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Kansas Geological Survey
Stratigraphic Research Section
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Education

Ph.D. Geology 2007

University of Kansas, Lawrence, KS

Dissertation: *Ichnofossils of the Paleogene Willwood Formation and the Paleocene-Eocene Thermal Maximum (PETM): Response of an Ancient Soil Ecosystem to Transient Global Warming*; Advisors: Stephen Hasiotis, Robert Goldstein, Bruce Lieberman, Jennifer Roberts, William Johnson

M.S. Geology 2001

Georgia State University, Atlanta, GA

Thesis: *The Stratigraphy and Petrology of the Upper Jurassic Morrison Formation near Dillon, Montana*; Advisors: William Fritz, Timothy La Tour, W. Crawford Elliott

B.S. Geology 1998

Georgia State University, Atlanta, GA

Academic and Professional Positions

2012-present **Courtesy Assistant Professor**, Department of Geology, University of Kansas

2009-present **Assistant Scientist**, Stratigraphic Research Section Kansas Geological Survey

2007-2009 **Postdoctoral Research Associate**, Stratigraphic Research Section, Kansas Geological Survey

2003-2006 **Graduate Research Assistant**, Department of Geology, University of Kansas

2001-2003 **Adjunct Professor**, Department of Science, Georgia Perimeter College

2000-2003 **Environmental Consultant/Project Manager**, ENSR Corp., Norcross, GA

1999-2000 **Graduate Research Assistant**, Department of Geology, Georgia State University

1998-1999 **Graduate Teaching Assistant**, Department of Geology, Georgia State University

1996-1998 **Teaching Assistant**, Department of Geology, Georgia State University

Funded Grants

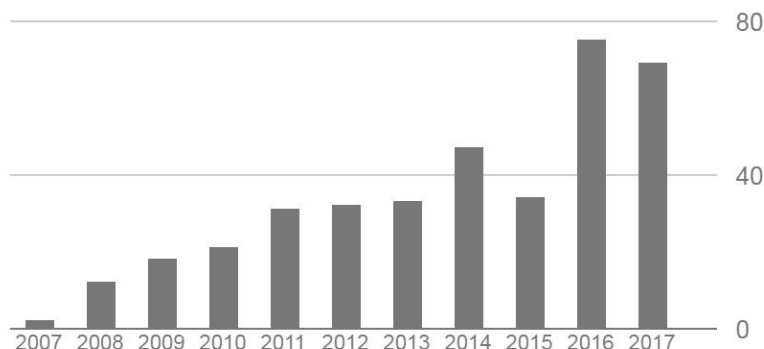
2017 Ludvigson, G.A., **Smith, J.J.**, Layzell, A., Bidgoli, T., Mandel, J.R., Johnson, W.C., and Dunham, J.W., *Geologic Mapping in Kansas for FY17*. U.S. Geological Survey STATEMAP Program (\$155,315)

- 2016 Ludvigson, G.A., **Smith, J.J.**, Newell, K.D., Mandel, J.R., Johnson, W.C., Sawin, R.S., and Dunham, J.W., *Geologic Mapping in Kansas for FY16*. U.S. Geological Survey STATEMAP Program (\$151,010)
- 2015 Ludvigson, G.A., **Smith, J.J.**, Newell, K.D., Mandel, J.R., Johnson, W.C., Sawin, R.S., Whittemore, D.O., and Dunham, J.W., *Geologic Mapping in Kansas for FY15*. U.S. Geological Survey STATEMAP Program (\$116,475)
- 2014 Hembree, D.I., Platt, B.F., Buynevich, I.V., and **Smith, J.J.**, *Investigation of the Soils and Burrowing Biota of the Sonoran Desert: Improving the Recognition of Semi-Arid Ecosystems in Deep Time*. National Geographic Society (\$16,530)
- 2014 Ludvigson, G.A., **Smith, J.J.**, Johnson, W.C., Mandel, J.R., Newell, K.D., Sawin, R.S., Whittemore, D.O., and Dunham, J.W., *Geologic Mapping in Kansas for FY14*. U.S. Geological Survey STATEMAP Program (\$140,973)
- 2013 Ludvigson, G.A., **Smith, J.J.**, Johnson, W.C., Mandel, J.R., Newell, K.D., Sawin, R.S., Whittemore, D.O., and Dunham, J.W., *Geologic Mapping in Kansas for FY13*. U.S. Geological Survey STATEMAP Program (\$108,165)
- 2012 Ludvigson, G.A., **Smith, J.J.**, Johnson, W.C., Mandel, J.R., Newell, K.D., Sawin, R.S., Whittemore, D.O., and Dunham, J.W., *Geologic Mapping in Kansas for FY12*. U.S. Geological Survey STATEMAP Program (\$167,620)
- 2012 Stotler, R., Butler, J., Hirmas, D., Ludvigson, G., and **Smith, J.J.**, *Investigations of Recharge to the High Plains Aquifer, Northwestern Kansas*. Kansas Water Resources Institute 104(b) Research Grant (\$30,000).
- 2011 Ludvigson, G.A., **Smith, J.J.**, Johnson, W.C., Mandel, J.R., Newell, K.D., Sawin, R.S., Whittemore, D.O., and Dunham, J.W., *Geologic Mapping in Kansas for FY11*. U.S. Geological Survey STATEMAP Program (\$216,325)
- 2010 Ludvigson, G.A. and **Smith, J.J.**, *Ogallala-High Plains Aquifer Special Study Phase III: Lithologic Calibration of Practical Saturated Thickness in the Ogallala-High Plains Aquifer*. Kansas Water Office (\$68,100)
- 2010 **Smith, J.J.**, Petronis, M., Ludvigson, G.A., and Doveton, J.H., *Collaborative Research: Investigating Lithologic and Stratigraphic Controls on Hydrogeology in Neogene Strata of the Central High Plains Aquifer*. National Science Foundation (\$381,000)
- 2010 Ludvigson, G.A., **Smith, J.J.**, Johnson, W.C., Mandel, J.R., Newell, K.D., Sawin, R.S., Whittemore, D.O., and Dunham, J.W., *Geologic Mapping in Kansas for FY10*. U.S. Geological Survey STATEMAP Program (\$221,100)
- 2009 Ludvigson, G.A., Macfarlane, P.A., Mandel, J.R., Newell, K.D., Sawin, R.S., Johnson, W.C., Dunham, J.W., and **Smith, J.J.**, *Geologic Mapping in Kansas for FY09*. U.S. Geological Survey STATEMAP Program (\$198,628)
- 2008 Ludvigson, G.A., Macfarlane, P.A., Mandel, J.R., Newell, K.D., Sawin, R.S., Johnson, W.C., Dunham, J.W., and **Smith, J.J.**, *Geologic Mapping in Kansas for FY08*. U.S. Geological Survey STATEMAP Program (\$206,164)

Publications

[Google Scholar Citations: **378 citations** since 2007, current Hirsch **h-index** and **i10-index** values are **10** based on the Google Scholar database]

Citations per year as of 08/25/17



Published Peer-Reviewed Articles

22. Hembree, D.I., **Smith, J.J.**, Buynevich, I.V., and Platt, B.F., *in press*. Neoichnology of semiarid environments: Soils and burrowing animals of the Sonoran Desert, Arizona, U.S.A. *PALAIOS*.
21. **Smith, J.J.**, Ludvigson, G.A., Layzell, A., Möller, A. Harlow, R.H., Turner, E., Platt, B.F., and Petronis, M., 2017. Discovery of Paleogene deposits of the central High Plains aquifer in the western Great Plains, USA. *Journal of Sedimentary Research*, 87:880-896, doi: <http://dx.doi.org/10.2110/jsr.2017.48>.
20. Golab, J.A., **Smith, J.J.**, Clark, A.K., and Blome, C.D., 2017. Effects of *Thalassinoides* ichnofabrics on the petrophysical properties of the Lower Cretaceous Lower Glen Rose Limestone, Middle Trinity Aquifer, Northern Bexar County, Texas. *Sedimentary Geology*, 351: 1-10, <http://dx.doi.org/10.1016/j.sedgeo.2017.02.001>.
19. Golab, J.A., **Smith J.J.**, Clark, A.K., and Morris, R.R., 2017. Bioturbation-influenced fluid pathways within a carbonate platform system: The Lower Cretaceous (Aptian–Albian) Glen Rose Limestone. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 456: 138-155, doi: 10.1016/j.palaeo.2016.10.025.
18. Katz, B. Stotler, R. Hirmas, D. Ludvigson, G. **Smith, J.**, and Whittemore, D., 2016. Geochemical recharge estimation and the effects of a declining water table. *Vadose Zone Journal*, p. 1-13, doi:10.2136/vzj2016.04.0031.
17. **Smith, J.J.**, Layzell, A.L., Lukens, W.E., Morgan, M.L., Keller, S.M., Martin, R.A., and Fox, D.L., 2016. Getting to the bottom of the High Plains aquifer: New insights into the depositional history, stratigraphy, and paleoecology of the Cenozoic High Plains, in Keller, S.M., and Morgan, M.L., eds., *Unfolding the Geology of the West: Geological Society of America Field Guide 44*, p. 93-124, doi:10.1130/2016.0044(04).
16. Layzell, A.L., Mandel, R.D., Rittenour, T.M., **Smith, J.J.**, Harlow, R.H., and Ludvigson, G.A., 2016. Stratigraphy, morphology, and geochemistry of late Quaternary buried soils on the High Plains of southwestern Kansas, USA. *Catena*, 144: 45-55.
15. **Smith, J.J.**, Platt, B.F., Ludvigson, G.A., Sawin, R.S., Marshall, C.P., and Olcott-Marshall, A., 2015. Enigmatic red beds exposed at Point of Rocks, Cimarron National Grassland, Morton County, Kansas: Chronostratigraphic constraints from U-Pb dating of detrital

- zircons. *Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 261*, 17 p., 1 appendix <http://www.kgs.ku.edu/Current/2015/Smith/index.html>.
14. Stotler, R.L., Whittemore, D.O., **Smith, J.J.**, Katz, B.S., Yoerg, A., Butler Jr., J.J., Ludvigson, G.A., and Hirmas, D.R., 2015. Isotopic composition of the Ogallala-High Plains aquifer and vadose zone. *Procedia Earth and Planetary Science*, v. 13, p. 39-42.
 13. Kraus, M.J., Woody, D.T., **Smith, J.J.**, and Dukic, V., 2015. Alluvial response to the Paleocene-Eocene Thermal Maximum climatic event, Polecat Bench, Wyoming (U.S.A.), *Palaeogeography, Palaeoclimatology, Palaeoecology*, 435: 177-192, doi: 10.1016/j.palaeo.2015.06.021.
 12. Layzell, A.L., Mandel, R.D., Ludvigson, G.A., Rittenour, T.M., and **Smith, J.J.**, 2015. Forces driving late Pleistocene (ca. 77-12 ka) landscape evolution in the Cimarron River valley, southwestern Kansas. *Quaternary Research*, 84: 106-117.
 11. Woody, D.T., **Smith, J.J.**, Kraus, M.J., and Hasiotis, S.T., 2014. Manganese-bearing rhizocretions in the Willwood Formation, Wyoming, U.S.A.: Implications for paleoclimate during the Paleocene-Eocene Thermal Maximum. *PALAIOS*, 29: 266-276.
 10. Ludvigson, G.A., González, L.A., Fowle, D.A., Roberts, J.A., Driese, S.G., Villarreal, M.A., **Smith, J.J.**, Suarez, M.B., 2013. Paleoclimatic implications and modern process studies of pedogenic siderite in Driese, S.G., and Nordt, L.C., eds. *New Frontiers in Paleopedology and Terrestrial Paleoclimatology*, SEPM Special Publications No 104, p. 79-87.
 9. **Smith, J.J.**, Platt, B.F., Ludvigson, G.A., and Thomasson, J.R., 2011. Ant-nest ichnofossils in honeycomb calcretes, Neogene Ogallala Formation, High Plains region of western Kansas, U.S.A. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 308: 383-394.
 8. Driese, S.G., Ludvigson, G.A., Roberts, J.A., Fowle, D.A., González, L.A., **Smith, J.J.**, Vulava, V.M., and McKay, L.D., 2010. Micromorphology and stable isotope geochemistry of historical pedogenic siderite formed in PAH-contaminated alluvial clay soils, Tennessee, USA. *Journal of Sedimentary Research*, 80: 943-954. doi: 10.2110/jsr.2010.087.
 7. **Smith, J.J.**, Hasiotis, S.T., Kraus, M.J., and Woody, D.T., 2009. Transient dwarfism of soil fauna during the Paleocene–Eocene Thermal Maximum. *Proceedings of the National Academy of Sciences*, 6: 17655-17660.
 6. Ludvigson, G.A., Sawin, R.S., Franseen, E.K., Watney, W.L., West, R.R., and **Smith, J.J.**, 2009. A Review of the Stratigraphy of the Ogallala Formation and Revision of Neogene ("Tertiary") Nomenclature in Kansas. *Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 256*, part 2, 9 pgs. <http://www.kgs.ku.edu/Current/2009/Ludvigson/index.html>.
 5. **Smith, J.J.**, Hasiotis, S.T., Kraus, M.J., and Woody, D.T., 2008. Relationship of floodplain ichnocoenoses to paleopedology, paleohydrology, and paleoclimate in the Willwood Formation, Polecat Bench, Bighorn Basin, Wyoming, during the Paleocene-Eocene Thermal Maximum. *PALAIOS*, 23: 683-699.
 4. **Smith, J.J.** and Hasiotis, S.T., 2008. Traces and burrowing behaviors of the cicada nymph *Cicadetta calliope*: neoichnology and paleoecological significance of extant soil-dwelling insects. *PALAIOS*, 23: 503-513.

3. **Smith, J.J.**, Hasiotis, S.T., Woody, D.T., and Kraus, M.J., 2008. Paleoclimatic implications of crayfish-mediated prismatic structures in paleosols of the Paleogene Willwood Formation, Bighorn Basin, Wyoming, U.S.A. *Journal of Sedimentary Research*, 78: 323-334.
2. **Smith, J.J.**, Hasiotis, S.T., Kraus, M.J., and Woody, D.T., 2008. *Naktodemasis bowni*: new ichnogenus and ichnospecies for adhesive meniscate burrows (AMB), and paleoenvironmental implications, Paleogene Willwood Formation, Bighorn Basin, Wyoming. *Journal of Paleontology*, 82: 267-278.
1. **Smith, J.J.**, Hasiotis, S.T., and Fritz, W.J., 2006. Stratigraphy and sedimentology of the Upper Jurassic Morrison Formation, Dillon, Montana. In Foster, J.R. and Lucas, S.G. (eds.), Paleontology and Geology of the Upper Jurassic Morrison Formation. *New Mexico Museum of Natural History and Science Bulletin* 36: 1-7.

Peer-Reviewed Books and Book Chapters

1. Hembree, D.I., Platt, B.F., and **Smith, J.J.**, (eds.), 2014. *Experimental Approaches to Understanding Fossil Organisms: Lessons from the Living*. Topics in Geobiology, Vol. 41, Springer, New York, 420 p.

Published Scientific Abstracts (* indicates speaker)

95. ***Smith, J.J.**, Ludvigson, G.A., Layzell, A., Möller, A., Turner, E., Hallman, J. and Sitek, B., 2017. Recent advances toward developing of a U-Pb zircon chronostratigraphy of Cenozoic strata in the central High Plains aquifer of Kansas. *Transactions of the Kansas Academy of Science, Abstracts from the 149th Annual Meeting of the Kansas Academy of Science*, 120(1-2): 122.
94. *Turner, E., **Smith, J.J.**, Möller, A., Otto, R.E., Joeckel, R.M., and Tucker, S.T., 2017. Preliminary U-Pb zircon ages of the Ashfall Fossil Beds in northeastern Nebraska: Geochronology of a *Konservat-Lagerstätten* in the northern High Plains. *Transactions of the Kansas Academy of Science, Abstracts from the 149th Annual Meeting of the Kansas Academy of Science*, 120(1-2): 125.
93. ***Smith, J.J.**, Ludvigson, G.A., Layzell, A., Möller, A., and Turner, E., 2017. Scientific drilling in Cenozoic strata of the central High Plains aquifer: A developing U-Pb zircon chronostratigraphy in western Kansas. *Geological Society of America, South-Central Section Meeting, Abstracts with Programs*, 49(1), doi: 10.1130/abs/2017SC-289486.
92. *Golab, J.A. and **Smith, J.J.**, 2017. Using well logs to assess the effects of Thalassinoides-dominated ichnofabrics on the subsurface fluid pathways of the Trinity aquifer in northern Bexar County. *Geological Society of America, South-Central Section Meeting, Abstracts with Programs*, 49(1), doi: 10.1130/abs/2017SC-289414.
91. *Turner, E., **Smith, J.J.**, Möller, A., Otto, R.E., Joeckel, R.M., and Tucker, S.T., 2017. The first U-Pb zircon ages for the Ashfall Fossil Beds and Grove Lake volcanic deposits in Nebraska: two different Yellowstone hotspot track sources. *Geological Society of America, South-Central Section Meeting, Abstracts with Programs*, 49(1), doi: 10.1130/abs/2017SC-289615.
90. ***Smith, J.J.**, Ludvigson, G.A., Layzell, A.L., Möller, A., Stotler, R.L., Harlow, R.H., Petronis, M., Rittenour, T.M., and Doveton, J.H., 2016. Maximum depositional age constraints and provenance of Cenozoic deposits of the central High Plains in western

- Kansas, USA. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-287381.
89. ***Smith, J.J.**, Stover, S.G., and Johnston, P., 2016. The Neal trace fossil locality: a new Pennsylvanian ichnofossil assemblage in Greenwood County, Kansas. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-287434.
 88. *Hallman, J.A., McLean, N., Möller, A., Ludvigson, G.A., **Smith, J.J.**, and Sitek, B.C., 2016. Spatial and temporal patterns of Ogallala Formation deposition revealed by U-Pb zircon geochronology. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-279868.
 87. *Platt, B.F., Hembree, D.I., **Smith, J.J.**, and Buynevich, I.V., 2016. Neoichnology at the Santa Catalina Critical Zone Observatory: three-dimensional analysis of soil fauna burrows from the Sonoran Desert, Arizona, USA. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-287558.
 86. *Golab, J.A. and **Smith, J.J.**, 2016. Effects of biogenic porosity on the petrophysical properties of the karstic Lower Cretaceous Glen Rose Limestone, Bexar County, Texas. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-283302.
 85. *Graham, M.A., Möller, A., Ludvigson, G.A., Hallman, J.A., and **Smith, J.J.**, 2016. Trace element fingerprinting of Yellowstone hotspot track (YHT) major eruptions in volcanic ashes from high plains strata in Kansas. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-281965.
 84. *Sitek, B. C., **Smith, J.J.**, Möller, A., Ludvigson, G.A., McLean, N., and Hallman, J.A., 2016. Chronostratigraphy of the Ogallala Formation in western Kansas: a new approach using paleosols. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-281004.
 83. *Stotler R.L., Butler, J.J., Hirmas, D.R., Johnson, W.C., Katz, B., Knobbe, S.J., Layzell, A.L., Long, M.M., Ludvigson, G.A., Reboulet, E.C., **Smith, J.J.**, and Whittemore, D.O., 2016. Understanding the role of geology on recharge to and production from the High Plains aquifer in Kansas. *Geological Society of America, Abstracts with Programs*, 48(7), doi: 10.1130/abs/2016AM-283041.
 82. ***Smith J.J.**, Ludvigson, G.A., Layzell, A., Stotler, R.L., and Möller, A., 2016. Scientific Drilling in the Cenozoic strata of the High Plains of western Kansas. *Transactions of the Kansas Academy of Science, Abstracts from the 148th Annual Meeting of the Kansas Academy of Science*, 119(2): 261.
 81. Platt, B.F., ***Smith, J.J.**, Ludvigson, G.A., and Thomasson, J.R., 2015. Making a mountain out of an anthill: Ancient hymenopter influence on calcrete outcrop expression, Neogene Ogallala Formation, western Kansas, USA. *The American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America Joint International Annual Meetings*, Minneapolis, MN, November 15-18, 2015.
 80. ***Smith, J.J.**, Hembree, D.I., Buynevich, I.V., and Platt, B.F., 2015. Neoichnology and pedology of montane soils in the Santa Catalina mountains, southern Arizona. *Geological Society of America, Abstracts with Programs*, 47(7): 425.
 79. *Hembree, D.I., **Smith, J.J.**, Buynevich, I.V., and Platt, B.F., 2015. Neoichnology of semiarid environments: soils and burrowing organisms of the Sonoran Desert. *Geological Society of America, Abstracts with Programs*, 47(7): 424.

78. *Hallman, J.A., Möller, A., McLean, N., Ludvigson, G.A., **Smith, J.J.**, and Sitek, B.C., 2015. Paleosols and volcanic ashes as marker beds in the Ogallala Formation, western Kansas. *Geological Society of America, Abstracts with Programs*, 47(7): 595.
77. *Layzell, A.L., Harlow, R.H., Ludvigson, G.A., Mandel, R.D., and **Smith, J.J.**, 2015. Major element and isotope geochemistry from late quaternary paleosols in southwestern Kansas: assessing climate and parent material change. *Geological Society of America, Abstracts with Programs*, 47(7): 596.
76. *Alves, V.A., Buynevich, I.V., Hembree, D.I., **Smith, J.J.**, and Platt, B.F., 2015. Signal polarity trends in georadar images of mammal burrow networks in a heterogeneous mountain slope regolith. *Geological Society of America, Abstracts with Programs*, 47(7): 343.
75. *Buynevich, I.V., Hembree, D.I., **Smith, J.J.**, and Platt, B.F., 2015. Georadar characterization of bioturbation structures in contrasting soil-geomorphic biotopes, southern Arizona. *Geological Society of America, Abstracts with Programs*, 47(7): 342.
74. ***Smith, J.J.**, Platt, B.F., Ludvigson, G.A., Sawin, R.S., Marshall, C.P., and Marshall, A.O., 2015. Chronostratigraphic assessment of enigmatic redbeds at Point of Rocks, Cimarron National Grassland, Kansas: U-Pb age constraints from detrital zircons. *Geological Society of America, Abstracts with Programs*, 47(7): 803.
73. *Turner, E., **Smith, J.J.**, Ludvigson, G.A., Layzell, A.L., and Möller, A., 2015. Maximum depositional age constraints from U-Pb dating of zircons in Cenozoic deposits of the High Plains Aquifer, southwestern Kansas. *Geological Society of America, Abstracts with Programs*, 47(7): 801.
72. **Smith, J.J.**, Ludvigson, G.A., Doveton, J., *Layzell, A., Stotler, R.L., Möller, A., and Rittenour, T.M., 2015. A scientific drilling program in the Cenozoic strata of the High Plains Aquifer: Sedimentologic and hydrostratigraphic characterization of cored sediments from the Ogallala Formation. *NovCare 2015*, Lawrence, KS, May 18-21, 2015.
71. *Korus, J.T., Joeckel, R.M., Ludvigson, G.A., **Smith, J.J.**, and Abraham, J.D., 2015. Geologic investigations of the northern High Plains Aquifer: historical review and recent advances. *University of Nebraska-Lincoln Water Conference*, March 19, 2015.
70. *Stotler, R.L., Katz, B.S., Whittemore, D.O., Butler, Jr., J.J., Ludvigson, G.A., **Smith, J.J.**, and Hirmas, D.R., 2015. Implications of a falling water table for recharge estimations through a thick vadose zone beneath an irrigated field. *International Association of Hydrogeologists-Canadian National Chapter Meeting*, Waterloo, Ontario, October 27-30, 2015.
69. *Kraus, M.J., Woody, D., **Smith, J.J.**, 2015. Alluvial response to climate change at the Paleocene-Eocene Thermal Maximum (PETM), Bighorn Basin, Wyoming. *American Association of Petroleum Geologists Annual Convention, Official Program Abstracts*.
68. *Stotler, R.L., Katz, B.S., Hirmas, D.R., Whittemore, D.O., Butler, Jr., J.J., **Smith, J.J.**, and Ludvigson, G.A., 2014. Understanding recharge patterns in the High Plains aquifer, Kansas. *3rd Annual Governor's Conference on the Future of Water in Kansas*, November 12-13, 2014.
67. *Ludvigson, G.A., **Smith, J.J.**, Doveton, J.D., Mandel, R., Murphy, L., Layzell, A., Stotler, R.L., and Sleezer, R., 2014. Sedimentologic and stratigraphic characterization of cored sediments from the High Plains Aquifer system of western Kansas. *3rd Annual Governor's Conference on the Future of Water in Kansas*, November 12-13, 2014.

66. *Richey, J.D., Upchurch, G.R., Suarez, M.B., Joeckel, R.M., Ludvigson, G., **Smith, J.J.**, and Lomax, B.H., 2014. Changes in Stomatal Index during OAE1d: A Comparison to Other Carbon Cycle Perturbations of the Mesozoic. *Fall Meeting of the American Geophysical Union*.
65. *Ludvigson, G.A., **Smith, J.J.**, Doveton, J.D., Mandel, R., Murphy, L., Layzell, A., Stotler, R.L., and Sleezer, R., 2014. Sedimentologic and stratigraphic characterization of cored sediments from the High Plains Aquifer system of western Kansas. *59th annual Midwest Ground Water Conference, Lawrence, KS, October 1, 2014*.
64. *Kraus, M.J., Woody, D. and **Smith J.J.**, 2014. Alluvial response to climate change interpreted from paleosols across the Paleocene-Eocene Thermal Maximum, Bighorn Basin, Wyoming. *Geological Society of America, Abstracts with Programs*, 46(6):39.
63. *Layzell, A., Mandel, R.D., Ludvigson, G.A., and **Smith, J.J.**, 2014. Late Pleistocene eolian sedimentation, soil development and climate change on the High Plains of southwestern Kansas. *Geological Society of America, Abstracts with Programs*, 46(6):151.
62. *Upchurch, G.R., Richey, J., Joeckel, R.M., Suarez, M. Ludvigson, G.A., and **Smith, J.J.**, 2014. Stratigraphy of the Rose Creek Pit, Dakota Formation of Nebraska: Implications for the minimum age of Pentaletalae and Lauraceae. *9th European Palaeobotany and Palynology Conference in Padova, Italy, Abstracts with Program*.
61. *Stotler, R.L., Katz, B.S., Butler, J.J., Whittemore, D.O., Reboulet, E.C., Hirmas, D.R., **Smith, J.J.**, and Ludvigson, G.A., 2014. Recharge in the High Plains Aquifer: physical and chemical data. *Goldschmidt 2014 Conference*.
60. ***Smith, J.J.**, Sleezer, R.O., Ludvigson, G.A., Duarte, A.M., and Platt, B.F., 2014. Preliminary results of litho-and chronostratigraphic investigations of the McPherson Channel deposits in south central Kansas. *Geological Society of America, North-Central Section Meeting, Abstracts with Programs*, 46(4):57.
59. *Trevino, S.F., Zeigler, K.E., Petronis, M., **Smith, J.J.**, Ludvigson, G.A., and Doveton, J.H., 2014. Developing a refined magnetostratigraphy for the White River Group and Ogallala Formation in southwestern Kansas: Preliminary results from the High Plains-Ogallala Drilling Project. *Geological Society of America, North-Central Section Meeting, Abstracts with Programs*, 46(4):52.
58. *Ludvigson, G., **Smith, J.J.**, Joeckel, R.M., Möller, A., and Feldman, J., 2014. Development of a scientific drilling program in Cenozoic strata of the Great Plains in Kansas and Nebraska. *Geological Society of America, North-Central Section Meeting, Abstracts with Programs*, 46(4):57.
57. *Layzell, A., Ludvigson, G.A., Mandel, R., and **Smith, J.J.**, 2014. Investigations of the litho-and soil-stratigraphy of Plio-Pleistocene strata in the Cimarron River Valley, southwestern Kansas. *Geological Society of America, North-Central Section Meeting, Abstracts with Programs*, 46(4):57.
56. **Smith, J.J.**, *Ludvigson, G. Möller, A., Feldman, J., Harlow, H., Doveton, J., Rittenour, T., and Platt, B., 2014. Developing a paleosol geochronometer: Examples from Cenozoic strata of the High Plains of the western United States. *American Association of Petroleum Geologists Annual Convention, Official Program Abstracts CD, Abstract No. 1842182*.
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 47. *Stotler, R.L., Butler, J.J., Whittemore, D.O., Reboulet, E.C., Katz, B.S., Hirmas, D.R., **Smith J.J.**, and Ludvigson, G.A., 2013, Monitoring, groundwater age, and assessing water availability: Lessons from the High Plains Aquifer, Kansas, USA. *Groundwater and Global Paleoclimate Signals, ICSU-INQUA-IGCP-Graphic Workshop*.
 46. ***Smith J.J.**, Sleezer, R., Platt, B.F., Ludvigson, G.A., and Harlow, R.H., 2013. Geologic mapping and subsurface investigations of Equus Beds aquifer sediments in south-central Kansas. *American Association of Petroleum Geologists Mid-Continent Section Meeting*.
 45. ***Smith, J.J.**, Platt, B.F., Thomasson, J.R., Ludvigson, G.A., Packauskas, R.J., Flores, T., Leiker, J., Walters, G., and Barrick, R., 2013. Ant nest trace fossils of the Neogene Ogallala Formation and preliminary analysis of aluminum casts of modern western harvester ant nests from Hays, Kansas. *2013 Annual Meeting of the Society for Cenozoic Research (TerQua), Lawrence, KS, Programs and Abstracts, p. 25*.
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- timing. *2013 Annual Meeting of the Society for Cenozoic Research (TerQua)*, Lawrence, KS, Programs and Abstracts, p. 22.
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 41. *Harlow, R.H., Ludvigson, G.A., **Smith, J.J.**, Doveton, J.H., Petronis, M., Gonzalez, L.A., 2013. Employment of non-traditional techniques to improve stratigraphic correlation of the High Plains Succession and their applications for future groundwater management. *10th Annual Capitol Graduate Research Summit*, Topeka, KS.
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 16. Hasiotis, S.T.*, **Smith, J.J.**, and Counts, J.W., 2007. Understanding meniscate-backfilled burrows in continental deposits and their application to sequence stratigraphy at the continental-marine interface. In, MacEachern, J.A., Pemberton, S.G., Gingras, M. K., and Bann, K. L.(eds.), *SEPM Research Conference: Ichnological Applications to Sedimentological and Sequence Stratigraphic Problems*, 7 pages.
 15. ***Smith, J.J.** and Hasiotis, S.T., 2007. Traces and burrowing behaviors of the cicada nymph *Melampsalta calliope*: Neoichnology and paleoecological significance of modern soil-dwelling insects. *Geological Society of America, South- and North-Central Joint Section Meeting, Abstracts with Programs* 39(3):54.
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13. *Hasiotis, S. T., Kraus, M.J., **Smith, J.J.**, and Counts, J.W., 2007. Pedofabrics and Ichnofabrics: A Case for Developing Ichnopedologic Units. In, Gingras, M. K. and Zonneveld, J.-P. (eds.), *International Ichnofabric Workshop IX*, August 12-19, Calgary, Alberta, Canada, p. 36.
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 10. ***Smith, J.J.**, Hasiotis, S.T., 2006. Morphologic and Paleoenvironmental Implications of Adhesive Meniscate Burrows (AMB), Paleogene Willwood Formation and Other Continental Deposits. *138th Annual Meeting, Kansas Academy of Science, Transactions of the Kansas Academy of Science*, 109(3/4): 247-267.
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 6. ***Smith, J.J.**, Hasiotis, S.T., Kraus, M.J., and Woody, D., 2005. Ichnofossils in alluvial deposits and paleosols of the lower Eocene Willwood Formation, Bighorn Basin, Wyoming. *American Association of Petroleum Geologists Annual Convention, Abstracts Volume*, 14: 130.
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 4. ***Smith, J.J.**, Hasiotis, S.T., Kraus, M.J. and Woody, D., 2004. The occurrence and diversity of trace fossils in paleosols of the lower Eocene Willwood Formation during the Paleocene-Eocene Thermal Maximum (PETM) event: preliminary results. *Geological Society of America, Abstracts with Programs*, 36(5):62.
 3. *Hasiotis, S.T., Hembree, D., **Smith, J.J.**, and Platt, B.F., 2004. Modern crayfish burrows as indicators of a spring and perched water table, Kansas Ecological Research Station, Lawrence, Kansas. *Geological Society of America, Abstracts with Programs*, 36(5):130.
 2. ***Smith, J.J.**, Hasiotis, S.T., and Kraus, M.J., 2004. Preliminary study on the occurrence and

distribution of trace fossils in paleosols across the Paleocene-Eocene Thermal Maximum (PETM) in the Bighorn Basin, Wyoming. *Journal of Vertebrate Paleontology Annual Meeting, Abstracts of Papers*, 24 (3, Suppl.):114.

1. ***Smith, J.J.**, and Fritz, W.J., 2003. Sedimentology, stratigraphy and geochemistry of the Upper Jurassic Morrison Formation near Dillon, Montana. *G-Hawk Student Symposium, Geology Department, University of Kansas, Program and Abstract Volume*, 2003.

Non-Reviewed Papers, Articles, Theses, Geologic Maps, and Reports

19. Ludvigson, G.A., Mandel, R., Macfarlane, A., and **Smith, J.J.**, 2016. Capturing the record of Neogene climate change from strata of the High Plains aquifer in Kansas: Research activities and findings: Open-file Report 2016-31, 32 p.
18. **Smith, J.J.**, 2015. Preliminary surficial geology of the Haskell County portion of the Wild Horse Lake quadrangle, Kansas: Kansas Geological Survey, Open-file Report no. 2015-17, 1 sheet, scale 1:24,000.
17. **Smith, J.J.**, 2015. Preliminary surficial geology of the Haskell County portion of the West of Wild Horse Lake quadrangle, Kansas: Kansas Geological Survey, Open-file Report no. 2015-16, 1 sheet, scale 1:24,000.
16. **Smith, J.J.**, 2015. Preliminary surficial geology of the Haskell County portion of the Hickock NE quadrangle, Kansas: Kansas Geological Survey, Open-file Report no. 2015-15, 1 sheet, scale 1:24,000.
15. **Smith, J.J.**, 2014. Preliminary Surficial Geology of the North of Satanta Quadrangle, Haskell County, Kansas: Kansas Geological Survey, Open-file Report no. 2014-9, 1 sheet, scale 1:24,000.
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13. **Smith, J.J.**, Ludvigson, G.A., Harlow, H., and Platt, B.F. 2014. Ogallala-High Plains Aquifer Special Study Phase III: Lithologic Calibration of Practical Saturated Thickness in the Ogallala-High Plains Aquifer. Final Report on Kansas Water Office Grant KAN0066607 for Ogallala-High Plains Aquifer Special Study Phase III. Kansas Geological Survey, Open-file Report no. 2014-2, 9 pages.
12. **Smith J.J.**, and Ludvigson, G.A., 2014. A Report to the Calvert Corporation on a Geologic Inspection of the Calvert Volcanic Ash Mine on February 23, 2011. Kansas Geological Survey, Open-file Report no. 2014-3, 6 pages.
11. **Smith, J.J.**, 2013. Preliminary geology field maps and stratigraphic column, Haskell County, Kansas (Copeland, West of Copeland, and Plains NW USGS 7.5 minute quadrangle): Kansas Geological Survey, Open-file Report 2013-9, 3 sheets, scale 1:24,000.
10. **Smith, J.J.**, and Sleezer, R., 2012. Preliminary geology field maps and stratigraphic column, Harvey County, Kansas (Peabody NW, Elbing, and Whitewater USGS 7.5 minute quadrangles): Kansas Geological Survey, Open-file Report 2012-10, 3 sheets, scale 1:24,000.
9. **Smith, J.J.**, and Johnson, W.C, 2012. Preliminary geology field maps and stratigraphic column, Haskell County, Kansas (Ryus, Satanta, and Sublette USGS 7.5 minute quadrangle): Kansas Geological Survey, Open-file Report 2012-9, 3 sheets, scale 1:24,000.

8. **Smith, J.J.**, and Sleezer, R., 2011. Preliminary geology field maps and stratigraphic column, Harvey County, Kansas (Halstead NW, Burrton, Patterson, and Bentley USGS 7.5 minute quadrangles): Kansas Geological Survey, Open-file Report 2011-11, 4 sheets, scale 1:24,000.
7. **Smith, J.J.**, and Johnson, W.C., 2011. Preliminary geology field maps and stratigraphic column, Haskell County, Kansas (Copeland NW USGS 7.5 minute quadrangle): Kansas Geological Survey, Open-file Report 2011-13, 1 sheet, scale 1:24,000.
6. **Smith, J.J.**, and Sleezer, R., 2010. Preliminary geology field maps and stratigraphic column, Harvey County, Kansas (Halstead, Hesston, Moundridge, and Zimmerdale USGS 7.5 minute quadrangles): Kansas Geological Survey, Open-file Report 2010-10, 4 sheets, scale 1:24,000.
5. **Smith, J.J.**, and Sleezer, R., 2009. Preliminary geology field maps and stratigraphic column, Harvey County, Kansas (Sedgwick, Sedgwick NE, Newton, and Goessel USGS 7.5 minute quadrangles): Kansas Geological Survey, Open-file Report 2009-15, 4 sheets, scale 1:24,000.
4. Haj, A., Murphy, L. and **Smith, J.J.**, 2008. *Laboratory Procedures and Worksheets: Decarbonation for Ground Sediment/Soil Samples*. Kansas Geological Survey Decarbonation Laboratory, 4 p.
3. **Smith, J.J.**, 2008. Review of *Why Size Matters: From Bacteria to Blue Whales* by John Tyler Bonner, *PALAIOS*, DOI: 10.2110/palo.2008.BR29.
2. **Smith, J.J.**, 2007. *Ichnofossils of the Paleogene Willwood Formation and the Paleocene-Eocene Thermal Maximum (PETM): Response of an Ancient Soil Ecosystem to Transient Global Warming*. Ph.D. Dissertation, Department of Geology, The University of Kansas, Lawrence, KS, 183p.
1. **Smith, J.J.**, 2001. *The Stratigraphy and Petrology of the Upper Jurassic Morrison Formation near Dillon, Montana*. M.Sc. thesis, Department of Geology, Georgia State University, Atlanta, GA, 88p.

Academic Awards and Honors

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| 2007 | Erasmus S. Haworth Distinguished Graduate Award, University of Kansas |
| 2007 | Joseph Minton Patterson Scholarship, Geology Department, University of Kansas |
| 2006 | Dissertation Fellowship, University of Kansas Graduate School |
| 2006 | Preparing Future Faculty Fellowship, University of Kansas Graduate School |
| 2006 | Raymond and Lillian Moore Graduate Scholarship, Geology Dept., University of Kansas |
| 2006 | Eugene Dehner Award, Kansas Academy of Science, Ph.D. Oral Presentation |
| 2005 | Lloyd Henbest Graduate Scholarship, University of Kansas |
| 2004 | Frederick T. Holden Scholarship, Geology Department, University of Kansas |
| 1997 | Field Camp Award, Georgia State University |

Invited Talks and Presentations

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| 2016 | <i>Getting to the Bottom of the High Plains Aquifer: New insights into the Depositional History and Stratigraphy of the Cenozoic High Plains</i> , National Association of State Boards of Geology, Council of Examiners Workshop Subject Matter Experts meeting, Lawrence, KS |
| 2016 | <i>High Plains-Ogallala Drilling Program: Progress Report and Preliminary Findings</i> , to the Kansas Geological Mapping Advisory Committee |

- 2015 *Lessons from the Living: Using Modern Organisms to Answer Paleontological Questions*, Kansas-Missouri Paleontological Society meeting
- 2015 *Chronostratigraphic assessment of enigmatic red beds at Point of Rocks, Cimarron National Grassland, Kansas: U-Pb age constraints from detrital zircons*, to the Kansas Geological Survey Advisory Committee
- 2014 *Lessons from the Living: Two Neoichnological Case Studies*, New Mexico Highlands University, Department of Natural Sciences
- 2014 *Getting to the Bottom of the Ogallala: Scientific Drilling in the High Plains of Western Kansas*, University of Mississippi, Department of Geology and Geological Engineering
- 2013 *Update: Sediment Mapping Within the McPherson Channel*, to the Kansas Geological Survey Advisory Committee
- 2012 *Coring the Ogallala: Scientific Drilling in the High Plains of Western Kansas*. University of Kansas, Department of Geology Colloquium Series
- 2011 *Scientific Drilling in the High Plains of Western Kansas – FY2010*, to the Kansas Geological Mapping Advisory Committee
- 2011 *Coring the Ogallala: Scientific Drilling in the High Plains of Western Kansas*, to the Kansas Geological Survey Advisory Committee
- 2010 *Kansas Participation in the National Cooperative Geologic Mapping Program, FY2010*, to the Kansas Geological Mapping Advisory Committee
- 2009 *Soil Biota: Their Role in Pedogenesis and Use in Paleoenvironmental Interpretation*. University of Kansas, Department of Geography, Guest Lecturer
- 2008 *Chemostratigraphic, Paleopedologic, and Paleobiologic Response to Climate Change: Two Case Studies in Terrestrial Cenozoic Deposits*, Kansas Geological Survey
- 2007 *Ichnology and Paleopedology of the Willwood Formation, Bighorn Basin, Wyoming Through the Paleocene-Eocene Thermal Maximum: Response of Soil Ecosystems to a Transient Global Warming Event*. Kansas Geological Survey
- 2007 *The Occurrence and Distribution of Ichnofossils Across the Paleocene-Eocene Thermal Maximum (PETM), Willwood Formation, Wyoming: The Response of Ancient Soil Biota to Global Warming*. University of Kansas, Natural History Museum and Biodiversity Research Center

Students Supervised

Graduate Students Advised:

James Golab (Ph.D., KU, graduated December 2016 with Honors)

Graduate Committee Service:

Deserae Jennings (Ph.D., KU, 2017–present)

Undergraduate/Graduate Research Assistants and Mentees:

Alan Peterson (M.S. Emporia State University, 2017-present)

Andrew Christensen (B.S., KU, 2017-present)

Elijah Turner (B.S., KU, 2015–2017; Senior Thesis advisor 2016-2017)

Isabel Villaneda-Vanvloten (M.S., KU, 2016)

Jason Hallman (M.S., KU, 2015–2016)

Jeff Ross (M.S., KU, 2015)

Anthony Layzell (Ph.D., KU, 2014–2015)
 Brian Sitek (B.S., KU, 2013–2014; M.S., KU 2015–2017)
 Adrienne Duarte (B.S., KU, 2012–2014)
 Hunter Harlow (M.S., KU, 2010–2012)
 Laura Murphy (M.S., Ph.D., KU, 2008–2014)

Institutional Service

Committee Membership:

2017 Search–Geochemist, KGS
 2016 Search–Quaternary geologist, KGS
 2016 Outstanding Support Staff Recognition Award, KGS
 2015 Outstanding Support Staff Recognition Award, KGS
 2012 Search–Postdoctoral Research Assistant, KGS
 2012 Search–Hydrogeologist, KGS
 2011 Chair, Outstanding Student Awards, KGS
 2011 Search–High Plains Data Manager, KGS
 2010 Outstanding Student Awards, KGS
 2009 Search–Geologic Research Assistant, KGS

University Service:

2014-2015 Co-Leader: High Plains Working Group, KU Water Research Community

Professional Affiliations

Geological Society of America (GSA)
 American Geophysical Union (AGU)
 Paleontological Society (PS)
 Society for Sedimentary Geology (SEPM)
 International Ichnological Association (IIA)
 Kansas Academy of Science (KAS)
 Society for Cenozoic Research (TerQua)

Professional Service

Manuscript Reviews:

- ♦ *Baltica* (2015)
- ♦ *Geodinamica Acta* (2015x2)
- ♦ *Geosciences* (2012)
- ♦ *Ichnos* (2012)
- ♦ *Journal of Sedimentary Research* (2009, 2010, 2012, 2015, 2016)
- ♦ *U.S. National Park Service* (2015)
- ♦ *Palaeogeography, Palaeoclimatology, Palaeoecology* (2014, 2016, 2017)
- ♦ *Palaeontologia Electronica* (2014)
- ♦ *PALAIOS* (2012, 2014, 2016, 2017)
- ♦ *Southeastern Geology* (2008)

Proposal Reviews:

- ♦ National Geographic Society (2011, 2012)
- ♦ American Chemical Society-Petroleum Research Fund, New Directions Grant (2017)

Panel and Committee service:

- 2016 National Science Foundation-Sedimentary Geology and Paleobiology Review Panel
 2016 SEPM Election Committee (2016)

Professional Meetings Service:

- 2017 Roy J. Shlemon Mentors Program in Applied Geoscience, South-Central Section Annual meeting of the Geological Society of America
 2014 Session Co-Chair: *Cenozoic Stratigraphy of the Great Plains*, North-Central Section Annual Meeting of the Geological Society of America
 2013 Session Co-Chair; *Recent Advances in Stratigraphic Research*, Annual Meeting of the Geological Society of America
 2013 Session Co-Chair; Annual Meeting of the Society for Cenozoic Research (TerQua), Lawrence, KS
 2011 Session Co-Chair: *Lessons from the Living: Paleontological Investigations Using Modern Analogs*, Annual Meeting of the Geological Society of America
 2008 Session Co-Chair: *Neoichnological Solutions to Paleontological Problems: Actualistic Studies of the Morphology, Behavior, and Ecology of Modern Analogs for Ancient Organisms*, Annual Meeting of the Geological Society of America
 2007 Session Co-Chair: *Fossils and Modern Analogs: Using Modern Organisms to Improve Paleontological Interpretations*, Geological Society of America, South- and North-Central Joint Section Meeting GSA South- and North-Central Joint Section Meeting

Media/Science News Coverage

- 2015 Research on geochronology of red beds at Point of Rocks, KS featured in the *Lawrence Journal-World* newspaper and online in *Environmental Monitor* and *KU Today*; this research was also the subject of a radio broadcast on Kansas Public Radio: “Rock Mystery Solved in Southwestern Kansas; Thanks to KGS”, <http://kansaspublicradio.org/tags/point-rocks>.
 2013 Research on transient dwarfism of soil fauna during the PETM featured in *New Scientist* magazine (February 9, 2013) and online on *Discovery News* following reports of climate induced body size changes in extant organisms.
 2011 Research on fossil ant nests in the Ogallala Formation was featured in the *KU News*, *KU Alumni Magazine*, and other online news reports; this research was also the subject of a radio broadcast on the Kansas Public Radio program *Research Matters*: “Ancient Ant Nests”, <http://www.researchmatters.ku.edu/2011/september/antnests.shtml>.
 2011 Story on the initiation of KGS drilling in the Ogallala Aquifer was produced by *Harvest Public Media* and broadcast on Kansas Public Radio: “Getting to the core of the Ogallala”, <http://harvestpublicmedia.org/article/573/getting-core-ogallala/5>.
 2010 Report on receipt of NSF funding for drilling in the High Plains aquifer in *The University Daily Kansan*: “Kansas students research water loss in aquifer”, http://www.kansan.com/news/kansas-students-research-water-loss-in-aquifer/article_9431b17a-a58e-55d4-8a5d-5fe715cc084a.html.

- 2009 Research on transient dwarfism of soil fauna during the PETM was featured in *Nature Reports Climate Change*, *U.S. News and World Report*, *NBC News*, and ~13 other online news websites; this research was also the subject of a radio broadcast on the Kansas Public Radio program *Research Matters*: “Soil Dwellers”, <http://www.researchmatters.ku.edu/2009/october/dwarfism.shtml>.