Daniel R. Hirmas

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EDUCATION

- Ph.D. in Soil and Water Sciences, University of California—Riverside, 2008
  Dissertation: Surface Processes, Pedology, and Soil-Landscape Modeling of the Southern Fry Mountain Bolson, Mojave Desert, California
- M.S. in Soil Science, Texas Tech University, 2003
  Thesis: Degradation of Pedogenic Calcretes in West Texas
- B.A. in Biology, Texas A&M University, 1999

ACADEMIC APPOINTMENTS

- Associate Professor, Department of Geography and Atmospheric Science, University of Kansas, Lawrence, KS, 2015–Present
- Visiting Research Scholar, Department of Environmental Sciences, Rutgers University, New Brunswick, NJ, Fall 2014 (Sabbatical)
- Associate Professor, Department of Geography, University of Kansas, Lawrence, KS, 2014–2015
- Courtesy Appointment, Environmental Studies Program, University of Kansas, Lawrence, KS, 2009–Present
- Assistant Professor, Department of Geography, University of Kansas, Lawrence, KS, 2008–2014

PUBLICATIONS (*italics indicate students*)

Articles

- *Zautner, E.J.*, **D.R. Hirmas**, J.R. Miller, and K.I. Drager. 2017. Surface rock controls on the development of desert varnish in the Mojave Desert. Journal of Arid Environments. (In review)
- **Hirmas, D.R.**, and D. Giménez. 2017. A geometric equation for representing morphological field information in horizons with compound structures. Soil Science Society of America Journal. doi: 10.2136/sssaj2016.12.0396 (In press)
- *Mohammed, A.K.*, **D.R. Hirmas**, D. Giménez, R.D. Mandel, and J.R. Miller. 2016. A digital morphometric approach for quantifying ped shape. Soil Science Society of America Journal 80:1604-1618.

- *Katz, B.S.*, R.L. Stotler, **D.R. Hirmas**, G. Ludvigson, J.J. Smith, and D.O. Whittemore. 2016. Geochemical recharge estimation and the effects of a declining water table. Vadose Zone Journal 15(10). doi: 10.2136/vzj2016.04.0031
- Kim, D., **D.R. Hirmas**, R.W. McEwan, T.G. Mueller, S.J. Park, P. Šamonil, J.A. Thompson, and O. Wendroth. 2016. Predicting the influence of multi-scale spatial autocorrelation on soil-landform modeling. Soil Science Society of America Journal 80:409-419.
- *Drager, K.*, **D.R. Hirmas**, S.T. Hasiotis, and T.C. Bents. 2016. Effects of ant (*Formica subsericea*) nest development on physical and hydrological properties in a coarse-textured soil. Soil Science 181:166-174.
- *Drager, K.*, **D.R. Hirmas**, and S.T. Hasiotis. 2016. Effects of ant (*Formica subsericea*) bioturbation on physical and hydrological properties of a fine-textured soil. Soil Science Society of America Journal 80:364-375.
- *Eck, D.V.*, *M. Qin*, **D.R. Hirmas**, D. Giménez, and N.A. Brunsell. 2016. Relating quantitative soil structure metrics to saturated hydraulic conductivity. Vadose Zone Journal. 15(1). doi: 10.2136/vzj2015.05.0083
- *Klopfenstein, S.T.*, **D.R. Hirmas**, and W.C. Johnson. 2015. Relationships between soil organic carbon and precipitation along a climosequence in loess-derived soils of the central Great Plains, USA. Catena 133:25-34.
- Rabenhorst, M.C., A. Schmehling, J.A. Thompson, **D.R. Hirmas**, R.C. Graham, and *A.M. Rossi*. 2015. Reliability of soil color standards. Soil Science Society of America Journal 79:193-199.
- *Halfen, A.F.*, *T. White*, T.A. Slocum, **D.R. Hirmas**, D. McDermott, P. Atchley, W.C. Johnson, S. Egbert, and A. Gilbreath. 2014. A new stereoscopic (3D) media database and teaching strategy for use in large-lecture introductory geoscience courses. Journal of Geoscience Education 62:515-531.
- **Hirmas, D.R.**, T.A. Slocum, *A.F. Halfen*, *T. White*, *E. Zautner*, P. Atchley, *H. Liu*, W.C. Johnson, S. Egbert, and D. McDermott. 2014. Effects of seating location and stereoscopic display on learning outcomes in an introductory physical geography class. Journal of Geoscience Education 62:126-137.
- **Hirmas, D.R.**, D. Giménez, *V. Subroy*, and *B.F. Platt*. 2013. Fractal distribution of mass from the millimeter- to decimeter-scale in two soils under native and restored tallgrass prairie. Geoderma 207-208:121-130.
- *Eck, D.V.*, **D.R. Hirmas**, and D. Giménez. 2013. Quantifying soil structure from field excavation walls using multistripe laser triangulation scanning. Soil Science Society of America Journal 77:1319-1328.
- **Hirmas, D.R.** 2013. A simple method for removing artifacts from moist fine-textured soil faces. Soil Science Society of America Journal 77:591-593.
- *Platt, B.F.*, S.T. Hasiotis, and **D.R. Hirmas**. 2012. Empirical determination of physical controls on megafaunal footprint formation through neoichnological experiments with elephants. PALAIOS 27:725-737.

- *Subroy, V.*, D. Giménez, **D.R. Hirmas**, and P. Takhistov. 2012. On determining soil aggregate bulk density by displacement in two immiscible liquids. Soil Science Society of America Journal 76:1212-1216.
- **Hirmas, D.R.**, *B.F. Platt*, and S.T. Hasiotis. 2012. Determination of calcite and dolomite content in soils and paleosols by continuous coulometric titration. Soil Science Society of America Journal 76:1100-1106.
- **Hirmas, D.R.**, R.C. Graham, and K.J. Kendrick. 2011. Soil-geomorphic significance of land surface characteristics in an arid mountain range, Mojave Desert, USA. Catena 87:408-420.
- **Hirmas, D.R.**, and R.C. Graham. 2011. Pedogenesis and soil-geomorphic relationships in an arid mountain range, Mojave Desert, California. Soil Science Society of America Journal 75:192-206.
- *Platt, B.F.*, S.T. Hasiotis, and **D.R. Hirmas**. 2010. Use of low-cost multistripe laser triangulation scanning technology for three-dimensional, quantitative paleoichnological and neoichnological studies. Journal of Sedimentary Research 80:590-610.
- **Hirmas, D.R.**, C. Amrhein, and R.C. Graham. 2010. Spatial and process-based modeling of soil inorganic carbon storage in an arid piedmont. Geoderma 154:486-494.
- *Rossi, A.M.*, **D.R. Hirmas**, R.C. Graham, and P.D. Sternberg. 2008. Bulk density determination by automated three-dimensional laser scanning. Soil Science Society of America Journal 72:1591-1593.
- Graham, R.C., **D.R. Hirmas**, Y.A. Wood, and C. Amrhein. 2008. Large near-surface nitrate pools in soils capped by desert pavement in the Mojave Desert, California. Geology 36:259-262.
- **Hirmas, D.R.**, and B.L. Allen. 2007. Degradation of pedogenic calcretes in West Texas. Soil Science Society of America Journal 71:1878-1888.
- **Hirmas, D.R.**, and *S.A.C. Furquim*. 2006. A simple modification of the clod method for determining bulk density of very gravelly soils. Communications in Soil Science and Plant Analysis 37:899-906.

Book Chapters

- **Hirmas, D.R.**, and R.D. Mandel. 2017. Soils of the Great Plains. p. 131-164. *In* L. West et al. (eds.) Soils of the USA, Springer, Dordrecht, Netherlands.
- **Hirmas, D.R.**, D. Giménez, E.A. Mome Filho, M. Patterson, K. Drager, B.F. Platt, and D.V. Eck. 2016. Quantifying soil structure and porosity using three-dimensional laser scanning. p. 19-35. *In* A. Hartemink and B. Minasny (eds.) Digital Soil Morphometrics, Springer, Dordrecht, Netherlands.
- Kraus, C., **D. Hirmas**, and J. Roberts. 2015. Compressive strength of blood stabilized earthen architecture. p. 217-220. *In* C. Mileto, F. Vegas, L. García Soriano, and V. Christini (eds.) Earthen Architecture: Past, Present and Future. Taylor & Francis Group, London, UK.
- Kraus, C., **D. Hirmas**, and J. Roberts. 2013. Microbially indurated rammed earth: A long awaited next phase of earthen architecture. p. 58-65. *In* C. Jarrett, K.-H. Kim, and N. Senske

(eds.) The Visibility of Research, Proceedings of the 2013 Architectural Research Centers Consortium, University of North Carolina Charlotte, NC.

- Wysocki, D.A., P.J. Schoeneberger, **D.R. Hirmas**, and H.E. LaGarry. 2011. Geomorphology of Soil Landscapes. p. 29-1−29-26. *In* P.M. Huang, Y. Li, and M.E. Sumner (eds.) Handbook of Soil Sciences: Properties and Processes, 2nd ed. CRC Press, Boca Raton, FL.

Minor Publications

- **Hirmas, D.R.**, and M. Cooper. 2016. Introduction to the special issue on soil macrofauna as ecosystem engineers. Soil Science 181:89-90.
- **Hirmas, D.R.** 2016. To flip or not to flip? That is not the question. KU Center for Teaching Excellence, Teaching Matters 19(2):4.
- Giménez, D., and **D.R. Hirmas**. 2016. Macroporosity. p. 1388-1391. *In* R. Lal (ed.) Encyclopedia of Soil Science, Vol. 2, 3rd Ed. CRC Press, Boca Raton, FL.
- Stotler, R.L., D.O. Whittemore, J.J. Smith, B.S. Katz, A. Yoerg, J.J. Butler, Jr., G.A. Ludvigson, and **D.R. Hirmas**. 2015. Isotopic composition of the Ogallala-High Plains aquifer and vadose zone. Procedia Earth and Planetary Science 13:39-42.
- **Hirmas, D.R.** 2013. Establishing disciplinary foundations with discussion, lecture, and writing. University of Kansas Center for Teaching Excellence, Portfolio (Available online at http://cte.ku.edu/gallery/portfolios/hirmas/index.shtml).
- Stiles, C.A., E.C. Brevik, and **D. Hirmas**. 2013. Guidelines for posters and oral presentations for the graduate student competition. Division S-5 Pedology, Soil Science Society of America (Available online at https://www.soils.org/files/membership/divisions/s05/division-s-5-presentation-guidelines-vs2012-final.pdf).
- McDermott, D., **D.R. Hirmas**, T. Slocum, *A.F. Halfen*, *T. White*, S. Egbert, P. Atchley, W.C. Johnson and A. Gilbreath. 2012. Do stereoscopic displays improve learning in introductory physical geography classes? *In* Proceedings, AutoCarto 2012, Columbus, OH. 16-18 Sep. 2012. Cartography and Geographic Information Society.
- Slocum, T., *A. Halfen*, *T. White*, **D. Hirmas**, S. Egbert, D. McDermott, and W. Johnson. 2011. Adoption of stereoscopic displays in geographic education: A persistent problem in geographic visualization. *In* Proceedings, 25th Intern. Cartographic Conf., Paris, France. 3-8 July 2011. ICA/CFC, Saint-Mandé, France.
- **Hirmas, D.R.**, and R.C. Graham. 2011. Response to "Comment on 'Pedogenesis and soil-geomorphic relationships in an arid mountain range, Mojave Desert, California."' Soil Science Society of America Journal 75:1173.

Highlighted Contributions

- Society Science. 2017. A digital morphometric approach for quantifying ped shape. CSA News 62(1):10.
- Digital Library News. 2016. A digital morphometric approach for quantifying ped shape. Alliance of Crop, Soil, and Environmental Science Societies. (https://dl.sciencesocieties.org/story/2016/dec/tue/a-digital-morphometric-approach-for-quantifying-ped-shape)

- News. 2016. Laser reveals water's secret life in soil. Soil Science Society of America. (https://www.soils.org/discover-soils/story/laser-reveals-waters-secret-life-soil)
- Society Science. 2013. Quantifying soil structure in the field. CSA News 58(8):12.
- Featured Articles. 2012. Empirical determination of physical controls on megafaunal footprint formation through neoichnological experiments with elephants. BioOne. (http://www.bioone.org/action/showDois)
- Science. 2011. Arid mountains affect soil-geomorphic evolution and biogeochemical cycling in desert soilscapes. CSA News 56(3):14.
- Research and Industry. 2009. Soil bulk density determination by automated three-dimensional laser scanning. CSA News 54(1):4.
- Research Highlights. 2008. Nitrate under the pavement. Nature Geoscience 1:210.

PRESENTATIONS

Invited Research Presentations

- Development of digital soil morphometric methods for integrating pedological and soil hydrological investigations. Department für Ökologie und Ökosystemmanagement, Technische Universität München, Freising, Germany. 14 Apr. 2016.
- Transcending transnational and cultural borders in university research, teaching, and service. Colloquium, Department of Geography and Atmospheric Science, University of Kansas. 25 Mar. 2016.
- Novel strategies and teaching materials to enhance student learning in the soil and environmental sciences. Department of Soil and Water Science Seminar, University of Sulaimani, KRG, Iraq. 17 Jan. 2016.
- Application of pedomimicry to stabilize materials for Earthen architecture. Department of Soil and Water Science Seminar, University of Sulaimani, KRG, Iraq. 17 Jan. 2016.
- Continental-scale relationships between soil structure, macroporosity, and climate. Department of Soil and Water Science Seminar, University of Sulaimani, KRG, Iraq. 11 Jan. 2016.
- Application of multistripe laser triangulation (MLT) scanning to measuring soil physical properties. Department of Soil and Water Science Seminar, University of Sulaimani, KRG, Iraq. 11 Jan. 2016.
- Quantification of soil architecture using a variety of novel approaches. Department of Soil and Water Science Seminar, University of Sulaimani, KRG, Iraq. 4 Jan. 2016.
- Challenges for the new century of soil survey: Quantification and representation in the age of big data. Pedology Symposium, Soil Survey: Present and Future, 2015 SSSA Annual Meetings, Minneapolis, MN. 15-18 Nov. 2015.
- Quantitative soil morphology: Emerging technologies, new discoveries, and future directions. Seminar, Department of Crop and Soil Science, Oregon State University. 11 June 2015.
- Soil architecture: Quantitative methods, new discoveries, and future directions. Seminar, Department of Agronomy, Purdue University. 30 Mar. 2015.

- Application of structured-light scanning to quantify soil architecture at the sub-millimeter to meter scale. Seminar, Department of Geology, University of Kansas. 13 Mar. 2014.
- Integrating soil morphological and hydraulic properties. Colloquium, Department of Geography, University of Kansas. 20 Sep. 2013.
- Integrating hydropedology in Critical Zone investigations. Karst Critical Zone Observatory Workshop, University of Kentucky. 25 Sep 2012.
- Quantifying soil architecture: Application of structured-light scanning to soil morphology from the horizon to pit scale. Natural Resources Conservation Service—National Soil Survey Center. 8 Aug 2012.
- Soil geomorphology and biogeochemistry of an arid mountain bolson, Mojave Desert, USA. University of Kansas Ecosystems Research Group, Kansas Biological Survey. 24 Sep. 2010.
- Land-use effects on soil architecture and near-surface hydrology in eastern Kansas. Seminar, Department of Geological and Atmospheric Sciences, Iowa State University. 10 Sep. 2010.
- Soil Architecture of the Rockefeller Experimental Tract: Initial Findings and Implications. Seminar, KU Field Station and Ecological Reserves, Kansas Biological Survey. 13 Nov. 2009.
- Soil Geomorphology of an Arid Mountain Bolson, Mojave Desert, USA. Seminar, Department of Geography, Kansas State University. 11 Sep. 2009.
- Geomorphology, pedology, and soil-landscape modeling of the southern Fry Mountain bolson, Mojave Desert, USA. Department of Environmental Sciences, Rutgers University. 30 Jun. 2009.
- Surface processes, pedology, and soil-landscape modeling, Mojave Desert, California. Colloquium Series, Department of Geography, University of Kansas. 25 Feb. 2008.
- Spatial distribution of inorganic carbon storage in an arid landscape. Seminar, Soil and Water Sciences Program, Department of Environmental Sciences, University of California–Riverside. 3 Dec. 2007.

Invited Teaching Presentations

- Grassland soils of Iraq. (Co-led with A.K. Mohammed) Grasslandia: A Workshop for K-12 Teachers and Education Students, Center for Global and International Studies, University of Kansas. 1 Apr. 2017.
- Developing quantitative problem solving skills using in-class group exercises. C21 Course Redesign Consortium, Center for Teaching Excellence, University of Kansas. 9 Dec. 2016.
- Documenting teaching. Doctoral Seminar guest lecture, Department of Architecture, University of Kansas. 13 Oct. 2016.
- 3-D Printing: An Emerging Tool in Universal Design for Learning. (Co-led with S.J. Smith) Teaching Summit, University of Kansas. 18 Aug. 2016.
- Active teaching strategies: An example from an introductory geoscience course. Faculty of Science Seminar, University of Sulaimani, KRG, Iraq, 22 May 2016.
- Soil and paleosol geochemistry. Paleopedology guest lecture, Department of Geology, University of Kansas. 3 May 2016.

- Active teaching strategies for enhancing undergraduate student learning, University Seminar, University of Sulaimani, KRG, Iraq, 25 Jan. 2016.
- Preparation of manuscripts for publication in common soil science journals. Workshop, Department of Soil and Water Science, University of Sulaimani, KRG, Iraq, 24 Jan. 2016.
- What to give up? Lessons from GEOG 104. C21 Course Redesign Consortium, Center for Teaching Excellence, University of Kansas. 11 Sep. 2015.
- Promoting student buy-in with new teaching strategies. (Co-led with A.F. Greenhoot and A.E. Rossomondo) Teaching Summit, University of Kansas. 20 Aug. 2015.
- What the flip! Redesigning a core physical geography course to maximize student learning. (Co-presented with A.F. Halfen.) Colloquium, Department of Geography, University of Kansas. 18 Apr. 2014.
- Soil architecture/Earthen architecture. (Co-presented with C. Kraus.) University of Kansas Mini-College. 4 Jun. 2012.
- Untethered teaching: Combining the iPad with AppleTV. Instructional Technology demonstration, University of Kansas. 28 Nov. 2012.
- Soil and paleosol geochemistry. Paleopedology guest lecture, Department of Geology, University of Kansas. 23 Apr. 2012.
- Soil and paleosol geochemistry. Paleopedology guest lecture, Department of Geology, University of Kansas. 28 Apr. 2010.
- Soil-biota relationships. Introduction to Soil Geography guest lecture, Department of Geography, University of Kansas. 26 Feb. 2008.
- Soils. 6th-grade class period guest lecture, Heritage K8 Charter School, Escondido, CA. 17 Jan. 2008.
- What is soil science? Four class periods of 10th-grade Integrated Science guest lectures, Rancho Buena Vista High School, Vista, CA. 22 Feb. 2007.

Volunteered Research Presentations (*italics indicate students*)

- Caplan J.S., D. Giménez, **D.R. Hirmas**, N.A. Brunsell, J.M. Blair, and A. Knapp. 2017. Rapid shifts in soil hydraulic properties in response to simulated rainfall. *In* Abstracts, Ecological Society of America, Portland, OR. 6-11 Aug. 2017. Washington, D.C.
- *Mohammed, A.K.*, **D.R. Hirmas**, D. Giménez, A. Nemes. 2016. Exploring relationships between soil structure and climate across the conterminous USA. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Phoenix, AZ. 6-9 Nov. 2016. ASA, Madison, WI.
- Stotler R.L., J.J. Butler, Jr., **D.R. Hirmas**, *B.S. Katz*, S. Knobbe, A. Layzell, *M. Long*, G.A. Ludvigson, E. Reboulet, J.J. Smith, and D.O. Whittemore. 2016. Understanding the role of geology on recharge to and production from the High Plains aquifer in Kansas. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 25-28 Sep. 2016. GSA, Denver, CO.
- **Hirmas, D.R.**, M. Steffens, P. Sullivan, C. Zhang and D. Giménez. 2016. Coupling multistripe laser triangulation with hyperspectral imaging VisNIR spectroscopy to elucidate the feedbacks between soil structure, hydrology, and organic matter. *In* Geophysical Research

Abstracts, Vol. 18, EGU General Assembly 2016, Vienna, Austria. 17-22 Apr 2016. EGU, Munich, Germany.

- Slocum, T.A., **D.R. Hirmas**, *A.L. Johnson*, J.R. Miller, S.T. Hasiotis, A.F. Halfen, and W.C. Johnson. 2016. Increasing conceptualization of soil structure through digital and 3-D printing technologies. *In* Abstracts and Programs, Annu. Meet., AAG, San Francisco, CA. 29 Mar.-2 Apr. 2016. AAG, Washington, DC.
- *Mohammed, A.K.*, J.H. Kastens, W.C. Johnson, and **D.R. Hirmas**. 2016. Predicting Flood Vulnerability in a Developing Urbanized Environment: A Modeling Study for Sulaimanyah, Iraq. *In* Abstracts and Programs, Annu. Meet., AAG, San Francisco, CA. 29 Mar.-2 Apr. 2016. AAG, Washington, DC.
- Giménez, D., **D.R. Hirmas**, *A.K. Mohammed*. 2015. Investigating the potential of National Cooperative Soil Survey information for advancing soil science. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Minneapolis, MN. 15-18 Nov. 2015. ASA, Madison, WI.
- **Hirmas, D.R.**, *A.L. Johnson*, J.R. Miller, T.A. Slocum, S.T. Hasiotis, A.F. Halfen, and W.C. Johnson. 2015. Do digital and 3-D printed specimens increase conceptualization of soil structure? *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Minneapolis, MN. 15-18 Nov. 2015. ASA, Madison, WI.
- *Zautner, E.*, and **D.R. Hirmas**. 2015. Surface rock controls on the development of desert varnish in the Mojave Desert, California. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Minneapolis, MN. 15-18 Nov. 2015. ASA, Madison, WI.
- *Mohammed, A.K.*, **D.R. Hirmas**, D. Giménez, and R.D. Mandel. 2015. A digital morphometric method for quantifying ped shape. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Minneapolis, MN. 15-18 Nov. 2015. ASA, Madison, WI.
- *Patterson, M.*, D. Giménez, **D.R. Hirmas**, E. Ayres, and *T.C. Bents*. 2015. Monitoring and quantification of crack development in cores during evaporation experiments. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Minneapolis, MN. 15-18 Nov. 2015. ASA, Madison, WI.
- Stotler R.L., D.O. Whittemore, J.J. Smith, B.S. Katz, A. Yoerg, J.J. Butler, Jr., G.A. Ludvigson, **D.R. Hirmas**, and M.J. Hendry. 2015. Isotopic composition of the Ogallala-High Plains aquifer and vadose zone. IAH-CNC 2015, Waterloo, Ontario. 27-30 Oct 2015.
- Stotler R.L., *B.S. Katz*, D.O. Whittemore, J.J. Butler, Jr., G.A. Ludvigson, J.J. Smith, and **D.R. Hirmas**. 2015. Implications of a falling water table for recharge estimations through a thick vadose zone beneath an irrigated field. 11th Applied Isotope Geochemistry Conference, French Geological Survey, Orléans, France. 21-25 Sep 2015.
- **Hirmas, D.R.**, D. Giménez, *T.C. Bents*, *E.A. Mome Filho*, *M. Patterson*, B.F. Platt, *K. Drager*, and D.V. Eck. 2015. Application of structured-light scanning to digital soil morphometrics. IUSS Working Group, Digital Soil Morphometrics Global Workshop 2015, Madison WI. 1-4 June 2015.
- Stotler R.L., J.J. Smith, G.A. Ludvigson, *B.S. Katz*, D.O. Whittemore, J.J. Butler, Jr., and **D.R. Hirmas**. 2015. Assessing recharge sources and pathways with high resolution pore fluid geochemistry. AEEG NovCare 2015, Lawrence, KS. 19-21 May 2015.

- Friedman, R., O. Skyba, and **D.R. Hirmas**. 2014. Threshold concepts 2.0: Implementing the framework. NAGC 61st. Annual Convention and Exhibition. National Association for Gifted Children, Baltimore, MD. 13-16 Nov. 2014.
- Stotler R.L., *B.S. Katz*, **D.R. Hirmas**, D.O. Whittemore, J.J. Butler, Jr., J.J. Smith, and G.A. Ludvigson. 2014. Understanding recharge patterns in the High Plains Aquifer, Kansas. Governor's Conference on the Future of Water in Kansas. Manhattan, KS. 12-13 Nov 2014.
- *Eck, D.V.*, **D.R. Hirmas**, D. Giménez, *M. Qin*, and N.A. Brunsell. 2014. Potential for linking hydraulic properties and quantitative characterization of soil architecture at NEON field sites. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Long Beach, CA. 2-5 Nov. 2014. ASA, Madison, WI.
- *Mohammed, A.*, **D.R. Hirmas**, D. Giménez, and A. Nemes. 2014. Investigating relationships between soil morphology, classification, and hydraulic properties. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Long Beach, CA. 2-5 Nov. 2014. ASA, Madison, WI.
- *Bents, T.C.*, and **D.R. Hirmas**. 2014. Relating soil structure to water retention using multistripe laser triangulation scanning. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Long Beach, CA. 2-5 Nov. 2014. ASA, Madison, WI.
- **Hirmas, D.R.**, *A.L. Johnson*, J.R. Miller, T.A. Slocum, S.T. Hasiotis, A.F. Halfen, and W.C. Johnson. 2014. Use of digital and 3-D printed soil structure specimens in an introductory geoscience laboratory. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Vancouver, BC, Canada. 19-22 Oct. 2014. GSA, Denver, CO.
- Kraus, C., **D.R. Hirmas**, J. Roberts, *J. Boling*, *A. Bents*, *T. Bents*, *Z. Dawson*, *A. Johnson*, *B. Peek*, and *D. Versteeg*. 2014. Compressive strength of blood stabilized earthen architecture. International Conference on Vernacular Heritage, Sustainability and Earthen Architecture, VerSus 2014–2nd MEDITERRA–2nd ResTAPIA, Valencia, Spain. 11-13 Sep. 2014.
- Stotler, R.L., *B.S. Katz*, J.J. Butler, D.O. Whittemore, E.C. Reboulet, **D.R. Hirmas**, J.J. Smith, and G.A. Ludvigson. 2014. Recharge in the High Plains Aquifer: Physical and Chemical Data. Goldschmidt2014, Sacramento, CA. 8-13 June 2014.
- Giménez, D., A. Nemes, and **D.R. Hirmas**. 2014. An index of soil structure derived from water retention and particle-size distribution. 20th World Congress of Soil Science, Jeju, Korea. 8-13 June 2014.
- *Bents, T.C.*, and **D.R. Hirmas**. 2013. Relationships between quantitative descriptions of soil structure and basic soil properties. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Tampa, FL. 3-6 Nov. 2013. ASA, Madison, WI.
- *Drager, K.*, **D.R. Hirmas**, and S.T. Hasiotis. 2013. Effects of ant (*Formica subsericea*) bioturbation on soil physical and hydrological properties. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Tampa, FL. 3-6 Nov. 2013. ASA, Madison, WI.
- **Hirmas, D.R.**, and D. Giménez. 2013. Investigating fractal distribution of mass from the millimeter- to decimeter-scale in two Kansas soils. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Tampa, FL. 3-6 Nov. 2013. ASA, Madison, WI.

- **Hirmas, D.R.**, D. Giménez, N. Brunsell, and A. Nemes. 2013. Response of soil effective porosity to prevailing climates. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Tampa, FL. 3-6 Nov. 2013. ASA, Madison, WI.
- D. Giménez, A. Nemes, **D.R. Hirmas**, and S. Kværnø. 2013. Using water retention data and particle size distribution to characterize soil structure using the European Hydropedological Data Inventory. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Tampa, FL. 3-6 Nov. 2013. ASA, Madison, WI.
- Rabenhorst, M.C., R.C. Graham, **D.R. Hirmas**, J.A. Thompson, and *A.M. Rossi*. 2013. Reliability of soil color standards. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Tampa, FL. 3-6 Nov. 2013. ASA, Madison, WI.
- *Murphy, L.R.*, **D.R. Hirmas**, S.C. Hurst, and E. Johnson. 2013. Quantifying archaeological preservation bias using a universal model of soil erosion. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 27-30 Oct. 2013. GSA, Denver, CO.
- *Koop, A.N.*, W.C. Johnson, and **D.R. Hirmas**. 2013. Using TLS to assess the influence of late-Quaternary sediments and paleosols on canyon development in the Central Great Plains. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 27-30 Oct. 2013. GSA, Denver, CO.
- *Katz, B.S.*, R.L. Stotler, **D.R. Hirmas**, D.O. Whittemore, J.J. Butler Jr., J.J. Smith, and G.A. Ludvigson. 2013. Implications of δ^{18}O and δ^{2}H stable isotopes for recharge to the high plains aquifer, northwestern Kansas. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 27-30 Oct. 2013. GSA, Denver, CO.
- *Klopfenstein, S.*, W.C. Johnson, and **D.R. Hirmas**. 2013. Pedogenesis along a climosequence in loess-derived soils of the Central Great Plains. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 27-30 Oct. 2013. GSA, Denver, CO.
- Hasiotis, S.T., A.F. Halfen, *J.W. Counts*, *H.N. Wasserman*, B.F. Platt, D.I. Hembree, *M.F. Jones*, **D.R. Hirmas**, and J.J. Smith. 2013. Exploring old and new frontiers in continental ichnology–evaluating its place in ichnology and its role in geology. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 27-30 Oct. 2013. GSA, Denver, CO.
- Stotler, R.L., J.J. Butler, Jr., D.O. Whittemore, E.C. Reboulet, *B.S. Katz*, **D.R. Hirmas**, J.J. Smith, and G.A. Ludvigson. 2013. Monitoring, groundwater age, and assissing water availability: Lessons from the High Plains Aquifer, Kansas, USA. Groundwater and Global Palaeoclimate Signals, ICSU-INQUA-IGCP-GRAPHIC Workshop, Bobole, Mozambique, 14-19 Oct. 2013.
- *Murphy, L.R.*, **D. Hirmas**, S.C. Hurst, and E. Johnson. 2013. Quantifying archaeological preservation bias using a universal model of soil erosion, Caprock Canyonlands, Northwest Texas, USA. Annual Meeting of the Society for Cenozoic Research (TerQua), Lawrence, KS. 25-26 May 2013.
- Kraus, C., **D. Hirmas**, and J. Roberts. 2013. Microbially indurated rammed earth: A long awaited next phase of earthen architecture. p. 58-65. *In* C. Jarrett, K.-H. Kim, and N. Senske (eds.) The Visibility of Research, Proceedings of the 2013 Architectural Research Centers Consortium, University of North Carolina Charlotte, NC.

- *Halfen, A.F.*, **D.R. Hirmas**, T. Slocum, *T. White*, *E. Zautner*, P. Atchley, *H. Liu*, W.C. Johnson, S. Egbert, and D. McDermott. 2012. A hybrid online/offline curriculum for implementing stereoscopic technology in large lectures. GSA Abstracts with Programs 44:149.
- **D.R. Hirmas**, N.A. Brunsell, and D.B. Mechem. 2012. Optimization of soil structure under differing climatic regimes. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Cincinnati, OH. 21-24 Oct. 2012. ASA, Madison, WI.
- *Niehues, N.D.*, **D.R. Hirmas**, and *D.V. Eck*. 2012. Effects of soil moisture on macropore geometry. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Cincinnati, OH. 21-24 Oct. 2012. ASA, Madison, WI.
- McDermott, D., **D.R. Hirmas**, T. Slocum, *A.F. Halfen*, *T. White*, S. Egbert, P. Atchley, W.C. Johnson and A. Gilbreath. 2012. Do stereoscopic displays improve learning in introductory physical geography classes? *In* Proceedings, AutoCarto 2012, Columbus, OH. 16-18 Sep. 2012. Cartography and Geographic Information Society.
- Hasiotis, S.T., **D.R. Hirmas**, and *A.F. Halfen*. 2012. Sediment Mixing Depths and Rates in Continental Environments and the Creation of Macrochannels and Macropores: Lessons Learned and Implications for Alerting Porosity and Permeability by Bioturbation. *In* AAPG Annu. Convention & Exhibition Abstracts, Long Beach, CA. 22-25 Apr. 2012.
- **Hirmas, D.R.**, T. Slocum, *A.F. Halfen*, *T. White*, P. Atchley, S. Egbert, D. McDermott, W.C. Johnson. 2012. Mapping the effects of seating location and stereoscopic displays on learner outcomes in an introductory physical geography class. *In* Abstracts and Programs, Annu. Meet., AAG, New York, NY. 24-28 Feb. 2012. AAG, Washington, DC.
- *Eck, D.V.*, and **D.R. Hirmas**. 2012. Characterizing geometries of preferential flow paths in soils using structured-light laser scanning. *In* Abstracts and Programs, Annu. Meet., AAG, New York, NY. 24-28 Feb. 2012. AAG, Washington, DC.
- *Halfen, A.F.*, T. Slocum, *T. White*, **D.R. Hirmas**, *A. Gilbreath*, D. McDermott, P. Atchley, S. Egbert, W.C. Johnson. 2012. Assessing the impact of stereoscopic displays in introductory physical geography courses. *In* Abstracts and Programs, Annu. Meet., AAG, New York, NY. 24-28 Feb. 2012. AAG, Washington, DC.
- *Eck, D.*, and **D.R. Hirmas**. 2012. Characterizing interpedal pore geometries in soils with vertic properties in eastern Kansas. p. 32. *In* Proceedings, Kansas Natural Resources Conference, Wichita, KS. 26-27 Jan. 2012. KCWF-KCAFC-GPSAF-KSSRM-KCSWCS, Wichita, KS.
- *Paxson, C.*, **D.R. Hirmas**, and K. Kindscher. 2012. Evaluating impacts of concentrated animal feeding operations on nitrate levels of the Arkansas River, central Kansas. p. 35. *In* Proceedings, Kansas Natural Resources Conference, Wichita, KS. 26-27 Jan. 2012. KCWF-KCAFC-GPSAF-KSSRM-KCSWCS, Wichita, KS.
- *Eck, D.V.*, and **D.R. Hirmas**. 2011. A novel method for characterizing geometries of interaggregate planar pores in soils with vertic properties. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, San Antonio, TX. 16-19 Oct. 2011. ASA, Madison, WI.
- **Hirmas, D.R.**, B.F. Platt, and S.T. Hasiotis. 2011. Determination of calcite and dolomite content in soils and paleosols by continuous coulometric titration. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, San Antonio, TX. 16-19 Oct. 2011. ASA, Madison, WI.

- Slocum, T., *A. Halfen*, *T. White*, **D. Hirmas**, S. Egbert, D. McDermott, and W. Johnson. 2011. Adoption of stereoscopic displays in geographic education: A persistent problem in geographic visualization. *In* Proc. 25th Intern. Cartographic Conf., Paris, France. 3-8 July 2011. ICA/CFC, Saint-Mandé, France.
- **Hirmas, D.R.**, and N. Brunsell. 2011. Application of wavelet and fractal techniques to the analysis of soil structure and color. *In* Geophysical Research Abstracts, Vol. 13, EGU General Assembly 2011, Vienna, Austria. 3-8 Apr 2011. EGU, Munich, Germany.
- Hasiotis, S.T., **D.R. Hirmas**, *B.F. Platt*, and *J. Reynolds*. 2011. New frontiers in ichnology using MLT (multistripe laser triangulation) and rapid prototyping technology for three-dimensional analysis, printing, and sharing of modern and ancient traces with other ichnophiles. *In* GSA Abstracts with Programs, Northeastern and North-Central Annu. Joint Meet., GSA, Denver, CO. 20-22 Mar. 2011. GSA, Denver, CO.
- **Hirmas, D.R.**, and *J.A. Decker*. 2010. Effects of land use on soil organic carbon and hydraulic properties in upland landscapes of eastern Kansas. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Long Beach, CA. 31 Oct.-4 Nov. 2010. ASA, Madison, WI.
- **Hirmas, D.R.**, N.A. Brunsell, and B.L. Allen. 2010. Soil morphological applications of wavelet and fractal analyses. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Long Beach, CA. 31 Oct.-4 Nov. 2010. ASA, Madison, WI.
- **Hirmas, D.R.**, and S.T. Hasiotis. 2010. Development of three-dimensional virtual models to enhance conceptualization of soil morphology. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Long Beach, CA. 31 Oct.-4 Nov. 2010. ASA, Madison, WI.
- **Hirmas, D.R.**, S.T. Hasiotis, and *B.F. Platt*. 2010. Field application of multistripe laser triangulation (MLT) scanning to enhance and quantify descriptions of soil and exogenic trace morphology. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 31 Oct.-3 Nov. 2010. GSA, Denver, CO.
- *Reynolds, J.*, S.T. Hasiotis, and **D.R. Hirmas**. 2010. Utilizing three-dimensional image scanning and printed models of traces and trace fossils in K-12 classrooms. *In* GSA Abstracts with Programs, Annu. Meet., GSA, Denver, CO. 31 Oct.-3 Nov. 2010. GSA, Denver, CO.
- *Decker, J.A.*, and **D.R. Hirmas**. 2010. Effects of land use on hydraulic properties in upland landscapes of eastern Kansas. Annu. Meet. Rocky Mount. Div. AAG, Lawrence, KS. 8-9 Oct. 2010.
- *Platt, B.F.*, S.T. Hasiotis, and **D.R. Hirmas**. 2010. Three dimensional ichnofossil analyses using multistripe laser triangulation (MLT) technology: Quantifying trace-fossil morphology, bioturbation patterns, and ichnopedologic fabrics in sedimentary rocks. AAPG Annu. Convention & Exhibition., New Orleans, LA. 13 Apr. 2010.
- **Hirmas, D.R.**, D. Giménez, and X. Li. 2009. Characterization of soil structure and pore architecture from the aggregate to horizon scale. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Pittsburgh, PA. 1-4 Nov. 2009. ASA, Madison, WI.
- *Zautner, E.J.*, **D.R. Hirmas**, and J. de Koff. 2009. A rapid and accurate field test for the analysis of soil phosphate. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Pittsburgh, PA. 1-4 Nov. 2009. ASA, Madison, WI.

- *Platt, B.F.,* **D.R. Hirmas**, and S.T. Hasiotis. 2009. Footprints in the landscape: Quantifying bioturbation in soils and paleosols with multistripe laser triangulation (MLT) technology. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Pittsburgh, PA. 1-4 Nov. 2009. ASA, Madison, WI.
- *Rossi, A.M.*, **D.R. Hirmas**, R.C. Graham, and P.D. Sternberg. 2009. Bulk density determination by automated three-dimensional laser scanning. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Pittsburgh, PA. 1-4 Nov. 2009. ASA, Madison, WI.
- *Platt, B.F.*, S.T. Hasiotis, and **D.R. Hirmas**. 2009. Use of multistripe laser triangulation (MLT) technology for quantitative, three-dimensional analyses of trace fossils. *In* GSA Abstracts with Programs, Vol. 41, Annu. Meet., GSA, Portland, OR. 18-21 Oct. 2009. GSA, Denver, CO.
- **Hirmas, D.R.**, R.C. Graham, and M. Harlow. 2008. Links between land surface characteristics and near-surface accumulations of dust, soluble salts, nitrate-nitrogen, and carbonate in the southern Fry Mountains, Mojave Desert, USA. *In* Abstracts with Programs, Joint. Annu. Meet., GSA/ASA-CSSA-SSSA/GCAGS/HGS, Houston, TX. 5-9 Nov. 2008. GSA, Boulder, CO.
- *Pietrasiak, N.*, **D.R. Hirmas**, R.C. Graham, and K.N. Bozhilov. 2008. Mineralogy of a paralithic horizon (well weathered bedrock) in the Mojave Desert. *In* Abstracts with Programs, Joint. Annu. Meet., GSA/ASA-CSSA-SSSA/GCAGS/HGS, Houston, TX. 5-9 Nov. 2008. GSA, Boulder, CO.
- Graham, R.C., **D.R. Hirmas**, Y.A. Wood, and C. Amrhein. 2008. Nitrate in soils capped by desert pavement, Mojave Desert, California. *In* Abstracts with Programs, Joint. Annu. Meet., GSA/ASA-CSSA-SSSA/GCAGS/HGS, Houston, TX. 5-9 Nov. 2008. GSA, Boulder, CO.
- **Hirmas, D.R.**, and R.C. Graham. 2007. Spatial distribution of inorganic carbon storage in an arid landscape. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, New Orleans, LA. 4-8 Nov. 2007. ASA, Madison, WI.
- **Hirmas, D.R.**, and R.C. Graham. 2007. Soil-geomorphic classification of an arid mountain range, Mojave Desert, USA. *In* Abstracts of the 88th Annu. Meet. AAAS, Pacific Division, Boise, ID. 17-21 June 2007.
- **Hirmas, D.R.**, and R.C. Graham. 2006. Pedology of an arid mountain range, Mojave Desert, CA. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Indianapolis, IN. 12-16 Nov. 2006. ASA, Madison, WI.
- **Hirmas, D.R.**, and R.C. Graham. 2006. Soil surface properties of Mojave Desert landforms. *In* Abstracts, 18th World Congress of Soil Science. IUSS, Philadelphia, PA. 9-15 July 2006.
- **Hirmas, D.R.** 2005. Spatial and process-based modeling of inorganic carbon storage in the Mojave Desert. Kearney Foundation Conf., Davis, CA. 24 May 2005.
- **Hirmas, D.R.**, and R.C. Graham. 2004. Relationships between soil surface characteristics and geomorphology in the Mojave Desert. 3rd Annu. Mojave Desert Science Symposium, Redlands, CA. 16-18 Nov. 2004.
- **Hirmas, D.R.**, and R.C. Graham. 2004. Relationships between soil surface characteristics and geomorphology in the Mojave Desert. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Seattle, WA. 1-4 Nov. 2004. ASA, Madison, WI.

- **Hirmas, D.R.**, and B.L. Allen. 2003. Degradation of pedogenic calcretes in West Texas. *In* Abstracts, Intern. Annu. Meet., ASA-CSSA-SSSA, Denver, CO. 2-6 Nov. 2003. ASA, Madison, WI.

GRANTS, AWARDS AND HONORS

External Research Grants (*funded*)

- US Environmental Protection Agency, Investigation of Playa Lake Recharge in the Ogallala Aquifer, Co-Investigator, 2014-2016 ($132,040)
- National Science Foundation: NSF 12-505, Enhancements to Internet and Communication Systems at the KU Field Station, Co-Principle Investigator, 2013-2016 ($349,714)
- US Environmental Protection Agency: EPA P3, Biostabilization of Rammed Earth for Reduction of Waste and CO_2 Emissions, Co-Principle Investigator, 2013-2014 ($14,980)
- Bioforsk (Norwegian Institute for Agricultural and Environmental Research), Validating a novel concept to quantify the structural development of soils using a new international soil database, Co-Principle Investigator, 2013 (180,000 kr).
- National Science Foundation: NSF 10-544, Developing virtual and physical models to enhance conceptualization of soil and biogenic structures in undergraduate geoscience classes, Principle Investigator, 2012-2017 ($199,999)
- Kansas Water Resources Institute/USGS, Investigation of recharge to the High Plains Aquifer, Northwestern, Kansas, Co-Principle Investigator, 2012-2014 ($30,000)
- National Science Foundation: NSF 05-550, Facilities to Enhance Research and Teaching at the University of Kansas Field Station, Co-Investigator, 2011-2014 ($329,890)
- US Environmental Protection Agency, Office of Water, National Wetland Condition Assessment, Field Sampling Services for National Aquatic Resource Surveys, Co-Investigator on Central Plains Center for BioAssessment (CPCB) subcontract, 2011 ($142,407 CPCB subcontract portion)
- Kearney Foundation of Soil Science Graduate Fellowship, 2004-2006 ($64,965)

External Research Grants (*pending*)

- US Geological Survey: Powell Center Synthesis Activities, Do soil properties change as a result of decadal-scale climate fluctuations? Linking soil and climatic datasets in hydrological simulations of historical water balance, Principle Investigator, 2017-2019 ($143,318)
- National Science Foundation: NSF 16-506, Instrumentation Array to Enhance the Capacity for Collaborative Research and Teaching at the University of Kansas Field Station, Principle Investigator, 2017-2020 ($736,788)

Internal Research and Teaching Grants

- KU Office of International Programs, Effects of long-term wastewater irrigation on soil health, Sulaimani, KRG, Iraq, Principle Investigator, 2016 ($3,000)
- KU Research Investment Council: Level II, Building Data Infrastructure, Network Capacity, and Research Engangement at the KU Field Station, Co-Principle Investigator, 2014 ($38,196)

- KU Center for Teaching Excellence, Teaching-Related Education and Travel Fund, 2013 ($900)
- KU CLAS Instructional Technology Grant, 2012-2013 ($10,271)
- KU General Research Fellowship, 2012-2013 ($2,596)
- KU Center for Teaching Excellence, Faculty Seminar Participant, 2011 ($1,000)
- KU General Research Fellowship, 2011-2012 ($3,656)
- KU Center for Teaching Excellence, BPI Faculty Facilitator, 2011 ($1,000)
- KU New Faculty General Research Program Grant, 2010-2011 ($7,950)
- KU Center for Teaching Excellence, Best Practices Institute, 2010 ($700)
- KU Field Station Small Grants Program, 2010 ($250)
- Frank T. Bingham Memorial Fellowship, 2006-2007 ($2,000)
- Albert Marsh Environmental Sciences Scholarship, 2006-2007 ($400)
- UCR Graduate Dean's Dissertation Research Grant, 2006 ($1,000)
- UCR Dean's Fellowship, 2003-2004 ($33,527)

Travel Grants

- KU College of Liberal Arts and Sciences Faculty Travel Award, 2008–2016 ($5,800 in total)
- Stolzy-Letey Environmental Science Travel Scholarship, 2007 ($750)
- AAAS Pacific Division Student Travel Award, 2007 ($150)
- UCR Academic Senate Omnibus Field Research Travel Grant, 2006 ($500)
- UCR Graduate Student Association Conference Travel Grants, 2004–2007 ($2,180 in total)

Awards and Honors

- SSSA Lloyd R. Frederick Soil Teaching Travel Study Award, 2015 ($5,000)
- Fellow, Center for Teaching Excellence, University of Kansas, 2015-2018
- National Association of Geoscience Teachers – On the Cutting Edge, "Soil Profile Homework" exercise added to the Exemplary Teaching Activity collection, 2015
- Soil Science Society of America Journal, Citation of Excellence for Associate Editors, 2015
- National Association of Geoscience Teachers – On the Cutting Edge, "Final Project for Introductory Soils Course" exercise added to the Exemplary Teaching Activity collection, 2014
- AAAS Pacific Division J. Thomas Dutro, Jr. Geosciences Award, 2007 ($275)
- Western Soil Science Society/AAAS Pacific Division 1st Place Poster Award, 2007 ($150)
- Sigma Gamma Epsilon Geological Honor Society: Alpha Beta Chapter, Texas Tech University, 2002-2003

COURSES TAUGHT

- GEOG 104 Principles of Physical Geography, KU, Spring 2009, Fall 2009, 11–13, 15
- GEOG 316 Methods of Analyzing Geographical Data, Fall 2015–16
- GEOG 331 Regional Geomorphology of the United States, KU, Fall 2008
- GEOG 335 Introduction to Soil Geography, KU, Fall 2009–13, 15–16
- GEOG 500 Senior Capstone in Geography, KU, Spring 2017
- GEOG 531 Topics in Physical Geography: Soil Physics, KU, Spring 2013
- GEOG 535 Soil Geography, KU, Fall 2008–13, 15–16
- GEOG 538 Environmental Soil Physics and Chemistry, KU, Spring 2010, 12
- GEOG 538 Soil Chemistry, KU, Spring 2014
- GEOG 635 Soil Physics, KU, Spring 2014
- GEOG 735 Soil Geomorphology, KU, Spring 2010, 12–13
- LA&S 792 Topics in: Being an Effective College Teacher, KU, Spring 2016
- GEOG 935 Soil Geography Seminar, KU, Spring 2009
- 16:375:625 Advanced Special Problem in Environmental Sciences: Environmental Data Analysis with R, Rutgers University, Fall 2014
- Soil and Environmental Data Analysis with R, University of Sulaimani, KRG, Iraq, Spring 2016

GRADUATE COMMITTEES

Committees Chaired

- Timothy Bents (M.S., Geography, completed November 2015)
- Kim Drager (M.S., Geography, completed February 2015; co-chair with Prof. Stephen Hasiotis)
- Dennis Eck (M.S., Geography, completed March 2014)
- Scott Klopfenstein (M.A., Geography, completed April 2014; co-chair with Prof. William Johnson)
- Aaron Koop (M.S., Geography, completed June 2016; co-chair with Prof. William Johnson)
- Aaron Koop (Ph.D., Geography, in progress)
- Awesta Mohammed (Ph.D., Geography, in progress, ABD)
- Zhino Mohammed (Ph.D., Soil and Water Science, University of Sulaimani, in progress; co-chair with Prof. Khasraw Rashid)
- Eric Zautner (M.S., Geography, completed July 2016)

Committee Member

- Michael Bergervoet (Ph.D., Geography, in progress, ABD)
- Joshua Boling (M.S., Geology, completed November 2015)
- Mark Bowen (Ph.D., Geography, completed March 2011)
- Tyler Buck (M.S., Atmospheric Science, completed June 2010)
- Kathryn Clark (M.S., Atmospheric Science, completed March 2013)
- Mackenzie Cremeans (Ph.D., Geology, in progress)
- Erin Dempsey (Ph.D., Anthropology, completed, April 2012)
- Rubina Firdous (Ph.D., Geology, completed, September 2013)
- Jen Glaubius (Ph.D., Geography, in progress, ABD)
- Patrick Green (M.A., Anthropology, completed January 2012)
- Andrew Gottsfield (Ph.D., Anthropology, in progress, ABD)
- Alan Halfen (Ph.D., Geography, completed, April 2012)
- Leila Joyce Seals (Ph.D., Geology, in progress)
- Britney Katz (M.S., Geology, completed September 2014)
- Daniel Keating (M.A., Anthropology, completed January 2012)
- Benjamin Keil (Ph.D., Philosophy, completed April 2015)
- Anthony Layzell (Ph.D., Geography, completed March 2015)
- Theo Michaels (Ph.D., Ecology and Evolutionary Biology, in progress)
- Laura Murphy (Ph.D., Anthropology, completed March 2015)
- Brian Platt (Ph.D., Geology, completed, April 2012)
- Karen Willey (Ph.D., Geography, completed July 2009)
- Garrett Welch (M.A., Anthropology, completed January 2012)
- Kristopher West (M.A., Anthropology, completed December 2012)
- Terri Woodburn (Ph.D., Geography, completed December 2014)

PROFESSIONAL SERVICE

International

- Member, Scientific Committee for the Pedometrics 2017 Conference, International Union of Soil Sciences, 2016–2017
- Discussion Leader, Preparation of manuscripts for publication in common soil science journals, Workshop, University of Sulaimani, KRG, Iraq, 28 Jan. 2016

- Session Chair, Soil Profile Properties, Inaugural Global Workshop on Digital Soil Morphometrics, International Union of Soil Sciences and UW Department of Soil Science, Madison, WI, 2015
- Associate Editor, Geoderma, 2015–2018
- Reviewer, Entropy, 2015
- Reviewer, United States-Israel Binational Science Foundation (BSF) Proposal, 2015
- Reviewer, Soil & Tillage Research, 2015
- Reviewer, Catena, 2013, 2015
- Reviewer, Geoderma, 2013–2017
- Reviewer, Analytical Methods, 2012
- Reviewer, Cambridge University Press, 2011
- Reviewer, European Journal of Soil Science, 2011
- Reviewer, Plant and Soil, 2011
- Editorial Board Member, Open Journal of Soil Science (OJSS), 2011–2012

National

- Member, Soil Survey Division (SSD) Research Focus Team, Charged with recommending changes and providing guidance on future research directions to the Steering Team of the National Cooperative Soil Survey, USDA-NRCS, 2017
- Co-Organizer and Presiding Officer, Quantitative pedon descriptions and modeling—Digital soil morphometrics, Pedology Division, ASA-CSSA-SSSA, Phoenix, Arizona, 6-9 Nov. 2016.
- Co-Organizer, Bugs and dirt: Four letter words that go together, Soil Mineralogy Division, ASA-CSSA-SSSA, Minneapolis, Minnesota, 17 Nov. 2015
- Presiding Officer, General Soil Mineralogy Session, Soil Mineralogy Division, ASA-CSSA-SSSA, Minneapolis, Minnesota, 16 Nov. 2015
- Reviewer, Geology, 2014
- Member, ACS320.1 Methods of Soil Analysis Subcommittee, Soil Science Society of America, 2014–2016
- Co-Leader, Desert Pedology, Land Use and Wild Lands—Las Vegas to Long Beach (Mohave National Preserve), Pre-Meeting Pedology Tour, Soil Science Society of America, 2014
- Chair, Soil Mineralogy Division, Soil Science Society of America, 2014-2016
- Associate Editor, Soil Science Society of America Journal, 2013-2015
- External Reviewer for a reappointment to Assistant Professor, Claremont McKenna, Pitzer, and Scripps Colleges, 2014
- External Reviewer for a promotion to Associate Professor, Rutgers University, 2014

- Proposal Reviewer, Lewis and Clark Fund for Exploration and Field Research, American Philosophical Society, 2013
- Reviewer, Vadose Zone Journal, 2013
- Lead Judge, Student Presentation Competition. Div. S05 Soil Science Society of America, 2013–2015
- Chair, Ad hoc committee to organize an award for the best recent paper in pedology, Div. S05 Soil Science Society of America, 2012–2013
- Presiding Officer, Ecosystem-Mineral Interactions–II Symposium, Div. S05 & S09, ASA-CSSA-SSSA, Cincinnati, Ohio, 21-24 Oct. 2012
- Proposal Reviewer, National Science Foundation, 2012–2016
- Chair, Soil Micromorphology Committee, Soil Science Society of America, 2013–2015
- Member, Soil Micromorphology Committee, Soil Science Society of America, 2011–2012
- Reviewer, Soil Science Society of America Journal, 2011–2013, 2016
- Reviewer, SEPM Special Publication, 2011
- Reviewer, The Professional Geographer, 2011
- Presenter and Participant, Two iQuest camp panels to engage learning among underrepresented and economically disadvantaged 7th and 8th grade students (primarily Hispanic, African American, Native American, and women) for the NSF ITEST program, 15 & 22 July 2010
- Session Organizer, Soil Characterization, Modeling, and Prediction using Novel Instrumentation and Techniques, Div. S05, ASA-CSSA-SSSA, Pittsburgh, PA. 1-4 Nov. 2009
- Presenter and Participant, iQuest camp panel to engage learning among underrepresented and economically disadvantaged middle-school students (primarily Hispanic and Native American) for the NSF ITEST program 16 July 2009
- Mentor, Hosted and trained a high-school Earth science teacher in standard soil analyses, 18-24 Jun. 2009
- Reviewer, Soil Science, 2008–2012, 2014
- Presiding Officer, Mineralogical Controls on Soil Physical, Chemical, and Biological Processes, Div. S09, ASA-CSSA-SSSA, New Orleans, LA, 4-8 Nov. 2007
- Presiding Officer, Pedologic Progress, Philosophy, and Perspectives, Div. S05, ASA-CSSA-SSSA, Indianapolis, IN, 12-16 Nov. 2006

Institutional

- Member, KGS Director Search Committee, Kansas Geological Survey, University of Kansas, 2016–2017
- Member, Advisory Committee for the KU Postdoctoral Association, University of Kansas, 2016–2017

- Chair, Curriculum Committee, KU Department of Geography and Atmospheric Science, 2015–2016
- Member, Ecohydrologist Search Committee, KU Department of Geography, 2013–2014
- Outside Member, Hydrogeochemist Search Committee, KU Department of Geology, 2013–2014
- Co-Organizer/Instructor, Graduate Field Experience, KU Department of Geography, 2013
- Member, Documenting Learning Specialist Search Committee, KU Center for Teaching Excellence, 2012–2013
- Member, Scholarship Committee, KU Environmental Studies Program, 2012–2013
- Member, Graduate Affairs Committee, KU Department of Geography, 2012–2013
- Co-Organizer/Instructor, 2-Day Graduate Field Experience, KU Department of Geography, 2012
- Member, Atmospheric Science Search Committee, KU Department of Geography, 2011–2012
- Member, Executive Committee, KU Field Station, Kansas Biological Survey, 2010–2017
- Member, Honors Committee, KU Department of Geography, 2010–2011
- Member, Outreach Committee, KU Department of Geography, 2009–2010
- Member, Curriculum Committee, KU Department of Geography, 2008–2009, 2011-2012

Teaching-Related Service

- Discussion Leader, Graduate Teaching Assistant Follow-Up Sessions (6)—"Teaching in STEM," KU Center for Teaching Excellence, Fall 2016–Spring 2017
- Discussion Leader, About Teaching: A Conference for New GTAs—"Fostering Learning and Engagement for All Your Students," KU Center for Teaching Excellence, Fall 2016.
- Coordinator, Department Teaching Grant funded by the KU Center for Teaching Excellence ($3,500)—"Mapping the Undergraduate Curriculum in Geography to Increase and Assess Student Learning," Department of Geography and Atmospheric Science, Fall 2015–Spring 2016
- Discussion Leader, Graduate Teaching Assistant Follow-Up Sessions (6)—"Teaching in STEM," KU Center for Teaching Excellence, Fall 2015–Spring 2016
- Discussion Leader, About Teaching: A Conference for New GTAs—"Motivating Students and Using Active Learning," KU Center for Teaching Excellence, Fall 2015.
- Discussion Leader and Co-Organizer, Threshold Concepts Working Group, KU Center for Teaching Excellence, Spring 2014
- Discussion Leader, Graduate Teaching Assistant Workshop—"Teaching in the Natural Sciences," KU Center for Teaching Excellence, 27 Feb. 2014
- Faculty Facilitator, Best Practices Institute, KU Center for Teaching Excellence, 2011
- Center for Teaching Excellence Ambassador, KU Department of Geography, 2010-2013

PROFESSIONAL ADVANCEMENT

- Urban Soils, Agriculture, and Brownfields—Los Angeles Basin Tour, 2014
- Teaching Hydrogeology, Soils, and Low-T Geochemistry in the 21st Century, National Association of Geoscience Teachers–On the Cutting Edge, University of New Mexico, 2013
- Southwest Ohio Soils Tour, 2012
- Field Indicator of Hydric Soils in the United States Tour, 2012
- Association of American Geographers Annual Meeting, 2012
- Geological Society of America Annual Meeting, 2008
- Western Society of Soil Science/AAAS Pacific Division, 2007
- Desert Project Tour, 2007
- World Congress of Soil Science, 2006
- Friends of the Pleistocene, Pacific Cell, 2005
- International Salinity Forum, 2005
- Learning ArcGIS 9, Online Course, UCR Extension/ESRI, 2005
- Mojave Desert Science Symposium, 2004
- Soil Science Society of America Annual Meeting, 2002–2014
- International Conference on Aeolian Research (ICAR-5), 2002
- Nematode Identification Short Course, Clemson University, 2000

PROFESSIONAL AFFILIATIONS

- National Association of Geoscience Teachers (NAGT), 2013–Present
- SACNAS, 2013–Present
- National Council for Geographic Eduction (NCGE), 2013–Present
- European Geosciences Union (EGU), 2011–Present
- Association of American Geographers (AAG), 2009–Present
- International Union of Soil Sciences (IUSS), 2002–Present
- American Geophysical Union (AGU), 2002–Present
- Soil Science Society of America (SSSA), 2001–Present
- Association of Analytical Chemists (AOAC) International, 1999–2003