

APRIL L. ULERY

Plant & Environmental Sciences Department
New Mexico State University
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EDUCATION

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

B.S., Geology, 1980 University of Redlands, Redlands, CA

EMPLOYMENT

Professor (2008 – present) Department of Plant & Environmental Sciences, New Mexico State University, Las Cruces, NM.

Interim Department Head (Feb-July 2018) Department of Agricultural and Extension Education, New Mexico State University, Las Cruces, NM.

Associate Professor (2004 – 2008) Department of Plant & Environmental Sciences, New Mexico State University, Las Cruces, NM.

Assistant Professor (Dec., 1997 – July, 2004) Department of Agronomy and Horticulture, New Mexico State University, Las Cruces, NM.

Environmental Soil Scientist (Jun., 1997 - Dec., 1997) Komex H2O-Science Environmental Consultants, Westminster and Huntington Beach, 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; taught Geology and Physical Science courses.

Graduate Research and Teaching Assistant, Staff Research Associate (1985 - 1991) Department of Soil and Environmental Science, University of California, Riverside, CA

AWARDS

- 2021 Outstanding Paper in Natural Sciences Education Journal by ASA-CSSA-SSSA
- 2020 Outstanding Mentor, NMSU Teaching Academy
- 2018 Outstanding Faculty, Agricultural and Extension Education Department
- 2014-2017 Professor of Exemplary Teaching, Plant and Environmental Sciences Department
- 2013 Women in Agronomy, Crops, Soils and Environmental Sciences Mentoring Award
- 2012 Fellow, Soil Science Society of America
- 2012 Donald C. Roush Teaching Award in the College of Agricultural, Consumer and Environmental Sciences (ACES)
- 2011 Graduate Advising and Teaching Award, Gamma Sigma Delta - The Honor Society of Agriculture
- 2011 Distinguished Teaching Award in the College of ACES
- 2007 Teaching Award of Merit, National Association of Colleges and Teachers of Agriculture
- 2000 Outstanding Student Mentor in the Waste Management Education & Research Consortium (WERC) Undergraduate Fellowship Program
- 1990 Outstanding Teaching Assistant in the Dept of Soil & Environmental Sciences, U.C. Riverside

TEACHING

General instructional area is soil science, specializing in environmental soil chemistry. Courses regularly taught include:

Environmental Soil Chemistry (every year until 2018 then every other year)

Introduction to Soil Science (every year - in rotation with other Soils Faculty)

Emergency Response to Hazardous Material Incidents (every year). *Satisfies the OSHA 29 CFR 1910.120 training requirements.*

Courses taught once or as needed:

Introduction to Environmental Science; Soil Fertility and Management (including lab);
Sampling and Analysis of Environmental Contaminants

Students Advised

Undergraduate Environmental Science (15-20 per year); Soil Science (2-3 per year).

Graduate Students: Chaired six Ph.D. and 11 M.S. students who graduated. Committee member or Dean's Representative for at least 20 Ph.D. and over 40 M.S. students over the past 22 years.

RESEARCH

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 and bioenergy crop yields when grown under saline conditions, potentially an increasing problem in New Mexico soils as our water resources face competition with urban development.

Books or Monographs

Ulery, A.L. and L.R. Drees (Editors). 2008. Methods of Soil Analysis – Mineralogical Methods. Soil Science Society of America Book Series No. 5. Madison, WI.

Refereed Journal Articles (*indicates graduate student)

71. Fullen*, S., G. Jha*, M. Whiting*, K. Lombard, A.L. Ulery, D. VanLeeuwen. 2021. Optimizing Sampling Strategies for Total Lead (Pb) Analysis in Irrigation Ditch Sediments after the Gold King Mine Spill. (In preparation)
70. Ahmed*, T., K.C. Carroll, D. VanLeeuwen, A.L. Ulery. Statistical analysis of streambed sediments (In preparation)
69. Omer*, M., O.J. Idowu, A.L. Ulery, N. Pietrasiak, A.J. Dominguez, R. Ghimire, D. VanLeeuwen, M. Marsalis. Biological soil quality indicators in an irrigated semiarid agroecosystem. Submitted to Applied Soil Ecology. (*In Review*).
68. Jha*, G., A.L. Ulery, K. Lombard, D. VanLeeuwen, C. Brungard, B. Dari, D. Sihi. 2021. Portable X-Ray Fluorescence (PXRF) Analysis of Total Metal(loid)s and Sequential Extraction of Bioavailable Arsenic in Agricultural Soils of Animas Watershed. Water, Air, & Soil Pollution Online at: <https://doi.org/10.1007/s11270-021-05249-2>
67. Jha*, G., D. Sihi, B. Dari, H. Kaur*, M. Nocco, A. Ulery. 2021. Rapid and Inexpensive Assessment of Soil Total Iron Using Nix Pro Color Sensor. Agricultural & Environmental Letters. 2021;6:e20050. Online at <http://dx.doi.org/10.1002/ael2.20050>

66. Rucker, D., K.C. Carroll, C-H. Tsai*, S.C. Brooks, E.M. Pierce, A. Ulery, C.R. DeRolph. 2021. Bedrock Architecture, Soil Texture, and Hyporheic Zone Characterization Combining Electrical Resistivity and Induced Polarization Imaging. *Journal of Applied Geophysics*. 188:104306. <https://doi.org/10.1016/j.jappgeo.2021.104306>
65. Jha*, G., S. Mukhopadhyay, A.L. Ulery, K. Lombard, S. Chakraborty, D.C. Weindorf, D. VanLeeuwen, C. Brungard. 2021. Agricultural Soils of the Animas River Watershed after the Gold King Mine Spill: An Elemental Spatiotemporal Analysis via Portable X-ray Fluorescence Spectroscopy. *J. Env. Qual.* doi.org/10.1002/jeq2.20209
64. Chaganti, V.N., G. Ganjegunte, W.L. Hargrove, G. Nui, A. Ulery, J.M. Enciso, R. Flynn, and J. Kiniry. 2021. Yield response of canola as a biofuel feedstock and soil quality changes under treated urban wastewater irrigation and soil amendment application. *Industrial Crops and Products*. 170 (2021) 113659. doi.org/10.1016/j.indcrop.2021.113659
63. Brevik, E., A. Ulery, and A. Smith Muisse. 2021. Pivoting to online laboratories due to COVID-19 using the “Science of Agriculture” digital tools: A case study. 2021. *Natural Sciences Education*. doi:10.1002/nse2.20045
62. Chaganti, V.S., Ganjegunte, G., G. Niu, A. Ulery, R. Flynn, J. Enciso, N. Meki, J. Kiniry. 2021. Response of soil organic carbon and emerging soil health indicators to treated wastewater irrigation in bioenergy sorghum production on an arid soil. *Land Degradation & Development*. doi: 10.1002/ldr.3888
61. Brevik, E., H. Dolliver, S. Edinger-Marshall, D. Itkin, J. Johnson-Maynard, G. Liles, M. Mbila, C. Moorberg, Y. Sanchez De Leon, J.J. Steffan, A. Ulery, K. Vaughan. 2020. Undergraduate degrees that train students for soil science careers at universities in the USA and its territories. *Soil Sci Soc Am J*. 84. doi.org/10.1002/saj2.20140
60. Omer*, M., O. Idowu, C. Brungard, A. Ulery, B. Adedokun, N. McMillan. 2020. Visible Near-Infrared Reflectance and Laser-Induced Breakdown Spectroscopies for Sensing Soil Quality in Arid and Semiarid Agroecosystems. *Soil Systems* 4, 42; doi:10.3390/soilsystems4030042
59. Omer*, M., Idowu, O. J., Ulery, A. L., VanLeeuwen, D., Guldan, S. J., Marsalis, M. A., Ghimire, R. 2020. Impacts of selected management practices on soil quality in an irrigated arid agroecosystem *Journal of Soil and Water Conservation*. 75:143-152. doi:10.2489/jswc.75.2.143
58. Matthews*, A.N., S. Rogus, G. Jha*, A. Ulery, E. Delgado, K. Lombard, B. Hunter, B. Francis. 2020. Heavy metal content of produce grown in San Juan County (New Mexico, USA). *Journal of Environmental Science and Health, Part B*. doi: 10.1080/03601234.2020.1794220
57. Ulery, A., A. Smith Muisse, K.C, Carroll, B. Chamberlin, L. White, P. Martinez, L Spears, J. Gleason. 2020. Impact of Multimedia Learning Tools in Agricultural Science Classes. *Natural Sciences Education*:49.e20011. <http://dx.doi.org/10.1002/nse2.20011>
54. Chaganti, V.N., G. Ganjegunte, G. Niu, A. Ulery, R. Flynn, J.M. Enciso, M.N. Meki, J.R. Kiniry. 2020. Effects of treated urban wastewater irrigation on bioenergy sorghum and soil

- quality. *Agricultural Water Management*, 228:105894
<https://doi.org/10.1016/j.agwat.2019.105894>
53. Omer*, M., O.J. Idowu, A.L. Ulery, D. VanLeeuwen, S.J. Guldan. 2018. Seasonal Changes of Soil Quality Indicators in Selected Arid Cropping Systems. *Agriculture* 8:124-135.
<https://doi.org/10.3390/agriculture8080124>
52. Ganjegunte, G., A. Ulery, G. Niu, Y. Wu. 2018. Treated Urban Wastewater Irrigation Effects on Bioenergy Sorghum Biomass, Quality and Soil Salinity in an Arid Environment. *Land Degradation & Development*. 29:534–542. doi: 10.1002/ldr.2883
51. Ganjegunte, G., A. Ulery, G. Niu, Y. Wu. 2018. Organic carbon, nutrient and salt dynamics in saline soil and in switchgrass irrigated with treated municipal wastewater. *Land Degradation & Development*. 29:80-90.
50. Ganjegunte, G., A. Ulery, G. Niu, Y. Wu. 2017. Effects of Treated Municipal Wastewater Irrigation on Soil properties, Switchgrass Biomass Production and Quality under Arid Climate. *Industrial Crops and Products*. 99:60-69.
49. Ulery, A.L., R.C. Graham, B. Goforth, K. Hubbert. 2016. Fire Effects on Cation Exchange Capacity of California Forest and Woodland Soils. *Geoderma*. 286:125–130.
48. Flores*, A.M., M.K. Shukla, D. Daniel, A.L. Ulery, B.J. Schutte, G. Picchioni, A. Fernald. 2016. Evapotranspiration changes with irrigation using saline groundwater and RO concentrate. *Journal of Arid Environment*. 131:33-45.
47. Adams, S.V., B. Barrick*, E.P. Freney, M.M. Shafer, X. Song, H. Vilchis, P.A. Newcomb, A. Ulery. 2015. Urinary heavy metals in Hispanics 40-85 years old in Doña Ana County, NM. *Arch Environmental Occupational Health*. 2015 Dec 14:0. PubMed PMID: 26666397.
46. Adams, S.V., B. Barrick*, E.P., Christopher, M.M., Shafer, K. Makar, X. Song, J. Lampe, H. Vilchis, A. Ulery, P.A. Newcomb. 2015. Genetic variation in metallothionein and metal-regulatory transcription factor 1 in relation to urinary cadmium, copper, and zinc. *Toxicology and Applied Pharmacology*. 28:381-8. doi: 10.1016/j.taap.2015.10.024. Epub 2015 Oct 31.
45. Flores*, A.M., B.J. Schutte, M.K. Shukla, G.A. Picchioni, A.L. Ulery. 2015. Time-integrated measurements of seed germination for salt tolerant plant species. *Seed Science & Technology*. 43:1-7. <http://doi.org/10.15258/sst.2015.43.3.09>
44. Idowu, O.J., K.A. Lombard, D. Hyder, A.L. Ulery. 2015. Soil Quality of a Semi-Arid Pasture Irrigated with Reverse Osmosis Wastewater—A Case Study from Northern New Mexico. *Journal of Water Resource and Protection*. 7:1121-1130.
43. Barrick*, B., R. Steiner, G. Picchioni, A. Ulery, J. Zhang. 2015. Salinity Responses of Selected Introgressed Cotton Lines Grown in Two Soils from Organic and Conventional Cotton Production. *The Journal of Cotton Science*. 19:268–278.

42. Hawthorne*, J., A. Ulery, J. Harrington, J. Mexal, D. VanLeeuwen, A. Wagner. 2015. Establishment of New Mexico Locust (*Robinia neomexicana*) on Mining Overburden. *Tree Planter's Notes*. 58:13-21.
41. Mexal, J.G., J. Hawthorne*, S. Martinez*, A. Ulery, A. Wagner. 2014. A 'Seed Gun' for high throughput percussion scarification of hard seed. *Journal of Native Plants*. 16:13-18.
40. Mexal, J.G., G.A. Picchioni, M.K. Shukla, A.L. Ulery, W.C. Lindemann. 2014. Land application of municipal wastewater to desert ecosystems: Case studies identifying risks and opportunities. *Journal of Arid Land Studies*. 24:109-112.
39. Ganjegunte, G., G. Niu, A. Ulery, Y. Wu, C. Wang. 2013. Developing alternative water sources for bioenergy crops production on marginal lands. OIDA International Journal of Sustainable Development. Ontario International Development Agency. ISSN 1923-6654; ISSN 1923-6662. <http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html>
38. Nemmers*, S.J., A.L. Ulery, M.K. Shukla. 2013. Wastewater Effluent Effects on Arsenic Sorption in Arid New Mexico Soils. *New Mexico Journal of Science*. 44:137-148.
37. Soukup, D. B. Buck, D. Goossens, A. Ulery, B. McLaurin, D. Baron, Y. Teng. 2012. Arsenic Concentrations in Dust Emissions from Wind Erosion and Off-Road Vehicles in the Nellis Dunes Recreational Area, Nevada, USA. *Aeolian Research*. 5:77-89.
36. Gonzalez-Delgado*, A.M., M.K. Shukla, A.L. Ulery, A.S. Bawazir, P.V. Brady. 2011. Saturated Hydraulic Conductivity of Self-Sealing Lining Materials for Desalination Evaporation Ponds. *Desalination and Water Treatment*. 29:187-195. Recipient of the first *Best Graduate Research Paper Award of PES Department*.
35. Lombard, K.A., M. O'Neill, A. Ulery, J. Mexal, B. Onken, S. Forster-Cox, T. Sammis. 2011. Fly ash and composted biosolids as a source of Fe for hybrid poplar – a greenhouse study. Special Issue: Biosolids Soil Application: Agronomic and Environmental Implications. *Applied and Environmental Soil Science* vol. 2011, Article ID 475185, doi:10.1155/2011/475185. <http://www.hindawi.com/journals/aess/2011/475185/>
34. Huez-López*, M.A., A.L. Ulery, Z. Samani, G. Picchioni, R.P. Flynn. 2011. Response of Chile Pepper (*Capsicum Annuum L.*) To Salt Stress and Organic and Inorganic Nitrogen Sources: I. Growth and Yield. *Tropical and Subtropical Agroecosystems*. 14:137 – 147.
33. Huez-López*, M.A., A.L. Ulery, Z. Samani, G. Picchioni, R.P. Flynn. 2011. Response of Chile Pepper (*Capsicum Annuum L.*) to Salt Stress and Organic and Inorganic Nitrogen Sources: II. Nitrogen and Water Use Efficiencies, and Salt Tolerance. *Tropical and Subtropical Agroecosystems*. 14:757-763.
32. Huez-López*, M.A., A.L. Ulery, Z. Samani, G. Picchioni, R.P. Flynn. 2011. Response of Chile Pepper (*Capsicum Annuum L.*) to Salt Stress and Organic and Inorganic Nitrogen Sources: III. Ion Uptake and Translocation. *Tropical and Subtropical Agroecosystems*. 14:765-776.

31. Lombard, K., M. O'Neill, R. Heyduck, B. Onken, A. Ulery, J. Mexal, A. Unc. 2011. Composted biosolids as a source of iron for hybrid poplars (*Populus* sp) grown in Northwest New Mexico. *Agroforestry Systems*. 81:45-56.
30. Sevostianova*, E., W.C. Lindemann, A.L. Ulery, M.D. Remmenga. 2010. Plant uptake of depleted uranium from manure-amended and citrate treated soil. *International Journal of Phytoremediation*. 12:550-561.
29. Lombard, K., M. O'Neill, J. Mexal, A. Ulery, B. Onken, G. Bettmann, R. Heyduck. 2010. Can Soil Plant Analysis Development (SPAD) Values Predict Chlorophyll and Total Fe in Hybrid Poplar? *Agroforestry Systems*. 78:1–11.
28. Niu, G., D.S. Rodriguez, M. Wang, E. Call*, P. Bosland, A. Ulery, E. Acosta. 2010. Responses of eight chile peppers to saline water irrigation. *Scientia Horticulturae*. 126:215-222.
27. Cabrera, V.E., L.J. Stavast*, T.T. Baker, M.K. Wood, D.S. Cram, R.P. Flynn, A.L. Ulery. 2009. Soil and runoff response to dairy manure application on New Mexico rangeland. *Agriculture, Ecosystems and Environment*. 131:255-262.
26. Helmus*, A.M, A.G. Fernald, D.M. VanLeeuwen, A.L. Ulery, T.T. Baker, L.B. Abbott. 2009. Surface water irrigation input effects on shallow ground water along the Rio Grande in northern New Mexico. *Journal of the American Water Resources Association*. 45:407-418. DOI: 10.1111/j.1752-1688.2008.00293.x
25. Parra*, R.R., A.L. Ulery, M. Blaylock, M.P. Elless. 2008. Transient Phytoextraction Agents: A New Class of Soil Amendments for Remediating Uranium, Lead, and Other Heavy Metals. *International Journal of Phytoremediation* 10:415-429.
24. Soukup, D.A., A.L. Ulery, S. Jones. 2007. Distribution of Petroleum and Aromatic Hydrocarbons at a Former Crude Oil and Natural Gas Production Facility. *Journal of Soil and Sediment Contamination*. 16:143-158.
23. Johnson*, C., B. Leinauer, A.L. Ulery, R. Goss, D. Karcher. 2007. Moderate Salinity Does Not Affect Germination of Several Cool- and Warm-Season Turfgrasses. *Applied Turfgrass Science*. Doi:10.1094/ATS-2007-0912-01-RS.
22. Perkins*, S.R., K.C. McDaniel, A.L. Ulery. 2006. Vegetation and soil change following creosotebush (*Larrea tridentate*) control in the Chihuahuan desert. *Journal of Arid Environments*. 64:152-173.
21. Villa Castorena*, M., E.A. Catalan Valencia, M.A. Inzunza Ibarra, A.L. Ulery. 2006. Sodium and chloride uptake and translocation in chile plants fertilized with nitrogen and grown under saline stress. (in Spanish) *Rev. Fitotec. Mex.* 29:79-88.
20. McShannon, J., P. Hynes, N. Nirmalakhandan, G. Venkataramana, C. Ricketts, A. Ulery, R. Steiner. 2006. Gaining Retention and Achievement for Students Program: A Faculty

- Development Program. *Journal of Professional Issues in Engineering, Education, and Practices*. 132:204-208.
19. Stavast*, L.J., T.T. Baker, A.L. Ulery, R.P. Flynn, M.K. Wood, D. Cram. 2005. New Mexico Blue Grama Rangeland Response to Dairy Manure Application. *Rangeland Ecology and Management*. 58:423-429.
 18. Buck, B.J., A.L. Brock*, W.H. Johnson, A.L. Ulery. 2004. Corrosion of depleted uranium in an arid environment: Soil-geomorphology, SEM/EDS, XRD, and electron microprobe analyses. *Journal of Contaminated Sediments* 13:545-561.
 17. Kurunc*, A., R.P. Flynn, A.L. Ulery. 2004. Dairy lagoon effluent effects on soil chemical properties, corn yield and nutrient uptake. *Journal of Agronomy* 3:219-222.
 16. Ulery, A.L., R. Flynn, R. Parra*. 2004. Dairy Wastewater Sample Preservation Using Sulfuric Acid. *Environmental Monitoring and Assessment*. 95:117-124.
 15. Ulery, A.L., T.W. Sammis, J.G. Mexal. 2004. A Mentoring Program that Helps Untenured Faculty Navigate the Academic Maze. *NACTA Journal* 48:46-51.
 14. Picchioni, G.A., C.J. Graham, A.L. Ulery. 2004. Gypsum effects on growth and macroelement accumulation of field-grown *Asimina triloba* (Pawpaw) irrigated with low-saline, sodic water. *HortScience*. 39:1104-1109.
 13. Villa*, M., A.L. Ulery, E. Catalan, M.D. Remmenga. 2003. Salinity and nitrogen effects on chile pepper growth and yield. *Soil Science Society of America Journal*. 67:1781-1789.
 12. Wellman, D.E., A.L. Ulery, M.P. Barcellona*, S. Duerr-Auster*. 2001. Animal waste-enhanced degradation of hydrocarbon-contaminated soil. *Soil and Sediment Contamination*. 10:511-523.
 11. Sternberg, P.D., A.L. Ulery, M. Villa-C*. 2001. Salinity and boron effects on growth and yield of tepary and kidney beans. *HortScience*. 36:1269-1272.
 10. Ulery, A.L., S. Stewart, D.A. Reid, P.J. Shouse. 2000. Vacuum method for field installation of pipes and casings in sandy soils. *Soil Science*. 165:269-273.
 9. Wellman, D.E., D.A. Reid, 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.
 8. Ulery, A.L., J.A. Teed, M.C. Shannon, M. Th. van Genuchten. 1998. SALTDATA: A database of plant yield response to salinity. *Agronomy Journal*. 90:556-562.
 7. 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.
 6. Swartz, C.H., A.L. Ulery, 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.

5. Ulery, A.L., R.C. Graham, L.H. Bowen. 1996. Forest fire effects on soil phyllosilicates in California. *Soil Science Society of America Journal*. 60:309-315.
4. Ulery, A.L., R.C. Graham, O.A. Chadwick, H.B. Wood. 1995. Decade-scale changes in soil carbon, nitrogen, and exchangeable cations under chaparral and pine. *Geoderma*. 65:121-134.
3. 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.
2. Ulery, A.L., R.C. Graham, C. Amrhein. 1993. Wood-ash composition and soil pH following intense burning. *Soil Science*. 156:358-364.
1. Graham, R.C., A.L. Ulery, R.H. Neal, R.R. Teso. 1992. Herbicide residue distributions in relation to soil morphology in two California Vertisols. *Soil Science*. 153:115-121.

Book Chapters

- Goss, R.M. and A.L. Ulery. Edaphology. 2013. In: S. Elias (Ed). *Earth Systems and Environmental Sciences*. Elsevier. The Netherlands.
- Mexal, J.G., C.L. Falk, A. Ulery, G. Picchioni, R. Ng, C. Taylor, and A. Hagen. 2004. Iron-Rich Mine Tailings Fail to Perform as Fertilizer: An Economic Development Model. In: M. Wilken-Robertson (Ed.) *The U.S.-Mexican Border Environment*. San Diego State University Press. San Diego, CA. P. 139-170.
- Ulery, A.L. Edaphology. 2005. In: D. Hillel et al. (Eds.) *Encyclopedia of Soils in the Environment*. Academic Press. London.
- 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. and A.J. Tugel. 1999. Farming in New Mexico: Soil Quality and Productivity Maintenance. *New Mexico Journal of Science*. 39:86-108.

Agricultural Experiment Station Bulletins

- Schroeder, J., L. Murray, A. Ulery, C. Fiore, H. Nguyen, X. Liu. 2012. Identification and Detection of Problem and Noxious Weeds on Irrigation Canals will lead to Effective Weed Management Programs and Increase Water for Irrigation: Survey of the Vegetation and Soils of the Leasburg Canal System 2002-2006. Agricultural Experiment Station, NMSU, Las Cruces, NM.

Flynn, R.R. and A.L. Ulery. 2011. An Introduction to Soil Salinity and Sodium Issues in New Mexico. NMSU Cooperative Extension Service Circular 656. Las Cruces, NM.

Flynn, R., A. Ulery, W.C. Lindemann. 2010. Sulfur in New Mexico Agriculture. NMSU Cooperative Extension Service Circular 650. 7 pp. Las Cruces, NM.

Flynn, R., R. Phillips, A. Ulery, R. Kochevar, Linda Liess, 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.

FUNDING Approximately \$3.6 million from various agencies as competitive grants, subcontracts, partnerships, fellowships, or awards. Education grants included USDA-Hispanic Serving Institution Education and NASA Earth System Science Century 21 programs that helped fund students to develop labs, exercises, and animation tools to improve learning in STEM courses.

Education Grants:

“Sustainable Use of Biomass Resources in a Semi-Arid Landscape: Connecting Chemical Engineering, Soil Science, and Extension.” C. Brewer, A.L. Ulery, O.J. Idowu, D. Rockstraw. USDA/NIFA National Needs Fellowships (to support four graduate students), 2015-2020. \$241,000.

"Raising the Gates: Addressing Gaps in Students' Understanding of Math and Chemistry in the Animal and Plant Sciences." Ulery, A. L., White, L.M., Chamberlin, B.A. USDA/NIFA/Hispanic Serving Institutions, 2014-2017. \$250,000.

"Developing Digital Tools to Improve Soil Sampling and Analysis for Sustainable Agriculture in the Western U.S." Flynn, R.P., Gleason, J.B., Chamberlin, B.A., Ulery, A.L. Western SARE through Utah State University, 2015-2017. \$49,566.

"Supporting Instruction in Soil and Plant Sciences: Filling the Gaps in Key STEM Understanding for Undergraduate Students." Chamberlin, B. and A. Ulery. USDA Hispanic-Serving Institutions, 2010-2013. \$289,928.

“Course Development for Introductory Environmental Sciences.” A.L Ulery, H.C. Monger, A. Lara, F. Cadena, J. McShannon, S.W. Brown. NASA/USRA Earth System Education for the 21st Century Program. 2004-2006. \$68,664.

“Coupling Direct and Indirect Characterization Methods for Mercury Transport and Surface Water-Hyporheic Zone Exchange.” K. Carroll, P. Xu, D. Rucker and A.L. Ulery (STEM Education Lead). Savannah River Nuclear Solutions, LLC. 2017-2018. \$296,163.

“Development of Geochemical and Solute Transport Attenuation and Mass Flux Quantification Approaches for Subsurface Contaminant Mixtures Relevant to the Hanford Site.” K. Carroll, L. Zhong P. Xu, and A.L. Ulery (STEM Education Lead). \$300,000.

Research Grants and Contracts:

“Developing Canola as an alternative crop for marginal lands irrigated with brackish waters in the southern Plains” A. Ulery and R. Flynn under subcontract to TAMU. 2021-2023. \$100,000.

“Phytoremediation of Radium-Contaminated Soil and Water: Ambrosia Lake, NM” C. Brewer and A. Ulery. BHP. 2019-2020. \$150,000.

“Edible Safety of Produce in Farmington, NM.” A.L. Ulery, A. Matthews, S.G. Phillips, K. Lombard. 2017 IMPACT Mini-Grants, VPR and Provost, NMSU. 2018-2019. \$28,918.

“Developing Alternative Water Sources for Bioenergy Crops Production on Marginal Lands.” A.L. Ulery. Sun Grant Institute through TAMU, 2017-2018. \$25,000.

“Diversifying the Water Portfolio for Agriculture in the Rio Grande Basin.” A.L. Ulery, R.P. Flynn, O.J. Idowu. USDA-NIFA AFRI through TAMU and Water Resources Research Institute, 2017-2018. \$33,592.

“Monitoring of Potential Heavy Metals on Farmlands Adjacent to the Animas and San Juan Rivers.” K. Lombard and A.L. Ulery. USDA/NRCS. 2016-2019. \$75,000.

“Sediment and Agricultural Sampling.” K. Lombard and A.L. Ulery. New Mexico Environment Department. 2016-2018. \$112,193. Amended for an additional \$124,193 from 2018-2020.

“Joint Project for Economical Removal of Uranium, Biological Contaminants and Nitrate from Rural Water Sources.” K. Carroll, A. Lara, A.L. Ulery. USDA-CSREES Tribal Colleges. 2009-2012. \$175,000.

“Heavy Metal Exposure Assessment in New Mexico” Ulery, A. P. Newcomb, S. Adams. NIH U-54 Cancer Partnership. 2010-2012. \$72,011.

“Non-specific microbial symbionts inoculation and plant fitness for remediation of surface coal mining sites” A. Unc, A.L. Ulery, and K. Lombard. BHP Billiton contract. 2010-2011. \$54,247.

“Land Application of Arsenic-Contaminated Waste Water”. A.L. Ulery and A. Unc. Water Resources Research Institute, NMSU. 2009. \$25,828.

“Land Application of Wastewater containing Arsenic: Impacts on the Sorption and Mobility of Arsenic in Soil” A.L. Ulery. Water Resources Research Institute, NMSU, 2007-2008. \$2,325.

“Screening and Breeding Chile Varieties for Salt Tolerance”. A.L. Ulery and P.W. Bosland. NM Chile Commission. 2008-2009. \$20,000

“Identification and detection of problem and noxious weeds on irrigation canals”. J. Schroeder, R. Sanderson, A.L. Ulery, M. Renz, and L. Murray. USDA Rio Grande Water Quality Initiative. 2004-2007. \$256,657 plus “Amendment 2 for 2004-2005” USDA through the Rio Grande Basin Initiative. 2004-2005. \$41,202.

“Organic Fertilizer use on Chile Peppers in a Greenhouse”, A.L. Ulery, M. Huez-Lopez and Z. Samani. NM Chile Commission. 2006. \$2,000.

“Soil recovery after herbicide treatment of saltcedar stands and management implications” Cheryl Rosel, A.L. Ulery, and Kirk McDaniel. NM Water Resources Research Institute Student Water Research Program. 2005-2006. \$1,900

“Developing an improved method to reduce soil-lead levels in urban years”. A.L. Ulery. Housing and Urban Development (HUD) subcontract from Edenspace Systems, Inc. 2005-2006. \$40,000.

“Salinity and Nitrogen Effects on Chile Pepper Growth and Yield”. A. Ulery and M. Villa. 1999-2000. NM Chile Commission: \$4,400.

“Phytoremediation of Depleted Uranium Contaminated Soils”. A.L. Ulery and B. McCaslin. 2001-2010. Department of Defense through NMSU Physical Science Laboratory for \$509,775 with ongoing funding for several years between \$10,000 and \$40,000 through 2010.

“Soil Quality of Irrigated Agriculture”. A. Ulery and A. Tugel. 1999-2000. USDA-NRCS-Soil Quality Institute: \$12,942.

“Dairy Wastewater Biodegradation and Odor Control”. A.L. Ulery and F. Cadena. WERC. 1998-2000: \$83,045.

“Impacts of Alpha Biocatalyst on pollution in dairy wastewater and on soil chemistry”. A.L. Ulery. 1998. WERC (Waste Education Research Consortium) Seed Project: \$7,227.

SERVICE

Service to the Profession

President, Soil Science Society of America (SSSA) including Program Planning Committee, Science Policy Committee, CEO Search Committee, Science Policy Committee, and others. 2020-2022 (president-elect, president, and past president).

Member-at-Large, Council of Science Society Presidents Board of Directors. 2021 – present.

American Geosciences Institute Liaison. 2020 - present.

Chair, SSSA Soil Education and Outreach Division, (chair-elect; chair; past-chair) 2016-2018

SSSA Board Representative, Soil Mineralogy Division, 2009-2011

Chair, CSA Books and Multimedia Committee (2011-2016, SSSA Representative since 2007)

Chair, SSSA Membership and Society Identity Committee, 2012-2013

Chair, Soil Mineralogy Division (chair-elect; chair; past-chair) 1998-2000

Chair, Marion L. and Chrystie M. Jackson Soil Science Award Committee, 2007

SSSA Nyle Brady Lecture Selection Committee, 2016

Soil Science Society of America Fellows Selection Committee, 2016

Agronomy Society of America Fellows Selection Committee, 2007

Joe B. and Martha J. Dixon Soil Mineralogy Graduate Student Award Founding member, 2002-2005

Soil Science Visibility Enhancement Committee, 1999-2002

Tri-society Membership Committee, 1999-2001

SSSA Geomorphology Field Trip Organizer, 1997

Associate Editor for *Vadose Zone Journal* (2004-2009) and *Soil Science Society of America Journal* (1997-1999).

Panel member of at least six USDA review panels (various programs including Water Quality, Soil Processes, and Watershed Processes).

Provide external reviews for Promotion and Tenure files for at least eight institutions (UI, USU, MSU, OSU, KSU, TAMU, USDA ARS, Claremont Colleges).

Peer reviewer for many scholarly journals including *Chemosphere*, *PLOS One*, *Environmental Science & Technology*, *Microporous and Mesoporous Materials*, *Natural Sciences Education*, *Soil Science*, *International Journal of Phytoremediation*, *Soil Science Society of America Journal*, *Agronomy Journal*, *Journal of Plant Nutrition*, *Restoration Ecology*, *Geoderma*, *Soil and Sediment Contamination*, *Clays and Clay Minerals*, *Journal of Environmental Quality*, *MDPI-Agriculture*, *Scientific African*, and *Irrigation Science*.

Service to Teaching

Faculty Navigate Champion, (2020 – present).

Member of Review Committee for 2016-2017 Periodic Program Review for Department of Plant and Soil Sciences, University of Kentucky

Chair, Environmental Science Program Review Committee, 2018, Oklahoma State University
Department Student Recruitment and Retention Committee

Department Graduate Studies Committee (former Chair)

College Advisement Committee (former Chair)

Teaching Outcomes Assessment Committee (former Chair)

University Advising Council

Advisory Board of the NMSU Teaching Academy

NASA-USRA-ESSE 21 Leadership Council

Faculty Advisor to Environmental Science Student Organization (2015-present)

Departmental and University Service

Chair, PES Scholarship Committee (2019-present)

Chair, PES Curriculum Committee (2019-present)

Antiracism/Anti-Discrimination Task Force, Committee Member (2020 – Present)

Radiation Safety, Committee Member (2020 – Present).

Chair of three and member of twelve faculty or administrator search committees

Chair, Department Awards Committee (2008, 2012-2013) – successfully nominated numerous faculty and staff for a variety of college and university research, teaching, and service awards.

Member, PES Academic Department Program Review (2018-2019)

Member, Promotion and Tenure Committee, Plant and Environmental Sciences (2008-present)

External Promotion & Tenure Committee for College of Health and Social Services (2013)

New Mexico Agricultural Leadership Program 9th co-hort (2012-2013)

Living the Vision Committee, College representative (2008-2009)

Gamma Sigma Delta Las Cruces, NMSU Chapter (President, 2006-2007)

Chair, NSF-ADVANCE Faculty Development Committee

Advancing Leaders Program 3rd co-hort (2006-2007)

Advancing Leaders Program Steering Committee Member (2012-2015)

University Admissions Appeals Committee (1999-2002)

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