

Karen L. Vaughan

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Ecosystem Science and
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RESEARCH INTERESTS

Application of pedological concepts and tools to solve environmental problems; hydric and hydromorphic soils; influence of climate on edaphic factors and vegetation communities; soil evolution; tephra-influenced soils; plant-soil inter-relationships; digital soil mapping; soil mineralogy; and natural resources education.

EDUCATION

Ph.D.	2008	Soil Science, University of Idaho - Moscow <i>Pedogenesis at Craters of the Moon National Monument and Preserve</i> Major advisor: Paul McDaniel
M.S.	2004	Soil Science, University of Maryland - College Park <i>Hydromorphology of Mid-Atlantic Piedmont Floodplain Soils</i> Major advisor: Martin Rabenhorst
B.S.	2001	Wildlife Conservation, University of Delaware - Newark
B.S.	2001	Entomology, University of Delaware - Newark

PROFESSIONAL EXPERIENCE

Assistant Professor of Pedology (2015 - present)

University of Wyoming, Laramie, WY

Conduct research and teaching in the areas of environmental pedology, hydric and hydromorphic soils, and natural resources education. A combination of field, laboratory, and computer-based studies will be designed to elucidate critical issues in pedology. Extramural funding will be secured to support research, scholarly activities, and graduate students. The results of this research will be published in peer-reviewed journals and other appropriate outlets. Participation at research conferences, professional meetings, and other venues will also allow for the dissemination of research findings.

Assistant Professor of Soil Science (2011 - 2015)

California Polytechnic State University, San Luis Obispo, CA

Teaching responsibilities included Introduction to Soil Science, Soil Morphology, Soil Ecology, Wetlands, Soil Judging, and Senior Project I and II. My role as an undergraduate advisor included oversight of two Natural Resource Management and Environmental Sciences student clubs, mentoring of undergraduate research, and specialized curricular advice in soil and earth sciences. Other service activities include FFA Land Judging Contest coordinator and host, Indigenous Studies in Environmental Sciences minor committee member, earth and soil science curriculum committee member, new student enrollment taskforce committee member, and Employment Equity Facilitator for the NRES department. Advised graduate students through direct mentorship and guidance of research projects in soil science as well as through service on graduate committees. Research performed on anomalous hydric soils, digital soil mapping and predictive modeling, pedogenesis in saline vernal pools, soil-vegetation relationships, Indicator of Reduction in Soil tubes, and S biogeochemistry.

Soil Scientist (2008 - 2011)

USDA-NRCS Snow Survey Program and Soil Climate Analysis Network - Salt Lake City, UT

Responsible for the operation, maintenance, and data analyses at the 35 Soil Climate Analysis Network (SCAN) stations in Utah and soil information and sensors at 150 Snowpack-Telemetry (SNOTEL) stations in Utah, Nevada, western Wyoming, and eastern California. Worked with rangeland ecologists to produce ecological site descriptions at SCAN and SNOTEL sites in order to develop state and transition models. Collaborated with hydrologists, agronomists, land managers, biologists, and ecologists to identify the importance of using soil climate information to improve our understanding of relationships between soil and vegetation communities, snow hydrology, and improved agricultural practices. Examine the influence of edaphic factors on sagebrush and aspen vegetation community establishment; vegetation encroachment at high elevation, snowfall-dominated SNOTEL stations; and variability in soil climatic conditions in adjacent meadow, aspen, and conifer communities.

Graduate Research Assistant (2004 - 2008)

University of Idaho - Moscow

Developed and executed a research study that examined secondary mineral synthesis along a chronosequence of basaltic cinder cones using a combination of techniques including selective dissolutions and total elemental digests. Investigated processes involved in organic and mineral soil succession on Holocene-aged lava flows. Through an agreement with the National Park Service and Natural Resources Conservation Service, determined volcanic-ash influence throughout Craters of the Moon National Monument and Preserve and identified sources of ash via electron microscopy. Evaluated vegetated and non-vegetated cinder cone surfaces using GPR and automated water content measurements in order to elucidate the edaphic controls over plant communities in arid climates.

Inland Northwest Research Alliance - Subsurface Science Graduate Fellow (2006 - 2008)

University of Idaho - Moscow

Participated in an interdisciplinary program entitled Terrestrial Subsurface Processes. Research and discussion topics included geology, vadose zone processes, soil chemistry, subsurface microbiology, kinetics, and flow and transport. Collaboration between graduate students and faculty at eight universities in the inland northwest was facilitated through scheduled meetings, field trips, in-class lectures, and online discussion forums. Subsurface transport of contaminants was the focus of the course and integrated projects. In-situ microbial and chemical remediation techniques were examined and transport models were applied in heterogeneous subsurface environments.

Instructor - Soil and Site Evaluation (Soil Judging) (2006 - 2008)

University of Idaho - Moscow

Instructor of a field-based course to teach students how to describe and characterize soil profiles under field conditions. Responsible for preparing and accompanying students to the Regional and National Soil Judging Competitions in San Luis Obispo, CA (2006), Bend, OR (2006), Logan, UT (2007), Ontario, OR (2007), and Narragansett, RI (2008). Soil profiles and landscape attributes were described based on Soil Taxonomy.

Instructor - The Soil Ecosystem Laboratory (2004 - 2006)

University of Idaho - Moscow

Developed, designed, and taught lectures and laboratory procedures to approximately forty students during both the fall and spring semesters for two years. Reviewed important laboratory methods, developed examinations and quizzes, and led field trips throughout the region. Laboratory topics included

soil genesis, color, texture, pH, salinity, taxonomy, cation exchange capacity, nitrogen cycle, biology, and fertility. An applied, hands-on teaching approach was adopted.

Soil Scientist (2004)

Bluefields, Nicaragua

Collaborated with a tropical forest ecologist from Hood College and researchers from the University of the Autonomous Regions of the Caribbean Coast of Nicaragua (URACCAN) to produce a first-order soil survey of two, eight-hectare plots located in lowland tropical rainforests on the Atlantic coast of Nicaragua. A soil sampling strategy was developed and implemented in an effort to establish recruitment limitation factors of three tropical tree species.

Graduate Research Assistant (2001 - 2004)

University of Maryland - College Park

Determined the relationship between duration of soil saturation and Fe reduction in hydric and non-hydric soils. Developed a new hydric soil field indicator that was accepted as an indicator for soils on Mid-Atlantic Piedmont floodplains. Performed an extensive field sampling and monitoring program in order to link soil processes with environmental conditions and water table dynamics. Mineralogy and micromorphology of soil profiles were comprehensively described using thin-sections, X-ray diffraction, selective dissolutions, and grain counts.

Soil Judging - Assistant Coach (2001 - 2003)

University of Maryland - College Park

Assisted in leading undergraduate students on numerous field trips to examine soil morphology and its application to land use. Descriptions of soil profiles were made locally to learn these techniques. Regional contests were held in Connecticut (2001), Pennsylvania (2002), and Rhode Island (2003). The soil judging team received first place in the regional contests all three years and attended the national contest in Minnesota (2002) and Texas (2003).

Ecological Restoration - Student Conservation Association/AmeriCorps (2001)

Big Cypress National Preserve - Ochopee, FL

Initiated a six-month study on the effects of off-road vehicles on soil compaction in saturated and unsaturated soils. Responsibilities included performing plant, soil, and biological inventories; aiding in the construction of an authorized trail system; removing unnatural human influences; eliminating invasive exotic plants; fighting wildland fires; studying fire ecology; and revegetating disturbed areas.

TEACHING

Courses taught at University of Wyoming

- SOIL 4120/5120 Soil Morphology and Genesis lecture and laboratory

Courses in development at University of Wyoming

- SOIL 2010 Introduction to Soil Science lecture and laboratory
- Advanced Pedology
- Hydric and Hydromorphic Soils

Courses taught at California Polytechnic State University

- SS 121 Introduction to Soil Science lecture and laboratory
- SS 321 Soil Morphology lecture and laboratory

- SS 400 Special Topics for Advanced Undergraduates
- SS/NR 421 Wetlands lecture and laboratory
- SS 422 Soil Ecology lecture and laboratory
- SS 444 Soil Judging
- SS 461 Senior project I
- SS 462 Senior project II
- SS 500 Individual study in soil science
- SS 600 Graduate thesis research

PUBLICATIONS

Verma, P., **K. Vaughan**, K. Martin, E. Pulitano, J. Garrett, and D. Piirto. Integrating indigenous knowledge and western science into forestry, natural resources, and environmental programs. *In review at Journal of Forestry Science*.

Vaughan, K.L., P.C. McDaniel, D.G. Strawn, and S. Blecker. Soil evolution along a chronosequence of basaltic cinder cones. *In review at Soil Sci. Soc. Am. J.*

Appel, C., **K. Vaughan**, B. Swan, M. Wallace, C. Stubler, and P. Verma. 2014. Effect of a soil microbial activity laboratory on student learning. *NACTA J.* 58:129-134.

Vaughan, K.L., P.C. McDaniel, and W. Phillips. 2011. Episodic soil succession on basaltic lava fields in a cool, dry environment. *Soil Sci. Soc. Am. J.* 75:1462-1470.

Baker, L.L, D.G. Strawn, **K.L. Vaughan**, and P.A. McDaniel. 2010. XAFS study of Fe mineralogy in a chronosequence of soil clays formed in basaltic cinders. *Clays and Clay Minerals.* 58:772-782.

Vaughan, K.L. and P.A. McDaniel. 2009. Organic soils on basaltic lava flows in a cool, arid climate, Craters of the Moon National Monument and Preserve, Idaho, USA. *Soil Sci. Soc. Am. J.* 73:1510-1518.

Vaughan, K.L., M.C. Rabenhorst, and B.A. Needelman. 2009. Saturation and temperature effects on the development of reducing conditions in soils. *Soil Sci. Soc. Am. J.* 73:663-667.

Castenson*, K.L., and M.C. Rabenhorst. 2006. Indicator of reduction in soil (IRIS): Evaluation of a new approach for assessing reduced conditions in soil. *Soil Sci. Soc. Am. J.* 70:1222-1226.

Rabenhorst, M.C., and **K.L. Castenson***. 2005. Temperature effects on iron reduction in a hydric soil. *Soil Sci.* 170:734-744.

* maiden name

OTHER PUBLICATIONS

Vepraskas, M. and **K. Vaughan**. 2015. Morphological Features of Hydric and Hydromorphic Soils. *In Richardson, J. and M. Vepraskas (Eds.) Wetland Soils: genesis, hydrology, landscapes, and classification.* 2nd ed. CRC Press. Boca Raton, FL.

Vaughan, K.L. and R. Julander. 2010. Relationship between climatic conditions and soil properties at SCAN and SNOTEL sites in Utah. *Proceedings of the 78th Western Snow Conference*, pp 4125-121. Logan, Utah.

AWARDS AND RECOGNITION

- Soil Science Society of America, Association of Women Soil Scientists Mentoring Award recipient. 2013
- Utah NRCS representative for the Emerging Leadership Development Program, USDA-NRCS. 2010
- Presentation Excellence Award, Graduate Student Expo, University of Idaho. 2008

- Leadership Award, Graduate and Professional Student Association, University of Idaho. 2008
- Western Society of Soil Science, first place award for presentation excellence. 2007
- American Association for the Advancement of Science (AAAS) Pacific Division, Robert I. Larus Award for best overall student presentation. 2007
- Pacific Northwest Society of Wetland Scientists Student Travel Scholarship. 2007
- Inland Northwest Research Alliance Graduate Fellowship. 2007
- Research Excellence Award, Graduate Student Expo, University of Idaho. 2007
- Inland Northwest Research Alliance Graduate Fellowship. 2006
- Teaching Excellence Award, University of Idaho. 2005

GRANTSMANSHIP

- Ellbogen Center for Teaching and Learning Professional Development Mini-Grants, University of Wyoming; 2015; *Augmented Reality Sandbox construction* (\$1,500).
- Research, Scholarly, and Creative Activities Grant Program, California Polytechnic State University; 2014; *Variability of Soil Redoximorphic Feature Expression in Seasonal Wetlands* (\$13,440).
- Agricultural Research Institute, California State University; 2014-2016; *Development and documentation of a standard for visual sulfur reduction to identify seasonally inundated wetlands* (\$40,000).
- United State Department of Agriculture - Natural Resources Conservation Service in coordination with Oregon State University; 2013-2015; *Quantification of outcomes generated using multi-scale geomorphic classification systems in predictive and update modes of digital soil mapping* (\$94,074).
- Agricultural Research Institute, California State University; 2012-2013; *Soil Science New Investigator Funding* (\$5,000).
- United State Department of Agriculture - Natural Resources Conservation Service; 2008-2009; responsible for expenditure of funding initiated to install and manage telemetered climate stations in representative soils throughout Utah while working for USDA-NRCS (\$320,000).
- University of Idaho Student Grant Program; 2007-2008; *Organic soil formation on Holocene-aged basaltic lava flows at Craters of the Moon National Monument and Preserve* (\$1,500).
- Sustainable Idaho Initiative; 2007; co-PI with Jodi Johnson-Maynard on grant entitled - *Soil Stewards, student-run organic farm: Advancing sustainable food systems and experiential education opportunities on the University of Idaho campus* (\$7,500).
- United State Department of Agriculture - Natural Resources Conservation Service in coordination with the National Park Service; 2005-2007; co-PI with Paul McDaniel on grant entitled - *Andisol pedogenesis at Craters of the Moon National Monument and Preserve* (\$22,000).

ADVISING & MENTORING

Previous Institution

- Faculty advisor to the Cal Poly Earth, Soil, and Water Conservation Club (2012 - 2015)
- Faculty advisor to the Cal Poly Geology Club (2013 - 2015)
- Faculty advisor to the Cal Poly Soil Judging Team/Club (2012 - 2015)
- Advisor to approximately 80 undergraduate students majoring in soil science or earth science at Cal Poly annually.
- Undergraduate research mentoring (2012-2014):

- Adrian Gallo* - California Polytechnic State University (2013); Seasonal soil moisture and temperature variation of timber stands with varying canopy structure in SW Oregon.
- Scott Pensky* - California Polytechnic State University (2013); Seasonal soil moisture and temperature variation of timber stands with varying canopy structure in SW Oregon.
- Yamina Pressler* - California Polytechnic State University (2013); Nitrogen cycling in well-developed cyanobacterial biological soil crusts under varied moisture conditions
- Andrew Ritenour - California Polytechnic State University (2013); Studying the efficacy of vermicompost for greenhouse tomato seedling growth
- Maria Hassett - California Polytechnic State University (2013); The effects of recycled water irrigation on soil salinity and plant health
- Laurie Fraser - California Polytechnic State University (2014); Using soil maps to prevent sudden oak death: Map analysis of four coastal California counties to determine influence of soil and landscape characteristics of *Phytophthora ramorum* chlamydospore survival.
- Max Ross* - California Polytechnic State University (2014); Sampling of soil profiles on Cal Poly campus
- Josh Fridlund - California Polytechnic State University (2014); The effect of increasing rates of biochar on corn growth in Salinas clay loam
- Jason DeMoss - California Polytechnic State University (2014); Utilizing Indicator of Reduction in Soils Tubes to Affirm a Serpentinic Hydric Soil on the California Central Coast
- Nico Navarro - California Polytechnic State University (2015); Development and Documentation of a Standard for Visual Sulfur Reduction to Identify Seasonally Inundated Wetlands
- Florence Miller - California Polytechnic State University (2015); Development and Documentation of a Standard for Visual Sulfur Reduction to Identify Seasonally Inundated Wetlands
- Kathryn Grossmith - California Polytechnic State University (2015); The Collection and Analysis of Soil Sites on the Cal Poly Campus

*continued to graduate school

- Graduate research mentoring:
 - Mark Gormley (MS) *The influence of hydrogeomorphology, soil redox conditions, and salinity on the spatial zoning of vegetation at Scott's Creek Marsh, Swanton Pacific Ranch, California*. Major Professor: Dr. Karen Vaughan (2011-2013)
 - Ariel Namm (MS) *Serpentinic problematic hydric soils in a Mediterranean Climate along the Central Coast of California*. Major Professor: Dr. Karen Vaughan (2012-2014)
- Graduate student committees:
 - Mary Crable (MS) *Evaluating five years of soil hydrologic response following the 2009 Lockheed Fire in the coastal Santa Cruz Mountains, California*. Major Professor: Dr. Brian Dietterick (2011-2014)

PROFESSIONAL ORGANIZATIONS & COMMITTEES

- USDA-NRCS National Technical Committee for Hydric Soils, elected academic representative (2013 - present)
- National Collegiate Soil Judging Contest Committee - region 6 representative (2013 - present)
- Soil Science Society of America (2001 - present)
 - Invited member of the Early Career Member Taskforce (2010-2011)
 - Invited member of the SSSA Reorganization Taskforce (2011-present)
 - Invited member of the Early Career Member Advisory Committee to the SSSA Board of Directors (2010-2013)

- Chair-elect Pedology division

- Western Society of Soil Science (2004-present)
- Western Snow Conference Association (2010-2013)
- Society of Wetland Scientists (2004-present)
- Association of Women Soil Scientists (2006-present)

COMMUNITY AND CAMPUS OUTREACH

- Organized and hosted the California State FFA Land Judging Competition at Cal Poly (2014).
- Environmental Earth Science for fourth graders from San Luis Obispo County Schools (2013).
- Agriculture Development for Afghanistan Pre-Deployment (ADAPT) Training instructor (2013).
- WORMS - explored the wonderful world of worms with toddlers at the ASI Children's Center at Cal Poly (2012, 2013, 2014, 2015).
- NRES Enrollment Taskforce member (2011) - Responsible for identifying ways to increase enrollment in all NRES majors.
- NRES Mission and Vision Statement Taskforce member (2011) - Responsible for developing a recommendation for the new mission and vision statement for the NRES department.
- Green Career Day at Thanksgiving Point (2010) Lehi, UT - Discussed environmental career opportunities with Utah high school students.
- Soil Science education for third graders at Rose Wagner Elementary (2010) Salt Lake City, UT - Taught third grade class about the importance of the environment and soil health.
- Encouraged Earth team volunteers to assist in soil descriptions and sampling at SNOTEL and SCAN sites (supervised 4 volunteers in 2009-2010).
- Soil Science education for second graders at West Park Elementary (2007) Moscow, ID - Taught second grade classes about the importance of the environment and soil health.
- Soil Stewards Farm Field Day (2007) Moscow, ID - Presented information about the soil fertility and morphology on the University of Idaho student-run organic farm.
- El Segundo Taller de Suelos (2007) Talamanca, Costa Rica - Assisted a colleague in preparing and hosting a workshop for a Cabécar indigenous community about the importance of soil fertility on their farms.
- Community supported agriculture coordinator (2007) Moscow, ID - Liaison between community shareholders and student members of the Soil Stewards.
- Mountain biking through Thailand (2007) Moscow, ID - Informal presentation to the Moscow Grange Chapter.
- Backyard Harvest (2006-2008) Moscow, ID - Delivered and organized the weekly donation of produce grown by the Soil Stewards to Backyard Harvest who then distributed produce to regional food banks.

TRAININGS AND WORKSHOPS

- Tips and Tricks for Actively Engaged Learning - UWYO ECTL (2015)
- Employment Equity Facilitator Training - Cal Poly (2014)
- USDA-NRCS Emerging Leadership Development Program - Potomac, MD (2011)
- CPR and First Aid - America Red Cross (2011)
- NASCA National Conservation Partnership Leadership Training - Louisville, KY (2010)
- All Terrain Vehicle Training - ATV Safety Institute (2010)

- Aviation Safety – Interagency Aviation Training (2010)
- Introductory Helicopter Flight Training, Upper Limit Aviation, Utah (2009)
- Tower Climbing Safety and Rescue – Boise, ID (2009)
- Snow Safety and Survival School – Tahoe City, CA (2009)
- 7th Biennial Conference on University Education in Natural Resources – Corvallis, OR (2008)
- Radiation Safety Training – University of Maryland (2002) and University of Idaho (2007)
- Grant Writing Workshop – University of Idaho (2007)
- Ground-penetrating radar and electromagnetic induction training – James Doolittle, NRCS (2006)
- Cultural Resources Training – Bureau of Land Management, Shoshone, ID (2005)
- Teaching Assistant Training – University of Idaho (2004)
- Grantsmanship Workshop – University of Maryland (2004)
- Wildland Fire Safety Training and Red-Card certification – Big Cypress National Preserve, FL (2001)

PRESENTATIONS

Vaughan, K., R. Vaughan, J. Noller, T., Cullum, and M. Taggart. Quantification of outcomes generated using multi-scale geomorphic classification systems in predictive and update modes of digital soil mapping. Soil Science Society of America. Minneapolis, MN. 2015. Poster presentation.

Vaughan, K., F. Miller, N. Navarro, and C. Appel. Development and documentation of a standard for visual sulfur reduction to identify seasonally inundated wetlands. Soil Science Society of America. Minneapolis, MN. 2015. Poster presentation.

Verma, P., **K. Vaughan**, K. Martin, E. Pulitano, J. Garrett, and D.D. Piirto. Integrating indigenous knowledge and western science into forestry, natural resources, and environmental programs. Association for Environmental Studies and Science. San Diego, CA. 2015. Oral Presentation

Vaughan, K. Hydric soil update for California and Wyoming. National Technical Committee for Hydric Soils Annual Meeting. Fairbanks, AK. 2015. Oral Presentation.

Noller, J., **Vaughan, K.**, Vaughan, R., and C. Ringo. Multi-Scale Geomorphic Classifications – In predictive and update digital soil mapping. Western Regional National Cooperative Soil Survey Meeting. Portland, OR. 2014. Oral Presentation.

Namm, A. and **K. Vaughan**. Standardizing sulfur reduction on IRIS tubes as a visual indicator of reduction in wetlands. Soil Science Society of America. Tampa, FL. 2013. Poster presentation.

Pressler, Y. and **K. Vaughan**. Nitrogen cycling in well-developed cyanobacterial biological soil crusts under varied moisture conditions. Soil Science Society of America. Tampa, FL. 2013. Poster presentation.

Vaughan, K. Use of soil climatic data to improve agricultural productivity and water supply forecasts. CAFES Graduate Seminar. California Polytechnic State University. San Luis Obispo, CA. 2011. Oral Presentation.

Julander, R., **K. Vaughan**, M. Bricco, B. Uriona, T. Bardsley, and B. Nault. 2011. The Mill Flat Fire hydrologic and flood potential evaluation. Western Snow Conference. South Lake Tahoe, CA. 2011. Oral Presentation.

Vaughan, K. and R. Julander. What does soil moisture tell us about the behavior of snowpack? Western Snow Conference. South Lake Tahoe, CA. 2011. Poster Presentation.

Bronsten, T., R. Julander, R. Vaughan, K. Vaughan, and M. Bricco. The use of UAVs in mapping vegetation at snow sites. Western Snow Conference. South Lake Tahoe, CA. 2011. Poster Presentation.

Vaughan, K. Soil Climate Analysis Network and Snow Survey Program. Utah Soil Scientists Workshop. St. George, UT. 2011. Oral Presentation, *invited*.

- Vaughan, K.**, M. Domeier, and R. Julander. Soil Climate Analysis Network: Importance of monitoring the influence of climatic conditions on soil. Soil Science Society of America. Long Beach, CA. 2010. Poster presentation.
- Vaughan, K.** Soil moisture and temperature data collected at SNOTEL sites in the western United States. National Oceanic and Atmospheric Administration and National Weather Service. Salt Lake City, UT. 2010. Oral Presentation, *invited*.
- Vaughan, K.**, M. Domeier, and R. Julander. Relationship between climatic conditions and soil properties at SCAN and SNOTEL sites in Utah. Western Soil Science Society Annual Meeting. Las Vegas, NV. 2010. Poster presentation.
- Strachen, S. and **Vaughan, K.L.** Soil moisture and temperature measured at SNOTEL and SCAN sites. ID, OR, and WA Tri-State Soil Scientists Training Session. Moscow, ID. 2010. Oral Presentation.
- Abramovich, R., Perkins, T., Julander, R, and **Vaughan, K.** Products, tools, and resources for water management. Western Snow Conference. Logan, UT. 2010. Oral Presentation.
- Vaughan, K.** and R. Julander. Relationship between climatic conditions and soil properties at SCAN and SNOTEL sites in Utah. Western Snow Conference. Logan, UT. 2010. Poster presentation.
- Baker, L.L, D.G. Strawn, **K.L. Vaughan**, and P.A. McDaniel. XAFS study of Fe mineralogy of soil colloids formed in basaltic tephra under cold, dry conditions. Soil Science Society of America. 2009. Pittsburg, PA. Poster Presentation.
- Vaughan, K.**, K. Sutcliffe, R. Julander, and M. Domeier. Utah Soil Climate Analysis Network. National Cooperative Soil Survey Conference. Las Cruces, NM. 2009. Poster presentation.
- Vaughan, K.** Utah Soil Climate Analysis Network – data usage and product availability. Utah Water Users Workshop. 2009. St. George, UT. Poster presentation.
- Vaughan, K.** and P.A. McDaniel. Soil succession across basaltic lava flows in a cool, arid climate. Western Soil Science Society Annual Meeting. Spokane, WA. 2008. Oral presentation.
- Vaughan, K.** and P.A. McDaniel. Secondary mineral synthesis along a chronosequence at Craters of the Moon National Monument and Preserve. Soil Science Society of America. 2007. New Orleans, LA. Oral presentation.
- Vaughan, K.** and P.A. McDaniel. Integrating pedology and XAFS to examine clay minerals along a chronosequence. Inland Northwest Research Alliance Environmental Sensing Symposium. 2007. Boise, ID. Poster presentation.
- Vaughan, K.** and M.C. Rabenhorst. Indicator of Reduction in Soil: IRIS Tubes. Society of Wetland Scientists Annual Meeting. 2007. Sacramento, CA. Oral presentation.
- Vaughan, K.** and P.A. McDaniel. Overview of soils at Craters of the Moon National Monument and Preserve. Idaho Native Plant Society Meeting. 2007. Craters of the Moon National Monument and Preserve, ID. Oral presentation.
- Vaughan, K.**, P.A. McDaniel, and A. Falen. Organic soil formation on lava flows at Craters of the Moon National Monument and Preserve. Western Soil Science Society Annual Meeting. 2007. Boise, ID. Oral presentation.
- Langill, D. and **K.L. Castenson***. Assessing reduced conditions in soil. Western Society of Wetland Scientists Annual Meeting. 2006. Vancouver, WA. Oral presentation.
- Castenson*, K.L.**, P.A. McDaniel, and D. Hoover. Secondary mineral formation in cool, dry Andisols of the eastern Snake River Plain, USA. World Congress of Soil Science. 2006. Philadelphia, PA. Poster presentation.
- Castenson*, K.L.**, P.A. McDaniel, D. Hoover, and A.L. Falen. Pedogenesis in Andisols of Craters of the Moon National Monument and Preserve. Western Soil Science Society Annual Meeting. 2006. Park City, UT. Poster presentation.

Castenson*, K.L., P.A. McDaniel, and D. Hoover. Pedogenesis in Andisols of Craters of the Moon National Monument and Preserve. Soil Science Society of America. 2005. Salt Lake City, UT. Poster presentation.

Castenson*, K.L. and M.C. Rabenhorst. Indicator of reduction in soil: Evaluating a new approach to identify hydric soils. Soil Science Society of America. 2004. Seattle, WA. Poster presentation.

Rabenhorst M.C. and **K.L. Castenson***. Indicator of reduction in soil: Evaluating a new approach to identify hydric soils. South-Atlantic Society of Wetland Scientists Wetlands and Watershed Workshop. 2004. Atlantic City, NJ. Oral presentation.

Castenson*, K.L. and M.C. Rabenhorst. Brief overview of IRIS experiment. Mid-Atlantic Hydric Soils Committee Meeting. 2004 Richmond, VA. Oral presentation.

Castenson*, K.L. and M.C. Rabenhorst. Hydromorphology of Mid-Atlantic Piedmont floodplain soils. Soil Science Society of America. 2003. Denver, CO. Poster presentation.

Castenson*, K.L. Indicator of reduction in soil. Mid-Atlantic Association of Professional Soil Scientists. 2003. College Park, MD. Poster presentation.

Castenson*, K.L. and M.C. Rabenhorst. Hydromorphology of Mid-Atlantic Piedmont floodplain soils. South-Atlantic Society of Wetland Scientists Wetlands and Watershed Workshop. 2003. Atlantic City, NJ. Oral presentation.

Castenson*, K.L. and M.C. Rabenhorst. Hydromorphology of Piedmont floodplain soils. Mid-Atlantic Hydric Soils Committee Meeting. 2003. Richmond, VA. Oral presentation.

Castenson*, K.L. and M.C. Rabenhorst. Hydromorphology of Piedmont floodplain soils. Soil Science Society of America. 2002. Indianapolis, IN. Poster presentation.

* maiden name