Soil Science Society of America Journal*. 57:135-140.

Ulery, A.L., R.C. Graham, and C. Amrhein. 1993. Wood-ash composition and soil pH following intense burning. *Soil Science*. 156:358-364.

Graham, R.C., **A.L. Ulery**, R.H. Neal, and R.R. Teso. 1992. Herbicide residue distributions in relation to soil morphology in two California Vertisols. *Soil Science*. 153:115-121.

Manuscripts in Review or Revision

A.L. Ulery, J.G.Mexal, and T.W. Sammis. A mentoring program that helps untenured faculty navigate the academic maze. *NACTA Journal*. (In Review).

Stavast, L.J., T.T. Baker, **A.L. Ulery**, R.P. Flynn, and M.K. Wood. New Mexico blue grama rangeland response to dairy manure application. *Journal of Range Management*. (In Revision).

Buck, B.J., A.L. Brock, W.H. Johnson, and **A.L. Ulery**. Corrosion of depleted uranium in an arid environment: Soil-geomorphology, SEM/EDS, XRD, and electron microprobe analyses. *Journal of Contaminated Sediments* (In Review).

Picchioni, G.A., C.J. Graham, and **A.L. Ulery**. Gypsum effects on growth and macroelement accumulation of field-grown *Asimina triloba* irrigated with low-saline, sodic water. *HortScience* (In Review).

Hashimoto, Y., M. Blaylock, M.P. Elless, and **A.L. Ulery**. Uranium phytoextraction by arid zone plants. *International Journal of Phytoremediation* (In Review).

Hashimoto, Y., L. Boyse, V. Anne, M. Remmenga, and **A.L. Ulery**. A sand culture method of screening plants for uranium phytoextraction. *International Journal of Phytoremediation* (In Review).

Book Chapters

Ulery, A.L. and A.J. Tugel. 1999. Farming In New Mexico: Soil Quality and Productivity Maintenance. *New Mexico J. Science*. 39:86-108.

Ulery, A.L. 2002. Amorphous Minerals. *In: Lal, R. (Ed.) Encyclopedia of Soil Science*. Marcel Dekker, Inc. P. 56-59.

Reid, D.A. and **A.L. Ulery**. 2002. Environmental Applications of Smectites. *In: Dixon et al. (Eds.) Applications of Soil Mineralogy to the Environment*. Soil Science Society of America. Madison, WI. P. 467-499.

Ulery, A.L. Edaphology. *In: D. Hillel et al. (Eds.) Encyclopedia of Soils in the Environment*. Academic Press. London. (In Press).

Proceedings

Flynn, R., **A.L. Ulery**, and Y. Lamm. 2001. Compost-enhanced Remediation of Arsenic- and Lead-Contaminated Soil. Presented to the Western Nutrient Management Conference, Salt Lake City, Mar 8-9, 2001.

Ernst, F.F., **A.L. Ulery**, and L.H. Stolzy. 1989. Use of saline industrial cooling water with minimal leaching for crop production on arid soils. Proceedings of the American Water Works Association Water Reuse Symposium IV. P. 967-983.

Experiment Station Publications

Abbott, L.B., and **A.L. Ulery**. 2003. Long-term effects of burning and herbicide treatments on soil nutrient dynamics in shortgrass prairie. *In*: K. McDaniel (Ed.) Research Briefs: Corona Rangeland and Livestock Research Center 1990-2002. (In press).

Flynn, R., R. Phillips, **A. Ulery**, R. Kochevar, Linda Liess, and M. Villa. 2002. Chile seed germination as affected by temperature and salinity. New Mexico Chile Task Force Report 2, New Mexico State University, College of Agriculture and Home Economics, Las Cruces, NM.

Schroeder, J., R. Sanderson, **A. Ulery**, and R. Lee. Identification and detection of problem and noxious weeds on irrigation canals will lead to effective weed management programs and increase water for irrigation. *In*: Rossana Sallenave (Ed.) Water Task Force Publication No. 1. New Mexico State University College of Agriculture and Home Economics.

Published Abstracts

Stavast, L.J., T.T. Baker, M.K. Wood, **A.L. Ulery**, and R.P. Flynn. 2002. Effects of dairy manure disposal on blue grama rangelands: Results on vegetation, soils, and runoff water quality. Livestock Research Briefs and Cattle Growers Short Course. March 21-22, 2002. Las Cruces, NM. P. 78.

Stavast, L.J., T.T. Baker, M.K. Wood, **A.L. Ulery**, and R.P. Flynn. 2002. Application of dairy wastes to blue grama rangelands in New Mexico: Results on vegetation, soils, and runoff water quality. 55th Annual Meeting of the Society for Range Management. Feb. 13-19, 2002. Kansas City, MO. P. 25.

Stavast, L.J., T.T. Baker, M.K. Wood, **A.L. Ulery**, and R.P. Flynn. 2002. Effects of dairy wastes on vegetation and runoff in blue grama rangelands in New Mexico. New Mexico Section Winter Meeting. Rangeland Issues along the New Mexico – Mexico Border. Jan. 8-10, 2002. Las Cruces, NM. P. 10.

Flynn, R., R. Parra, **A.L. Ulery**, A. Keenen. Dairy Wastewater Sample Preservation Using Sulfuric Acid. Presented to the Soil Science Society of America annual meetings, Charlotte, NC, Oct. 21-25, 2001.

- M. Villa-Castorena, **A.L. Ulery**, and E.A. Catalan-Valencia. Salinity and nitrogen effects on chile pepper growth and yield. Presented to the Soil Science Society of America annual meetings, Charlotte, NC, Oct. 21-25, 2001.
- D.A. Reid, **A.L. Ulery**, L.E. Moody, D.E. Wellman, S. Jones. Petroleum hydrocarbon chain length variation with depth at a former oil facility. Presented to the Soil Science Society of America annual meetings, Charlotte, NC, Oct. 21-25, 2001.
- Wellman D.E., R.W. Benz, and **A.L. Ulery**. 2000. Extraction study for enhanced biodegradation of petroleum hydrocarbons in soil utilizing animal manure amendments. *Abst. Am. Chem. Soc* Vol. 219 (pt.1) P. 150-ENVR Mar. 26, 2000.
- M. Villa-Castorena, **A.L. Ulery**, and E.A. Catalan-Valencia. 2000. Salinity and nitrogen effects on nutrient uptake by chile pepper plants. *Agronomy Abstracts* P. 275.
- Flynn, R.P., A. Kurunc, and **A.L. Ulery**. 2000. Using irrigated pastures for dairy wastewater nitrogen recovery. *Agronomy Abstracts* P. 285.
- Guerrero-Morales, R.P. Flynn, and **A.L. Ulery**. 2000. Calcium carbonate effects on P adsorption in New Mexico soils. *Agronomy Abstracts* P. 369.
- A.L. Ulery** and R. Flynn. 2000. Compost-enhanced remediation of arsenic-contaminated soil. *Agronomy Abstracts* P. 371.
- Harris, W.G., **A.L. Ulery**, and J.B. Dixon. 2000. Great ideas in soil mineralogy. *Agronomy Abstracts* P. 373.
- Reid, D.A., L.M. Bach, C. Powell, and **A.L. Ulery**. 2000. Regulatory standards versus background concentrations of arsenic in selected soils from southern California and Alberta, Canada. *Agronomy Abstracts* P. 375.
- Ulery, A.L.**, H.C. Monger, and J. Kipp. 1999. Mineralogy of playa crusts in New Mexico. *Agronomy Abstracts* P. 323.
- Wellman D.E., M.P. Barcellona, **A.L. Ulery**, S. Duerr Auster. 1999. Abstracts of Papers of The American Chemical Society, v. 217 (pt.1) P. 152-ENVR Mar. 21, 1999.
- Ulery, A.L.**, S. Stewart, A. Brown, and D.A. Reid. 1998. Vacuum method for field installation of pipes and casings in light, loose media. *Agronomy Abstracts* P. 175.
- Ulery, A.L.**, J. Teed, W. Russell, M.Th van Genuchten, and M. Shannon. 1995. A Software Package for Analyzing and Estimating Crop Salt Tolerance. *Agronomy Abstracts* P. 63.

- Ulery, A.L.** and M.Th. van Genuchten. 1994. Designing and Building a Crop Salt-Tolerance Database. *Agronomy Abstracts* P. 238. *Encore display of poster, by invitation, at the 1995 California Plant and Soil Conference in Visalia, CA.*
- Fargerlund, J., **A. Ulery**, and P.J. Shouse. 1994. Quantitative Soil Extraction Method for Conservative Tracer Solutes in Soils. *Agronomy Abstracts* P. 250.
- Ulery, A.L.**, R.C. Graham, O.A. Chadwick, and H.B. Wood. 1993. Mass Balance of Soil Carbon, Nitrogen, and Exchangeable Cations Under Chaparral and Pine. *Agronomy Abstracts* P. 307.
- Ulery, A.L.**, R.C. Graham and L.H. Bowen. 1992. Forest Fire Effects on Iron Oxides in California Soils. *Agronomy Abstracts* P. 362.
- Ulery, A.L.** and R.C. Graham. 1991. Forest Fire Effects on Soil Phyllosilicates. *Agronomy Abstracts* P. 369.
- Ulery, A.L.** and R.C. Graham. 1990. Effects of Fire on Soil Morphology and Mineralogy in an Oak Woodland. *Agronomy Abstracts* P. 306. *Additional encore displays of poster, by invitation, at the 1991 California Plant and Soil Conference in San Luis Obispo and at the USDA Cooperative State Research Service Business Officers Meeting in San Diego, 1995.*
- Reid, D.A., **A.L. Ulery**, and R.C. Graham. 1989. Soil Properties Affecting Infiltration along a Geomorphic Transect in the Carrizo Plain, CA. *Agronomy Abstracts* P. 269.
- Ulery, A.L.**, P.D. Sternberg, and L.H. Stolzy. 1987. Salinity and Boron Tolerance of Kidney Beans (*Phaseolus vulgaris* L.) Grown in Solution Culture. *Proc. AAAS, Pacific Div, San Diego State Univ.* P. 40.
- Ernst, F.F., **A.L. Ulery**, L.H. Stolzy, and W.A. Jury. 1987. Irrigation System Design for Maximum Uniformity and Salt Precipitation. *Western Soc. Soil Sci. Annual Meeting, Pacific Div., San Diego State Univ.*
- Ulery, A.L.** and L.H. Stolzy. 1985. Kidney bean emergence force as affected by salinity and temperature. *Amer. Soc. Agricultural Engineers. St. Joseph, MI.* 6 p (NAL: FICHE 290.9 AM32P).
- Ulery, A.L.**, L.H. Stolzy, and G.J. Hoffman. 1984. Kidney Bean Emergence Force as Affected by Salinity and Temperature. *Agronomy Abstracts* P. 173.

Other Articles

Ulery, A. 2003. What makes a great Lowenstein lecturer? Dr. Kathy Banks does! Hort Alumni Newsletter, Vol. 8, No. 2, page 6. Agronomy and Horticulture Department, New Mexico State University, Las Cruces, NM.

(2) Papers Presented

2002 National Meeting of the Soil Science Society of America, Indianapolis, IN
Nov. 10-14.

Title: Effects of Steer Manure and Citric Acid Amendments on Depleted Uranium (DU) Movement through Arid Zone Soils. R. Parra, Y. Hashimoto, J. Kallestad, and **A. Ulery**.

Title: Evaluation of Rapidly Biodegradable Chelating Agents for Lead Phytoextraction. M. P. Elless, **A.L. Ulery**, R. Parra, and M.J. Blaylock.

2002 New Mexico Water Research Symposium. Socorro, NM. August 13, 2002

Title: Appropriate Preservation of Dairy Wastewater Samples for Environmental Analysis. **A.L. Ulery**, R. Flynn, and R. Parra.

Title: Vegetation, Soil, and Runoff Responses to Dairy Solids Applied on a Blue Grama Rangeland in New Mexico. L.J. Stavast, T.T. Baker, **A.L. Ulery**, R.P. Flynn, and M.K. Wood

Title: Dairy Lagoon Effluent Effects on Soil and Grass Forage. A. Kurunc, R.P. Flynn, and **A.L. Ulery**.

2000 New Mexico Environmental Health Conference, Albuquerque, NM. Oct. 25.

Title: Dairy Wastewater Biodegradation and Hydrologic Balance", **April L. Ulery**, Fernando Cadena-C, and Graham Thompson.

2000 Southwest Center for Environmental Research and Policy (SCERP) Technical Conference, Cd. Juárez, Chihuahua, Oct. 11-13.

Title: Feasibility on the use of copper mine tailings as iron fertilizers. **A.L. Ulery**, C. Falk, J.G. Mexal, G. Picchioni.

1999 New Mexico Chile Conference, Las Cruces Hilton, Feb. 2.

Title: Soil and Tissue Testing for Maximizing Chile Yields. **A.L. Ulery** and R.P. Flynn.

1999 International Petroleum Environmental Conference in Houston, TX.

Title: Variation in Petroleum Hydrocarbon Chain Lengths with Depth Beneath a Former Crude Oil and Natural Gas Production Facility. Reid, D.A., D.E. Wellman, **A.L. Ulery**, and Steve Jones. .

(3) Other speeches and invited talks related to research

Ulery, A.L. 2003. Depleted Uranium greenhouse and laboratory studies. Presented at the Hazardous Materials Management and Technology Development Meeting, June 10-11, 2003. Santa Fe, NM. *Invited.*

Mexal, J.G., T. Sammis, and **A.L. Ulery**. 2003. M.A.P.s: Mentoring assistant professors: Navigating the promotion and tenure maze in the Agronomy and Horticulture Department. 5th Annual Science, Engineering & Technology Education Conference. Jan. 3, 2003. New Mexico State University, Las Cruces, NM. *Invited.*

Ulery, A.L., R. Parra, Y. Hashimoto, E. Sevestianov, L. Boyce, B. Allen, and J. Kallestad 2003. Phytoremediation of depleted uranium (DU)-contaminated soils. Poster presented at the All-College Conference, Jan. 7, 2003, Las Cruces, NM.

Stavast, L.J., T.T. Baker, **A.L. Ulery**, R.P. Flynn, and M.K. Wood. 2003. Effects of dairy manure on vegetation, soils, and runoff in a blue grama rangeland of New Mexico. Poster presented at the All-College Conference, Jan. 7, 2003, Las Cruces, NM.

W.C. Lindemann, **A.L. Ulery**, and B. McCaslin. 2002. "Modern Rio Grande Floodplain and Agriculture". Soil Institute Sept. 17, Las Cruces, NM. *Invited.*

Ulery, A.L. and W.C. Lindemann. 1998. "Getting the Dirt on Soil". New Mexico Teacher's Environmental Education Workshop, June 25. Silver City, NM. *Invited.*

Ulery, A.L. 1998. "Introduction to Soil Science for Crop Improvement". Northern New Mexico Small Grains Workshop. April 2, Questa, NM. *Invited.*

Ulery, A.L. 1998. "Soil Chemistry Fundamentals". WERC Environmental Academy, NMSU, July 20-24. Las Cruces, NM. *Invited.*

Ulery, A.L. 1998. "Dust, Manure, and Mining Interests - Environmental Soil Chemistry at NMSU". Geology Department Colloquium, Sept. 9. Las Cruces, NM. *Invited.*

Ulery, A.L. and F. Cadena-C. 1998. "Dairy Field Test of Alpha Biocat". Dairy Technical Working Group, Oct. 28. Las Cruces, NM. *Invited.*

4. Cooperative Extension Activities

- (a) I have no official Cooperative Extension appointment. However I collaborate with NMSU extension personnel from Plant Extension Sciences (Robert Flynn, Craig Runyun, Denise McWilliams) and Animal and Range Science ('Red' Terrell Baker).
- (b) I have presented information on soil sampling and analyses when invited and have made my soil chemistry laboratory available for research and extension activities as needed. I have also provided assistance in funding and advising graduate students and research projects on some extension-initiated projects.
- (c) I have participated in soil salinity and water issue discussion groups originated by NMSU Extension in an effort to promote best management practices and water conservation in southern New Mexico, west Texas, and even along the border with Mexico.

5. Other Service

a. *Departmental*

Search committee member for Floriculture position

Library liaison (2003 temporary replacement for Dr. Bosland)

Safety Committee

b. *College*

Search committee member for Cooperative Extension Agronomist

Who's Who Among Students in American Universities and Colleges - selection committee for the College of Agriculture and Home Economics (1999-2001).

c. *Extension*

Although I have 0% extension responsibilities, I actively collaborate with university and county extension personnel and when called upon assist in collecting and analyzing soil samples, interpreting data, and explaining the results to land owners or growers.

Collected, analyzed, and interpreted soil samples from several fields of Ricardo Ogaz of Garfield (sponsored by LeRoy Daugherty) (9/98).

Worked with FAO Intern, Marcia Smith, during her visit to the NMSU Chile Institute to teach her salinity concepts and initiate a seed germination study (2000).

d. *Graduate School*

Member, Graduate Faculty

e. *University*

University Admissions Appeals Committee

Waste-Management Education Research Consortium (WERC) Fellowship Selection Committee

Women's Studies Steering Committee

NSF-ADVANCE Mentoring Program

Teaching Academy Advisory Board

f. *Community*

Volunteer presenter at the 2003 Insect Expo downtown Las Cruces for 2400 elementary school children.

Provided information and assistance for Steve Woods and his daughter Juliet on her middle-school science fair project in phytoremediation (11/8/01)

Worked with Katie and Susan Grandle (7/03). Katie is a 7th grader working on chile peppers for her science fair project. I showed her our lab and helped her adjust soil pH.

Met with Deming High School science club advisor Mr. Goodgame and his students on phytoremediation projects.

Sponsored a science project by Michael Landers-Marlow, a local middle school student.

g. *State*

Judge for the Southwestern New Mexico Science and Engineering Fair: 1999 and 2000. Held at NMSU, Las Cruces, NM.

Division Chair (Environmental Sciences) for the Southwestern New Mexico Science and Engineering Fair: 2001. Held at NMSU, Las Cruces, NM.

h. *Nation*

i. *Profession*

Soil Science Society of America (SSSA):

Representative and founding member of the Joe B. and Martha J. Dixon Soil Mineralogy Graduate Student Award, 2002-2005.

M.L. Jackson Award Selection Committee, 2001.

SSSA Book Series Committee, 2001-2003; Chair-elect 2003; Chair 2004-2006.

Soil Science Visibility Enhancement Committee, 1999-2002.

Tri-society Membership Committee, 1999-2001.

Soil Science Nominations Committee, 2000.

j. *Industry*

New Mexico Chile Task Force

6. Professional Societies

Soil Science Society of America

Chair of Soil Mineralogy Division (S-9) 1999.

Associate Editor for *SSSAJ* Division S-6 1997-1999.

Agronomy Society of America

National Groundwater Association

Clay Minerals Society

Gamma Sigma Delta; The Honor Society of Agriculture

Sigma Xi, Scientific Research Society

7. International Activities

Advised two Ph.D. students from Mexico, one M.S. student from Japan, and one undergraduate student from Germany.

Met with International Programs Director and other faculty members to discuss opportunities for recruitment and retention of international students (4/11/03).

8. Other Material

a. Conferences and workshops attended

1998 New Mexico Teacher' s Environmental Education Workshop. Silver City, NM.

1998 Northern New Mexico Small Grains Workshop, Questa, NM.

1998, 1999 Dairy Technical Group Meeting, Las Cruces, NM.

1998, 1999 Dairy Producers Conference, Ruidoso, NM.

1998, 1999, 2000, 2001 Friends of the Jornada Research Symposium, Las Cruces, NM.

1998-2002 11th-15th All College Conferences, Las Cruces, NM.

1999 Assistant Professors Tour of NM Agriculture sponsored by Dean Schickadanz (8/16 – 8/18/99), throughout NM.

1999 New Mexico Chile Conference, Las Cruces, NM.

2000 Desert Project Tour (5/22 – 5/26/00) Las Cruces, NM.

2000 Water challenges on the Lower Rio Grande (WRRI), Las Cruces, NM.

2002 Water Resources Research Institute Conference, Socorro, NM.

2003 Rio Grande Basin Initiative Conference, Weslaco, TX (5/28-5/30/03)

2003 Hazardous Materials Management and Technology Development Meeting, Santa Fe, NM (6/10-6/11/03)