

*Curriculum Vitae*

**LYNN F. FENSTERMAKER**

Associate Research Professor, Ecological Remote Sensing  
(Director, Nevada Desert Research Center and NevCAN)  
Division of Earth and Ecosystem Sciences, Desert Research Institute  
Nevada System of Higher Education  
755 E. Flamingo Road, Las Vegas, Nevada 89119, (702) 862-5412

**EDUCATION**

Ph.D.	2003	Biology, University of Nevada, Las Vegas
M.S.	1986	Agronomy, Pennsylvania State University
B.S.	1981	Environmental Resource Management, Pennsylvania State University

**EXPERIENCE**

2006 – Present	<i>Associate Research Professor</i>
2004 – 2006	<i>Assistant Research Professor</i>
1990 - 2004	<i>Ecological Remote Sensing Scientist</i> Desert Research Institute, Division of Earth and Ecosystem Sciences, Nevada System of Higher Education, Las Vegas, Nevada
1989 - 1990	<i>Soil and Remote Sensing Scientist</i> Environmental Research Center, University of Nevada, Las Vegas.
1987 - 1989	<i>Assistant to the Director</i> Environmental Research Center, University of Nevada, Las Vegas.
1984 - 1987	<i>Scientist</i> Lockheed Engineering and Mgmt Services Company, Inc., Las Vegas, Nevada.
1979 - 1984	<i>Laboratory/Field Technician</i> Agronomy Department, the Pennsylvania State University.
1981 - 1983	<i>Research/Teaching Assistantship; Assistant Coach, Soil Judging Team</i> Agronomy Department, the Pennsylvania State University.

**PROFESSIONAL INTERESTS**

Dr. Fenstermaker has experience in assessing, mapping, and monitoring the effect of environmental stressors, particularly climate change, on vegetation at small and large scales using remotely sensed data including UAS (unmanned aircraft systems). Related research has focused on the use of remote sensing to estimate evapotranspiration for riparian and phreatophytic zones. Dr. Fenstermaker has management and supervisory experience as the Director of three statewide research programs addressing the effects of climate change: Nevada Climate-ecohydrological Assessment Network (NevCAN), Nevada Desert FACE Facility (NDFF) and the Mojave Global Change Facility (MGCF). She is also serving as the Deputy Director of the Earth and Ecosystem Sciences Division. She has conducted research using satellite data, hyperspectral aircraft data, data from a multispectral camera mounted on a radio control helicopter and field spectrometry to examine plant responses to climate change treatments at NDFF and MGCF. She is currently the DRI liaison UAS. Additional experience includes the use of remotely sensed data to map land use/land cover, monitor environmental status and trends, and the development of quality assurance/quality control procedures for spatial data. Dr. Fenstermaker has experience in soil characterization and basic soil science from work conducted at the Pennsylvania State University Soil Characterization Laboratory and as a participant with and Assistant Coach of the Penn State Soil Judging Team (1978-1984). Dr. Fenstermaker has taught classes at the University of Nevada, Las Vegas and participated in community and K-12 mentoring programs to inform students about ecological and remote sensing research as well as the rewards of a career in science.

## **TEACHING EXPERIENCE**

2008-            Teach lab on field spectroscopy measurements/analysis for UNLV Water Mgmt Course  
2000            Remote Sensing Ecology Course, University of Nevada, Las Vegas (Spring semester)  
1999            Plant Physiology Laboratory, University of Nevada, Las Vegas (Fall semester)  
1981-83        Assistant Coach, Pennsylvania State University Soil Judging Team

## **ADVANCED TRAINING**

Unmanned Aircraft Systems (UAS) Workshop – Embry Riddle Aeronautical University, Las Vegas, NV, February 27-28, 2014.

UCAR Advanced Study Program Colloquium on Terrestrial Biosphere and Atmosphere Interactions held at NCAR, Boulder, CO, July 15-26, 1996.

Imaging Spectrometer Data Analysis Techniques, by the Program for Industrial Excellence in Remote Sensing (PIERS) at the University of Colorado, Boulder, June 7-11, 1993.

GPS for the Environmental Protection Agency, Course 355, Navtech Seminars Inc., November 18-22, 1991.

Analysis of AVHRR Data Workshop, ASPRS, Denver, Colorado, March, 1990.

The Working Woman's Stress Management Seminar, CareerTrack, Las Vegas, NV, February 16, 1990

The Quality Advantage, Organizational Dynamics, Inc., Las Vegas, NV, 1989

Learning Through Discussion, The National Management Association, Las Vegas, NV, 1986

Administrative Skills for the Manager, The National Management Association, Las Vegas, NV, May 1986

ARC/INFO, NETWORK, GRID/GRID TOPO GIS training course provided by the Environmental Systems Research Institute at Las Vegas, Nevada. May and January, 1986

Interpersonal Relationships, The National Management Association, Las Vegas, NV, 1985

Communication Skills, The National Management Association, Las Vegas, NV, October, 1985

Hydrologic Info Systems Workshop, EROS Data Center, Sioux Falls, SD, October, 1985.

## **MEMBERSHIPS**

Association of Unmanned Vehicle Systems International (AUVSI)  
American Society of Photogrammetry and Remote Sensing  
American Society of Agronomy  
Ecological Society of America  
Organization for Biological Field Stations

## **SERVICE**

### Mentoring and Education:

UNLV: member of one PhD (2005-2007) and two MS graduate student committees (2010-2013); primary remote sensing mentor for the PhD and one MS student; providing undergraduate research opportunities in remote sensing

NASA: mentor for a NASA Graduate Student Internship (2013-2014); overseeing all data processing

Capstone Press: consultant for two middle school books about deserts

Expanding Your Horizons in Mathematics & Science Conference (Grades 6-12): speaker at 4 events

NSHE Mentoring and Modeling Program for K-12: speaker  
Odyssey of the Mind, Las Vegas NV: judge for two years  
Tutor: provide science and math tutoring to neighbors

Reviewer for peer review journals and books: International Journal of Remote Sensing; Astrobiology; Remote Sensing of Environment; Biogeosciences; Ecohydrology; Sensors; Photogrammetric & Engineering of Remote Sensing; Global Biogeochemical Cycles; Western North American Naturalist; Environmental Management; and Book reviews of: Climate Smart; a chapter on the Mojave Desert for Ecosystems of California; and A Natural History of the Mojave Desert book outline for University of Arizona Press.

Proposal reviewer for: American Association for the Advancement of Science (AAAS); National Science Foundation; U.S. Army Office of Research; NSF EPSCoR; Nevada Space Grant; and American Chemical Society's Petroleum Research Fund.

#### Public Outreach

Featured in Desert Companion article "Generation Drone";

<http://www.desertcompanion.com/article.cfm?ArticleID=865>

Featured in several UAS news interviews; examples include:

<http://www.8newsnow.com/story/24717873/i-team-drone-usage-raises-legal-questions-about-privacy> <http://www.mynews3.com/mediacenter/local.aspx?videoID=4981361>

#### **AWARDS AND HONORS**

1997 George C. and Jane B. Maxey Award (\$1000)

1994 Fellowship, Southwest Region of Soroptimist International (\$1000)

#### **RESEARCH GRANTS and CONTRACTS**

2015-? Principal Investigator: ET Remote Sensing. Southern Nevada Water Authority (~\$70,000; pending)

2013-2016 Co-PI, Project Manager and Watershed Science team member: The Western Consortium for Watershed Analysis, Visualization, and Exploration (WC-WAVE). NSF EPSCoR (\$2,000,000)

2013-2014 Principal Investigator: NASA RID Workshop. NASA EPSCoR (\$15,357)

2013-2014 Principal Investigator: NevCAN to IBM PureSystem Pilot. DRI VPR (\$77,428)

2012-2014 Principal Investigator: Development of a Standard Approach for Terrestrial Ecosystem Assessment and Monitoring. BP International (\$93,324)

2012-2014 Co-Investigator: Strategies for Climate Change Adaptation at the Dryden Flight Research Center and within the Mojave Desert. NASA (\$347,179)

2012-2014 Principal Investigator: NDFE Data Management and Participation in Data Synthesis. DOE via subcontract from ORNL (\$63,165)

2012-2013 Principal Investigator: DFRC Climate Adaptation Workshop. NASA (\$32,249)

2009-2014 Team member: Desert Terminal Lakes – Water Resources Evaluation Program. Dept of Interior (\$3,300,000)

2010-2013 Component Lead: Nevada Infrastructure for Climate Change Science, Education and Outreach. NSF EPSCoR (\$15,000,000 for 5 yrs; approx. \$25,000 per year for lead)

2010-2012 Principal Investigator: Updated Estimation of Annual Phreatophytic Evapotranspiration for White River, Spring and Snake Valleys. Southern Nevada Water Authority (\$95,000)

2010-2012 Principal Investigator: Assessing the Envelope of Interannual Variation in Vegetation Response to Climate in Spring Valley, NV. NSF EPSCoR (\$25,000)

2010-2011 Co-Investigator: IPA-New Technologies for Rapid Ecological Assessment. Desert Research Institute (\$14,797)

2009-2014 Co-Investigator: Desert Terminal Lakes – Water Resources Evaluation Program. DOI Bureau of Reclamation (\$3,300,000)

2009-2011 Co-Principal Investigator: Soil Moisture Determination for Ecosystem, Precipitation and Hydrological Modeling. NV System of Higher Education (\$33,776)

2009-2011 Co-Principal Investigator: Soil Moisture Determination for Ecosystem, Precipitation and Hydrological Modeling. NASA NV Space Grant (\$33,776)

2009-2010 Co-Investigator: IPA – Relating Moisture Content and Reflectance Spectra of Biological Soil Crust to Carbon Flux. Desert Research Institute (\$16,137)

2009-2010 Principal Investigator: Hot Spring Microbial Spectra. Desert Research Institute (\$9910)

2008-2013 Component Lead: Nevada Infrastructure for Climate Change Science, Education and Outreach. NSF EPSCoR (\$15,000,000)

2007-2009 Principal Investigator: Accuracy Assessment of Basin ET Estimates. Southern Nevada Water Authority (\$80,000)

2006-2007 Co-Principal Investigator: Global Change and Ecosystem H<sub>2</sub>O & CO<sub>2</sub> fluxes in the Mojave and Negev Deserts. International Arid Lands Consortium. (\$100,000)

2004-2008 Subcontract Principle Investigator: Estimating Basin Evapotranspiration for Spring Valley and White River Valley, Nevada: Remote Sensing Component; Southern Nevada Water Authority (\$139,200)

2001-2007 Co-Principal Investigator: Responses of a Mojave Desert Ecosystem to Simulated Global Change; DOE-PER (\$728,724)

2000-2011 Co-Principal Investigator: Biotic Processes Regulating the Carbon Balance of Desert Ecosystems, DOE-TCP I and II (\$2,250,000; 2,532,230; \$804,551)

2000-2004 Subcontract Principal Investigator: Long-term Comparative Study of Golf Courses Irrigated with Re-use versus Municipal Water: Remote Sensing Component; Toro Corporation and Las Vegas Valley Water Authority (\$64,000)

1998 Co-Principal Investigator: Detecting Change in Arid Vegetation Cover Using Hyperspectral Data; DOE and State of NV (\$160,000)

1998 Principal Investigator: Effect of Dust on Plant Spectra; DOE, (\$17,000)

1998-2001 Co-Principal Investigator: Constructing a Long-Term Ecological Research Program at the NTS; NSF (\$500,000)

1995-2000 Program Manager: Remote Sensing Research; U.S. Govt (\$3,557,115)

1996-1997 Principal Investigator: Estimation of Evapotranspiration; SNWA (\$30,000)

1996-1997 Principal Investigator: Background FACE Spectra; DRI (\$13,326)

## **PUBLICATIONS**

### **Books/Book Chapters:**

The Mojave Desert: Ecosystem Processes and Sustainability (2009) RH Webb, LF Fenstermaker, JS Heaton, DL Hughson, EV McDonald, DM Miller (editors), University of Nevada Press, Reno NV.

Smith, SD, TN Charlet, LF Fenstermaker and BA Newingham. (2009) Effects of Global Change on Mojave Desert Ecosystems, 41 pp in RH Webb, LF Fenstermaker, JS Heaton, DL Hughson, EV McDonald, DM Miller (editors), *The Mojave Desert: Ecosystem Processes and Sustainability*, University of Nevada Press, Reno NV.

Fenstermaker, LF (2003) Estimation of Evapotranspiration at Different Scales Using Traditional and Remote Sensing Techniques. PhD Dissertation, University of Nevada Las Vegas, Las Vegas, NV.

Fenstermaker, LF, TN Charlet, TE Huxman, JS Coleman, RS Nowak and SD Smith, (2002) Global Climate Change Research in the Nevada Desert. Pages 97-106 in DA Charlet (*editor*). *Nevada Environmental Issues*, Kendall/Hunt Publishing Company, Dubuque, IA.

Fenstermaker, LK, editor, (1994) Remote Sensing Thematic Accuracy Assessment: A Compendium. American Society for Photogrammetry and Remote Sensing, Bethesda, MD, ISBN 1-57083-002-9, 413p.

Fenstermaker, LK, editor (1988) Remote Sensing Applications for Acid Deposition. A Proceedings prepared for the U.S. Environmental Protection Agency's Environmental Monitoring Systems Laboratory, Las Vegas, Nevada under cooperative agreement no. CR814002-01, published by the University of Nevada, Las Vegas, 180 p.

Fenstermaker, LK, (1986) Diurnal Reflectance and Emittance Characteristics of a Desert Surface. MS Thesis, The Pennsylvania State University, State College, PA.

#### **Invited Papers (peer reviewed):**

Fenstermaker, LF, RL Jasoni, JA Arnone III, and DA Devitt (2012) Impact of pixel versus footprint approaches on empirically derived ET estimates from Landsat TM, pp 202-205, in CMU Neale and MH Cosh (editors) *IAHS/AISH Remote Sensing and Hydrology, Proceedings of a Symposium organized by the International Commission on Remote Sensing of IAHS*, Jackson Hole, WY, 27-30 September, 2010, IAHS Publ 352.

Fenstermaker, LK and JR Miller (1994) Identification of Fluvially-Redistributed Mill Tailings Using High Spectral Resolution Aircraft Data. *Photogrammetric Engineering and Remote Sensing*, 60(8):989-995.

#### **Journal Papers (peer reviewed):**

Evans, RD, A Koyama, DL Sonderegger, TN Charlet, BA Newingham, LF Fenstermaker, B Harlow, VL Jin, K Ogle, SD Smith and RS Nowak (2014) Greater ecosystem carbon in the Mojave Desert after 10 years exposure to elevated CO<sub>2</sub>. *Nature Climate Change*, DOI: 10.1038/NCLIMATE2184.

Mensing, S, S Strachan, J Arnone, L Fenstermaker, F Biondi, D Devitt, B Johnson, B Bird, and E Fritzingler (2013) A network for observing Great Basin climate change. *Eos, Transactions American Geophysical Union*, 94(11):105-106.

McGwire, K, M Weltz, J Finzel, C Morris, L Fenstermaker and D McGraw (2012) Multiscale assessment of green leaf cover in a semi-arid rangeland with a small unmanned aerial vehicle. *International Journal of Remote Sensing* 34:1615-1632.

Devitt D, LF Fenstermaker, MH Young, B Conrad, BM Bird and M Baghzouz (2011) Evapotranspiration of mixed shrub communities in phreatophytic zones of the Great Basin. *Ecohydrology*. DOI: 10.1002/eco.169.

- Baghzouz M, DA Devitt, LF Fenstermaker and MH Young (2010) Monitoring vegetation phenological cycles in two different semi-arid environmental settings using a ground based NDVI system: A potential approach to improve satellite data interpretation. *Remote Sensing*, 2:990-1013, doi:10.3390/rs2040990.
- Wohlfahrt, G, A Haslwanter, L Hörtnagl, RL Jasoni, LF Fenstermaker, JA Arnone III and A Hammerle, (2009) On the consequences of the energy imbalance for calculating surface conductance to water vapour. *Agricultural and Forest Meteorology* 149:1556-1559.
- Young, MH, TG Caldwell, DG Meadows and LF Fenstermaker, (2009) Variability of soil physical and hydraulic properties at the Mojave Global Change Facility, Nevada: implications for water budget and evapotranspiration. *Journal of Arid Environments*, doi:10.1016/j.jaridenv.2009.01.015
- Wohlfahrt, G, LF Fenstermaker and JA Arnone III. (2008) Large annual net ecosystem CO<sub>2</sub> uptake of a Mojave Desert ecosystem. *Global Change Biology*, 14:1475-1487.
- Devitt, DA, RL Morris, M Baghzouz, M Lockett, LK Fenstermaker (2005) Water quality changes in golf course irrigation ponds transitioning to reuse. *Hort Science*, 40(7): 2151-2156.
- Devitt, DA, RL Morris, LF Fenstermaker, M Baghzouz and DS Neuman (2005) Foliar Damage and Flower Production of Landscape Plants Sprinkle Irrigated with Reuse Water. *Hort Science*, 40(6):1871-1878.
- Devitt, DA, RL Morris, and LF Fenstermaker. (2005) Foliar Damage, Spectral Reflectance and Tissue Ion Concentrations of Trees Sprinkle Irrigated with Waters of Similar Salinity but Different Chemical Composition. *Hort Science*, 40(3):819-826.
- Smith SD, TE Huxman, SF Zitzer, TN Charlet, DC Housman, JC Coleman, LK Fenstermaker, JR Seemann, and RS Nowak (2000) Elevated CO<sub>2</sub> increases productivity and invasive species success in an arid ecosystem. *Nature* 408: 79-82.
- McGwire, K, T Minor and L Fenstermaker (2000) Hyperspectral Mixture Modeling for Quantifying Sparse Vegetation Cover in Arid Environments. *Remote Sensing of Environment*, 72(3):360-374.
- Devitt, DA, A Sala, SD Smith, JA Cleverly, LK Shaulis, and R Hammett (1998) Bowen Ratio Estimates of evapotranspiration for *Tamarix ramosissima* stands on the Virgin River in southern Nevada. *Water Resources Research*, 34(9):2407-2414.
- Fenstermaker-Shaulis, LK, A Leskys, and DA Devitt (1997) Utilization of remotely sensed data to map and evaluate turfgrass stress associated with drought. *Journal of Turfgrass Management*, 2(1):65-81.
- Hibbard, KA and LK Shaulis (1997) UCAR colloquium on advances in ecosystem-atmosphere interactions. *Bulletin of the Ecological Society of America* 78:164-165.
- Lunetta, RS, RG Congalton, LK Fenstermaker, JR Jensen, KC McGwire, and LR Tinney (1991) Remote Sensing and Geographic Information System Data Integration: Error Sources and Research Issues. *Photogrammetric Engineering and Remote Sensing*, Vol. 57, No. 6, pp. 677-687.

## **Proceedings**

- Fenstermaker, L (1991) A proposed approach for national to global scale error assessments. In *Proceedings of Geographic Information Systems and Land Information Systems*, Atlanta, GA, USA, 28 October–1 November 1991; pp. 293-300.
- Fenstermaker, LK (1991) Thoughts On" Remote And Geographic Information System Data Integration: Error Sources And Issues. In *The integration of remote sensing and geographic information systems:*

Proceedings of a special session held at the Baltimore 1991 ACSM-ASPRS Annual Convention (Vol. 12, p. 97). ASPRS Pubns.

Brotten, MD, L Fenstermaker and JM Shafer (1987) An Automated GIS for Ground Water Contamination Investigation," In Proceedings of the NWWA Conference on Solving Ground Water Problems with Models, National Water Well Association, Dublin, OH.

### **Selected Conferences:**

Kruse KE, L Saito, L Fenstermaker, D Devitt, S Strachan, C Morris and M Weltz (2013) Using runoff collectors to understand surface runoff characteristics in remote Nevada catchments. American Geophysical Union Fall Meeting, December 1, 2013, San Francisco, CA.

Fenstermaker LF (2013) DRI UAS Expertise and Related Interests. Titans of Industry, June 26-27, 2013, Las Vegas, NV.

Fenstermaker L, S Strachan, F Biondi, D Simeral, G McCurdy, B Bird, B Lyles, J Arnone, D Devitt and L Saito (2013) NevCAN: Measuring Climate and Environmental Response in the Great Basin. Great Basin Consortium Conference, January 14-16, 2013, Boise, ID

Apodaca L, Devitt D and Fenstermaker L (2012) Assessing Interannual Variation in Vegetation Response to Climate in Spring Valley, NV. Nevada Water Resources Association, March 5-8, 2012, Las Vegas, NV.

Fenstermaker LF, S Strachan, G McCurdy, B Bird, D Devitt, F Biondi, J Arnone, L Saito, R Jasoni, B Johnson and B Lyles (2012) NevCAN: Monitoring Climate Variability and Change along Two Elevation Gradients. CUAHSI Third Biennial Colloquium on Water Science and Engineering, July 16-18, 2012, Boulder CO.

Fenstermaker LF, DA Devitt, LS Saito, JA Arnone III, F Biondi, BR Riddle, MJ Walker, RL Jasoni, S Strachan, B Bird, G McCurdy and B Lyles (2011) Monitoring climate variability and change along two elevation gradients in the Mojave and Great Basin Deserts. 96th Ecological Society of America (ESA) Meeting, August 7-12, 2011 Austin TX.

Koonce, JE, MH Young, DA Devitt, Z Yu, A Wagner and L Fenstermaker (2011, December) Soil Water and Thermal Gradients in the Vadose Zone: Assessing Evapotranspiration, Recharge Rates and Shifts in Phreatophytic Water Source. In AGU Fall Meeting Abstracts (Vol. 1, p. 1024).

Saito, LS, F Biondi, L Fenstermaker, J Arnone, D Devitt, B Riddle, and M Young (2011) The Nevada NSF EPSCoR infrastructure for climate change science, education, and outreach project: investigations of ecological change and water resources along elevational gradients in arid environments. World Environmental and Water Resources Congress, May 22-26, 2011, Palm Springs CA.

Fenstermaker LF, RL Jasoni, JA Arnone III, DA Devitt and C Kratt (2010) Impact of pixel versus footprint approaches on empirically derived ET estimates from Landsat TM. Remote Sensing and Hydrology 2010, Sept 2010, Jackson Hole, WY.

Saito, L., F Biondi, LF Fenstermaker, J Arnone, D Devitt, B Riddle and M Young (2010, December) The Nevada NSF EPSCoR infrastructure for climate change science, education, and outreach project: highlights and progress on investigations of ecological change and water resources along elevational gradients. In AGU Fall Meeting Abstracts (Vol. 1, p. 01).

Fenstermaker LF and MH Young (2009) Carbon Flux and Spectral Response of Biological Soil Crust to Soil Moisture Status. ASA-CSSA-SSSA 2009 International Annual Meeting, November 1-5, 2009,

Pittsburgh, PA.

- Young, MH, LF Fenstermaker and J Zhu (2009) Near-Surface Water Content and Carbon Flux in Biological Soil Crust. AGU Chapman Conference Examining Ecohydrological Feedbacks of Landscape Change Along Elevation Gradients in Semiarid Regions, October 4-8, 2009, Boise and Sun Valley, ID.
- Fenstermaker, LF, BA Newingham, SD Smith and TN Charlet (2009) Spectral Assessment of Mojave Global Change Treatment Effects. Abstracts, The Ecological Society of America, 94<sup>th</sup> Annual Meeting, August 2-7, 2009, Albuquerque, NV, PS 6-63.
- Arnone, JA, RL Jasoni, JD Larsen, LF Fenstermaker and G Wohlfahrt (2008, December) Atmospheric-Ecosystem CO<sub>2</sub> Exchange in Sparse Arid Shrublands Across the Great Basin USA Over Multiple Years: Identifying Patterns and Mechanisms. In AGU Fall Meeting Abstracts (Vol. 1, p. 0285).
- Fenstermaker, LF and EA Knight (2007) Assessing Climate Change Treatment Effects with a Radio Control Helicopter Multispectral Platform. Abstracts, The Ecological Society of America, 92<sup>nd</sup> Annual Meeting, August 5-10, 2007, San Jose, CA, PS 66-122.
- Fenstermaker, LK, DA Devitt, DE Pataki, and SD Smith (1999) Spatial Variations in Evapotranspiration of a Riparian *Tamarix* Community. Abstracts, The Ecological Society of America, 84<sup>th</sup> Annual Meeting. August 8-12, 1999, Spokane WA, p. 249.
- Gamon JA, LK Fenstermaker, and DA Sims (1999) Optical detection of early CO<sub>2</sub> treatment effects at the Nevada Desert FACE Facility. Ecological Society of America, Annual Meeting, Spokane WA.
- Shaulis, LK, DA Devitt, and SD Smith (1997) Estimation of *Tamarix* Evapotranspiration Using Remotely Sensed Data. Agronomy Abstracts, 1997 Annual Meetings of the American Society of Agronomy, Crop Science Society of America, and the Soil Science Society of America. October 26-31, Anaheim, CA, p. 257.
- Fenstermaker, LK (1992) Identification of Mill Tailings within the Carson River Superfund Site. Proceedings, International Symposium on Spectral Sensing Research, Nov 15-20, Maui, HI, Vol. 2, pp. 997-1007.
- Fenstermaker, LK (1991) Proposed Approach for National to Global Scale Error Assessments. Proceedings, GIS/LIS '91, Atlanta, GA, Vol. 1, pp. 293-299.
- Fenstermaker, LK (1990) Delineation of Mine Tailings in Southeastern Kansas. Proceedings, 1990 ACSM-ASPRS Annual Convention, Denver, Colorado. Vol. 4 pp. 121-125.
- Broten M, L Fenstermaker, and J Shafer (1987) An Automated GIS for Ground Water Contamination Investigation, Proceedings - Solving Ground Water Problems with Models Conference, Denver Colorado, NWWA/IGWMC.
- Foresman, TW, and LK Fenstermaker (1986) Spatial Data Research for Hazardous Waste Sites, Proceedings - National Conference on Hazardous Wastes and Hazardous Materials, Atlanta, Georgia.
- Fenstermaker, LK (1986) Applications of GIS to Environmental Assessment: EMTS, a case study. CHATTMAP '86, Chattanooga, Tennessee.
- Fenstermaker, LK (1986) Geographic Information Systems: Environmental Assessment and Monitoring Applications. The World Health Organization Symposium on Human Exposure Assessment Local (Heal), Chattanooga, Tennessee.

**Selected Reports:**



- Shillito, RM and LF Fenstermaker (2014) Soil Stabilization Methods Having Potential for Application at the Nevada National Security Site: A Literature Review. Prepared for the U.S. Department of Energy, Report # DOE/NV/0000939-XX, TBA.
- Fenstermaker, LF, ME Cablk, J Chapman, M Green and A de Soyza (2013) Recommended Core and Supplemental Environmental Monitoring Methods for Arid Land BP Installations. Prepared for BP International.
- Miller JJ, V Etyemezian, RM Shillito, ME Cable, LK Fenstermaker and DS Shafer (2013) Monitoring Soil Erosion of a Burn Site in the Central Basin and Range Ecoregion: Final Report on Measurements at the Gleason Fire Site, Nevada. Prepared for the U.S. Department of Energy, Report # DOE/NV/0000939-14, OSTI #1096173.
- Hershey, R., M Cablk, K LeFebre, L Fenstermaker and D Decker (2013) Water-Chemistry Evolution and Modeling of Radionuclide Sorption and Cation Exchange during Inundation of Frenchman Flat Playa (No. DOE 45252/DRI 0000939-10). Desert Research Institute, Nevada University, Reno, NV (United States); Desert Research Institute (DRI), Nevada System of Higher Education, Reno, NV (United States).
- Fenstermaker LF (2012) Fire Impacts on the Mojave Desert Ecosystem: Literature Review. Prepared for the U.S. Department of Energy, Report # DOE/NV/26383-24, 33 p.
- Mace TH, J Mejia, J Gillies, J Miller, V Etyemezian, and L Fenstermaker (2011) NASA DFRC Climate Change Adaptation Workshop Summary Report. NASA Dryden Flight Research Center; Desert Research Institute, Palmdale, CA, August 2-3, 2011.
- Fenstermaker LF, AG Burns and RL Jasoni (2011) Empirically-derived relationship between growing-season average NDVI and annual ET for White River, Spring, and Snake Valleys, Nevada: Presentation to the Office of the Nevada State Engineer: Desert Research Institute, Las Vegas, Nevada, and Southern Nevada Water Authority, Las Vegas, Nevada.
- Arnone III JA, RL Jasoni, JD Larsen, LF Fenstermaker, G Wohlfahrt, CB Kratt, BF Lyles, J Healey, MH Young and JM Thomas (2008) Variable evapotranspirative water losses from lowland agricultural and native shrubland ecosystems in the eastern Great Basin of Nevada, USA. Prepared for Southern Nevada Water Authority, 97 p.
- Devitt D, L Fenstermaker, M Young, B Conrad, M Baghzouz and B Bird (2008) Evapotranspiration Estimates in North Eastern Nevada Basins. Prepared for the Southern Nevada Water Authority, 83 p
- Smith, S, RS Nowak, L Fenstermaker and M Young (2007) Final Technical Report: Effects of Changing Water and Nitrogen Inputs on a Mojave Desert Ecosystem (No. DOE/ER/63361-F). Nevada System of Higher Education, Las Vegas, NV; University of Nevada, Las Vegas, NV; University of Nevada, Reno, NV; Desert Research Institute, Las Vegas, NV.
- Devitt DA, LK Fenstermaker, MH Young and B Conrad. 2006. Basin Wide Evapotranspiration Estimates for Spring Valley and White River Valley. Prepared for the Southern Nevada Water Authority, 60 p.
- Meadows, DG, MH Young and LF Fenstermaker (2006) Geostatistical analysis of soil and hydraulic processes at the MGCF. Internal report prepared for DOE Program for Ecological Research grant, Desert Research Institute, DHS Publication No. 41225, 24 p.
- Shaulis, L, G Wilson and R Jacobson (1997) Historical hydronuclear testing: characterization and remediation technologies. Prepared for Nevada Operations Office, Department of Energy, DRI Publ. No. 45158, 21 p.

- Shaulis, L (1996) Review of encapsulation technologies. Prepared for the Nevada Operations Office, Department of Energy, DRI Publication No. 45146, 19 p.
- Shaulis, L, and J Lancaster (1995) Summary of Spectral Analysis Workshop: The Use of Vegetation as an Indicator of Environmental Contamination. Prepared for the U.S. Navy, Port Hueneme, CA, 147 p.
- Shaulis, L, and J Lancaster (1994) Changes in Plant Spectra as an Indicator of Environmental Contamination. Prepared for the U.S. Navy, Port Hueneme, CA, 29 p.
- Fenstermaker, LK (1993) Remote Sensing Quality Assurance and Quality Control Issues and Guidance. Internal report prepared for the EPA, Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, 16 p.
- Fenstermaker, LK (1993) Remote Sensing Thematic Accuracy Assessment. Internal report prepared for the EPA, Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, 26 p.
- Lunetta, R.S., JG Lyon, JA Sturdevant, JL Dwyer, CD Elvidge, LK Fenstermaker, D Yuan, JR Hoffer and R Weerackoon, (1993) North American Landscape Characterization: Research Plan. Report No. 600/R-93/135, EPA, American United States.
- Fenstermaker, LK (1992) Identification of Mill Tailings within the Carson River Watershed Using High Spectral Resolution Data, Internal report prepared for the EPA, Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, 31 p.
- Fenstermaker, LK, GE Byers, TH Starks, MJ Miah and CJ Palmer (1992) Direct/Delayed Response Project: Soil-characterization comparison (No. PB-92-153428/XAB). Lockheed Engineering and Sciences Co., Inc., Las Vegas, NV (United States). Environmental Programs Office.
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