

# Kansas Geological Survey

## Publications, Accomplishments, and Service

2023

### Refereed Publications

- Abbott, B. W., Underwood, K. L., Seybold, E. C., Kincaid, D. W., Hamshaw, S. D., Lee, R. M., Rizzo, D. M., Brown, B., Toolin, R., Chorover, J., Li, L., Lewis, G., Sayedi, S. S., St Clair, S., Buck, R. L., Aanderud, Z., Brahney, J. L., Nixon, R. S., Wang, W., Flox, C., and Perdril, J. N., in review, Resistance, recovery, and resilience: Rethinking the three Rs of survival in the Anthropocene: Earth's Futures. Pre-print available at <https://www.authorea.com/doi/pdf/10.22541/essoar.167390526.69780816>
- Aho, K., Derryberry, D., Godsey, S., Ramos, R., Warix, S., and Zipper, S., 2023, Communication distance and Bayesian inference in non-perennial streams: *Water Resources Research*, v. 59, no. 11, e2023WR034514. DOI: 10.1029/2023WR034513
- Aho, K., Kriloff, C., Godsey, S. E., Ramos, R., Wheeler, C., You, Y., Warix, S., Derryberry, D., Zipper, S., Hale, R. L., Bond, C. T., and Kuehn, K. A., 2023, Non-perennial stream networks as directed acyclic graphs: The R-package streamDAG: *Environmental Modeling and Software*, v. 167, 105775. DOI: 10.1016/j.envsoft.2023.105775
- Aktharuzzaman, M., Anwar, S., Borisov, D., Rao, J., and He, J., 2023, 2D numerical ultrasound computed tomography for elastic material properties in metals; *in* ASME International Mechanical Engineering Congress and Exposition: American Society of Mechanical Engineers, v. 86625, p. V001T01A012. <https://doi.org/10.1115/IMECE2022-90232>
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- Borisov, D., Miller, R. D., and Sloan, S. D., 2023, Waveform inversion of shallow seismic data with randomly selected sources: *Journal of Environmental and Engineering Geophysics*, v. 28, p. 1–11. doi:<https://doi.org/10.32389/JEEG22-038>
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- Brookfield, A. E., Zipper, S., Kendall, A. D., Ajami, H., and Deines, J. M., 2023, Estimating groundwater pumping for irrigation — A method comparison: *Groundwater*. DOI: 10.1111/gwat.13336
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- Buchanan, R. C., Hoffman, R., and Cochran, M., 2023, Induced seismicity in Kansas: Events and Responses; *in* R. C. Buchanan, M. H. Young, and K. E. Murray, eds., *Recent Seismicity in the Southern Midcontinent, US: Special Paper 559*, Geological Society of America, 71 p.
- Buchanan, R. C., Young, M. H., and Murray, K. E., eds., 2023, *Recent Seismicity in the Southern Midcontinent, USA: Special Paper 559*, Geological Society of America, 71 p.
- Butler, J. J., Jr., Bohling, G. C., Perkins, S. P., Whittemore, D. O., Liu, G., and Wilson, B. B., 2023, Net inflow: An important target on the path to aquifer sustainability: *Groundwater*, v. 61, no. 1. doi: 10.1111/gwat.13233
- Butler, J. J., Jr., and Johnson, C. K., in press, Groundwater depletion: A global challenge for intergenerational equity: *Interpretation*. (Invited)
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- Grande, E., Visser, A., Oertre, E., Arora, B., Seybold, E. C., Tatariw, C., Braswell, A. E., Montalvo, M., and Zimmer, M. A., 2023, Flow directions and ages of subsurface water in a salt marsh system constrained by isotope tracing: Estuaries and Coasts. <https://link.springer.com/article/10.1007/s12237-023-01237-3>
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- Holcomb, J. A., Srivastava, A., Kinnaird, T. C., and Blong, J., Revisiting Kelly Forks (10CW34): Current and future research at a western stemmed tradition occupation in the Nez-Perce Clearwater National Forest, Idaho, USA: PaleoAmerica, v. 9, no. 1, p. 76–80.
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- Mandel, R. D., and Cummings, L. S., 2023, Geoarchaeology and paleoenvironmental context of Ais Giorkis; *in* A. H. Simmons, ed., *From the Sea to the Mountain: Ais Giorkis, an Early Neolithic Hamlet in the Troodos Foothills of Western Cyprus: Studies in Mediterranean Archaeology*, Volume CLVI, Astrom Editions, Nicosia, Cyprus, p. 123–149.
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- Menezes, M. N., Dal' Bó, P. F. F., Smith, J. J., Borghi, L., Arena, M., Favoreto, J., and de Araújo-Júnior, H. I., 2023, Pedogenic processes and climatic conditions from Cretaceous (Albian) tropical paleosols of the Itapecuru Formation, Parnaíba Basin, northeast Brazil: *Palaeogeography, Palaeoclimatology, Palaeoecology*. <https://doi.org/10.1016/j.palaeo.2023.111881>
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- Ortega-Ariza, D., Franseen, E. K., Boudagher-Fadel, M. K., Khameiss, B., and Ishman, S., 2023, Identifying and characterizing Miocene tropical transitional carbonate systems (TTCS) in the Caribbean: The significance of coral and large benthic foraminifera classification; *in* Michael Montenari, ed., *Stratigraphy of Geo- and Biodynamic Processes, Stratigraphy & Timescales*, Vol. 8: Elsevier, Inc., p. 189–230,
- Ortega-Ariza, D., Franseen, E. K., Boudagher-Fadel, M. K., Khameiss, B., and Ishman, S., 2023, Understanding tropical transitional carbonate systems (TTCS): The importance of macro to micro scale observations and data; *in* Ted E. Playton and Paul (Mitch) Harris, ed., *SEPM Short Course Notes No. 57: Advances in the Understanding and Interpretation of Carbonates*, p. 51–54.
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- Zipper, S., Befus, K. M., Reinecke, R., Zamrsky, D., Gleeson, T., Ruzzante, S., Jordan, K., Compare, K., Kretschmer, D., Cuthbert, M., Castronova, T., Wagener, T., Bierkens, M. F. P., 2023, GroMoPo: A groundwater model portal to enable findable, accessible, interoperable, and reusable (FAIR) groundwater modeling: *Groundwater*, v. 61, no. 6, p. 764–767. DOI: 10.1111/gwat.13343

### Books and Edited Volumes

- Ivanov, J., 2023, Surface wave methods; in A.B. Medhus and L. Klinkby, eds., *Engineering Geophysics* (1st ed.): CRC Press, p. 324, <https://doi.org/10.1201/9781003184676-11>.
- Miller, R. D., 2023, Reflection seismic methods; in A.B. Medhus and L. Klinkby, eds., *Engineering Geophysics* (1st ed.): CRC Press, p. 95-106.

### Nonrefereed Publications

- Andrzejewski, K. A., 2023, Preliminary surficial geology of the Bayneville quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2023-2, scale 1:24,000.
- Andrzejewski, K. A., 2023, Preliminary surficial geology of the Belle Plaine quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2023-23, scale 1:24,000.



- Andrzejewski, K. A., 2023, Preliminary surficial geology of the Clearwater quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2023-3, scale 1:24,000.
- Andrzejewski, K. A., 2023, Preliminary surficial geology of the Conway Springs quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2023-24, scale 1:24,000.
- Andrzejewski, K. A., 2023, Preliminary surficial geology of the Derby quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2023-4, scale 1:24,000.
- Andrzejewski, K. A., 2023, Preliminary surficial geology of the Millerton quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2023-25, scale 1:24,000.
- Andrzejewski, K. A., 2023, Preliminary surficial geology of the Mulvane quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2023-26, scale 1:24,000.
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- Buchanan, R., Peterie, S., and Miller, R., 2023, Consortium to Study Trends in Seismicity, 2022 Annual Report: Kansas Geological Survey, Open-File Report 2023-51, 64 p.
- Buchanan, R. C., Wilson, B. B., and Butler, J. J., Jr., 2023, The High Plains aquifer: Kansas Geological Survey Public Information Circular 18, 6 p.
- Butler, J. J., Jr., Whittemore, D. O., Reboulet, E., Knobbe, S., Wilson, B. B., and Bohling, G. C., High Plains aquifer index well program: 2022 annual report: Kansas Geological Survey Open-File Report 2023-55, 122 p.
- Knippel, E. P., Ivanov, J., Peterie, S. L., Miller, R. D., Bennett, B. C., Wedel, B., Umbrell, C., Jones, O., and Hoch, A., 2023, Passive characterization of high priority salt jugs in Hutchinson, Kansas: November 2021: Kansas Geological Survey, Open-File Report 2023-20, 43 p. Report to Burns & McDonnell Engineering Company.
- Layzell, A. L., 2023, Preliminary surficial geology of the Doster quadrangle, Sumner County Kansas: Kansas Geological Survey, Open-File Report 2023-5, scale 1:24,000.
- Layzell, A. L., 2023, Preliminary surficial geology of the Milan quadrangle, Sumner County Kansas: Kansas Geological Survey, Open-File Report 2023-6, scale 1:24,000.
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- Layzell, A. L., 2023, Preliminary surficial geology of the South Haven NE quadrangle, Sumner County Kansas: Kansas Geological Survey, Open-File Report 2023-30, scale 1:24,000.
- Mandel, R. D., 2023, Odyssey Archaeological Research Fund report of investigations, summer and fall, 2023: Kansas Geological Survey, Lawrence, Kansas.
- Miller, R., Peterie, S., Borisov, D., and Ivanov, J., 2023, Time-lapse, high-resolution seismic reflection imaging (line 1) of a void in the Hutchinson Salt beneath #1 Knackstedt Disposal Well, McPherson County, Kansas: Kansas Geological Survey, Open-File Report 2023-18. (October 2022 report to the Kansas Corporation Commission)
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- Oborny, S. C., Hasiuk, F., Potter, N., and Louis, D., 2023, Bedrock drill core and cuttings: Kansas Geological Survey, Public Information Circular 39.
- Peterie, S., Newell, D., Miller, R., and Mandel, R., 2023, Report on feasibility study of regional Arbuckle properties in South Central Kansas; Now and planning for the future: Kansas Geological Survey, Open-File Report 2023-19. (February 2022 preproposal to the Kansas Water Office)
- Peterie, S. L., Ivanov, J., Tamburro, M., Miller, R. D., Bennett, B. C., Wedel, B., Umbrell, C., Bunker, C., Gonzales, C., and Jones, O., 2023, Passive seismic characterization of high priority salt jugs in Hutchinson, Kansas: March 2023: Kansas Geological Survey, Open-File Report 2023-61, 35 p.
- Peterie, S. L., Ivanov, J., Tamburro, M., Miller, R. D., Wedel, B., Bunker, C., and Umbrell, C., 2023, Downhole survey and vertical seismic profiling at the CBRA: Kansas Geological Survey, Open-File Report 2023-64, 18 p.
- Schneider, B., 2023, Southwest Kansas: History, industries, and adaptation; 2023 Kansas Field Conference field guide: Kansas Geological Survey, Open-File Report 2023-56, 62 p.  
<https://www.kgs.ku.edu/Publications/OFR/2023/OFR2023-56.pdf>
- Schneider, B., Latas, C., and Olive, K., 2023, Geophysical survey of Fort Zarah site, Barton County, Kansas: Report to the Kansas Historical Society.

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- Smith, J. J., 2023, Preliminary surficial geology of the Harper County portion of the Crisfield quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2023-38, scale 1:24,000.
- Smith, J. J., 2023, Preliminary surficial geology of the Harper County portion of the Spivey quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2023-16, scale 1:24,000.
- Smith, J. J., 2023, Preliminary surficial geology of the Harper County portion of the Zenda quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2023-39, scale 1:24,000.
- Smith, J. J., 2023, Preliminary surficial geology of the Harper County portion of the Zenda SE quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2023-40, scale 1:24,000.
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- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2023, 2023 Status of the High Plains aquifer in Kansas: Kansas Geological Survey, Technical Series 25, 25 p.
- Whittemore, D. O., Butler, J. J., Jr., Seybold, E. C., Wilson, B. B., and Woods, J. J., 2023, Salinity and Uranium in the Upper Arkansas River Corridor, Southwest Kansas: Kansas Geological Survey, 2023 Kansas Field Conference, 8 p.
- Whittemore, D. O., Seybold, E. C., Butler, J. J., Jr., Woods, J. J., and Wilson, B. B., 2023, Assessment of groundwater mineralization in the Upper Arkansas River Corridor: 2023 Final Report: Kansas Geological Survey, Open-File Report 2023-21, 56 p.
- Wilson, B. B., Butler, J. J., and Reboulet, E. C., 2023, Maintain existing and expand Kansas-based data services to the National Groundwater Monitoring Network: Kansas Geological Survey, Open-File Report 2023-60, 19 p.

## Abstracts

- Abbasi, S., Alfarraj, M., Borisov, D., Jayaram, V., Alam, I., and Sarosh, B., 2023, A simultaneous denoising and event picking approach using supervised machine learning: Third International Meeting for Applied Geoscience & Energy: Society of Exploration Geophysicists and American Association of Petroleum Geologists, p. 1,490–1,494. <https://doi.org/10.1190/image2023-3917108.1>
- Allen, D., Alves Borges, A., Fitzwater, S., Franklin, S., Olive, K., Vaughn, A., Miller, B., Hoard, R., and Schneider, B., 2023, Revisiting a 150-year-old cold case: Utilizing non-invasive geophysics to search for the Bender family homestead: Plains Anthropological Society Annual Conference, Rapid City, South Dakota.
- Andrzejewski, K., and Möller, A., 2023, Combining paleosol stable isotope proxies to provide insight on interactions between climatic, biotic, and atmospheric processes during the Mid-Cretaceous in Texas and Oklahoma: Mesozoic Terrestrial Ecosystems Abstracts with Programs.
- Andrzejewski, K., and Möller, A., 2023, Insight on the interactions between climatic, biotic, and atmospheric processes during the Mid-Cretaceous using terrestrial deposits in Texas and Oklahoma: Geological Society of America Abstracts with Programs.
- Asfaw, D., Smith, R., Majumdar, S., Lakshmi, V., Fang, B., Grote, K., Butler, J. J., Jr., and Wilson, B. B., 2023, Capturing the spatio-temporal variability of groundwater pumping using remote sensing products and machine learning techniques: An assessment of training data quality and quantity implications on model performance, Abstract H43I-2192 presented at 2023 Fall Meeting: American Geophysical Union, December 14.
- Baka, A., Potter, B., Niquette, R. M., and Mandel, R. D., 2023, Preliminary analysis of San Esteban (41PS20) lithic data: Implications for mobility, investment, and dietary predictions: Annual meeting of the Society for American Archaeology, Portland, Oregon, April.
- Borisov, D., Miller, R. D., Ivanov, J., Peterie, S. L. and Sloan, S. D., 2023, Building an initial model for near-surface surface waves based full-waveform inversion with deep learning: Seventh International Conference on Engineering Geophysics, Virtual, Society of Exploration Geophysicists.

- Borisov, D., Zhang, Y., Ivanov, J., Miller, R. D., and Sloan, S. D., 2023, Building an initial model for near-surface surface waves based full-waveform inversion with deep learning: International Conference on Engineering Geophysics, October 16, Al Ain, UAE.
- Borisov, D., Zhang, Y., Ivanov, J., Miller, R. D., and Sloan, S. D., 2023, Near-surface velocity estimation for a complex land environment with a shallow salt layer: Third International Meeting for Applied Geoscience & Energy, Society of Exploration Geophysicists/American Association of Petroleum Geologists, Houston, Texas, August 28–September 1, 4 p.
- Bourgeon, L., and Mandel, R. D., 2023, Bluefish Caves I, II, III: An archaeological, taphonomic and radiometric re-evaluation: Beringia Symposium, Institute for Arctic and Alpine Research, University of Colorado, Boulder, Colorado, March.
- Butler, J. J., Jr., Bohling, G. C., Whittemore, D. O., Liu, G., and Wilson, B. B., 2023, Extending aquifer lifespans with pumping reductions: Experiences from the High Plains aquifer: European Geophysical Union General Assembly 2023, session HS8.1.9, abstract EGU23-955, Vienna, Austria, April 28.
- Butler, J. J., Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2023, Are we making a difference? Data-driven approaches for assessing the effectiveness of groundwater conservation activities in the High Plains aquifer, Abstract H12G-05 presented at the 2023 Fall Meeting: American Geophysical Union, San Francisco, California, December 11.
- Buynevich, I. V., Hembree, D. I., Smith, J. J., and Platt, B. F., 2023, Diverse zoogenic pedoturbation structures visualized by geophysical (750 MHz GPR) imaging, Arizona, USA: Progressive Research in the Modern World, Proceedings of the 5th International Scientific and Practical Conference, BoScience Publisher, Boston, USA, p. 261–266.
- Cassotto, R., Hill, A. F., Gold, A., Mattheis, A., Schneider, B., Ward, E., Marin-Spiotta, E., Tiampo, K., Dryák-Vallies, M., Hastings, M., and Jacquemart, M., 2023, Fieldsafe: Training for diverse and inclusive geoscience teams — a new course and toolkit: American Geophysical Union Fall Meeting, San Francisco, California.
- Dryák-Vallies, M., Hill, A. F., Gold, A., Mattheis, A., Schneider, B., Ward, E. G., Marin-Spiotta, E., Tiampo, K., Hastings, M., Jacquemart, M., and Cassotto, R., 2023, Fieldsafe: A program providing training and tools to create safe, inclusive, and welcoming field environments in the geosciences: Geological Society of America Abstracts with Programs, v. 55, no. 6. doi: 10.1130/abs/2023AM-392554.
- Han, X., Blum, M. D., and Smith, J. J., 2023, Sediment routing of the Oligo-Miocene Ogallala Formation and subsequent evolution on the North American High Plains based on detrital zircon provenance: Geological Society of America Abstracts with Programs, v. 55, no. 6. doi: 10.1130/abs/2023AM-395835.
- Han, X., Smith, J., and Blum, M., 2023, Asynchronous deposition of the Ogallala Formation on the North American High Plains from detrital zircon U-Pb maximum depositional ages: Geological Society of America, South-Central Section Meeting Program, v. 55, no. 1.
- Harris, M., and Ortega-Ariza, D., 2023, The promise of strontium isotopes from brachiopods for absolute age dating Lower Mississippian carbonate rocks in Kansas: G-Hawk Symposium, Department of Geology, University of Kansas, Lawrence, Kansas.
- Head, E., Ortega-Ariza, D., and Franseen, E. K., 2023, Depositional controls and reservoir character of low-latitude, shallow-water heterozoan and biosiliceous carbonate ramp strata, lower Mississippian, Kansas: G-Hawk Symposium, Department of Geology, University of Kansas, Lawrence, Kansas.
- Holcomb, J. A., Mandel, R. D., and Wegmann, K. W., 2023, The case for a lunar anthropocene: Understanding current and future anthropogenic activity on Earth's moon: XXI INQUA Congress, Rome, Italy, July.
- Ivanov, J., Peterie, S. L., Miller, R. D., Borisov, D., and Sloan, S. D., 2023, Enhanced converted-surface-wave imaging (CSWI) method for the detection of an elongated empty space using challenging seismic data collected at a desert site: International Conference on Engineering Geophysics, October 18, Al Ain, UAE.
- Khameiss, B., Ishman, S., Torres-Zamora, A., Ortega-Ariza, D., and Franseen, E. K., 2023, Foraminiferal biostratigraphy of the Miocene Cicuco Field, NW Colombia: GSA Annual Meeting, Abstracts with Program, Pittsburgh, Pennsylvania.
- Khameiss, B., Oborny, S. C., Ishman, S., and Grosch, Z., 2023, Biostratigraphic evaluation of benthic foraminifera across the Marmaton-Pleasanton Group boundary in Kansas: GSA Abstracts and Programs.
- Kisielinski, C., Tackney, J., Norman, L. E. Y., Mandel, R. D., and O'Rourke, D. H., 2023, Paleoenvironmental reconstruction at Bluefish Cave III using sedimentary ancient DNA (*sedaDNA*): XXI INQUA Congress, Rome, Italy, July.

- Layzell, A., and Mandel, R. D., 2023, A pervasive period of pedogenesis in stream valleys of the Central Great Plains during MIS 3: XIV International Symposium and Field Workshop on Paleopedology, INQUA International Union of Soil Sciences, New Mexico State University, October.
- Lummus, M., Schneider, B., and Stearns, L., 2023, GeoGradApp Workshop — Initial findings of an intervention designed to create a more transparent graduate school application process: American Geophysical Union Fall Meeting, San Francisco, California.
- Mandel, R. D., 2023, Bluefish Caves revisited: A geoarchaeological and paleoenvironmental assessment of a potential pre-Clovis site in the Yukon Territory of northwestern Canada: Beringia Symposium, Institute for Arctic and Alpine Research, University of Colorado, Boulder, Colorado, March.
- Mandel, R. D., 2023, In the footprints of Kirk Bryan and Claude C. Albritton, Jr.: A reinvestigation of soils as evidence of Late-Quaternary climate change in the northern Chihuahuan Desert of the Big Bend region, Southwest Texas: XIV International Symposium and Field Workshop on Paleopedology, INQUA International Union of Soil Sciences, New Mexico State University, October.
- Mandel, R. D., 2023, Searching for the early archaeological record in the Big Bend region of southwest Texas: A lithostratigraphic approach: Annual meeting of the Society for American Archaeology, Portland, Oregon, April.
- Mandel, R. D., Norman, L. E. Y., Bourgeon, L., Kisielinski, C. A., Holcomb, J. A., and O'Rourke, D. H., 2023, Bluefish Caves revisited: A geoarchaeological and paleoenvironmental assessment of a potential pre-Clovis site in the Yukon territory of Northwestern Canada: Annual meeting of the European Association of Archaeologists, Belfast, Ireland, September. (Invited)
- Mandel, R. D., Norman, L. E. Y., Bourgeon, L., Kisielinski, C. A., Holcomb, J. A., and O'Rourke, D. H., 2023, Bluefish Caves revisited: A geoarchaeological and paleoenvironmental assessment of a potential pre-Clovis site in the Yukon territory of Northwestern Canada: XXI INQUA Congress, Rome, Italy, July. (Invited)
- Mandel, R. D., and Schroeder, B., 2023, Searching for archaeological evidence of the first people in the Big Bend region of Texas: A tale of two sites: 29<sup>th</sup> Annual Conference of the Center for Big Bend Studies, Sul Ross State University, Alpine, Texas, November.
- Marin-Spiotta, E., Schneider, B., Bell, C., Blois, J., Burt, M., Hastings, M., Hendrickson, K., Horinek, H., Maertens, J., Mattheis, A., and Williams, B., 2023, An ethics of care approach to transforming workplace climate in the geosciences: Geological Society of America Abstracts with Programs, v. 55, no. 6. doi: 10.1130/abs/2023AM-393739
- Menezes, M. N., Dal' Bó, P. F. F., Smith, J. J., de Almeida, L. F. B., and de Araújo Junior, H. I., 2023, Pedogenic processes and climatic conditions from tropical paleosols of the Itapecuru Formation (Albian of the Parnaíba Basin, northeast Brazil): Simpósio De Geologia Do Sudeste, October 8–11, Livro de Resumos, p. 102
- Miller, R. D., Lawrence, Z., Martinez, A., Ivanov, J., Borisov, D., and Reilly, J., 2023, Enhancing high-frequency vibroseis images of near surface: Uncorrelated is key: Third International Meeting for Applied Geoscience & Energy, Society of Exploration Geophysicists/American Association of Petroleum Geologists, Houston, Texas, August 29, 4 p.
- Miller, R. D., Peterie, S. L., Borisov, D., and Klock, J., 2023, Direct detection of 135 m deep void using high resolution seismic reflection: International Conference on Engineering Geophysics, October 18, Al Ain, UAE.
- Mohammadi, S., Lowe, T., Oborny, S., Bode-Omoleye, I., Smith, J., and Ishman, S., 2023, Critical minerals in Pennsylvanian black shale of the U.S. midcontinent, Kansas: 2023 Earth Mapping Resources Initiative Workshop, October 24–26, USGS Headquarters, Reston, Virginia.
- Norman, L. E. Y., Mandel, R. D., Bourgeon, L., Kisielinski, C. A., Holcomb, J. A., 2023, Bluefish Caves revisited: Testing a potential pre-Clovis site in eastern Beringia: Annual meeting of the Society for American Archaeology, Portland, Oregon, April.
- Orduna Alegria, M. E., Zipper, S. C., and Butler, J. J., Jr., 2023, Managing groundwater depletion: Insights from the irrigator-driven Sheridan-6 Local Enhanced Management Area in Kansas, Abstract H23Z-1920 presented at 2023 Fall Meeting: American Geophysical Union, December 12.
- Ortega-Ariza, D. and Franseen, E. K., 2023, Upwelling as a control on regional distribution of heterozoan and photozoan carbonate facies in a low-latitude setting, Lower Mississippian, continental U.S.: 17th Bathurst Meeting — International Meeting of Carbonate Sedimentologists, Naples, Italy, September 5–7.
- Ortega-Ariza, D., Franseen, E. K., and Boudagher-Fadel, M. K., 2023, Miocene shallow-water tropical transitional carbonate systems (TTCS) in the Caribbean affected by adverse photic zone conditions: Characteristics and how they formed: 36<sup>th</sup> IAS International Meeting of Sedimentology, Dubrovnik-Croatia, June 12–16.

- Schneider, B., Burgin, A., Latas, C., Olcott, A., and Seybold, E., 2023, The BESST Program: A new curriculum to provide high quality research experiences and programmatic development for undergraduates paired with enhanced mentor training for faculty: Geological Society of America Abstracts with Programs, v. 55, no. 6. doi: 10.1130/abs/2023AM-393332
- Schneider, B., Hendrickson, K., Horinek, H., and Marin-Spiotta, E., 2023, New ADVANCEGeo research ethics training modules to address NSF RECR and NIH RCR training requirements: Earth Educator Rendezvous, Anaheim, California.
- Seals, L. J., and Mandel, R. D., 2023, The effects of Late Quaternary landscape evolution on the early archaeological record in the Big Blue River Valley, Northeastern Kansas, USA: Annual Meeting of the Geological Society of America, Pittsburgh, Pennsylvania, October.
- Smith, J. J., 2023, Cow pies, goat tongues, bull tails and other Pennsylvanian (Virgilian) delicacies from the Neal trace fossil locality in southeastern Kansas: Geological Society of America Abstracts with Programs, v. 55, no. 6. doi: 10.1130/abs/2023AM-396192
- Zhang, Y., Borisov, D., Miller, R. D., and Sloan, S., 2023, Near-surface velocity estimation for a complex land environment with a shallow slat layer: Third International Meeting for Applied Geoscience & Energy, Society of Exploration Geophysicists and American Association of Petroleum Geologists.
- Zhang, Y., Borisov, D., Miller, R. D., and Sloan, S., 2023, Using convolutional neural network to detect voids in velocity model: 2023 Fall Meeting: American Geophysical Union.
- Zipper, S. C., Wilson, B. B., Foster, T., Kastens, J., Grinstead, A., Deines, J. M., Butler, J. J., Jr., and Marston, L., 2023, Evaluating irrigator-driven groundwater conservation practices using remotely sensed evapotranspiration data, Abstract H22E-01 presented at 2023 Fall Meeting: American Geophysical Union, December 12.

## **Presentations**

- Borisov, D., 2023, Building an initial model for near-surface surface waves based full-waveform inversion with deep learning: Seventh International Conference on Engineering Geophysics (ICEG), UAE University, Al Ain, UAE, October 16–19. (Invited)
- Borisov, D., 2023, Deep void detection with seismic imaging: Presentation of research updates for Department of Defense, April 18. (Virtual)
- Borisov, D., 2023, Detection of near-surface hazards within onshore salt layer using waveform inversion: SEG Workshop, Full Waveform Inversion: Land and Shallow Water Challenges, Abu Dhabi, UAE, October 10–12. (Invited)
- Borisov, D., 2023, FWI for anomaly detection: Presentation of research updates for Department of Defense, January 12. (Virtual)
- Borisov, D., 2023, Void detection — case studies: Presentation of research updates for Department of Defense, November 6. (Virtual)
- Bosompemaa, P., Brookfield, A. E., Zipper, S., and Hill, M. C., 2023, Using a national hydrologic model to obtain regional water supply estimates: The case of the heavily-stress central Arkansas River basin (CARB). Geological Society of America Annual Meeting.
- Butler, J. J., Jr., 2023, Groundwater dependent agricultural systems: What do we need to assess an aquifer's future? Sustainable Human-Water Systems Course – Lecture 4, November 20. Web presentation as part of a CUAHSI Virtual University course.
- Butler, J. J., Jr., 2023, Slug test strategies for challenging conditions, Midwest Geosciences Group, March 23, Internet webinar.
- Butler, J. J., Jr., and others, 2023, Aquifer testing for improved hydrogeologic site characterization, Midwest Geosciences Group, September 19–21, Fort Collins, Colorado. Short course.
- Butler, J. J., Jr., Bohling, G. C., Whittemore, D. O., Liu, G., and Wilson, B. B., 2023, Extending aquifer lifespans with pumping reductions: Experiences from the High Plains aquifer, European Geophysical Union General Assembly 2023, Vienna, Austria, April 28. Invited.
- Butler, J. J., Jr., and Whittemore, D. O., 2023, Index well program: Summer 2023 update, web presentation to the Kansas Water Office and other state and regional agencies, August 1.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2023, Conditions and trends of the Kansas High Plains aquifer, Kansas Rural Water Association Conference, Wichita, Kansas, March 29. Invited.
- Butler, J. J., Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2023, Are we making a difference? Data-driven approaches for assessing the effectiveness of groundwater conservation activities in the High Plains



- aquifer, oral presentation at the 2023 Fall Conference of the American Geophysical Union, San Francisco, California, December 11.
- Butler, J. J., Jr., Wilson, B. B., and Whittemore, D. O., 2023, Extending the lifespan of the High Plains aquifer in Kansas, presentation to the Kansas House Committee on Water, Topeka, Kansas, January 19. Invited.
- Chatterjee, S., Seybold, E. C., and Zipper, S., 2023, Exploring temporal trends of nitrate export in the Eastern Kansas River basin. Kansas Governor's Conference on the Future of Water.
- Gambill, I., Zipper, S., and Kirk, M. F., 2023, Exploring drivers of groundwater recharge in Konza Prairie with transfer function noise models. Kansas Governor's Conference on the Future of Water.
- Hatley, C., Seybold, E. C., Zipper, S., Burgin, A. J., Kincaid, D., Perdrial, J., and Li, L., 2023, Event scale nitrate transport dynamics in the Kansas River basin. Kansas Governor's Conference on the Future of Water.
- Hill, M., Bosompemaa, P., Zipper, S., Brookfield, A., and Peltier, E., 2023, A strategy that includes national models to evaluate water availability for arid agricultural areas being impacted by climate change: The Case of FEWtures in the central Arkansas River basin (CARB). CSU Hydrology Days.
- Hill, M. C., Barron, R. W., Pfromm, P., Amanor-Boadu, V., Wu, H., Edmonds, L., Brookfield, A., Zipper, S., Bosompemaa, P., Modarresi, A., Bloodgood, J., and Symons, J., 2023, Low carbon opportunities for arid agricultural areas impacted by climate change: The FEWtures experience in the central Arkansas River basin (CARB) with global interaction evaluation using GCAM. American Geophysical Union Fall Meeting.
- Holcomb, J. A., Mandel, R. D., and Wegman, K. W., 2023, The case for the lunar anthropocene: Current approaches to space heritage preservation. International Union for Quaternary Research (INQUA). Rome, Italy. Invited paper.
- Holcomb, J. A., and Shillito, L.-M., 2023, Geoarchaeology of the Younger Dryas in the Northern Great Basin, USA: The view from the Paisley and Connley caves. International Union for Quaternary Research (INQUA). Rome, Italy. Invited poster.
- Holcomb, J. A., Thompson, J., and Blong, J., 2023, Revisiting Kelly Forks (10CW34): Current and future research at a western stemmed tradition occupation in the Nez-Perce Clearwater National Forest, Idaho. 88<sup>th</sup> Annual Meeting of the Society for American Archaeology, Portland, Oregon. Invited poster.
- Hollenbach, A., Goldstein, R., Mohammadi, S., and Möller, A., 2023, Combining microthermometry and U-Pb dating to distinguish hydrothermal conditions from ambient burial temperature, European Current Research on Fluid and Melt Inclusions (ECROFI), Reykjavik, Iceland, July 2–6.
- Hollenbach, A., Goldstein, R. H., Mohammadi, S., and Möller, A., 2023, Impact of hydrothermal fluid flow on the Anadarko Basin petroleum system as revealed by the Pan Am Barnes D-2 Core, AAPG Mid-continent Sectional, Oklahoma City, Oklahoma, October 6–10.
- Hollenbach, A., Mohammadi, S., Goldstein, R. H., Möller, A., and Burberry, C. M., 2023, U-Pb dates on carbonate cements reveal tectonic and non-tectonic drivers for carbonate diagenesis, IMAGE- SEPM Carbonate session, Houston, Texas, August 28 to September 1).
- Ivanov, J., 2023, Landstreamer FWI developments: Presentation of research updates for Department of Defense, February 24. (Virtual)
- Ivanov, J., 2023, Moffat tunnel MASW, BASW, Attenuation, and CSWI from second trip data: Presentation of research updates for Department of Defense, November 2. (Virtual)
- Ivanov, J., 2023, Moffat tunnel surface wave analysis parameters evaluation from first trip data: Presentation of research updates for Department of Defense, September 5. (Virtual)
- Ivanov, J., 2023, Reference-model FWI developments: Presentation of research updates for Department of Defense, April 18. (Virtual)
- Ivanov, J., 2023, Reference-model FWI with raw global cost function developments: Presentation of research updates for Department of Defense, June 22. (Virtual)
- Ivanov, J., Peterie, S. L., Miller, R. D., Borisov, D., and Sloan, S., 2023, Detecting a near-surface elongated void using the converted-wave surface wave imaging (CSWI) method in Yuma, Arizona [poster]: Third International Meeting for Applied Geoscience & Energy, Society of Exploration Geophysicists/American Association of Petroleum Geologists, Houston, Texas, August 28–September 1.
- Ivanov, J., Peterie, S. L., Miller, R. D., Borisov, D., and Sloan, S. D., 2023, Enhanced converted-surface-wave imaging (CSWI) method for the detection of an elongated empty space using challenging seismic data collected at a desert site: International Conference on Engineering Geophysics, October 18, Al Ain, UAE.
- Layzell, A. L., and Mandel, R. D., 2023, A pervasive period of pedogenesis in stream valleys of the Central Great Plains during MIS 3: Soils as memory of contemporary and paleoenvironments: XIV International symposium and field workshop on paleopedology, Las Cruces, New Mexico, October 7–15.

- Lin, C-Y., Orduna Alegria, M. E., Zipper, S., and Marston, L. T., 2023, Exploring the interplay of heterogeneity in coevolved human-water systems for effective community-driven groundwater management. American Geophysical Union Fall Meeting.
- Liu, G., Wilson, B., Bohling, G., Whittemore, D., and Butler, J. J., Jr., 2023, Recent improvements in groundwater modeling for southwest Kansas Groundwater Management District no. 3: The annual Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 15–16.
- Liu, G., Wilson, B. B., and Butler, J. J., Jr., 2023, Recent improvements in groundwater modeling for Southwest Kansas GMD 3, 2023 Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 16.
- Mandel, R. D., 2023, Bluefish Caves revisited: A geoarchaeological and paleoenvironmental assessment of a potential pre-Clovis site in the Yukon Territory of northwestern Canada. Invited Lecture Series, Archaeological Society of Alberta-Calgary Centre, March 15.
- Mandel, R. D., 2023, Geology and past environments of the Flint Hills: A walk through the past 280 million years. Symphony in the Flint Hills Heritage Program, Wabaunsee County, Kansas, June 10.
- Miller, R. D., 2023, Additional seismic update and annual meeting preparations: Consortium to Study Trends in Seismicity quarterly meeting, April 28. (Virtual)
- Miller, R. D., 2023, Arbuckle working group update: Consortium to Study Trends in Seismicity quarterly meeting, February 8. (Virtual)
- Miller, R. D., 2023, Engineering geophysics: Positioned for evolution or revolution: Opening address, International Conference on Engineering Geophysics, October 16, Al Ain, UAE.
- Miller, R. D., 2023, Historic seismicity and emerging background trends: Consortium to Study Trends in Seismicity annual meeting, August 9, McPherson, Kansas.
- Miller, R. D., 2023, Knackstedt Void, McPherson County: Geology & Well Technology Annual Seminar, Kansas Department of Health and Environment, October 24–25, Wichita, Kansas.
- Miller, R. D., 2023, Recent seismic activity in central Kansas: Consortium to Study Trends in Seismicity quarterly meeting, November 28. (Virtual)
- Mohammadi, S., Hollenbach, A., Goldstein, R. H., Möller, A., and Burberry, C. M., 2023, What controls hydrothermal fluid flow in south-central Kansas, north-central Oklahoma, and Tri-State Mineral District: KIOGA, Wichita, Kansas, August 20–22.
- Mohammadi, S., Lowe, T., Oborny, S., Bode-Omoleye, I., Hasiuk, F., Smith, J. J., and Ishman, S., 2023, Critical minerals in Pennsylvanian black shales of the midcontinent, Kansas: Critical Materials Economic Development Summit, Kansas City, December 14.
- Mohammadi, S., Lowe, T., Oborny, S., Bode-Omoleye, I., Hasiuk, F., Smith, J. J., and Ishman, S., 2023, Critical minerals in Pennsylvanian black shales of the midcontinent, Kansas: Earth MRI Workshop, Reston, Virginia, October 24–26.
- Newell, K. D., 2023, Update on Class I & Class II Arbuckle disposal volumes and static fluid levels: Consortium to Study Trends in Seismicity annual meeting, McPherson, Kansas, August 9.
- Newell, K. D., 2023, Update on disposal volumes and Class I behavior in the Arbuckle Formation: Consortium to Study Trends in Seismicity quarterly meeting, February 8. (Virtual)
- Newell, K. D., 2023, Update on disposal volumes and Class I behavior: Presentation to the Arbuckle Working Group, Topeka, Kansas, January 17.
- Ndlovu, W., Zipper, S., and Foster, T., 2023, Global sensitivity analysis of the AquaCrop-OSPy model for corn yield and irrigation under different water treatments (Sheridan, KS): Community Surface Dynamics Modeling Conference.
- Ndlovu, W., Zipper, S., and Foster, T., 2023, Sensitivity analysis and performance evaluation of the AquaCrop-OS Model for corn yield and irrigation in northwestern Kansas: ASA, CSSA, SSSA International Annual Meeting.
- Oborny, S. C., 2023,  $CMCsC_{rCB}$ —critical minerals in coaly strata of the Cherokee-Forest City Basin. Critical Minerals Crossroads Summit, University of Missouri Kansas City, December 2023. Invited KGS Representative; poster.
- Oborny, S. C., 2023, Evaluating the stratigraphic and structural framework of the Cherokee-Forest City Basin and nomenclatural reconciliation within the Pennsylvanian: Kansas Geological Society Tech Talk. (Invited Lecturer)
- Onyekwelu, I., Sharda, V., Zipper, S. C., Welch, S. M., and Lin, X., 2023, Towards managing and preserving irrigation resources under novel climate risks in the eastern Kansas River basin of the U.S. Great Plains. American Society of Agricultural and Biological Engineers (ASABE) Annual International Meeting.

- Orduna Alegria, M. E., Lin, C-Y., Zipper, S., and Marston, L. T., 2023, Effective groundwater governance for agriculture: Advancing understanding of social and environmental processes for effective groundwater management. American Geophysical Union Fall Meeting.
- Orduna Alegria, M. E., Zipper, S., and Butler, J. J., Jr., 2023, Managing groundwater depletion: Insights from the irrigator-driven Sheridan-6 Local Enhanced Management Area in Kansas. American Geophysical Union Fall Meeting.
- Orduna Alegria, M. E., Zipper, S. C., and Butler, J. J., Jr., 2023, Policy, hydrological, and economic factors and outcomes underlying the SD-6 LEMA's first decade, 2023 Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 16.
- Ortega-Ariza, D., 2023, Miocene shallow-water tropical transitional carbonate systems (TTCS) in the Caribbean affected by adverse photic zone conditions: Characteristics and how they formed: 36<sup>th</sup> IAS International Meeting of Sedimentology, Dubrovnik-Croatia, June 12–16.
- Ortega-Ariza, D., 2023, Mississippian is an old play, so why do we need to continue to study?": Kioga Midyear Meeting & Expo, McPherson, Kansas, April 19–21. (Poster and core display)
- Ortega-Ariza, D., 2023, Osage Nation immersion school — Daphoska Ahnkodapi Elementary: Core display, identification of rocks, minerals, and fossils, and 'pet' rock, Pawhuska, Oklahoma, May 17.
- Ortega-Ariza, D., 2023, The Mississippian is an old play, so why do we still study it?": Kioga Annual Convention & Expo, Wichita, Kansas, August 20-22. (Poster and core display)
- Ortega-Ariza, D., 2023, Understanding tropical transitional carbonate systems (TTCS): The importance of macro to micro scale observations and data: Advances in the Understanding and Interpretation of Carbonates Conference — the Society for Sedimentary Geology (SEPM), Houston, Texas, August 26–27. (Invited poster)
- Ortega-Ariza, D., 2023, Upwelling as a control on regional distribution of heterozoan and photozoan carbonate facies in a low-latitude setting, Lower Mississippian, continental U.S.: 17th Bathurst Meeting – International Meeting of Carbonate Sedimentologists, Naples, Italy, September 5–7.
- Peterie, S. L., 2023, Emerging trends in Kansas earthquakes: Geology & Well Technology Annual Seminar, Kansas Department of Health and Environment, Wichita, Kansas, October 24–25.
- Peterie, S. L., 2023, KGS Arbuckle measurements: Class I & II wells: Presentation to the Arbuckle Working Group, Topeka, Kansas, January 17.
- Peterie, S. L., 2023, Regional trends and local seismicity near CSTS member wells for the period January–March 2023: Consortium to Study Trends in Seismicity quarterly meeting, April 28. (Virtual)
- Peterie, S. L., 2023, Regional trends and local seismicity near CSTS member wells for the period July–September 2023: Consortium to Study Trends in Seismicity quarterly meeting, November 28. (Virtual)
- Peterie, S. L., 2023, Regional trends and local seismicity near CSTS member wells for the period October–December 2022: Consortium to Study Trends in Seismicity quarterly meeting, February 8. (Virtual)
- Peterie, S. L., 2023, Regional trends and local seismicity near CSTS member wells, seismic update for the period April–June 2023: Consortium to Study Trends in Seismicity annual meeting, McPherson, Kansas, August 9.
- Rahman, M., and Zipper, S., 2023, Irrigation water use and crop yield prediction using AquaCrop-OSPy model and OpenET data. 2023 Governor's Conference on the Future of Water in Kansas.
- Schneider, B., 2023, Building inclusive workplace climates: Lessons learned from the ADVANCEGeo Partnership: Illinois State University Broadening Participation in STEM Seminar Series (virtual session).
- Schneider, B., Burgin, A., Olcott, A., and Seybold, E., 2023, Building emerging STEM scholars of tomorrow: 2023 NSF EPSCOR PI Meeting, Washington, DC.
- Smith, J. J., 2023, Stratigraphy framework and depositional histories of Neogene deposits of the Great Plains, North America: North American Rodents-Landscapes, Evolution and Ecology Workshop of Volcanism and Rodents Evolution, April 18, 2023.
- Swenson, L., Zipper, S., Husic, A., and Pandit, A., 2023, Predicting streamflow in intensively-managed agricultural basins across High Plains aquifer. American Geophysical Union Fall Meeting.
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2023, Status of the High Plains aquifer in Kansas, 2023 Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 16.
- Whittemore, D. O., Butler, J. J., Jr., Wilson, B. B., and Bohling, G. C., A simple method for assessing the effectiveness of groundwater conservation efforts in the High Plains aquifer, 30th Annual Kansas Hydrology Seminar, Lawrence, Kansas, November 17.

- Whittemore, D. O., Seybold, E. C., and Butler, J. J., Jr., 2023, Assessment of uranium contamination in the High Plains aquifer in the upper Arkansas River corridor: Upper Arkansas River Basin Watershed Group, Garden City, Kansas. (Virtual)
- Whittemore, D. O., Seybold, E. C., and Butler, J. J., Jr., 2023, Salinity and uranium contamination in the High Plains aquifer in the upper Arkansas River corridor: Kansas Environmental Conference, Manhattan, Kansas.
- Whittemore, D. O., Seybold, E. C., and Butler, J. J., Jr., 2023, Upper Arkansas River corridor study — Groundwater contamination and well construction: 27<sup>th</sup> Annual Geology and Well Technology Seminar, Wichita, Kansas.
- Zamrsky, D., Zipper, S., Reinecke, R., Befus, K., Kretschmer, D., Ruzzante, S., Compare, K., Jordan, K., Bierkens, M., and Gleeson, T., 2023, Groundwater Model Portal (GroMoPo) – collecting and sharing groundwater model information in a standardized open-access database. European Geophysical Union Annual Meeting.
- Zhang, Y., Borisov, D., Miller, R. D., and Sloan, S., 2023, Near-surface velocity estimation for a complex land environment with a shallow slat layer: IMAGE23.
- Zhang, Y., Borisov, D., Miller, R. D., and Sloan, S., 2023, Using convolutional neural network to detect voids in velocity model: AGU23.
- Zhang, Y., and Gao, S. S., 2023, Using convolutional neural network to determine time window for analyzing local shear-wave splitting measurements: AGU23.
- Zipper, S., 2023, Agrohydrology in the Anthropocene: Irrigation impacts on the stream, aquifer, and atmosphere. University of Arkansas, Department of Geosciences. Seminar.
- Zipper, S., 2023, Agrohydrology in the Anthropocene: Irrigation impacts on the stream, aquifer, and atmosphere. University of Kansas, Department of Geology. Seminar.
- Zipper, S., 2023, Exploring linkages between hydrology and biogeochemistry across perennial to non-perennial flow regimes in the Great Plains – and beyond. (Joint seminar with Erin Seybold). USGS Kansas Water Science Center. Seminar.
- Zipper, S., 2023, No flow? No problem! Long-term change and regime shifts in non-perennial streams. Universidade Federal de Mato Grosso do Sul (Brazil), Programa de Pós-Graduação em Tecnologias Ambientais. Seminar.
- Zipper, S., 2023, Successful U.S. Interagency Government Partnerships. NASA Water Resources Program Meeting. Panel.
- Zipper, S., Befus, K. M., Reinecke, R., Zamrsky, D., Gleeson, T., Ruzzante, S., Jordan, K., Compare, K., Kretschmer, D., Cuthbert, M., Castronova, T., Wagener, T., and Bierkens, M. F. P., 2023, GroMoPo: A groundwater model portal to enable findable, accessible, interoperable, and reusable (FAIR) groundwater modeling. American Geophysical Union Fall Meeting.
- Zipper, S., Butler, J. J., Foster, T., Kastens, J., Marston, L. T., Ndlovu, W., Rahman, M., and Wilson, B., 2023, Managing temporal trade-offs through irrigation and yield forecasting to advance groundwater conservation. NASA Water Resources Program Annual Meeting.
- Zipper, S. C., Wilson, B. B., Foster, T., Kastens, J., Grinstead, A., Deines, J. M., and Butler, J. J., Jr., 2023, Evaluating irrigator-driven groundwater conservation practices using remotely sensed evapotranspiration data, 2023 Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 16.
- Zipper, S., Wilson, B. B., Foster, T., Kastens, J., Grinstead, A., Deines, J. M., Butler, J. J., Jr., and Marston, L., 2023, Evaluating irrigator-driven groundwater conservation practices using remotely sensed evapotranspiration data. American Geophysical Union Fall Meeting. Invited speaker.
- Zipper, S. C., Wilson, B. B., Melton, F., Foster, T., Kastens, J., Grinstead, A., Deines, J. M., Butler, J. J., Jr., and Marston, L., 2023, Evaluating remotely sensed estimates of irrigation at the field, well, and district scale, 30th Annual Kansas Hydrology Seminar, November 17.

## Awards & Honors

Franseen, E. K. — SEPM Honorary Membership Award for “Excellence in Professional Achievements and Extraordinary Service to the Society”

Jordan, K. — George Donatello Lifetime Achievement Award, Kansas Association of Mappers

Mandel, R. D. — Selected by the National Academy of Sciences to serve as the delegate to represent the U.S. at the XXI International Union for Quaternary Research (INQUA) Congress in Rome, Italy, July 13–20, 2023

Ortega-Ariza, D. — Merriam Research Award – Kansas Geological Survey for attending and presenting at international conferences of sedimentology in Dubrovnik, Croatia, and Naples, Italy

Ortega-Ariza, D. — Faculty Success Program - The National Center for Faculty Development & Diversity  
 Schneider, B. — Geoscience Information Society Best Guidebook Award  
 Schneider, B. — KU Research Staff Achievement Award, \$5,000 Award

## Internal Service

Andrzejewski, K. A. — KGS Outstanding Staff Recognition Award Committee  
 Borisov, D. — 2023 Student Committee Award – chair  
 Borisov, D. — 2023 Postdoc within Exploration Program - search committee lead  
 Franseen, E. K. — Member, Promotion and Review Committee  
 Franseen, E. K. — Member, Editorial Advisory Board, Midcontinent Geoscience  
 Layzell, A. L. — Member, Stratigraphic Nomenclature Committee  
 Layzell, A. L. — Editor, Midcontinent Geoscience  
 Liu, G. — KU Office of Research Internal Review panel  
 Liu, G. — KGS search committees (3 positions)  
 Liu, G. — KGS rock and mineral shows (3 booth volunteers)  
 Liu, G. — Instructor, field classes for two courses by KU Department of Geology and Department of Civil Engineering  
 Mandel, R. D. — Member, KGS Promotion and Review Committee  
 Mandel, R. D. — Member, Stratigraphic Nomenclature Committee  
 Mohammadi, S. — 2023 KGS committee search for the lab technician  
 Mohammadi, S. — 2023 KGS Diversity, Equity, Inclusion, and Belonging (DEIB) Committee  
 Oborny, S. — Attended the invitational Critical Minerals Crossroads Summit in Kansas City, Missouri, on behalf of the KGS and presented a poster  
 Oborny, S. — Developed booth materials (created a poster) for the Osage Indian Nation's Oil and Gas Summit, Pawhuska, Oklahoma  
 Oborny, S. — Developed presentation materials for the Osage Nation's Minerals Council  
 Oborny, S. — Generated poster and helped operate informational booth for Kansas Geological Survey at the Kansas Independent Oil and Gas Association Midyear Meeting, McPherson, Kansas  
 Ortega-Ariza, D. — Member, Diversity, Equity, Inclusion and Belonging (DEIB) Committee  
 Ortega-Ariza, D. — Postdoc Search Committee - Machine Learning  
 Ortega-Ariza, D. — Guest Editor, Midcontinent Geoscience  
 Ortega-Ariza, D. — KGS booth at Kioga Midyear Meeting & Expo, McPherson, Kansas  
 Ortega-Ariza, D. — KGS booth at Kioga Annual Convention & Expo, Wichita, Kansas  
 Ortega-Ariza, D. — KGS Earth Day public event  
 Ortega-Ariza, D. — KGS booth volunteer, Kansas City Gem and Mineral show  
 Ortega-Ariza, D. — Assistance translating and reviewing KGS publications in Spanish  
 Ortega-Ariza, D. — KGS tour facilities visit for three elementary and middle school students  
 Ortega-Ariza, D. — KGS tour organizer for KU Department of Geology prospective graduate students  
 Ortega-Ariza, D. — Identification of rocks and fossils for Kansans  
 Potter, N. — DEIB Committee Member  
 Potter, N. — Earth Day Committee Member and participant  
 Potter, N. — KDHE Geology and Well Technology Seminar and Tech Fair booth  
 Potter, N. — Booth for Earth Day, KDHE Geology and Well Technology Seminar and Tech Fair  
 Potter, N. — KGS Field Conference (volunteer?)  
 Potter, N. — BESST Mentor  
 Potter, N. — Senior Cartographic Services Specialist search committee  
 Schneider, B. — Co-chair of the KGS DEIB Committee  
 Schneider, B. — Member, DEIB in KU Research Working Group  
 Schneider, B. — Member, Safe and Inclusive Field Work Task Force in the Office of Research  
 Schneider, B. — Member, KU DEIB Campus Council  
 Schneider, B. — Member, Office of Research Committee on Promotion  
 Schneider, B. — Member, Vice Provost for Faculty Affairs Search Committee  
 Schneider, B. — Instructor: one section of LDST 301 (fall) and GEOL 856 (spring). Developed and taught a new field camp, ANTH 418/889: Summer Archeological Field Work, for the KU Anthropology Department  
 Smith, J. J. — KGS STATEMAP Coordinator  
 Smith, J. J. — Chair, Stratigraphic Nomenclature Committee



Smith, J. J. — Member, KGS Promotion and Review Committee  
 Smith, J. J. — Member, Cartographic Service Specialist Search Committee  
 Smith, J. J. — Associate Editor, Midcontinent Geoscience  
 Tollefson, J. M. — Technical Editor, Midcontinent Geoscience  
 Tollefson, J. M. — Member (ex-officio), KGS Stratigraphic Nomenclature Committee

## External Service

Andrzejewski, K. A. — Member, M.S. committee, KU Department of Geology; member, Ph.D. committee, KU Department of Geology  
 Borisov, D. — Journal reviews: *Geophysical Journal International* - two papers, *Near Surface Geophysics*, *Journal of Geophysical Research: Solid Earth*  
 Butler, J. J., Jr. — Moderator, Groundwater Monitoring, Planning, and Reporting session, 2023 Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 16  
 Butler, J. J., Jr. — Moderator, all sessions, and member of organizing committee, 30<sup>th</sup> Annual Kansas Hydrology Seminar, Lawrence, Kansas, November 17  
 Butler, J. J., Jr. — Member, Kansas Water Resources Institute Administrative Council  
 Butler, J. J., Jr. — Promotion Evaluator, Department of Geosciences, University of Colorado Boulder  
 Butler, J. J., Jr. — Member, Darcy Lecture Task Force, National Ground Water Association  
 Butler, J. J., Jr. — Reviewer for *Advances in Water Resources*, American Geophysical Union Chapman Conference Program, Cambridge University Press, *Groundwater*, *Journal of Hydraulic Engineering*, *Nature Water*, *Nature Scientific Reports*, *Science of the Total Environment*, and *Water Resources Research*  
 Franseen, E. K. — Panel Member, KU Office of Research Internal Awards Review Panel  
 Franseen, E. K. — Member, Awards Nominations Committee, Department of Geology  
 Franseen, E. K. — Advisor for 3 Ph.D. students, Department of Geology  
 Franseen, E. K. — Co-Advisor for 1 master's student, Department of Geology  
 Franseen, E. K. — Committee Member for 1 master's student, Department of Geology  
 Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison.  
 Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee  
 Franseen, E. K. — Reviewer, American Chemical Society-Petroleum Research Fund Grant Proposals  
 Holcomb, J. A. — Guest Editor, *Geoarchaeology*, Special Issue: *Geoarchaeology at the Micro-Scale: Recent Advances in Microanalytical Techniques*  
 Layzell, A. L. — Member, National Geologic Map Database Project Technical Advisory Working Group  
 Layzell, A. L. — Guest Lecturer, Paleosols (graduate GEOL 728), University of Kansas, Department of Geology, April 2023  
 Layzell, A. L. — Member, Kansas Watershed Restoration and Protection Strategy (WRAPS) Work Group  
 Layzell, A. L. — Reviewer for Geological Society of America, Quaternary Geology and Geomorphology Division, Graduate Student Research Proposal Awards (up to 9 awards given)  
 Layzell, A. L. — Field trip presenter, North American Rodents: Landscapes, Ecology, and Evolution (NARLEE), May 2023  
 Liu, G. — Associate Editor, *Water Resources Research*  
 Liu, G. — Associate Editor, *Groundwater Monitoring & Remediation*  
 Liu, G. — Guest editor for a special Issue with Focus on Complex Sites for the journal of *Groundwater Monitoring & Remediation*  
 Liu, G. — Editor, *Advances in Hydrogeological Characterization*, to be published through Springer in 2025  
 Liu, G. — Organizing Committee Member, Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice (NovCare) biennial conference series, 2015, 2017, and 2023.  
 Liu, G. — Kansas Department of Health and Environment drinking water protection  
 Liu, G. — Rattlesnake Creek Watershed Plan/Environmental Assessment  
 Liu, G. — Student poster judge at 2023 Governor's water and future conference  
 Louis, D. — Geologist member of the Kansas State Board of Technical Professions (KSBTP); re-appointed to four-year term by Governor Laura Kelly  
 Louis, D. — Kansas State Board of Technical Professions representative at Association of State Boards of Geology (ASBOG) national meetings, April and October  
 Louis, D. — Secretary of the Board, Kansas Geological Society

Louis, D. — Volunteer, state Science Olympiad (created testing materials, ran Roads Scholar event)

Louis, D. — Represented KGS at Kansas Ground Water Association conference, Kansas Rural Water Association Annual Conference, and KIOGA mid-year and annual conventions

Louis, D. — Kansas geology presentation, Wichita Rotary Club

Louis, D. — Represented KGS, Wichita State University's Geology Club Career Day

Louis, D. — Designated KGS representative for the KCC's oil and gas advisory committee quarterly meetings

Louis, D. — KGS representative, Oil and Gas Pool Nomenclature Committee

Mandel, R. D. — External promotion and tenure evaluator, Department of Anthropology, Texas A&M University

Mandel, R. D. — Associate Editor, *Geoarchaeology: An International Journal*, John Wiley & Sons, Inc.

Mandel, R. D. — Associate Editor, *Encyclopedia of Geoarchaeology*, Springer Press

Mandel, R. D. — Chair, Fund Raising Committee for Student Research, Geological Society of America, Soils & Soil Processes Division

Mandel, R. D. — Chair, Promotion Committee for Dr. Kelly Graf (Associate to Full Professor), KU Department of Anthropology

Mandel, R. D. — Chair, Personnel Committee, KU Department of Anthropology

Mandel, R. D. — Member, KU Search Committee for Museum Curator/Professor, Joint Appointment with the Biodiversity Institute and Department of Anthropology

Mandel, R. D. — Reviewer, one manuscript submitted to *Science*

Mandel, R. D. — Reviewer, one manuscript submitted to *Quaternary Science Reviews*

Mandel, R. D. — Reviewer, one manuscript submitted to *Geological Society of America Bulletin*

Mohammadi, S. — Reviewer, National Science Foundation

Mohammadi, S. — Chair, Theodor Lowe (Master's student)

Mohammadi, S. — USGS Earth MRI workshop

Mohammadi, S. — Missouri University, 3rd Annual Workshop, Resilient Supply of Critical Minerals

Mohammadi, S. — A Deeper Dive into the Department of Energy: Lewis-Burke Associates

Mohammadi, S. — KU, CAREER Writers' Workshop — Incorporating Proposal Feedback

Mohammadi, S. — Petrel Fundamental by Schlumberger

Oborny, S. — Assisted researchers at Wright State University, Ohio, in identifying field localities in Kansas

Oborny, S. — Assisted researchers at University of Iowa in identification of drill cores for research in Kansas

Ortega-Ariza, D. — NSF panelist, review, discuss and recommend grant proposals for funding

Ortega-Ariza, D. — Reviewer, *Scientific Reports*

Ortega-Ariza, D. — Reviewer, *Geological Journal*

Ortega-Ariza, D. — Reviewer, SEPM graduate student research grant proposals

Ortega-Ariza, D. — External member, Ph.D. Committee, University of Alabama

Ortega-Ariza, D. — Advisor, master's student, KU Department of Geology

Ortega-Ariza, D. — Co-advisor, master's student, KU Department of Geology

Ortega-Ariza, D. — Member, master's student committee, KU Department of Geology

Ortega-Ariza, D. — Advisor, undergraduate student, KU Department of Geology

Ortega-Ariza, D. — Advisor, undergraduate student, KU BESST Program

Ortega-Ariza, D. — KGS representative for the KU Department of Geology Graduate Admission Committee

Ortega-Ariza, D. — Judge, student posters, GHawk Symposium, KU Department of Geology

Schneider, B. — President, AWG Foundation Board of Directors

Schneider, B. — Reviewed one paper for *Archaeological Prospection*

Schneider, B. — Associate Editor, *Journal of Environmental and Engineering Geophysics (JEEG)*

Smith, J. J. — Co-chair, Xialin (Kevin) Han, Ph.D. committee, University of Kansas

Smith, J. J. — Member, Matthew Allen, Ph.D. committee, University of Kansas

Smith, J. J. — Member, Nick Ferry, Ph.D. committee, University of Kansas

Smith, J. J. — Member, Commissioner at Large, North American Commission on Stratigraphic Nomenclature (NACSN)

Smith, J. J. — Member, Taphonomy and Stratigraphic Paleobiology Research Group, Brazilian Council for Research (CNPq)

Smith, J. J. — Session Co-Convener: Innovative Ichnology: Recent Advances in the Study of Modern and Ancient Behavior, Geological Society of America Annual Meeting.

Smith, J. J. — Handling editor, *Palaeontologica Electronica*

Stevens, J. — Volunteer, state Science Olympiad (created testing materials, ran Roads Scholar event)

Stevens, J. — Represented KGS, Wichita State University's Geology Club Career Day

Stewart, D. — KGS booth, KDHE Geology & Well Technology 28th Annual Seminar & Tech Fair, Wichita, Kansas, October 24–25  
 Stewart, D. — Volunteer, Kansas City Gem and Mineral Show, March 11  
 Stewart, D. — Volunteer, Earth Day event, April 22  
 Tollefson, J. M. — Tonganoxie (Kansas) High School Career Day — Science Communication  
 Zhang, Y. — Reviewer, Geophysical Research Letter, Journal of Geophysical Research: Solid Earth, and Interpretation

## Grants

Bohling, G. C., Wilson, B. B., and Butler, J. J., Jr.: Addressing groundwater goals of the Missouri Regional Planning Area – Phase II, Kansas Water Office, \$93,200, 2018–2024.  
 Burgin, A., Allen, D. C., Atkinson, C. L., Godsey, S. E., Kuehn, K. A., Jackson, C. R., Zeglin, L. H.: RII Track II-FEC: Aquatic Intermittency effects on Microbiomes in Streams (AIMS), NSF EPSCoR Research Infrastructure Improvement Program: Track-2 Focused EPSCoR Collaborations, \$6,597,214. (Zipper, co-I).  
 Butler, J. J., Jr., and Bohling, G. C.: High Plains aquifer index well program, Kansas Water Office, \$305,000, 2019–2024.  
 Butler, J. J., Jr., Bohling, G. C., Liu, G., and Wilson, B. B.: Kansas River alluvial aquifer observation well network maintenance and modeling, Kansas Water Office, \$240,000, 2022–2025.  
 Butler, J. J., Jr., and Liu, G. C.: INFEWS/T1: Developing pathways toward sustainable irrigation across the United States using process-based systems models (SIRUS), U.S. Dept. of Agriculture, \$148,704, 2018–2023.  
 Cramer, B. (PI), Oborny, S. (KU Subaward PI), Meyer J., Suarez M.: Critical Resource Availability for the Future of the Renewable Energy Industry: Critical Minerals and Ground Water Resources in Iowa and Kansas, National Science Foundation EPSCoR Research Infrastructure Improvement Program: Track-2 (RII Track-2 FEC; NSF 21-518), \$3,982,500 (KU subaward: \$1,670,320).  
 Franseen, E. K. (PI): Kansas Interdisciplinary Carbonates Consortium (KICC), \$90,000.  
 Husic, A., and Zipper, S.: Forecasting streamflow and groundwater depletion with deep learning models to sustain Kansan water resources, Kansas Water Resources Institute/USGS, \$50,000 (+\$50,000 matching funds).  
 Layzell, A. L.: Assessing the downstream effects of Water Injection Dredging on stream bedload. US Army Corps of Engineers via Kansas State University, \$19,431, 2023–2024.  
 Layzell, A. L., Husic, A., and Harris, T.: Assessment of sediment sources in the John Redmond reservoir watershed, Kansas Water Office, \$15,000, 2023–2024.  
 Layzell, A. L., Husic, A., and Mandel, R. D.: Streambank evaluation of the Cottonwood and Neosho rivers above John Redmond Reservoir, Kansas Water Office, \$100,000, 2023–2024.  
 Liu, G. (PI): Innovative use of the hydraulic profiling tool (HPT), high-resolution K (HRK), and nuclear magnetic resonance (NMR) logging for geohydrologic assessments of soils and unconsolidated formations, U.S. Bureau of Reclamation, \$30,000, 2023–2025.  
 Liu, G. (PI), Dynamic NMR logging technologies for high resolution measurement of hydrogeologic properties and soil response, U.S. Department of Energy, \$5,175 (subcontract with Vista Clara), 2023.  
 Liu, G., Seybold, E. C., and Zipper, S.: Developing a groundwater quality model to investigate irrigation and climate impacts on Uranium and sulfate contamination in the Upper Arkansas River corridor, Kansas Water Office, \$35,000.  
 Marston, L., Zipper, S., Butler, J., Sanderson, M., and Yu, D.: DISES: Toward resilient and adaptive community-driven management of groundwater dependent agricultural systems, National Science Foundation, \$590,042, 2022–2026.  
 Miller, R. D. (PI), Ivanov, J. (Co-PI), and Peterie, S. L. (Co-PI): U.S. Army Corps of Engineers, Enhanced implementation of K-Scope and ASII tunnel detection analysis approach using FWI, modal segmentation methods, and integrated multi-modal techniques, 2023, \$71,300.  
 Miller, R. D. (PI), Ivanov, J. (Co-PI), and Peterie, S. L. (Co-PI): U.S. Army Corps of Engineers, Enhanced implementation of K-Scope and ASII tunnel detection analysis approach using FWI, modal segmentation methods, and integrated multi-modal techniques, 2023, \$100,000.  
 Miller, R. D. (PI), Ivanov, J. (Co-PI), Peterie, S. L. (Co-PI), and Borisov, D. (Co-PI): Burns & McDonnell Engineering Company, Ground truth testing and correlation of seismic interpretation and borehole sampling at Mosaic’s legacy well field in Hutchinson, Kansas, 2023, \$37,006.

Miller, R. D. (PI), Ivanov, J. (Co-PI), Peterie, S. L. (Co-PI), and Borisov, D. (Co-PI): Burns & McDonnell Engineering Company, Ground truth testing and correlation of seismic interpretation and borehole sampling at Mosaic's legacy well field in Hutchinson, Kansas, Phase 2, 2023, \$40,920.

Miller, R. D. (PI), Peterie, S. L. (Co-PI), Ivanov, J. (Co-PI), and Borisov, D. (Co-PI): ExxonMobil, High resolution seismic investigations of rock characteristics associated with subsidence, 2023, \$254,003.

Miller, R. D. (PI), Ivanov, J. (Co-PI), Peterie, S. L. (Co-PI), U.S. Army Corps of Engineers, Enhanced Implementation of K-Scope & ASII Tunnel Detection Analysis Approach Using FWI, Modal Segmentation Methods, and Integrated Multi-Modal Techniques  
Period of funding 5/6/2019–12/19/2024, Total funded to date \$3,243,052

Miller, R. D. (PI), Peterie, S. L. (Co-PI), Borisov, D. (Co-PI), Ivanov, J. (Co-PI), Kansas Corporation Commission, Time-Lapse, High-Resolution Imaging of a void in the Hutchinson Salt beneath #1 Knackstedt disposal well, McPherson County, Kansas  
Period of funding 8/26/2019–8/25/2024, Amount funded \$14,803

Miller, R.D. (PI), Mandel, R. (Co-PI), Peterie, S. L. (Co-PI), Kansas Water Office, Preproposal for Study of Regional Arbuckle Properties in South Central Kansas Now and Planning for the Future  
Period of funding 1/1/2021–8/31/2023, Amount funded \$61,700

Miller, R.D. (PI), Peterie, S.L. (Co-PI), Norcal Geophysical Consultants, High Resolution Seismic Reflection to Map Bedrock, Faulting, and Lithologic Contacts in the Upper 1km in White Pine County, Nevada  
Period of funding 8/1/2021–9/30/2023, Amount funded \$132,427

Miller, R.D. (PI), Ivanov, J. (Co-PI), Peterie, S.L. (Co-PI), Borisov, D. (Co-PI), Burns & McDonnell Engineering, Ground Truth Testing and Correlation of Seismic Interpretation and Borehole Sampling at Mosaic's Legacy Well Field in Hutchinson, Kansas  
Period of funding 1/1/2023–05/29/2024, Total funded to date \$77,926

Miller, R.D. (PI), Peterie, S.L. (Co-PI), Ivanov, J. (Co-PI), Borisov, D. (Co-PI), Exxon Mobil, High Resolution Seismic Investigations of Rock Characteristics Associated with Subsidence  
Period of funding 9/1/2023–8/31/2025, Amount funded \$254,003

Miller, R.D. (PI), Ivanov, J. (Co-PI), Burns & McDonnell Engineering, Extended Term Passive Seismic Characterization of High Priority Salt Jugs in Hutchinson, Kansas  
Period of funding 11/13/2017–11/30/2023, Total funded to date \$424,154

Mohammadi, S. (PI), Hasiuk, F., Oborny, S., Bode-Omoleye, I., Smith, J.J., Ishman, S., Bancroft, A., Eble, C., Ganz, K., Mastalerz, M., McDonald, J., McLaughlin, P.: Critical minerals in Pennsylvanian black shales of the Midcontinent, USGS Earth MRI Cooperative Agreement for Geochemical Reconnaissance, \$325,000, 2023-2026.

Oborny, S. (PI), Louis, D., Bream, B., Schneider, B., Bream, K., Andrzejewski, K., Bode-Omoleye, I., Clark, R., Bancroft, A., Cramer, B., Hayman, N., Suriamin, F., Ganz, K., Seeger, C., Steele, A., Joeckel, M., and Lynn, W.: CMCSrCB—Critical Minerals in Coaly Strata of the Cherokee-Forest City Basin. U.S. Department of Energy (DOE) Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative for U.S. Basins, \$2,085,000 (federal), \$521,250 (state match), 2021–2024.

Potter, N. (PI), Stewart, D., Louis, D., Oborny, S., and Andrzejewski, K.: Preserving Kansas geologic data, documents, samples, and aerial photographs; and surveying drill hole/core holdings related to critical mineral resources, FY 2023, U.S. Geological Survey, National Geological and Geophysical Data Preservation Program (NGGDPP), \$1,493,122 (combined federal and state, 2023–2026)

Ruiz Diaz, D., Aguilar, J., Archontoulis, S., Dhillon, J., Holman, J., Kuman, V., Margenot, A., Obour, A., Olson, B., Ortey, O., Reiman, M., Rice, C., Rosa, A., Zeglin, L., and Zipper, S.: Increasing water productivity, soil carbon and sustainability of integrated multi-crop systems using field scale research, Foundation for Food and Agriculture Research, \$7.7 million (+ \$8.7 million matching funds).

Seybold, E. (PI): Kansas Water Office: Groundwater quality patterns, trends, and drivers in Groundwater Management District 2, Kansas, \$45,000. Funded in 2023; 1.5-year project.

Smith, J. J. (PI), Layzell, A., Oborny, S., Andrzejewski, K., Dunham, J. W., Ortega-Ariza, D., Bode-Omoleye, I., Mohammadi, S., and Franseen, E.: Geologic mapping in Kansas for FY23, U.S. Geological Survey STATEMAP Program, \$605,816, 2023.

Wardropper, C., Zipper, S., and Zwickle, A.: Sustaining ecosystem services in agricultural landscapes through a better understanding of decision-support systems, USDA NIFA Agriculture and Food Research Initiative, \$299,509.

Wilson, B. B., Butler, J. J., Jr., and Reboulet, E.: Maintain existing and expand Kansas-based data services to the National Groundwater Monitoring Network, U. S. Geological Survey, \$90,374, 2023–2024.

- Wilson, B. B., Liu, G., Bohling, G. C., and Butler, J. J., Jr.: Update of the GMD3 groundwater model, Kansas Water Office and Southwest Kansas Groundwater Management District #3, \$160,000, 2021–2023.
- Zipper, S. (PI): Developing a unified modeling approach to assess streamflow depletion impacts due to groundwater pumping, The Nature Conservancy-California, \$82,500.
- Zipper, S., Butler, J. J., Jr., Foster, T., Kastens, J., Marston, L., and Wilson, B. B.: Managing temporal trade-offs through irrigation and yield forecasting to advance groundwater conservation, NASA, \$100,000.
- Zipper, S., Nelson, K. S., Seybold, E., and Sharda, V.: Irrigation at the new 100th Meridian: Adaptation to manage climate risks and preserve water resources in the Eastern Kansas River Basin, USDA NIFA Agriculture and Food Research Initiative, \$750,000.



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## Abstracts

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- Andrzejewski, K. A., Layzell, A. L., Ludvigson, G. A., Joeckel, R. M., Möller, A., and Mandel, R. D., 2022, Unique insights to the Cretaceous OAE1d, Mid-Cenomanian Event, and OAE2 from long-line drillcores along the eastern cratonic margin of the Western Interior Basin: 38<sup>th</sup> Annual Gulf Coast Section SEPM Perkins-Rosen Conference, December 6, 2022, Houston, Texas.
- Asfaw, D., Smith, R., Majumdar, S., Lakshmi, V., Grote, K., and Butler, J. J., Jr., 2022, Towards generalizable groundwater withdrawal predictions: How much data do we need? Abstract H25T-1364 presented at 2022 Fall Meeting: American Geophysical Union, December 13.
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- Borisov, D., Miller, R. D., Peterie, S. L., Ivanov, J., Hoch, A. M., and Sloan, S. D., 2022, Graph-space optimal transport-based 3D elastic FWI for near-surface seismic applications: Second International Meeting for Applied Geoscience & Energy, Society of Exploration Geophysicists/American Association of Petroleum Geologists, Houston, Texas, August 28–September 1, p. 2,153–2,157.
- Butler, J. J., Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2022, Convincing the doubters: New means to demonstrate the effectiveness of groundwater conservation activities to the stakeholder community: Universitat Politècnica de València, València, Spain, Book of Abstracts for Sustain Valencia 2022:



- Achieving Sustainable Groundwater Management — Promising Directions and Unresolved Challenges, p. 37.
- Gandy, D., and Holcomb, J. A., 2022, Correlating Younger Dryas climate and environmental aDNA preservation at Connley Caves, Oregon: Geological Society of America, Denver, Colorado.
- Grosch, Z., Hasiuk, F., and Oborny, S. C., 2022, Using gadolinium and titanium well logs to prospect for critical mineral enrichment in the black shales of the Cherokee Forest City basin: Image 2022—International Meeting for Applied Geoscience and Energy Abstract.
- Hasiuk, F., Meng, J., Oborny, S. C., Holubnyak, E., and Raney, J., 2022, H-2-SALT: Geological characterization of potential hydrogen storage sites in Permian bedded salt deposits, central Kansas: Spring 2022 Solution Mining Technical Conference Abstract.  
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- Holcomb, J. A., 2022, Geoarchaeological context of Late Pleistocene and Early Holocene occupation at the Connley Caves, northern Great Basin, Oregon: Geological Society of America, Denver, Colorado.
- Holcomb, J. A., O’Leary, B., Darrin, A. G., Kling, C., Mandel, R., and Wegmann, K., 2022, Planetary geoarchaeology: A new frontier in archaeological science: Society for American Archaeology, Chicago, Illinois.
- Horinek, H., Schneider, B., Hasiuk, F., López Carranza, N., and Gardner, E., 2022, Expanding accessibility in 3 dimensions by printing Kansas fossil toolkits for K-12 classrooms: American Geophysical Union Fall Meeting, Chicago, Illinois.
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- Joeckel, R. M., Suarez, C., McClean, N. M., Möller, A., Ludvigson, G., Suarez, M. B., Kirkland, J. I., Andrew, J., Kiessling, S., and Hatzell, G., 2022, Valanginian carbon isotope excursion identified and dated in paleosol-bearing Yellow Cat Member, Cedar Mountain Formation, eastern Utah, USA: Geological Society of America Abstracts with Programs, v. 54, no 5. doi: 10.1130/abs/2022AM-377052
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- Ludvigson, G., Diefendorf, A., Suarez, M. B., González, L., Andrzejewski, K., Flaig, P., and McCarthy, P., 2022, The paradox of hydrogen and oxygen isotopic compositions of Cretaceous Arctic paleoprecipitation: Geological Society of America Abstracts with Programs, v. 54, no 5. doi: 10.1130/abs/2022AM-380659
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- Lumms, M. L., Schneider, B., Stearns, L. A., and Lehrmann, A., 2022, Creating a more transparent graduate school application process by boosting self-efficacy among GeoGradApp.com Workshop Participants: American Geophysical Union Fall Meeting, Chicago, Illinois. (Invited)
- Mandel, R. D., Bourgeon, L., Kisielinski, C. A., Norman, L. E. Y., Holcomb, J. A., and O’Rourke, D., 2022, Bluefish Caves revisited: A geoarchaeological and paleoenvironmental assessment of a potential pre-Clovis site in the Yukon Territory of northwestern Canada: Geological Society of America, Denver, Colorado.
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- Mandel, R. D., and Holcomb, J. A., 2022, In the footprints of Kirk Bryan and Claude C. Albritton, Jr.: A reinvestigation of soils as evidence of Late-Quaternary climate change in the Big Bend Region of southwestern Texas: Geological Society of America, Denver, Colorado.
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- Niquette, R. M., and Mandel, R. D., 2022, Stratigraphy and site formation at San Esteban Rockshelter in the Big Bend Region of Southwest Texas: 87<sup>th</sup> Annual Meeting of the Society of American Archaeology, Chicago, Illinois.
- Oborny, S. C., Layzell, A. L., Smith, J. J., Hasiuk, F., Mulvany, P., Bridges, D., Joeckel, R. M., Stanley, T., Eichler, C. M., Bancroft, A. M. and Clark, R., 2022, Reconciliation of Pennsylvanian stratigraphic nomenclature in the midcontinent, USA: Geological Society of America Abstracts with Programs, v. 54, no. 5. doi: 10.1130/abs/2022AM-382965
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- Schneider, B., 2022, The Kansas Field Conference: Engaging with state policy makers on natural resources in Kansas: Geological Society of America Abstracts with Programs, v. 54, no. 5. doi: 10.1130/abs/2022AM-381646
- Schneider, B., Jordan-Koenig, K., and Zipper, S., 2022, Utilizing GIS to inform fieldwork safety planning: Kansas Association of Mappers Conference, Manhattan, Kansas.
- Schneider, B., and Rice, M., 2022, A comparison of GPR data from rural historic cemeteries in Kansas: 19<sup>th</sup> International Conference on Ground Penetrating Radar, SEG Global Meeting Abstracts, 1–4. <https://doi.org/10.1190/gpr2022-036.1>
- Smith, C., Hasiuk, F., Holubnyak, E., Mohammadi, S., Smith, T., Gordon, P., and Smith, M., 2022, Reducing the time, cost, and risk of CCUS seal characterization via rock volatiles stratigraphy: AAPG CCUS.
- Smith, J. J., and Platt, B., 2022, Reconstructing the late Miocene depositional environment of the Ogallala Formation in the Central High Plains, USA: Geological Society of America, Abstracts with Programs, v. 54, no. 5. doi: 10.1130/abs/2022AM-380834
- Smith, R., Li, J., Grote, K., and Butler, J. J., Jr., 2022, Evaluating confined aquifer storage loss using geodesy, in-situ data and models, Abstract H25T-1355 presented at 2022 Fall Meeting: American Geophysical Union, December 13.
- Stolfus, B., Allman, L., Young, S., Calner, M., Hartke, E. R., Oborny, S. C., Bancroft, A. M., and Cramer, B. D., 2022, The expansion of reducing environments during the Ireviken Biogeochemical Event: New  $\Delta^{34}\text{S}$  data across the Llandovery-Wenlock Boundary of Gotland, Sweden: Geological Society of America Abstracts with Programs.
- Torres-Zamora, A., Ortega-Ariza, D., and Franseen, E. K., 2022, Controls on deposition and reservoir character of the Miocene Cicuco Field, NW Colombia: A low-latitude shallow-water transitional carbonate system, extended abstract: Kansas Interdisciplinary Carbonates Consortium Annual Meeting.
- Torres-Zamora, A., Ortega-Ariza, D., and Franseen, E. K., 2022, Factors affecting development of a Miocene tropical shallow-water heterozoan-limited photozoan carbonate system, NW Colombia: Preliminary Results, GHawk Symposium, Department of Geology, University of Kansas, Abstract.
- Torres-Zamora, A., Ortega-Ariza, D., Franseen, E. K., Veloza, G., Caycedo, H., and Mora, A., 2022, Controls on deposition and reservoir character of the Miocene Cicuco Field, NW Colombia: A low-latitude shallow-water transitional carbonate system, abstract, online: AAPG International Conference and Exhibition (ICE).
- Wei, Q., Brookfield, A. E., and Layzell, A. L., 2022, Quantifying the effects of water management decisions on streambank stability: Geological Society of America, Abstracts with Programs, v. 54, no. 5. doi: 10.1130/abs/2022AM-378200

## Presentations

- Andrzejewski, K. A., Layzell, A. L., Ludvigson, G. A., Ishman, S. E., Joeckel, R. M., Möller, A., and Mandel, R. D., 2022, Unique insight to the Cretaceous OAE 1d, Mid-Cenomanian Event, and OAE2 from long-line drillcores along the eastern cratonic margin of the Western Interior Basin. SEPM Gulf Coast Section Perkins-Rosen Research Conference, Houston, Texas, December 5–7.

- Asfaw, D., Smith, R., Majumdar, S., Lakshmi, V., Grote, K., and Butler, J. J., Jr., 2022, Towards generalizable groundwater withdrawal predictions: How much data do we need? Abstract H25T-1364 presented at 2022 Fall Meeting: American Geophysical Union, December 13.
- Bond, C. T., Nave, B. A., Wheeler, C., Kerner, T., Aho, K., Burgin, A., Jackson, C., Seybold, E. C., You, Y., Zeglin, L., Zipper, S. C., and Kuehn, K., 2022, Fungal biodiversity across an intermittent stream network at the Konza Prairie, Kansas, USA: Joint Aquatic Sciences Meeting, poster presentation, Grand Rapids, Michigan.
- Bosompemaa, P., et al., 2022, Quantifying water sustainability in the central Arkansas River basin: Evaluating existing tools at the regional scale: AGU/CUAHSI Frontiers in Hydrology Meeting, 2022.
- Bosompemaa, P., et al., 2022, Quantifying water sustainability in the central Arkansas River basin: Evaluating existing tools at the regional scale: MODFLOW & More.
- Brookfield, A., et al., Estimating groundwater withdrawals for irrigation – A method comparison: MODFLOW & More, 2022.
- Brown, C. L., Wheeler, C., Speir, S. L., Allen, D. C., Benstead, J. P., Burgin, A. J., Hale, R. L., and Seybold, E. C., 2022, Duration of drying controls the magnitude and recovery of metabolism in U.S. intermittent streams: Joint Aquatic Science Meeting, poster presentation, Grand Rapids, Michigan.
- Burgin, A., and the AIMS collaborators, 2022, Building the AIMS Network: Exploring the aquatic intermittency effects of microbiomes in streams: Joint Aquatic Sciences Meeting, oral presentation, Grand Rapids, Michigan.
- Burgin, A. J., Allen, D. C., Brown, C., Cook, S. C., Flynn, S., Nave, B., Seybold, E. C., Swenson, L., Wheeler, C., Wilhelm, J., Zeglin, L., Zarek, K., and Zipper, S. C., 2022, Building the Aquatic Intermittency effects on Microbiomes in Streams (AIMS) network to enable understanding of how intermittent flow impacts water quality and stream microbiomes: AGU Fall Meeting, poster presentation, Chicago, Illinois.
- Burke, E., et al., 2022, Spatial and temporal variation in suspended solids during the drydown of a prairie watershed: Joint Aquatic Sciences Meeting.
- Butler, J. J., Jr., 2022, Charting pathways toward sustainability of aquifer supporting irrigated agriculture: Universitat Politècnica de València, Valencia, Spain, invited presentation, April 1.
- Butler, J. J., Jr., 2022, How do they interact? A multi-year investigation of stream-aquifer interactions in the Kansas River Valley: Universitat Politècnica de València, Valencia, Spain, invited presentation, May 26.
- Butler, J. J., Jr., 2022, The net inflow concept: An alternate approach for aquifer water-balance studies: NSF-EPSCoR Groundwater Security Planning Workshop, invited presentation, University of Alabama, October 25.
- Butler, J. J., Jr., Whittemore, D. O., Bohling, G. C., Reboulet, E. C., Knobbe, S., and Wilson, B. B., 2022, The Kansas River Alluvial Aquifer: A key player in the future of the Kansas River Basin: KEHA and KSFA 2022 Annual Educational Conference, Topeka, Kansas, September 13.
- Butler, J. J., Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2022, Convincing the doubters: New means to demonstrate the effectiveness of groundwater conservation activities to the stakeholder community: Book of Abstracts for Sustain Valencia 2022: Achieving Sustainable Groundwater Management — Promising Directions and Unresolved Challenges, p. 37, Universitat Politècnica de València, València, Spain, October 8.
- Butler, J. J., Jr., Wilson, B. B., and Whittemore, D. O., 2022, The High Plains Aquifer in Kansas: Current challenges and promising paths forward: 2022 Kansas Farmers Union Convention, invited presentation, Salina, Kansas, November 30.
- Datry, T., et al., 2022, Comparison of human-induced and naturally intermittent rivers: science, management, and policy implications: Joint Aquatic Sciences Meeting.
- Flynn, S. M., Burgin, A., Seybold, E. C., Thomas, G., and Shogren, A. J., 2022, Flip of the switch: How do streams turn on and how does this phenomena impact water quality? Joint Aquatic Science Meeting, poster presentation, Grand Rapids, Michigan.
- Grande, E., Seybold, E. C., Tatariw, C., Visser, A., Braswell, A. E., Arora, B., Birgand, F., Haskins, J., and Zimmer, M. A., 2022, Seasonal and tidal forcing control salt marsh porewater nitrate dynamics in a Mediterranean system: AGU Fall Meeting, oral presentation, Chicago, Illinois.
- Grande, E., Visser, A., Oerter, E., Arora, B., Seybold, E. C., Tatariw, C., Braswell, A., and Zimmer, M., 2022, Flow directions and velocities of subsurface water in a Mediterranean salt marsh system constrained by isotope tracing: AGU Fall Meeting, oral presentation, Chicago, Illinois.
- Hendershot, S., 2022, Preserving data while WFH: National Geological and Geophysical Data Preservation Program 2022 Workshop, Butte, Montana. August 2022

- Holcomb, J. A., 2022, Ice Age seafarers? Geoarchaeology and the search for the Aegean Paleolithic: Annual Rumpakis Lecture, Willamette University, sponsored by the Archaeological Institute of America, April 21. <https://www.youtube.com/watch?v=ziDYy9LnVg>
- Holcomb, J. A., 2022, Multi-scalar geoarchaeology and the initial peopling of the Greek Islands: University of Kansas, May 5.
- Huggins, X., et al., 2022, Vulnerable basins for global prioritisation: Hotspots for social and ecological impacts from freshwater stress and freshwater storage loss: European Geophysical Union General Assembly.
- Ivanov, J., 2022, FWI developments (Fewer Records Per-iteration Processing; Global cost function estimation and display for Multi-scale FWI processing assessment; Vp, Density, Vp/Vs ratio, and Shear modulus model updates and display for FWI processing controls): Presentation of research updates for Department of Defense, October 26. (Virtual)
- Ivanov, J., 2022, Full waveform inversion (FWI) with real, synthetic, and difference seismic data display for convergence evaluation developments: Presentation of research updates for Department of Defense, May 26. (Virtual)
- Kastens, J., Baker, D., Huggins, D., Stotler, R., Peterson, D., and Layzell, A. L., 2022, An incomplete overview of recent playa research in Kansas: Platte River Basin Conference and 3<sup>rd</sup> Playa Research Symposium, Kearney, Nebraska, October 24–26.
- Kerner, T., et al., 2022, Microbiomes across an intermittent stream network in the Konza Prairie, Kansas, USA: Gordon Research Conference.
- Kerner, T., Nave, B. A., Wheeler, C., Bond, C. T., Burgin, A., Seybold, E. C., Kuehn, K. A., Zeglin, L. H., Zipper, S. C., Cook, S. C., Aho, K., and You, Y., 2022, Bacterial and archaeal communities across an intermittent stream network in the Konza Prairie: Joint Aquatic Sciences Meeting, poster presentation, Grand Rapids, Michigan.
- Kincaid, D. W., Perdrial, J. N., Wheaton, D., Seybold, E. C., Stewart, B., Walls, L., Blouin, M., Toolin, R. E., and Chorover, 2022, Equity, diversity, and community: Opportunities for critical zone science and education: AGU Fall Meeting, poster presentation, Chicago, Illinois.
- Kincaid, D., Underwood, K., Hamshaw, S., Seybold, E. C., Rizzo, D., Li, L., and Perdrial, J., 2022, Do catchment attributes explain stream solute concentration-discharge patterns across the contiguous US? Joint Aquatic Science Meeting, oral presentation, Grand Rapids, Michigan.
- Kincaid, D. W., Underwood, K., Hamshaw, S., Ul Haq, I., Li, L., Rizzo, D., Seybold, E. C., Stewart, B., and Perdrial, J. N., 2022, Leveraging catchment attributes to explain patterns of concentration-discharge relationships across the contiguous United States: AGU Fall Meeting, invited poster presentation, Chicago, Illinois.
- Latas, C., Schneider, B., and Pearson, D., 2022, Oak Hill Community Harvest Presentation: Presented at the Watkins Historical Society, Lawrence, Kansas.
- Layzell, A. L., and Kastens, J., 2022, Evaluating playas in western Kansas: Recharge to the High Plains aquifer and economics of cropping: Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 16–17.
- Layzell, A. L., and Mandel, R. D., 2022, Mid to Late Holocene bioclimatic change and fluvial geomorphic response in western Nebraska: Biennial Meeting of the American Quaternary Association, Madison, Wisconsin, June 8–10.
- Liu, G., Butler, J. J., Jr., Wilson, B. B., Bohling, G. C., and Whittemore, D. O., 2022, Groundwater recharge enhancement in depleting aquifers: Delay of drainage by low-permeability sediments: Book of Abstracts for Sustain Valencia 2022: Achieving Sustainable Groundwater Management — Promising Directions and Unresolved Challenges, p. 67–68, Universitat Politècnica de València, València, Spain, October 8.
- Mandel, R. D., 2022, Bluefish Caves revisited: Ongoing and future archaeological and paleoecological research in the Northern Yukon of Canada: Beringia Centre Science Talks, Whitehorse, Yukon Territory, Canada, May 12.
- Mandel, R. D., 2022, Searching for evidence of the first people in the Americas: A geoarchaeological & paleontological perspective: Kansas City Paleontological Society, Park University, Parkville, Missouri, February 20.
- Mandel, R. D., 2022, Searching for evidence of the first people in the Americas: A geoarchaeological perspective. Invited lecture series, Kansas Gem and Mineral Society, Olathe, Kansas, October 6.
- Mandel, R. D., 2022, Searching for evidence of the first people in the Americas: A geoarchaeological perspective: Invited lecture series, Kansas Gem and Mineral Society, Topeka, Kansas, October 28.

- Mandel, R. D., 2022, Searching for evidence of the first people in the Big Bend Region and beyond: A geoarchaeological perspective: Keynote address, 93rd Texas Archaeological Society Annual meeting, The University of Texas at Tyler, Tyler, Texas, October 22.
- Modi, R., et al., 2022, Characterizing subsurface flow pathways underlying an intermittent river using multiple geophysical methods: Geological Society of America Annual Meeting.
- Mohammadi, S., Bancroft, A., Eble, C., Ganz, K., Mastalerz, M., McDonald, J., McLaughlin, P., and Oborny, S., 2022, A multistate assessment of critical minerals in Pennsylvanian black shales of the US Midcontinent: Geological Society of America Abstracts with Programs, v. 54, n. 5, <https://doi.org/10.1130/abs/2022AM-376852>
- Montalvo, M., Grande, E., Braswell, A. E., Haskins, J., Endris, C., Gerbl, F., Huang, M. H., Visser, A., Arora, B., Seybold, E. C., Tatariw, C., Grunewald, E. D., and Zimmer, M. A., 2022, Seasonal terrestrial freshwater inputs impact salt marsh hydrology: AGU Fall Meeting, oral presentation, Chicago, Illinois.
- Nave, B. A., Bond, C. T., Cook, S. C., Seybold, E. C., Zipper, S. C., You, Y., Kuehn, K. A., Burgin, A., and Zeglin, L. H., 2022, Bacterial and fungal abundance responses to hydrological dynamics in an intermittent stream: Joint Aquatic Sciences Meeting, poster presentation, Grand Rapids, Michigan.
- Ndlovu, W., et al., 2022, Assessment of the AquaCrop-OSPy model in simulating crop-water productivity in a corn field (Sheridan-6 LEMA, Kansas): Kansas Governor's Conference on the Future of Water.
- Oborny, S. C., 2022, Interstate stratigraphic research in the Midcontinent: Wichita State University Lecture Series, March 2022 (Invited Lecturer).
- Oborny, S. C., 2022, Pennsylvanian stratigraphic nomenclatural reconciliation in the midcontinent: Kansas Geological Survey On the Rocks Series.
- Perdrial, J., Ruckhaus, M., Seybold, E. C., Underwood, K., Kincaid, D. W., Shanley, J., Stewart, B., and Li, L., 2022, Drivers and pathways of carbon and nitrogen in soil and streams: Insights from the Sleepers River Research Watershed in Vermont: AGU Fall Meeting, poster presentation, Chicago, Illinois.
- Peterson, D., et al., 2022, Investigating physical drivers of stream intermittency in Alabama: Alabama Water Resource Conference, 2022.
- Porter, M. E., et al., 2022, Using national datasets to detect streamflow depletion in the middle Arkansas River watershed, Kansas: Geological Society of America Annual Meeting.
- Potter, N., 2022, Outside the Box: Purchasing Local, NGGDPP Lightning Talks, Butte, Montana, September 30.
- Price, A., et al., 2022, Quantifying patterns and variability in wetting of non-perennial rivers and streams: American Geophysical Union Fall Meeting.
- Romero, J., Tatariw, C., Haynes, A., Grande, E., Montalvo, M., Wilshire, M., Carlson, H. K., Braswell, A., Seybold, E. C., Visser, A., Arora, B., Dwivedi, D., and Zimmer, M. A., 2022, Investigating hydrobiogeochemical drivers of salt marsh nitrogen cycling: AGU Fall Meeting, poster presentation, Chicago, Illinois.
- Schneider, B., 2022, Panel speaker for the AGI Leadership Forum: The Next Generation of Geoscience Societies: Views from Early- and Mid-Career Geoscientists and Leadership. (Virtual)
- Schneider, B., et al., 2022, Using GIS to inform fieldwork safety planning: Kansas Association of Mappers Meeting.
- Seybold, E. C., 2022, How low can you go? Understanding the hydrologic and ecological function of non-perennial stream ecosystems: invited seminar, Department of Geology Colloquium, University of Vermont, Burlington.
- Seybold, E. C., Atkinson, C. L., Benstead, J., Brown, C. L., Flynn, S. M., Hale, R. L., Jones, C. N., Speir, S., Swenson, L., Wheeler, C., Wilhelm, J., Wolford, M. A., Zipper, S. C., and Burgin, A., 2022, Changes in groundwater contributions influence streamwater chemistry during dry-down of a prairie stream: Joint Aquatic Sciences Meeting, oral presentation, Grand Rapids, Michigan.
- Seybold, E. C., Burgin, A. J., Brown, C., Speir, S. L., Wheeler, C. T., and Zipper, S. C., 2022, Linking oxygen regimes to flow regimes in non-perennial streams: AGU Fall Meeting, poster presentation, Chicago, Illinois.
- Smith, J. J., 2022, Reconstructing the late Miocene depositional environment of the Ogallala Formation in the Central High Plains, USA: Kansas Geological Survey Advisory Committee, December 2.
- Smith, R., Li, J., Grote, K., and Butler, J. J., Jr., 2022, Evaluating confined aquifer storage loss using geodesy, in-situ data and models, Abstract H25T-1355 presented at 2022 Fall Meeting: American Geophysical Union, December 13.
- Speir, S., Atkinson, C. L., Wolford, M. A., Allen, D., Benstead, J., Hale, R. L., Jones, C. N., Peterson, D., Seybold, E. C., Shogren, A. J., Thomas, S. G., and Burgin, A., 2022, Flow and behold: Non-perennial flow regimes impact sediment export across the continental USA: Joint Aquatic Science Meeting, oral presentation, Grand Rapids, Michigan.

- Stewart, B., Shanley, J., Matt, S., Perdrial, J. N., Ruckhaus, M., Seybold, E. C., Kincaid, D. W., and Li, L., 2022, Stream DOC and DIC response to climate and acidification disturbances at Sleepers River: AGU Fall Meeting, oral presentation, Chicago, Illinois.
- Swenson, L., et al., 2022, Changes in baseflow sources during the dry-down of a non-perennial headwater stream: AGU/CUAHSI Frontiers in Hydrology Meeting.
- Swenson, L., et al., 2022, Changes in baseflow sources during the dry-down of a non-perennial headwater stream: Kansas Governor's Conference on the Future of Water.
- Swenson, L., Burgin, A. J., Hatley, C., Jones, C. N., Kirk, M., Peterson, D., and Seybold, E. C., 2022, Changes in baseflow sources during the dry-down of a non-perennial headwater stream: AGU Frontiers in Hydrology Meeting, poster presentation, San Juan, Puerto Rico.
- Wei, Q., Brookfield, A. E., Layzell, A. L., and Seybold, E., 2022, Quantifying the effects of water management decisions on streambank stability: Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 16–17.
- Wheeler, C., et al., 2022, Examining the role of dynamic watershed storage as a driver of stream intermittency (Konza Prairie Biological Station, Kansas, USA): AGU/CUAHSI Frontiers in Hydrology Meeting.
- Wheeler, C., et al., 2022, STICr: An open-source package and workflow for processing and analyzing stream intermittency data: Kansas Governor's Conference on the Future of Water.
- Wilhelm, J. F., Burgin, A., Seybold, E. C., Wheeler, C., Zipper, S. C., and Zarek, K., 2022, How does dry-down on an intermittent prairie stream network affect greenhouse gas concentrations? Joint Aquatic Sciences Meeting, oral presentation, Grand Rapids, Michigan.
- Zarek, K., et al., 2022, Watershed network dry down effects on dissolved gas concentrations (N<sub>2</sub>, Ar, O<sub>2</sub>) in a prairie stream: Alabama Water Resource Conference.
- Zarek, K., Wheeler, C., Wilhelm, J. F., Seybold, E. C., Zipper, S. C., and Burgin, A., 2022, Watershed network dry down effects on dissolved gas concentrations (N<sub>2</sub>, Ar, O<sub>2</sub>) in a prairie stream: Joint Aquatic Sciences Meeting, poster presentation, Grand Rapids, Michigan.
- Zeglin, L., Kerner, T., Aho, K., Brisendine, J., Bond, C., Burgin, A. J., Hansen, P., Jackson, C., Kuehn, K., Lee, S., Nave, B., Ramos, R., Semenova, T., Seybold, E. C., Sikes, B. A., Swenson, L., Tchamba, A. L. K., Thomas, S. G., Wheeler, C., Wohler, A., You, Y., and Zipper, S. C., 2022, Assessing terrestrial-aquatic microbiome connectivity in non-perennial streams: AGU Fall Meeting, invited poster presentation, Chicago, Illinois.
- Zimmer, M. A., Grande, E., Montalvo, M., Seybold, E. C., Tatariw, C., Visser, A., Braswell, A., Arora, B., Hynes, A., Romero, J., Birgand, F., and Haskins, J., 2022, Identification of hot moments of nutrient processing in coastal systems using high frequency sensors: AGU Fall Meeting, invited oral presentation, Chicago, Illinois.
- Zipper, S., 2022, Do we know how to estimate streamflow depletion caused by groundwater pumping? Envisioning a community benchmarking resource: AGU/CUAHSI Frontiers in Hydrology Meeting.
- Zipper, S., 2022, Where did my water go? Irrigation and water conservation impacts on the stream, aquifer, and atmosphere; Montana State University, Department of Land Resources and Environmental Sciences.
- Zipper, S., et al., 2022, Evaluating groundwater conservation using emerging remotely sensed products: Kansas Governor's Conference on the Future of Water.
- Zipper, S., et al., 2022, Groundwater-driven alternative stable states in a large non-perennial river: Geological Society of America Annual Meeting.
- Zipper, S., et al., 2022, Hunting for hints of streamflow depletion in hydrographs: American Geophysical Union Fall Meeting.
- Zipper, S., et al., 2022, Managing temporal trade-offs through irrigation and yield forecasting to advance groundwater conservation: NASA Western Water Applications Office/Earth Science Applications Meeting.
- Zipper, S. C., Popescu, I., Compare, K., Seybold, E. C., and Zhang, C., 2022, Alternative stable states and stabilizing feedbacks in a large non-perennial river: AGU Frontiers in Hydrology Meeting, oral presentation, San Juan, Puerto Rico.

## Awards & Honors

- Butler, J. J., Jr. — Excellence Award in Interdisciplinary Scholarship, Michigan State University Chapter, Honor Society of Phi Kappa Phi (2022 – award given to MSU-KGS research group).
- Layzell, A. L., Newell, K. D., Oborny, S. C., Mandel, R. D., and Dunham, J. W. — ICA and IMIA Recognition of Excellence in Cartography award from the 2022 Esri User Conference Map Gallery **for** Surficial geology of



Miami County, Kansas, Map M-126, [https://www.kgs.ku.edu/General/Geology/County/klm/M-126\\_Miami\\_2022.pdf](https://www.kgs.ku.edu/General/Geology/County/klm/M-126_Miami_2022.pdf)

Miller, R. — Technical Committee Contribution Award, SEG Middle East.

Ortega-Ariza, D. — Faculty Success Program — the National Center for Faculty Development & Diversity.

Selected KU participant, total tuition: \$4,250 (KU Center for Faculty Development & Mentoring, \$2,500, KGS matching funds: \$1,750)

Schneider, B. — Association for Women Geoscientists Enhance Award

Zipper, S. — Kohout Early Career Award, Geological Society of America Hydrogeology Division.

Zipper, S. — Excellence Award in Interdisciplinary Scholarship (award to collaborative team), Michigan State University Chapter of the Honor Society of Phi Kappa Phi.

## Internal Service

Andrzejewski, K. A. — Search Committee, GIS Specialist

Layzell, A. L. — Member, Stratigraphic Nomenclature Committee

Layzell, A. L. — Editor, Midcontinent Geoscience

Mandel, R. D. — Director and State Geologist

Mandel, R. D. — Associate Editor, Midcontinent Geoscience

Mandel, R. D. — Member, Stratigraphic Nomenclature Committee

Miller, R. D. — KGS, Promotion and Review Committee

Mohammadi, S. — Search committee, KGS Research Project Manager

Mohammadi, S. — Member, KGS Diversity, Equity, Inclusion, and Belonging (DEIB) Committee, 2021 to present

Oborny, S. C. — Helped operate KGS information booth at the Eastern Kansas Oil and Gas Association Annual Meeting, Prairie Band Casino, Kansas

Oborny, S. C. — Helped operate KGS information booth at the Kansas Independent Oil and Gas Association Annual Meeting, Wichita, Kansas

Ortega-Ariza, D. — Member, Stratigraphic Nomenclature Committee

Ortega-Ariza, D. — Member, CUSP and CUSP Data Analytics Group

Ortega-Ariza, D. — Member, Diversity, Equity, Inclusion and Belonging (DEIB) Committee

Ortega-Ariza, D. — Member, Postdoc Search Committee — Machine Learning

Potter, N. — KDHE Geology and Well Technology Seminar and Tech Fair booth

Potter, N. — KC Gem and Mineral Show booth

Potter, N. — Member, DEIB Committee

Potter, N. — Data Entry Assistant search committee (2)

Schneider, B. — Co-chair, KGS DEIB Committee

Schneider, B. — Chair, Search Committee for Science Communication Specialist

Schneider, B. — Member, DEIB in KU Research Working Group

Schneider, B. — Member, Safe and Inclusive Field Work Task Force in the Office of Research

Schneider, B. — Member, KU CLAS DEI Cabinet

Schneider, B. — Instructor, one section of LDST 301

Schneider, B. — Developed and taught new course, GEOL 856: Geophysical Methods for Environmental Applications, for the KU Geology Professional Science Masters program

Seybold, E. C. — Co-director, KGS Geohydrology Internship Program

Smith, J. J. — KGS STATEMAP Coordinator

Smith, J. J. — Chair, Stratigraphic Nomenclature Committee

Smith, J. J. — Member, KGS Promotion and Review Committee

Smith, J. J. — Member, Cartographic Service Specialist Search Committee

Smith, J. J. — Associate Editor, Midcontinent Geoscience

Stewart, D. — KGS booth, KDHE Geology & Well Technology 27th Annual Fall Seminar/Tech Fair, Wichita, Kansas, October 25–26

Tollefson, J. M. — Technical Editor, Midcontinent Geoscience

Tollefson, J. M. — Member (ex-officio), KGS Stratigraphic Nomenclature Committee

Zipper, S. — Co-Chair, KGS Diversity, Equity, Inclusion, and Belonging (DEIB) committee

Zipper, S. — Member, KGS/KGS Research Project Coordinator search committee, KGS Laboratory Director search committee, and KGS Field Research Technician search committee

Zipper, S. — Co-chair, KGS Geohydrology Internship Program search committee



Zipper, S. — Chair, KGS Postdoctoral Research search committee

## External Service

- Butler, J. J., Jr. — Lead editor, special section of the journal *Water Resources Research* on the 2019 Chapman Conference (American Geophysical Union), for which he served as co-chair
- Butler, J. J., Jr. — Conference co-chair, *Sustain Valencia 2022: Achieving Sustainable Groundwater Management: Promising Directions and Unresolved Challenges*, Universitat Politècnica de València, Valencia, Spain, October 6–8, 2022
- Butler, J. J., Jr. — Member, Kansas Water Resources Institute Administrative Council
- Butler, J. J., Jr. — Member, Kansas Water Bank Review Group
- Butler, J. J., Jr. — Promotion Evaluator, Department of Geoscience, University of Wisconsin-Madison
- Butler, J. J., Jr. — Member, Darcy Lecture Task Force, National Ground Water Association
- Butler, J. J., Jr. — Reviewer for *Advances in Water Resources*, *Earth's Future*, *Environmental Research Letters*, *Geophysical Research Letters*, *Groundwater*, *Hydrologic Processes*, *Kansas Water Office*, *Nature Sustainability*, *Science*, *The Groundwater Project*, *The Journal of the American Water Resources Association*, *Tsinghua University*, and *Water Resources Research*
- Holcomb, J. A. — Session co-convenor, *Geoarchaeology at the Micro-Scale: Recent Advances in Microanalytical Techniques*, Geological Society of America, Denver, Colorado.
- Layzell, A. L. — Member, National Geologic Map Database Project Technical Advisory Working Group
- Layzell, A. L. — Guest lecturer, *Geoarchaeology (ANTH 517)*, University of Kansas, Department of Anthropology, February 2022
- Layzell, A. L. — Member, Kansas Watershed Restoration and Protection Strategy (WRAPS) Work Group
- Layzell, A. L. — Reviewer for Geological Society of America Mackin, Howard, and Morisawa student awards (Quaternary Geology and Geomorphology Division)
- Layzell, A. L. — Field trip leader, *NSF Research Experiences for Teachers: Exploring Career Opportunities through Water-Themed Engineering Research*, July 2022
- Ludigson, G. A. — Guest editor, special Issue of *Geosciences* on terrestrial paleoclimatology and paleohydrology of the Cretaceous greenhouse world
- Ludigson, G. A. — Associate editor, *Journal of Sedimentary Research (SEPM)*
- Mandel, R. D. — Member, KU Search Committee for Museum Curator/Professor, Joint Appointment with the Biodiversity Institute and Department of Anthropology
- Mandel, R. D. — Associate Editor, *Geoarchaeology: An International Journal*, John Wiley & Sons, Inc.
- Mandel, R. D. — Associate Editor, *Encyclopedia of Geoarchaeology*, Springer Press
- Mandel, R. D. — Chair, Fund Raising Committee for Student Research, Geological Society of America, Soils & Soil Processes Division
- Mandel, R. D. — Member, Personnel Committee, KU Department of Anthropology
- Mandel, R. D. — Reviewer, one manuscript submitted to *Science*
- Mandel, R. D. — Reviewer, one manuscript submitted to *Quaternary Science Reviews*
- Miller, R. D. — SEG, Strategic Options Presidential Task Force
- Miller, R. D. — SEG, Justice, Equity, Diversity, and Inclusion Committee
- Miller, R. D. — SEG, Nominations Committee
- Miller, R. D. — SEG, Honors and Awards Committee
- Mohammadi, S. — Peer reviewer, *Marine and Petroleum Geology*
- Mohammadi, S. — Peer reviewer, *The Depositional Record Journal*
- Mohammadi, S. — Reviewer, AWG Scholarship program
- Mohammadi, S. — Review committee for a KU institution
- Mohammadi, S. — Reviewer for an Elsevier's book proposal
- Ortega-Ariza, D. — NSF panelist – review, discuss and recommend grant proposals for funding
- Ortega-Ariza, D. — Reviewer, submitted abstracts — Carbonates session, 2022 IMAGE annual meeting
- Ortega-Ariza, D. — Co-advisor, master's student, KU Department of Geology
- Ortega-Ariza, D. — External committee member, PhD student, University of Alabama
- Ortega-Ariza, D. — External committee member, master's student, University of Texas A&M-Kingsville
- Ortega-Ariza, D. — Steering committee, KU Faculty Women & Allies Leadership Network
- Ortega-Ariza, D. — Facilitator, one-hour breakout room discussion, KU Townhall meeting for NSF ADVANCE, Systemic factors, equity and inclusion, policy and practice, culture at KU

Ortega-Ariza, D. — Co-facilitator, Jayhawks Give a Flock, KU Sexual Assault Prevention & Education Center

Ortega-Ariza, D. — Judge, student posters, GHawk Symposium, KU Department of Geology

Ortega-Ariza, D. — Guest editor, Midcontinent Geoscience

Schneider, B. — Vice-chair, SEG Near Surface Technical Committee

Schneider, B. — Town Hall Moderator and Convener, Leadership Courage to Transform Workplace Climate, American Geophysical Union Fall Meeting

Schneider, B. — Associate Editor, Journal of Environmental and Engineering Geophysics

Seybold, E. C. — Member, AGU Water Quality Technical Committee

Seybold, E. C. — Topic editor, Women in Science special issue for Frontiers in Water

Seybold, E. C. — Ad hoc peer-reviewer for 11 manuscripts in Biogeochemistry, Hydrological Processes, JGR-Biogeosciences, HESS, PLOS Water, JAWRA, Ecosystems

Seybold, E. C. — Panelist, NSF Hydrologic Sciences Program

Seybold, E. C. — Ad-hoc Reviewer for 3 NSF proposals (DEB Ecosystem Sciences Cluster, Hydrologic Sciences, GLD)

Seybold, E. C. — AGU Fall Meeting session convener: Global Impact of Non-perennial Waterways: Integrating Hydrological, Geochemical, Microbiological, and Social Perspectives; Frontiers in Water-Quality Science: Origins, Patterns, and Detection of Spatial and Temporal Dynamics

Smith, J. J. — Co-chair, Xialin (Kevin) Han, Ph.D. committee, University of Kansas

Smith, J. J. — Member, Matthew Allen, Ph.D. committee, University of Kansas

Smith, J. J. — Member, Nick Ferry, Ph.D. committee, University of Kansas

Smith, J. J. — Member, GSA Representative, North American Commission on Stratigraphic Nomenclature (NACSN)

Smith, J. J. — Member, Commissioner at Large, North American Commission on Stratigraphic Nomenclature (NACSN)

Smith, J. J. — Member, Taphonomy and Stratigraphic Paleobiology Research Group, Brazilian Council for Research (CNPq)

Smith, J. J. — Handling editor, Palaeontologica Electronica

Zipper, S. — Member, Ecohydrology Technical Committee, American Geophysical Union

Zipper, S. — Panelist, KU Research Rising review panel, 2022

Zipper, S. — Ad hoc reviewer, Legislative-Citizen Commission on Minnesota Resources (1 proposal reviewed), Babbitt Center Dissertation Fellowship Program (1 proposal reviewed), NSF HEGS program (1 proposal reviewed), and NSF EAR-PF program (1 proposal reviewed)

Zipper, S. — Peer reviewer, eight manuscripts for Water Resources Research, Journal of Hydrology, Environmental Research Letters, Hydrological Processes, and Agricultural Water Management

## Grants

Bohling, G. C., Wilson, B. B., and Butler, J. J., Jr.: Addressing Groundwater Goals of the Missouri Regional Planning Area — Phase II, \$93,200, Kansas Water Office, 2018–2024.

Brookfield, A. E.: Visualizing the Invisible: Causes, Consequences, Changes, and Management of Streamflow Depletion across the U.S., USGS Powell Center Working Group. PIs: A. E. Brookfield (lead), L. M. Hays, M. C. Hill, and S. C. Zipper. Total Award: \$163,530. 2019–2023.

Butler, J. J., Jr., and Bohling, G. C.: High Plains aquifer index well program, \$305,000, Kansas Water Office, 2019–2024.

Butler, Bohling, Liu, and Wilson: Kansas River alluvial aquifer observation well network maintenance and modeling, \$240,000, Kansas Water Office, 2022–2025.

Butler, J. J., Jr., and Liu, G.: INFEWS/T1: Developing pathways toward sustainable irrigation across the United States using process-based systems models (SIRUS), U.S. Department of Agriculture, \$148,704, 2018–2023.

Butler, J. J., Jr., and Seybold, E. C.: Assessment of groundwater mineralization in the upper Arkansas River corridor, \$77,000, Kansas Water Office, 2019–2022.

Hasiuk, F. (PI), Co-PIs: Scott, I., Bode-Omoleye, I., Ortega-Ariza, D., Mohammadi, S., Ridley, C., Raney, J., and Eleson, J.: Potential Field Deployment Project: CCUS Hub Concept for ONEOK: Natural Gas Liquids Fractionation and Gas Processing Plants in Kansas and Oklahoma, Infrastructure Development for Handling of New Gaseous Products, submitted to CUSP, \$1,098,072 (DOE Award No.: DE-FE0031837).

Husic, A.: Forecasting streamflow and groundwater depletion with deep learning models to sustain Kansan water resources, Kansas Water Resources Institute/USGS 104b. PIs: Admin Husic (lead), Sam Zipper. Total Project Amount: \$50,000 (+\$50,000 matching funds). 2022–2024.

Layzell, A. L., Mandel, R. D.: Streambank Evaluation of the Cottonwood and Neosho Rivers above John Redmond Reservoir, Kansas Water Office, \$100,000, 2002.

Mandel, R. D.: A statewide geographic information system (GIS) as a predictive tool for locating deeply buried archaeological deposits in Nebraska (Phase III), the Sandhills Region, \$88,500, History Nebraska/Nebraska Department of Transportation, September 1, 2022–May 31, 2024.

Miller, R. D. (PI): Norcal Geophysical Consultants, High-resolution seismic reflection to map bedrock, faulting, and lithologic contacts in the upper 1 km in White Pine County, Nevada, 2022, \$132,427.

Mohammadi, S. (PI), Co-PIs: Hasiuk, F., Oborny, S., Bode-Omoleye, I., Smith, J. J., Ishman, S., Mastalerz, M., McLaughlin, P., Clark, R., Bancroft, A., Seeger, C., Ganz, K., Devera, J., Elrick, S., Andrews, W., McDonald, J., McCafferty, A., and Emsbo, P.: Critical minerals in Pennsylvanian black shales of the Midcontinent: USGS Earth MRI Cooperative Agreement for Geochemical Reconnaissance, federal total for participating states: \$975,000, Kansas total: \$325,000, 2022–2025.

Seybold, E. NSF EPSCoR: Emerging STEM Scholar: Building STEM workforce capacity in undergraduates and mentors. Co-PI. Total award amount \$999,835. Funded in 2022; 5 year project.

Smith, J. J. (PI), Co-PIs: Hasiuk, F., Layzell, A., Oborny, S., Andrzejewski, K., Dunham, J.W., Ortega-Ariza, D., Bode-Omoleye, I., Mohammadi, S., Franseen, E., Mandel, R.D., and Ishman, S.: Geologic Mapping in Kansas for FY22. U.S. Geological Survey STATEMAP Program. Requested agency total: \$599,195.

Potter, N. (PI), Co-PIs: Stewart, D., Oborny, S., Louis, D, and Hasiuk, F.: Preserving Kansas Geologic Data, Documents, Samples, and Aerial Photographs; and Surveying Drill Hole/Core Holdings Related to Critical Mineral Resources, FY 2022. U.S. Geological Survey, National Geological and Geophysical Data Preservation Program (NGGDPP). Total Combined Federal and State: \$378, 706. 2022

Seybold, E. C.: NSF EPSCoR: Emerging STEM Scholar: Building STEM workforce capacity in undergraduates and mentors. Co-PI with Blair Schneider (KGS). Total award amount \$999,835. Funded in 2022; 5-year project.

Seybold, E. C.: Spatial variability and subsurface controls of groundwater recharge and nutrient mobilization in dry streams, Kansas Water Resources Institute/USGS 104b. PIs: E. C. Seybold (lead), S. C. Zipper, and C. Zhang. Total Award: \$40,000. 2020–2022.

Smith, J. J. (PI), Co-PIs: Hasiuk, F., Layzell, A., Oborny, S., Andrzejewski, K., Dunham, J. W., Ortega-Ariza, D., Bode-Omoleye, I., Mohammadi, S., Franseen, E., Mandel, R. D., and Ishman, S.: 2022, Geologic Mapping in Kansas for FY22: U.S. Geological Survey STATEMAP Program. Federal total: \$599,195.

Smith, J.J. (PI), Co-PIs: Layzell, A., Ortega-Ariza, D., Oborny, S., Andrzejewski, K., Hasiuk, F., Franseen, E., Dunham, J.W., Bode-Omoleye, I., and Mohammadi, S.: Geologic Mapping in Kansas for FY23. U.S. Geological Survey STATEMAP Program. Requested agency total: \$800,000; State match: \$800,000. 2022.

Wardropper, C. (PI), S. Zipper, A. Zwickle (Co-PIs) USDA NIFA Agriculture and Food Research Initiative, Sustainable Agroecosystems program area: Sustaining ecosystem services in agricultural landscapes through a better understanding of decision-support systems. Total amount \$299,509 | KGS Award Amount: \$132,417. 9/1/2022-8/31/2024

Wilson, Butler, and Reboulet: Co-Principal Investigator, Maintain existing and expand Kansas-based data services to the National Groundwater Monitoring Network, United States Geological Survey, \$132,239, 2021–2022.

Wilson, Liu, Bohling, and Butler: Update of the GMD3 groundwater model, \$160,000, Kansas Water Office and Southwest Kansas Groundwater Management District #3, 2021–2023.

Zipper, S.: Managing Temporal Trade-Offs through Irrigation and Yield Forecasting to Advance Groundwater Conservation; NASA A.34 Earth Science Applications: Water Resources. PIs: S. Zipper (lead), J. J. Butler, T. Foster, J. Kastens, L. Marston, and B. Wilson. Total Award: \$100,000. 2022–2025.

Zipper, S.: Irrigation at the new 100th Meridian: Adaptation to manage climate risks and preserve water resources in the Eastern Kansas River Basin, USDA NIFA Agriculture and Food Research Initiative, Water Quantity and Quality program area. PIs: S. C. Zipper (lead), K. S. Nelson, E. Seybold, and V. Sharda. Total Award: \$750,000 (\$503,988 to KU). 2022–2026.

Zipper, S.: Sustaining ecosystem services in agricultural landscapes through a better understanding of decision-support systems, USDA NIFA Agriculture and Food Research Initiative, Sustainable Agroecosystems program area. PIs: C. Wardropper (lead), S. C. Zipper (KU lead), A. Zwickle. Total Award: \$299,509 (\$132,417 to KU). 2022–2024.

- Zipper, S.: DISES: Toward resilient and adaptive community-driven management of groundwater dependent agricultural systems, NSF Dynamics of Integrated Social and Environmental Systems. PIs: L. Marston (lead), S. Zipper (KU lead), J. Butler, M. Sanderson, and D. Yu. Total Award: \$1,599,999 (\$590,042 to KU). 2022–2026.
- Zipper, S.: Advancing a Community Groundwater Model Portal (GroMoPo), CUAHSI Hydroinformatics Innovation Fellowship. PI: S. C. Zipper (lead), K. Befus, J. Castilla-Rho, T. Gleeson, R. Reinecke, and D. Zamrsky. Total Project Amount: \$4976. 2022.
- Zipper, S. (Co-I, lead of hydrology team): RII Track II-FEC: Aquatic Intermittency effects on Microbiomes in Streams (AIMS), NSF EPSCoR Research Infrastructure Improvement Program: Track-2 Focused EPSCoR Collaborations. PIs: A. Burgin (lead, KU lead), D. C. Allen, C. L. Atkinson, S. E. Godsey, K. A. Kuehn, C. R. Jackson, and L. H. Zeglin. Total Award: \$5,998,875. 2020–2024.

### Refereed Publications

- Atwah, I., Mohammadi, S., Moldowan, J. M., and Dahl, J., 2021, Episodic hydrocarbon charge in tight Mississippian reservoirs of Central Oklahoma, USA: Insights from oil inclusion geochemistry: *Marine and Petroleum Geology*, v. 123, p. 16. <https://doi.org/10.1016/j.marpetgeo.2020.104742>
- Barineau, C., and Ortega-Ariza, D., 2021, An Upper Cretaceous paleodrainage system on the coastal plain unconformity of Alabama-Georgia; *in* J. Florsheim, C. Koeberl, M. P. McKay, and N. Riggs, eds., *GSA Section Meeting Guides: Geological Society of America Field Guide* 61, p. 1–26. [https://doi.org/10.1130/2021.0061\(03\)](https://doi.org/10.1130/2021.0061(03))
- Biebesheimer, E. J., Cramer, B. D., Calner, M., Barnett, B. A., Oborny, S. C., and Bancroft, A. M., 2021, Asynchronous  $\delta^{13}\text{C}_{\text{carb}}$  and  $\delta^{13}\text{C}_{\text{org}}$  records during the onset of the Mulde (Silurian) positive carbon isotope excursion from the Altajme core, Gotland, Sweden: *Chemical Geology*, v. 576, p. 120,256. <https://doi.org/10.1016/j.chemgeo.2021.120256>
- Bohling, G. C., Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2021, Evaluation of data needs for assessments of aquifers supporting irrigated agriculture: *Water Resources Research*, v. 57, no. 4. doi: 10.1029/2020WR028320
- Borisov, D., Miller, R. D., Ivanov, J., Peterie, S. L., and Sloan, S. D., 2021, Delineating mines using full-waveform inversion in Galena, Kansas [Exp. Abs.]: First International Meeting for Applied Geoscience & Energy, Society of Exploration Geophysicists/AAPG, Denver, Colorado, p. 1,871–1,875.
- Borisov, D., Miller, R. D., Ivanov, J., Peterie, S. L., and Sloan, S. D., 2021, Waveform inversion of shallow seismic data with randomly selected sources [Exp. Abs.]: International Conference on Engineering Geophysics, Al Ain, UAE, October 25–28.
- Buchanan, R., 2021, There may be no better place to do hydrogeological field work during a pandemic than western Kansas: *Groundwater Monitoring and Remediation*, v. 41, n. 3, p. 86–87.
- Butler, J. J., Jr., Gomez-Hernandez, J. J., Perrone, D., and Hyndman, D., 2021, Introduction to special section: The quest for sustainability of heavily stressed aquifers at regional to global scales: *Water Resources Research*, v. 57, no. 8. doi: 10.1029/2021WR030446
- Butler, J. J., Jr., Knobbe, S., Reboulet, E. C., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2021, Water well hydrographs: An underutilized resource for characterizing subsurface conditions: *Groundwater*, v. 59, no. 6, p. 808–818. doi: 10.1111/gwat.13119
- Deines, J. M., Kendall, A. D., Butler, J. J., Jr., Basso, B., and Hyndman, D. W., 2021, Combining remote sensing and crop models to assess the sustainability of stakeholder-driven groundwater management in the US High Plains Aquifer: *Water Resources Research*, v. 57, no. 3. doi: 10.1029/2020WR027756
- Dillis, C., Butsic, V., Carah, J., Zipper, S. C., and Grantham, T., 2021, Cannabis farms in California rely on wells outside of regulated groundwater basins: *Environmental Research Communications*. DOI: [10.1088/2515-7620/ac1124](https://doi.org/10.1088/2515-7620/ac1124)
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- Suarez, M. B., McLean, N. M., Möller, A., Ludvigson, G. A., Kirkland, J. I., Montgomery, E., and Paige, M., 2021, Combined CA-ID-TIMS and carbon isotope chemostratigraphy to correlate Cretaceous continental strata of the Ruby Ranch Member of the Cedar Mountain Formation: Geological Society of America Abstracts with Programs, v. 53, no. 6. doi: 10.1130/abs/2021AM-370386
- Torres-Zamora, A., Ortega-Ariza, D., and Franseen, E. K., 2021, Controls on deposition and reservoir character of atypical shallow-water tropical carbonate systems: Miocene, Cicuco Field, NW Colombia: European Association of Geoscientists and Engineers (EAGE)-Houston Geological Society (HGS) Virtual Conference on Latin America.
- Torres-Zamora, A., Ortega-Ariza, D., and Franseen, E.K., 2021, Controls on deposition and reservoir character of atypical shallow-water tropical carbonate systems: Miocene, Cicuco Field, NW Colombia: SACNAS National Diversity in STEM Conference.
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2021, Precipitation and pumping relationships: A simple approach to assess the effectiveness of groundwater conservation measures, Abstract H12C-05 presented at 2021 Hybrid Fall Meeting: American Geophysical Union, December 13.
- Wu, F. V., Borisov, D., Simons, F. J., and Williamson, P., 2021, Waveform inversion for shear velocity and attenuation via the spectral-element adjoint method: First International Meeting for Applied Geoscience & Energy, Society of Exploration Geophysicists/American Association of Petroleum Geologists, Denver, Colorado, September 26–30, p. 697–701.

## Presentations

- Ayers, J., et al., 2021, On the role of climate in monthly baseflow changes across the continental United States: American Geophysical Union Fall Meeting.
- Barineau, C., and Ortega-Ariza, D., co-field trip leader, An Upper Cretaceous paleodrainage system on the Coastal Plain unconformity of Alabama-Georgia, Geological Society of America Section Meeting, virtual.
- Burgin, A. J., et al., 2021, Aquatic intermittency effects on microbiomes in streams (AIMS): Successes and challenges in launching a new track 2 during COVID: National EPSCoR Meeting (Virtual).
- Butler, J. J., Jr., 2021, An overview of the groundwater resources of Kansas: Kansas House Water Committee, web presentation, January 25.
- Butler, J. J., Jr., 2021, Separating the signal from the noise in aquifer test data: Midwest Geosciences Group, internet webinar, October 26.
- Butler, J. J., Jr., 2021, The ABCs of slug testing: Midwest Geosciences Group, internet webinar, September 30.

- Butler, J. J., Jr., and Whittemore, D. O., 2021, Gave a web presentation on the Index Well Program: Kansas Water Office and other state and regional agencies, web presentation, June 1.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2021, An overview of the hydrogeology of Kansas: National Groundwater Association Hydrogeology of States Webinar Series, invited presentation, May 19.
- Butler, J. J., Jr., and Wilson, B. B., 2021, Water levels and county-based water use vs water level relationships: Annual Meeting of Western Kansas Groundwater Management District #1, Scott City, August 11.
- Glose, T., et al., 2021, Time lags between pumping reductions and recharge response under groundwater conservation: Geological Society of America – South Central Section Meeting.
- Glose, T., et al., 2021, Quantification of time-varying aquifer responses to adoption of low-pressure irrigation technology: American Geophysical Union Fall Meeting.
- Glose, T., et al., 2021, Weather whiplash in Kansas: Past and future: Kansas Governor's Conference on the Future of Water.
- Glose, T., et al., 2021, Weather whiplash across Kansas: Quantification of changes in spatial and temporal trends: American Geophysical Union Fall Meeting.
- Grande, E., Arora, B., Visser, A., Montalvo, M., Braswell, A. E., Seybold, E. C., Tatariw, C., Beheshti, K., and Zimmer, M. A., 2021, Tidal forcing influences on biochemical processes in a salt marsh: AGU Fall Meeting, oral presentation, New Orleans.
- Gutierrez-Cala, L., et al., 2021, Looking for the present in the past: Paleoenvironmental analyses and social-ecological memory to explore changes in the mangroves of the Cienaga Grande de Santa Marta – Colombia: European Geophysical Union General Assembly.
- Holcomb, J. A., 2021, Disentangling site formation processes using soil micromorphology and geochemistry (pXRF) at Stelida, Naxos, Greece: Newcastle University, February 22.
- Hollenbach, A., Mohammadi, S., Goldstein, R. H., and Möller, A., 2021, Early timing of hydrothermal overprint: STACK Play, Oklahoma: AAPG ACE.
- Hollenbach, A., Mohammadi, S., Goldstein, R. H., and Möller, A., 2021, Hydrothermal fluid flow and burial history in the STACK Play of north central Oklahoma: KGS Midcontinent Carbonate Research virtual symposium, September 14–15.
- Hollenbach, A., Mohammadi, S., Goldstein, R. H., Möller, A., and Gregg, J. M., 2021, Multiple episodes of hydrothermal fluid flow in the midcontinent revealed by U/Pb dating, petrography, and fluid inclusions: KGS Midcontinent Carbonate Research virtual symposium, September 14–15.
- Hollenbach, A., Mohammadi, S., Goldstein, R. H., Möller, A., and Gregg, J. M., 2021, Tracking the hydrothermal overprint in the Midcontinent: Kansas Interdisciplinary Carbonates Consortium.
- Holubnyak, E., Hasiuk, F., Meng, J., Nottle, A., Tsoflias, G., Hollenbach, J., Ansari, E., Bode-Omoleye, I., Ahlert, A., Kingsley, L., Ajobiewe, N., Mohammadi, S., Wreath, D., Smith, M., Smith, C. and Raines, J., 2021, CCUS stacked storage characterization of Hartland-Patterson Site in south-west Kansas: AAPG ACE.
- Kar, K., et al., 2021, Identifying nonlinear change in non-perennial streamflow: American Geophysical Union Fall Meeting.
- Kendall, A., et al., 2021, Simulating the hydrologic effects of aquifer-wide adoption of efficient irrigation technologies: American Geophysical Union Fall Meeting.
- Kincaid, D., Hamshaw, S., Underwood, K., Seybold, E. C., Adair, C., Perdrial, J., Rizzo, D., Wemple, B., and Schroth, A., 2021, Self-organizing maps reveal the influence of event regimes on dissolved N and P export dynamics from an agricultural and forested watershed: Society of Freshwater Sciences Annual Meeting, virtual conference, oral presentation.
- Loheide, S. P., et al., 2021, Groundwater-crop interactions: How shallow groundwater affects yield and how groundwater management can close the yield gap: American Geophysical Union Fall Meeting.
- Ludvigson, G. A., 2021, Some new findings of the paleoclimatology of the Cretaceous greenhouse world: Department of Geology Colloquium, University of Kansas, Lawrence, Kansas, December 2.
- Mandel, R. D., 2021, In the footprints of Kirk Bryan and Claude C. Albritton, Jr.: A reinvestigation of late-Quaternary landscape evolution and geoarchaeology in the Big Bend region of Southwest Texas: Texas Bureau of Economic Geology, University of Texas at Austin, April 30.
- Mandel, R. D., 2021, Searching for evidence of the first people in the Americas: A geoarchaeological & paleoecological perspective: Keynote Address, 27<sup>th</sup> Annual Conference of the Center for Big Bend Studies, Sul Ross State University, Alpine, Texas, November 6.
- Miller, R. D., 2021, Arbuckle Study Group, Update on Arbuckle Study and 2021 Seismicity, October 20.
- Miller, R. D., 2021, Consortium to Study Trends in Seismicity, 2021 Annual Meeting, Regulatory, Legislative, and Industry Aspects of Seismicity, August 5 (virtual).

- Miller, R. D., 2021, Current Trends in Kansas Seismicity, Kansas House Energy, Utilities, and Telecomm Committee.
- Miller, R. D., 2021, DGG/SEG Scientific Drilling Workshop (virtual), March.
- Miller, R. D., 2021, ICEG, Al Ain, UAE, Conference Opening Address (virtual), October 25.
- Miller, R. D., 2021, invited presentation, ICEG, Al Ain, UAE, Keynote Address (virtual), October 25.
- Miller, R. D., 2021, invited presentation, KDHE, Geology Seminar, September 14.
- Miller, R. D., 2021, Salina area earthquake update: Geological Survey Advisory Council, Lawrence, Kansas, December 9.
- Miller, R. D., 2021, SEG Workshop, Application of Proximal and Remote Sensing Tech for Soil Investigations (virtual), August.
- Miller, R. D., 2021, SEG Workshop, Re-defining Direct Hydrocarbon Indicators, Keynote (virtual), June.
- Miller, R. D., 2021, SEG-NSG, Convocation and Society Host, Summit on Drone Geophysics (virtual), Denver, Colorado, November 2.
- Miller, R. D., 2021, Seismicity and Arbuckle Study, KWO, House Appropriations Committee.
- Miller, R. D., Ivanov, J., Peterie, S. L., and Borisov, D., 2021, Blurring the lines between near surface and conventional seismic imaging [Exp. Abs.]: International Conference on Engineering Geophysics, Al Ain, UAE, Oct. 25–28 (hybrid).
- Mohammadi, S., and Gregg, J. M., 2021, Diagenetic impact of basinal and hydrothermal fluids in the Mississippian rocks of the southern midcontinent of USA: Carbonate Forum 2021, online presentation.
- Mohammadi, S., Hollenbach, A., Goldstein, R. H., and Möller, A., 2021, Timing of hydrothermal fluid flow events in Kansas and tri-state mineral district: KGS Midcontinent Carbonate Research virtual symposium, September 14–15.
- Montalvo, M., Grande, E., Zimmer, M. A., Braswell, A. E., Haskins, J. C., Endris, C., Gerbl, F., Tatariw, C., Arora, B., Visser, A., Seybold, E. C., Caldwell, W., and Grunewald, E. D., 2021, Seasonal changes in subsurface hydrology influence nutrient cycling in a salt marsh: AGU Fall Meeting, poster presentation, New Orleans.
- Nerhus, K., et al., 2021, Analyzing recharge through playas with various land uses to the central High Plains aquifer in Western Kansas: Geological Society of America Annual Meeting.
- Oborny, S., and Layzell, A. L., 2021, Pennsylvanian stratigraphic nomenclature reconciliation in the midcontinent: Digital Mapping Techniques-Lite, virtual conference, December 6–7.
- Ortega-Ariza, D., invited speaker, GeoScience World, GSW In Our Customers Shoes Session.
- Perdrial, J. N., Kincaid, D., Wheaton, D., Walls, L., Ul Haq, I., Rizzo, D., Hamshaw, D., Lee, B., Seybold, E. C., Lewis, G., Toolin, R., and Chorover, J., 2021, Why Critical Zone (CZ) science needs team science: insights from the Big Data CZ Network cluster: AGU Fall Meeting, poster presentation, New Orleans.
- Perdrial, J. N., Kincaid, D. W., Wheaton, D., Walls, L., Ul Haq, I., Rizzo, D., Hamshaw, S. D., Lee, B. S., Seybold, E. C., Lewis, G., Toolin, R. E., Chorover, J., 2021, Why Critical Zone (CZ) science needs team science: insights from the big data CZ network cluster: AGU Fall Meeting, oral presentation, New Orleans.
- Price, A., et al., 2021, The drying regimes of non-perennial rivers: European Geophysical Union General Assembly.
- Price, A., et al., 2021, The drying regimes of non-perennial rivers and streams: American Geophysical Union Fall Meeting.
- Price, A., et al., 2021, The drying regimes of non-perennial rivers and streams: California section of the Society for Freshwater Sciences.
- Reeves, H., et al., 2021, Estimating impacts of groundwater withdrawals on streamflow: International Association of Great Lakes Research meeting.
- Ruckhaus, M., Seybold, E. C., Petrine, M., Shanley, J., Stewart, B., Li, L., Underwood, K., Lini, A., and Perdrial, J. N., 2021, Carbon and nitrogen dynamics in Sleepers River Research Watershed: A combined lab and field study: AGU Fall Meeting, poster presentation, New Orleans.
- Schneider, B., et al., 2021, Looking forward: URGE action items underway from the KansasGeo pod: Geological Society of America Annual Meeting.
- Seybold, E. C., et al., 2021, Effects of rain on snow events on runoff generation and nutrient export from forested and agricultural catchments in northern Vermont: Society of Freshwater Sciences Annual Meeting, virtual conference, oral presentation.
- Seybold, E. C., Wolford, M., Brown, C. L., Burgin, A., Flynn, S., Godsey, S., Hale, R., Jones, C. N., Peterson, D., Smith, C., Speir, S., Wheeler, C., Wilhelm, J., and Zipper, S., 2021, The effects of flow intermittency and groundwater-surface water exchange on stream biogeochemistry in a non-perennial prairie stream: AGU Fall Meeting, invited oral presentation, New Orleans.

- Shanley, J., Sebestyen, S., Chalmers, A., Matt, S., Chandler, D., Bailey, S., Campbell, J., Ryan, K., Perdrial, J., Ruckhaus, M., Seybold, E. C., Li, L., Stewart, B., Liu, F., and Porter, V., 2021, Long-term research and monitoring at Sleepers River Research Watershed, Vermont USA: AGU Fall Meeting, oral presentation, New Orleans.
- Stewart, B., Shanley, B., Matt, S., Perdrial, J., Ruckhaus, M., Seybold, E. C., and Li, L., 2021, Stream chemistry response to external perturbations at Sleeper's River: AGU Fall Meeting, oral presentation, New Orleans.
- Stewart, D., 2021, National Geological and Geophysical Data Preservation Program Grant Preservation Practices, training presentation and discussion of well log digitization process to USGS personnel and summer interns, July.
- Tatariw, C., Seybold, E. C., Montalvo, M., Zimmer, M. A., Kleinhuizen, A., Visser, A., Braswell, A. E., Grande, E., and Arora, B., 2021, Seasonal precipitation is a hydrologic driver of salt marsh nitrogen removal: AGU Fall Meeting, poster presentation, New Orleans.
- Wheeler, C., et al., 2021, Stream network spatiotemporal connectivity at Konza Prairie, KS: Kansas Governor's Conference on the Future of Water.
- Zipper, S. C., et al., 2021, Groundwater-driven flow regimes and alternate stable states in the Middle Arkansas River, Kansas: Kansas Governor's Conference on the Future of Water.
- Zipper, S. C., et al., 2021, Groundwater-driven intermittency regimes in the Arkansas River, Kansas: Geological Society of America – South Central Section Meeting.
- Zipper, S. C., et al., 2021, Quantifying streamflow depletion for science-based water management: Challenges and emerging approaches: American Geophysical Union Fall Meeting.
- Zipper, S. C., Compare, K., Popescu, I., Seybold, E. C., and Zhang, C., 2021, Flow regimes and alternate stable states in a non-perennial river: AGU Fall Meeting, poster presentation, New Orleans.

## Awards & Honors

- Butler, J. J., Jr. — Sabbatical Leave Award, University of Kansas
- Hartke, E. R., Cramer, B. D., Calner, M., Melchin, M. J., Barnett, B. A., Oborny, S. C., and Bancroft, A. M., — nominated as one of the year's top contributions to Global and Planetary Change for Decoupling  $\delta^{13}\text{C}_{\text{carb}}$  and  $\delta^{13}\text{C}_{\text{org}}$  at the onset of the Ireviken Excursion:  $\Delta^{13}\text{C}$  and  $f_{\text{org}}$  during a Silurian oceanic anoxic event: *Journal of Global and Planetary Change*, v. 196, p. 103–373 (<https://doi.org/10.1016/j.gloplacha.2020.103373>)
- Miller, R. — Past President, SEG, 2020-2021

## Internal Service

- Layzell, A. L. — Member, Stratigraphic Nomenclature Committee
- Layzell, A. L. — Editor, Midcontinent Geoscience
- Mandel, R. D. — Director and State Geologist
- Mandel, R. D. — Associate Editor, Midcontinent Geoscience
- Mandel, R. D. — Member, Stratigraphic Nomenclature Committee
- Miller, R. D. — Chair, KGS Promotion and Review Committee
- Mohammadi, S. — KGS committee search, Research Electrical Engineer position
- Mohammadi, S. — Member, KGS Diversity, Equity, Inclusion, and Belonging (DEIB) Committee
- Mohammadi, S. — Editor and convener, KGS virtual Carbonate Symposium
- Mohammadi, S. — Associate editor, Midcontinent Geosciences (one volume)
- Mohammadi, S. — Peer Reviewer, Midcontinent Geosciences
- Ortega-Ariza, D. — Member, Stratigraphic Nomenclature Committee
- Ortega-Ariza, D. — Assistant Research Professor in Stratigraphy Search Committee
- Ortega-Ariza, D. — Member, Diversity, Equity, Inclusion and Belonging (DEIB) Committee
- Ortega-Ariza, D. — Guest editor, Midcontinent Geoscience
- Ortega-Ariza, D. — Co-convener, KGS Midcontinent Carbonates Research Virtual Symposium, and co-editor of the resulting publication (KGS Technical Series 24)
- Ortega-Ariza, D. — Member, KU Faculty Women and Allies Leadership Network" (FWALN) Committee
- Potter, N. — Member, DEIB Committee
- Potter, N. — KC Gem and Mineral Show booth
- Potter, N. — Core Library Assistant Researcher search committee



Tollefson, J. M. — Technical editor, Midcontinent Geoscience  
 Tollefson, J. M. — Member (ex-officio), KGS Stratigraphic Nomenclature Committee  
 Zipper, S. — Co-chair, Diversity, Equity, Inclusion, and Belonging committee  
 Zipper, S. — KGS Field Research Technician search committee  
 Zipper, S. — AIMS Data Manager search committee

## External Service

Butler, J. J., Jr. — Lead editor, special section of the journal *Water Resources Research* on the 2019 Chapman Conference (American Geophysical Union)  
 Butler, J. J., Jr. — Co-chair, 2019 Chapman Conference (American Geophysical Union)  
 Butler, J. J., Jr. — Lead convener, Prospects for Sustainability of Heavily Stressed Aquifers: Impediments and Opportunities, fall meeting of the American Geophysical Union, New Orleans, December 2021  
 Butler, J. J., Jr. — Convener, Addressing Complex Problems in Hydrogeology with Big Data and Machine Learning, annual meeting of the Geological Society of America, hybrid session, October 2021  
 Butler, J. J., Jr. — Member, Kansas Water Resources Institute Administrative Council  
 Butler, J. J., Jr. — Member, Kansas Water Bank Review Group  
 Butler, J. J., Jr. — Promotion Evaluator, Department of Geoscience, University of Wisconsin-Madison  
 Butler, J. J., Jr. — Member, Darcy Lecture Task Force, National Ground Water Association  
 Butler, J. J., Jr. — Reviewer for *Advances in Water Resources*, *Earth's Future*, *Environmental Research Letters*, *Geophysical Research Letters*, *Groundwater*, *Hydrologic Processes*, *Kansas Water Office*, *Nature Sustainability*, *Science*, *The Groundwater Project*, *The Journal of the American Water Resources Association*, *Tsinghua University*, and *Water Resources Research*  
 Holcomb, J. A., — Panelist, Teaching and Training in Geoarchaeology: Pedagogical Methods and Curricular Pathways, 2021, Society for American Archaeology, San Francisco, California  
 Holcomb, J. A. — Five ad-hoc journal reviews: *International Journal of Geoarchaeology*, *Journal of Field Archaeology*, *PLOS One*, *PaleoAmerica*, *Science Advances*  
 Ludvigson, G. A. — Guest editor, special Issue of *Geosciences* on terrestrial paleoclimatology and paleohydrology of the Cretaceous greenhouse world  
 Ludvigson, G. A. — Associate editor, *Journal of Sedimentary Research* (SEPM)  
 Mandel, R. D. — Associate Editor, *Geoarchaeology: An International Journal*, John Wiley & Sons, Inc.  
 Mandel, R. D. — Organizer and trip leader, “Magic Mountain: A Stratified Site on the Front Range of the Southern Rocky Mountains, North-Central Colorado.” 78<sup>th</sup> Annual Plains Anthropological Conference, Boulder, Colorado, November 10, 2021  
 Mandel, R. D. — Organized and co-chaired a session, “Reconstruction of Quaternary Paleoenvironments at Regional and Global Scales: A Tribute to Eric C. Grimm (1951–2020).” Annual Meeting of the Geological Society of America, Portland, Oregon, October 2021  
 Mandel, R. D. — Member, Personnel Committee, KU Department of Anthropology  
 Mandel, R. D. — Member, Graduate Committee, KU Department of Anthropology  
 Mandel, R. D. — Reviewer, one manuscript submitted to *Science*  
 Mandel, R. D. — Reviewer, one manuscript submitted to *American Journal of Science*  
 Mandel, R. D. — Reviewer, one manuscript submitted to *Quaternary Science Reviews*  
 Mandel, R. D. — Reviewer, one manuscript submitted to *Journal of Archaeological Science*  
 Mandel, R. D. — Reviewer, one manuscript submitted to *Mediterranean Geoscience Reviews*  
 Miller, R. D. — SEG, Strategic Options Presidential Task Force  
 Miller, R. D. — SEG, Justice, Equity, Diversity, and Inclusion Committee  
 Miller, R. D. — ICEG, co-chair, Scientific and Technical Program Committee, Al Ain, UAE, October 25–28  
 Miller, R. D. — SEG, Nominations Committee  
 Miller, R. D. — SEG, Honors and Awards Committee  
 Miller, R. D. — ICEG, Innovations in Geophysics Award, Selection Committee  
 Miller, R. D. — Geophysical Technology, Inc. (GTI) Advisory Board  
 Mohammadi, S. — Peer reviewer, American Association of Petroleum Geologists conference abstracts  
 Oborny, S. C. — Assisted British Broadcasting Company's (BBC) Studio Science Unit in finding outcroppings of cyclothems in Kansas for a History of Life on Earth TV production  
 Oborny, S. C. — Assisted general public with geological questions in Miami County, Kansas  
 Oborny, S. C. — Assisted Hamm Industries in the identification of strata in southeastern Kansas quarries

Ortega-Ariza, D. — NSF URGE (Unlearning Racism in Geoscience) — Kansas Geology Pod, Kansas Geological Survey Member

Ortega-Ariza, D. — NSF panelist — review, discuss and recommend grant proposals for funding

Ortega-Ariza, D. — reviewer, SEPM Special Publications

Ortega-Ariza, D. — reviewer, SEPM Journal of Sedimentary Research

Ortega-Ariza, D. — reviewer, submitted abstracts — Carbonates session, 2021 International Meeting for Applied Geoscience & Energy (IMAGE) annual meeting

Ortega-Ariza, D. — Invited session chair, Modern Technologies Applied to Carbonate Systems: Geologic & Multi-Disciplinary Methods 1, 2021 IMAGE annual meeting

Ortega-Ariza, D. — Co-advisor, master's student, KU Department of Geology

Ortega-Ariza, D. — Ph.D. External Committee member, University of Alabama

Ortega-Ariza, D. — M.S. External Committee member, Columbus State University

Ortega-Ariza, D. — Mentor, Roy J. Shlemon Mentor Program in Applied Geoscience, GSA Southeastern Virtual Section Meeting

Ortega-Ariza, D. — Judge, student posters and presentations, Northcentral-Southcentral GSA Meeting

Seybold, E. C. — Panelist, NSF DEB Ecosystem Sciences Cluster

Seybold, E. C. — AGU Fall Meeting session convener: Frontiers in Water-Quality Science: Origins, Patterns, and High-Frequency Detection of Spatial and Temporal Variation

Zipper, S. — Member, American Geophysical Union Ecohydrology Technical Committee (in charge of social media and website)

Zipper, S. — USGS Ogallala Data Directory advisory group

Zipper, S. — Session convener: Non-perennial Streams: An Interface Between Hydrology, Ecology, Biogeochemistry, and Society. American Geophysical Union Fall Meeting

Zipper, S. — 10 peer reviews for journals: Ecohydrology, Hydrological Processes, Journal of Hydrology, Journal of Hydrology: Regional Studies, Water Resources Research, Weather and Climate Extremes

Zipper, S. — NSF GRFP panelist (17 proposals reviewed) and EAR Hydrological Sciences ad hoc reviewer (1 proposal reviewed)

Zipper, S. — Miami County (Bucyrus) – Wastewater treatment plant improvements

Zipper, S. — City of Hanston – Wastewater treatment plant improvements

Zipper, S. — City of Marysville – Wastewater treatment facility improvements

Zipper, S. — City of Leavenworth – WaterWorks

Zipper, S. — City of Vermillion – Water supply system

Zipper, S. — City of Alden – Wastewater treatment facility improvements

Zipper, S. — McPherson County – Water distribution system improvements

Zipper, S. — Johnson County/Nelson Complex – Wastewater treatment facility improvements

Zipper, S. — City of Great Bend – Water meter replacement

Zipper, S. — Jefferson County – Rural water district improvement project

## Grants

Bohling, G. C., Wilson, B. B., and Butler, J. J., Jr.: Addressing Groundwater Goals of the Missouri Regional Planning Area – Phase II, \$93,200, Kansas Water Office, 2018–2024.

Brookfield, A. E.: Visualizing the Invisible: Causes, Consequences, Changes, and Management of Streamflow Depletion across the U.S., USGS Powell Center Working Group. PIs: A. E. Brookfield (lead), L. M. Hays, M. C. Hill, and S. C. Zipper. Total Award: \$163,530. 2019–2023.

Butler, J. J., Jr., and Bohling, G. C.: High Plains aquifer index well program, \$305,000, Kansas Water Office, 2019–2024.

Butler, J. J., Jr., Bohling, G. C., and Wilson, B. B.: Development of the Kansas River alluvial aquifer observation well network and pre-modeling assessment, Kansas Water Office, \$250,000, 2017–2021.

Butler, J. J., Jr., and Liu, G.: INFEWS/T1: Developing pathways toward sustainable irrigation across the United States using process-based systems models (SIRUS), U.S. Dept. of Agriculture, \$148,704, 2018–2023.

Butler, J. J., Jr., and Seybold, E. C.: Assessment of groundwater mineralization in the upper Arkansas River corridor, \$77,000, Kansas Water Office, 2019–2022.

Hasiuk, F., and Oborny, S. (Joint PIs), Co-PIs: Bode-Omoleye, I., Holubnyak, E., Raney, J., Clark, R., Cramer, B., Hayman, N., Cardott, B., Seyedolali, A., Suriamin, F., Ganz, K., Seeger, C., Steele, A., Joeckel, M., and Lynn, W., 2021. C<sub>M</sub>C<sub>S</sub>C<sub>F</sub>C<sub>B</sub>—Critical Minerals in Coaly Strata of the Cherokee-Forest City Basin. U.S.

- Department of Energy (DOE) Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative for U.S. Basins (9/15/21-9/14/23). Total Federal: \$1,585,000.
- Layzell, A. L., and Mandel, R. D.: Streambank evaluation of the Cottonwood and Neosho rivers above John Redmond Reservoir, Kansas Water Office, \$100,000, 2021.
- Layzell, A. L., Oborny, S. C., Hasiuk, F., and Smith, J. J.: Pennsylvanian stratigraphic nomenclature reconciliation in the midcontinent, US Geological Survey, \$101,782, 2021.
- Mandel, R. D.: A GIS-based predictive model for surface and buried archaeological sites in Kansas, \$43,000, Kansas State Historical Society, 2021.
- Miller, R. D. (PI): Burns & McDonnell Engineering Company, Supplement to Continuation of passive seismic monitoring of high priority salt jugs near the Irsik & Doll Elevator, BNSF Railroad, V&S Railroad right-of-way, and parallel to William Street in Hutchinson, Kansas, 2021, \$5,000.
- Miller, R. D. (PI): U.S. Army Corps of Engineers, Enhanced implementation of K-Scope and ASII tunnel detection analysis approach using FWI, modal segmentation methods, and integrated multi-modal techniques, 2021, \$601,000.
- Miller, R. D. (PI): U.S. Army Corps of Engineers, Enhanced implementation of K-Scope and ASII tunnel detection analysis approach using FWI, modal segmentation methods, and integrated multi-modal techniques, 2021, \$96,575.
- Miller, R. D. (PI): Kansas Water Office, Preproposal for study of regional Arbuckle properties in South Central Kansas; Now and planning for the future, 2021, \$61,700.
- Ortega-Ariza, D. (PI) and Franseen (co-PI). Controls on Deposition and Reservoir Character of Atypical Shallow-water Tropical Carbonate Systems: Miocene, Cicuco Field, NW Colombia, Kansas University Center for Research – Kansas Interdisciplinary Carbonates Consortium (KICC), \$38,969.84.
- Potter, N. (PI), Co-PIs: Oborny, S., Stewart, D., and Louis, D.: Preserving Kansas Geologic Data, Documents, Samples, and Aerial Photographs; and Surveying Drill Hole/Core Holdings Related to Critical Mineral Resources, FY 2022. U.S. Geological Survey, National Geological and Geophysical Data Preservation Program (NGGDPP). Total Federal: \$160,374. 2021.
- Seybold, E. Kansas Water Office: Groundwater Nitrate Dynamics at the Flickner Innovation Farm. PI. Total award amount \$15,000. Funded in 2021; 1.5-year project.
- Seybold, E. C.: USDA NIFA: Irrigation at the new 100th Meridian: Adaptation to manage climate risks and preserve water resources in the Eastern Kansas River Basin. Co-PI with Sam Zipper (KGS). Total award amount \$750,000. Funded in 2021; 4-year project.
- Seybold, E. C.: Spatial variability and subsurface controls of groundwater recharge and nutrient mobilization in dry streams, Kansas Water Resources Institute/USGS 104b. PIs: E. C. Seybold (lead), S. C. Zipper, and C. Zhang. Total Award: \$40,000. 2020–2022.
- Smith, J. J. (PI), Co-PIs: Layzell, A., Hasiuk, F., Ludvigson, G.A., Mandel, R.D., Ishman, S., Oborny, S., Dunham, J.W., Franseen, E., Ortega-Ariza, D., Bode-Omoleye, I., and Mohammadi, S. Geologic Mapping in Kansas for FY21. U.S. Geological Survey STATEMAP Program. Requested agency total: \$517,951.
- Smith, J.J. (PI), Co-PIs: Layzell, A., Hasiuk, F., Andrzejewski, K., Oborny, S., Mandel, R.D., Ishman, S., Dunham, J.W., Franseen, E., Ortega-Ariza, D., Bode-Omoleye, I., and Mohammadi, S., 2021. Geologic Mapping in Kansas for FY22. U.S. Geological Survey STATEMAP Program. Total Federal: \$599,195 / Total State: \$599,195.
- Stewart, D., (PI), Dealy, M., Hasiuk, F., Louis, D., Potter, N., and Oborny, S., Preserving Kansas geologic data, documents, samples, and aerial photographs; and surveying drill hole/core holdings relating to critical mineral resources, National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, KGS Library and Archive, and Energy Section, Kansas Geological Survey, and administered through U. S. Geological Survey, FY 2021-2022, \$109,585. (Stewart PI)
- Stewart, D. (PI), Co-PIs: Oborny, S., Potter, N., Hasiuk, F., and Louis, D, Preserving Kansas geologic data, documents, samples, and aerial photographs; and surveying drill hole/core holdings relating to critical mineral resource, FY 2021. U.S. Geological Survey, National Geological and Geophysical Data Preservation Program (NGGDPP). Total combined federal and state: \$219,176
- Stotler, R.: Evaluating playas in Western Kansas: Recharge to the High Plains Aquifer and economics of cropping, EPA Wetland Program Development Grant (through Kansas Water Office). PIs: R. Stotler (lead), A. E. Brookfield, J. Kastens, and S. C. Zipper. Total Award: \$277,615. 2019–2021.
- Wilson, B. B., Butler, J. J., Jr., and Reboulet, E.: Maintain existing and expand Kansas-based data services to the National Groundwater Monitoring Network, , \$132,239, United States Geological Survey, 2021–2022.

- Wilson, B. B., Butler, J. J., Jr., Reboulet, E., and Knobbe, S.: Maintain existing and expand Kansas-based data services to the National Groundwater Monitoring Network, \$48,740, United States Geological Survey, 2018–2021.
- Wilson, B. B., Liu, G., Bohling, G. C., and Butler, J. J., Jr.: Update of the GMD3 groundwater model, \$160,000, Kansas Water Office and Southwest Kansas Groundwater Management District #3, 2021–2023.
- Wilson, B. B., Liu, G., Butler, J. J., Jr., and Bohling, G. C.: Development of GMD4 groundwater model, \$140,000, Kansas Water Office and Northwest Kansas Groundwater Management District #4, 2018–2021.
- Zipper, S. (Co-I, lead of hydrology team): RII Track II-FEC: Aquatic Intermittency effects on Microbiomes in Streams (AIMS), NSF EPSCoR Research Infrastructure Improvement Program: Track-2 Focused EPSCoR Collaborations. PIs: A. Burgin (lead, KU lead), D. C. Allen, C. L. Atkinson, S. E. Godsey, K. A. Kuehn, C. R. Jackson, and L. H. Zeglin. Total Award: \$5,998,875. 2020–2024.

### Refereed Publications

- Berhe, A., Hastings, M., Schneider, B., and Marin-Spiotta, E., 2020, Changing academic cultures to respond to sexual harassment through bystander intervention and workplace climate training: ACS Symposium Series, v. 1,354, p. 109–125.
- Borden, R. C., Cha, K. Y., and Liu, G., 2020, A physically based approach for estimating hydraulic conductivity from HPT pressure and flowrate: Groundwater. <https://doi.org/10.1111/gwat.13039>
- Borisov, D., Gao, F., Williamson, P., and Tromp, J., 2020, Application of 2D full-waveform inversion on exploration land data: Geophysics, v. 85, no. 2, p. R75–R86.
- Brelsford, C., Dumas, M., Schlager, E., Dermody, B. J., Aiuvalasit, M., Allen-Dumas, M. R., Beecher, J., Bhatia, U., D'Odorico, P., Garcia, M., Gober, P., Groenfeldt, D., Lansing, S., Madani, K., Méndez-Barrientos, L., Mondino, E., Müller, M. F., O'Donnell, F. C., Owuor, P. M., Rising, J., Sanderson, M. R., Souza, F. A. A., and Zipper, S. C., 2020, Developing a sustainability science approach for water systems: Ecology and Society. doi: [10.5751/ES-11515-250223](https://doi.org/10.5751/ES-11515-250223)
- Butler, J. J., Jr., Bohling, G. C., Whittemore, D. O., and Wilson, B. B., 2020, Charting pathways towards sustainability for aquifers supporting irrigated agriculture: Water Resources Research, v. 56, no. 10. doi: 10.1029/2020WR027961
- Butler, J. J., Jr., Bohling, G. C., Whittemore, D. O., and Wilson, B. B., 2020, A roadblock on the path to aquifer sustainability: Underestimating the impact of pumping reductions: Environmental Research Letters, v. 15, 014003. doi:10.1088/1748-9326/ab6002
- Deines, J. M., Schipanski, M. E., Golden, B., Zipper, S. C., Nozari, S., Rottler, C., Guerrero, B., and Sharda, V., 2020, Transitions from irrigated to dryland agriculture in the Ogallala aquifer: Land use suitability and regional economic impacts: Agricultural Water Management. doi: [10.1016/j.agwat.2020.106061](https://doi.org/10.1016/j.agwat.2020.106061)
- Gleeson, T., Wang-Erlandsson, L., Porkka, M., Zipper, S. C., Jaramillo, F., Gerten, D., Fetzer, I., Cornell, S. E., Piemontese, L., Gordon, L., Rockström, J., Oki, T., Sivapalan, M., Wada, Y., Brauman, K. A., Flörke, M., Bierkens, M. F. P., Lehner, B., Keys, P., Kummu, M., Wagener, T., Dadson, S., Troy, T. J., Steffen, W., Falkenmark, M., and Famiglietti, J. S., 2020, Illuminating water cycle modifications and Earth System resilience in the Anthropocene: Water Resources Research, e24390. <https://doi.org/10.1029/2019WR024957>
- Gleeson, T., Wang-Erlandsson, L., Zipper, S. C., Porkka, M., Jaramillo, F., Gerten, D., Fetzer, I., Cornell, S. E., Piemontese, L., Gordon, L., Rockström, J., Oki, T., Sivapalan, M., Wada, Y., Brauman, K. A., Flörke, M., Bierkens, M. F. P., Lehner, B., Keys, P., Kummu, M., Wagener, T., Dadson, S., Troy, T. J., Steffen, W., Falkenmark, M., and Famiglietti, J. S., 2020, The water planetary boundary: Interrogation and revision: One Earth. doi: [10.1016/j.oneear.2020.02.009](https://doi.org/10.1016/j.oneear.2020.02.009)
- Holmes, M. A., Myles, L., and Schneider, B., 2020, Diversity and equality in honors and awards programs: Steps towards a fair representation of membership: Advances in Geosciences, Special Issue: Diversity and Equality in the Geosciences, v. 1, p. 1–11.
- Kincaid, D. W., Seybold, E. C., Adair, E. C., Bowden, W. B., Perdrial, J. N., Vaughan, M. C. H., and Schroth, A. W., 2020, Land use and season influence event-scale riverine export dynamics of nitrate and soluble reactive phosphorus from headwater catchments: Water Resources Research. <https://doi.org/10.1029/2020WR027361> \*Awarded WRR Editor's Choice Award\*
- Landsman-Gerjoi, M., Perdrial, J. N., Lancellotti, B., Seybold, E. C., Schroth, A. W., Adair, C. A., and Wymore, A., 2020, Measuring the influence of environmental conditions on dissolved organic matter biodegradability and optical properties: A combined field and laboratory study: Biogeochemistry. <https://doi.org/10.1007/s10533-020-00664-9>
- Layzell, A. L., and Mandel, R. D., 2020, Late-Quaternary landscape evolution and bioclimatic change in the central Great Plains, USA: Geological Society of America Bulletin. <https://doi.org/10.1130/B35462.1>
- Li, Q., Zipper, S. C., and Gleeson, T., 2020, Streamflow depletion from groundwater pumping in contrasting hydrogeological landscapes: Evaluation and sensitivity of a new management tool: Journal of Hydrology. doi: [10.1016/j.jhydrol.2020.125568](https://doi.org/10.1016/j.jhydrol.2020.125568)
- Majumdar, S., Smith, R., Butler, J. J., Jr., and Lakshmi, V., 2020, Groundwater withdrawal prediction using integrated multi-temporal remote sensing datasets and machine learning: Water Resources Research, v. 56, no. 11. doi: 10.1029/2020WR028059

- Marin-Spiotta, E., Barnes, R. T., Berhe, A. A., Hastings, M. G., Mattheis, A., Schneider, B., and Williams, B. M., 2020, Hostile climates are barriers to diversifying the geosciences; *in* *Advances in Geosciences, Special Issue: Diversity and Equality in the Geosciences*, v. 53, p. 117–127.
- Meng, J., Holubnyak, Y., Hasiuk, F., Hollenbach, J., and Wreath, D., 2020, Geological characterization of the Patterson CO<sub>2</sub> storage site from 3-D seismic data: *Midcontinent Geoscience*, v. 1, p. 52–90.
- Meng, J., Pashin, J. C., Chandra, A., Xue, L., Sholanke, S., and Spears, J., 2020, Structural framework and fault analysis in the east-central Gulf of Mexico shelf: Implications for offshore CO<sub>2</sub> storage: *Journal of Structural Geology*, v. 134, no. 104020. <https://doi.org/10.1016/j.jsg.2020.104020>
- Meng, J., Pashin, J. C., and Nygaard, R., 2020, Geomechanical integrity of the potential CO<sub>2</sub> storage reservoirs, DeSoto Canyon Salt Basin, Eastern Gulf of Mexico: *Environmental Geosciences*, v. 27, no. 2, p. 87–101.
- Morton, S. L., Miller, R. D., Ivanov, J., Peterie, S. L., and Parsons, R. L., 2020, Time-lapse monitoring of stress-field variations within the Lower Permian shales in Kansas: *The Leading Edge*, v. 39, no. 5, p. 318–323.
- Newell, K. D., Peterie, S., Killion, M., DeArmond, B., Ridley, C., Mandel, R., and Buchanan, R., 2020, Diminishing depth to water in Cambrian-Ordovician Arbuckle Group disposal wells in Kansas: *Midcontinent Geoscience*, v. 1, p. 1–29.
- Orduña Alegría, M. E., Schütze, N., and Zipper, S. C., 2020, A serious board game to analyze socio-ecological dynamics towards collaboration in agriculture: Sustainability. doi: [10.3390/su12135301](https://doi.org/10.3390/su12135301)
- Peterie, S. L., Miller, R. D., Ivanov, J., and Sloan, S. D., 2020, Shallow tunnel detection using SH-wave diffraction imaging: *Geophysics*, v. 85, p. EN29–EN37. doi: [10.1190/geo2018-0731.1](https://doi.org/10.1190/geo2018-0731.1)
- Peterie, S. L., Newell, K. D., Bohling, G. C., and Mandel, R. D., 2020, Comment on “Accelerated fill-up of the Arbuckle Group aquifer and links to U.S. midcontinent seismicity”: *Journal of Geophysical Research: Solid Earth*, 125, e2019JB018348. <https://doi.org/10.1029/2019JB018348>
- Ross, J. B., Ludvigson, G. A., Schröder-Adams, C. J., and Suarez, M. B., 2020, High latitude meteoric  $\delta^{18}\text{O}$  compositions from the Cenomanian Bastion Ridge Formation, Axel Heiberg Island, Canadian Arctic Archipelago: A paleoclimate proxy from the Sverdrup Basin: *in* M. Wagreich, M. B. Hart, B. Sames, and I. O. Yilmaz, eds., *Cretaceous Climate Events and Short-Term Sea-Level Changes*: Geological Society London, Special Publications 498. <http://doi.org/10.1144/SP498-2018-134>
- Schneider, B. B., and Holmes, M. A., 2020, The science of implicit bias and how to minimize its effects; *in* S. Azad, ed., *Addressing Gender Bias in Science: Research-Based Solutions*. ACS Symposium Series, v. 1,354, p. 51–71.
- Shelley, J., Kenney, M., Layzell, A. L., and Brown, T., 2020, Contribution of two eroding banks to multipurpose pool sedimentation at a Midwestern Reservoir: ERDC/TN RSM-20-6, U.S. Army Engineer Research and Development Center, Vicksburg, Mississippi.
- Suarez, M. B., Knight, J. A., Godet, A., Ludvigson, G. A., Snell, K., Murphy, L., and Kirkland, J. I., 2020, Multi-proxy strategy for determining paleoclimate parameters in the Ruby Ranch Member of the Cedar Mountain Formation: *in* A.-V. Bojar, ed., *Stable Isotope Studies of Water Cycle and Terrestrial Environments*: Geological Society London, Special Publication 507. <https://sp.lyellcollection.org/content/early/2020/09/17/SP507-2020-85.abstract>
- Tague, C. L., Papuga, S. A., Gerlein-Safdi, C., Dymond, S., Morrison, R. R., Boyer, E. W., Riveros-Iregui, D., Agee, E., Arora, B., Dialynas, Y. G., Hansen, A., Krause, S., Kuppel, S., Loheide, S. P., Schymanski, S. J., and Zipper, S. C., 2020, Adding our leaves: A community-wide perspective on research directions in ecohydrology: *Hydrological Processes*, v. 34, no. 7, p. 1,665–1,673. DOI: [10.1002/hyp.13693](https://doi.org/10.1002/hyp.13693)
- Tetteh, J.T., Veisi, M., Brady, P.V., and Barati Ghahfarokhi, R., 2020, Surface reactivity analysis of the crude oil–brine–limestone interface for a comprehensive understanding of the low-salinity waterflooding mechanism: *Energy Fuels*, v. 34, no. 3, p. 2,739–2,756. <https://doi.org/10.1021/acs.energyfuels.9b03664>
- Zhang, C., He, G., Zhang, Q., Liang, S., Zipper, S. C., Guo, R., Zhao, X., Zhong, L., and Wang, J., 2020, The evolution of virtual water flows in China's electricity transmission network and its driving forces: *Journal of Cleaner Production*. doi: [10.1016/j.jclepro.2019.118336](https://doi.org/10.1016/j.jclepro.2019.118336)
- Zimmer, M., Kaiser, K., Blaszcak, J., Zipper, S. C., Hammond, J., Fritz, K. M., Costigan, K. H., Hosen, J., Godsey, S. E., Allen, G. H., Kampf, S., Burrows, R. M., Krabbenhoft, C. A., Dodds, W., Hale, R., Olden, J. D., Shanafield, M., DelVecchia, A. G., Ward, A. S., Mims, M. C., Datry, T., Bogan, M. T., Boersma, K. S., Busch, M. H., Jones, C. N., Burgin, A., and Allen, D. C., 2020, Zero or not? Causes and consequences of zero-flow stream gage readings: *WIREs Water*. doi: [10.1002/wat2.1436](https://doi.org/10.1002/wat2.1436)
- Zipper, S. C., Jaramillo, F., Wang-Erlandsson, L., Cornell, S. E., Gleeson, T., Porkka, M., Häyhä, T., Crépin, A.-S., Fetzer, I., Gerten, D., Hoff, H., Matthews, N., Ricaurte-Villota, C., Kumm, M., Wada, Y., and Gordon, L.,



2020, Integrating the water planetary boundary with water management from local to global scales: Earth's Future. doi: [10.1029/2019EF001377](https://doi.org/10.1029/2019EF001377)

### Books and Edited Volumes

Baker, H., and Miller, R. D., eds., 2020, Proceedings of the Fifth International Conference on Engineering Geophysics, Al-Ain, UAE.

### Nonrefereed Publications

- Bennett, B., and Brohammer, M. C., 2020, 2020 water-level data acquisition statistics: Kansas Geological Survey, Open-File Report 2020-3, 19 p. <http://www.kgs.ku.edu/Publications/OFR/2020/OFR2020-3.pdf>
- Bohling, G., Wilson, B., and Adkins-Heljeson, D., 2020, Explanation of quantitatively interpreted logs in the Kansas Geological Survey's WWC5 database: Kansas Geological Survey, Open-File Report 2020-13, 16 p. <http://www.kgs.ku.edu/Publications/OFR/2020/OFR2020-13.pdf>
- Butler, J. J., Jr., Reboulet, E. C., Knobbe, S., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2020, Kansas River alluvial aquifer index well program: 2019 annual report: Kansas Geological Survey, Open-File Report 2020-14, 54 p. <http://www.kgs.ku.edu/Publications/OFR/2020/OFR2020-14.pdf>
- Butler, J. J., Jr., Whittemore, D. O., Reboulet, E., Knobbe, S., Wilson, B. B., and Bohling, G. C., 2020, High Plains aquifer index well program: 2019 annual report: Kansas Geological Survey, Open-File Report 2020-2, 71 p. <http://www.kgs.ku.edu/Publications/OFR/2020/OFR2020-2.pdf>
- Layzell, A. L., and Dunham, J. W., 2020, Preliminary surficial geology of the Dalton quadrangle, Sumner County, Kansas: Kansas Geological Survey, Open-File Report 2020-4, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-04\\_Dalton\\_SU.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-04_Dalton_SU.pdf)
- Layzell, A. L., and Dunham, J. W., 2020, Preliminary surficial geology of the Sumner County portion of the Belle Plaine quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2020-5, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-05\\_Belle\\_Plaine\\_SU.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-05_Belle_Plaine_SU.pdf)
- Layzell, A. L., and Dunham, J. W., 2020, Preliminary surficial geology of the Sumner County portion of the Zyba quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2020-6, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-06\\_Zyba\\_SU.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-06_Zyba_SU.pdf)
- Layzell, A. L., and Peterson, A., 2020, Assessing the effectiveness of streambank stabilization projects on the Cottonwood River using unmanned aircraft systems: Kansas Geological Survey, Open-File Report 2020-16, 16 p. <http://www.kgs.ku.edu/Publications/OFR/2020/OFR2020-16.pdf>
- Lyle, S. A., [2009] 2020, Glaciers in Kansas, revised by A. L. Layzell: Kansas Geological Survey, Public Information Circular 28, 4 p.
- Mandel, R. D., 2020, Late-Quaternary landscape evolution and geoarchaeology in East Cache Creek Valley, Fort Sill, Oklahoma; Report prepared for the Cultural Resources Office, Fort Sill Environmental Quality Division, Fort Sill, Oklahoma: R. Christopher Goodwin & Associates, Inc., and the Kansas Geological Survey, Lawrence, Kansas.
- Mandel, R. D., Layzell, A. L., McClean, J. A., Welch, G. A., and Potter, A. R., 2020, Geoarchaeological investigations for three erosion projects (Peach Tree Crossing, Beef Creek Road, and Hairpin) on East Cache Creek, Fort Sill, Oklahoma; Report prepared for Cultural Resources Office, Fort Sill Environmental Quality Division, Fort Sill, Oklahoma: R. Christopher Goodwin & Associates, Inc., Lawrence, Kansas, and Kansas Geological Survey, Lawrence, Kansas.
- Miller, R. D., 2020, President's Page: Embracing the new normal: Leading Edge, v. 39, n. 10, p. 696.
- Miller, R. D., 2020, Reports of SEG Board Members, President Rick Miller, 2020 Annual Report of the Society of Exploration Geophysicists, p. 5–6.
- Morton, S. L., Peterie, S. L., Ivanov, J., Miller, R. D., Bennett, B., Bunker, C., Burke, K., Knippel, E., Lawler, J., Umbrell, C., and Wedel, B., 2020, Passive seismic characterization of high priority salt jugs near Hutchinson, Kansas: December 2019: Kansas Geological Survey, Open-File Report 2020-15, 39 p.
- Parcell, W. C., Moots, W. E., and Dunham, J. W., 2020, Preliminary surficial geology of the Sedgwick County portion of the Garden Plain quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2020-8, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-08\\_Garden\\_Plain\\_SG.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-08_Garden_Plain_SG.pdf)
- Shanafield, M., Godsey, S. E., Datry, T., Hale, R., Zipper, S. C., [+13 additional co-authors], (2020), Science gets up to speed on dry rivers: Eos. DOI: 10.1029/2020EO139902

- Smith, J. J., and Dunham, J. W., 2020, Preliminary surficial geology of the Bluff City NW quadrangle, Harper County, Kansas: Kansas Geological Survey, Open-File Report 2020-9, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-09\\_Bluff\\_City\\_NW\\_HP.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-09_Bluff_City_NW_HP.pdf)
- Smith, J. J., and Dunham, J. W., 2020, Preliminary surficial geology of the Danville quadrangle and the Harper County portions of the Adams and Norwich quadrangles, Kansas: Kansas Geological Survey, Open-File Report 2020-10, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-10\\_Danville\\_Adams\\_Norwich\\_HP.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-10_Danville_Adams_Norwich_HP.pdf)
- Smith, J. J., and Dunham, J. W., 2020, Preliminary surficial geology of the New Salem quadrangle, Cowley County, Kansas: Kansas Geological Survey, Open-File Report 2020-11, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-11\\_New\\_Salem\\_CL.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-11_New_Salem_CL.pdf)
- Smith, J. J., and Dunham, J. W., 2020, Preliminary surficial geology of the Winfield quadrangle, Cowley County, Kansas: Kansas Geological Survey, Open-File Report 2020-12, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR\\_2020-12\\_Winfield\\_CL.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/OFR_2020-12_Winfield_CL.pdf)
- Wilson, B., Liu, G., Bohling, G. C., and Butler, J. J., Jr., 2020, GMD2 groundwater flow model: High Plains aquifer model maintenance project: Kansas Geological Survey, Open-File Report 2020-1, 98 p. <http://www.kgs.ku.edu/Publications/OFR/2020/OFR2020-1.pdf>
- Zipper, S. C., 2020, Book review: Water Resources: Science and Society: Groundwater. DOI: 10.1111/gwat.13011

## Abstracts

- Barnes, R. T., Bell, C. F., Berhe, A. A., Hastings, M. G., Mattheis, A., Schneider, B., Williams, B., and Marin-Spiotta, E., 2020, Improving workplace culture, indoors and out: Challenge and opportunities to make the geosciences more inclusive and welcoming: American Geophysical Union Fall Meeting.
- Borisov, D., Ivanov, J., Peterie, S. L., Miller, R. D., and Sloan, S. D., 2020, Full-waveform inversion with alternating source and model update for shallow seismic: 2020 Annual Meeting of the Society of Exploration Geophysicists, p. 1,860–1,864, EXPANDED ABSTRACT.
- Brookfield, A., Farmer, W., Hansen, A., Hill, M., Layzell, A. L., Porter, M., Sullivan, P., and Zipper, S., 2020, Untangling the implications of water management on hydrologic systems: Geological Society of America, Abstracts with Programs, v. 52, no. 6. doi: 10.1130/abs/2020AM-355795
- Butler, J. J., Jr., Whittemore, D. O., Bohling, G., Wilson, B. B., and Knobbe, S., 2020, The Sheridan-6 Local Enhanced Management Area: An ongoing experiment in groundwater conservation: Abstract H109-0004 presented at 2020 Virtual Fall Meeting, American Geophysical Union, December 11.
- Ivanov, J., Miller, R. D., Hoch, A. M., Peterie, S. L., Morton, S., and Borisov, D., 2020, A unique approach for estimating surface-wave instability and nonuniqueness: 2020 Annual Meeting of the Society of Exploration Geophysicists, p. 1,835–1,839, EXPANDED ABSTRACT.
- Knippel, E. P., Peterie, S. L., Ivanov, J., and Miller, R. D., 2020, Common offset wavenumber filtering for enhanced diffraction imaging: 2020 Annual Meeting of the Society of Exploration Geophysicists, p. 1,915–1,919, EXPANDED ABSTRACT.
- Layzell, A. L., Ludvigson, G. A., Mandel, R. D., and Smith, J. J., 2020, Using factors of soil formation to investigate stable carbon isotope disequilibrium in late Pleistocene (MIS 3) buried soils of the central Great Plains, USA: Geological Society of America, Abstracts with Programs, v. 52, no. 6. doi: 10.1130/abs/2020AM-355553
- Layzell, A. L., Ludvigson, G. A., Smith, J. J., and Mandel, R. D., 2020, Assessing stable carbon isotope disequilibrium in Late Pleistocene buried soils of the Great Plains, USA, using a state factor approach: Goldschmidt, Virtual 2020, June 21–26.
- Lee, J. D., Möller, A., Ludvigson, G. A., Suarez, M. B., McLean, N. M., and Joeckel, R. M., 2020, Volcanogenic zircons from mudrocks: A new tool for chronostratigraphy: Geological Society of America, Abstracts with Programs, v. 52, no. 1. doi: 10.1130/abs/2020SC-343823
- Lee, J. D., Möller, A., Ludvigson, G. A., Suarez, M. B., McLean, N. M., Joeckel, R. M., and Maxson, J., 2020, Refining the chronostratigraphy of the Cretaceous Cedar Mountain Formation, Utah using volcanogenic zircon from mature paleosols: Annual Meeting of the Geological Society of America.
- Majumdar, S., Smith, R., Conway, B. D., Butler, J. J., Jr., and Lakshmi, V., 2020, Integrating remote sensing and machine learning for groundwater withdrawal estimation in Arizona: Abstract H030-0018 presented at 2020 Virtual Fall Meeting, American Geophysical Union, December 8.

- Marin-Spiotta, E., Mattheis, A., Bell, C., Maertens, J., Berhe, A. A., Barnes, R., Hastings, M., Schneider, B., Williams, B. M., and Magley, V., 2020, A critical feminist approach to transforming workplace climate in the geosciences: GSA Annual Meeting.
- Morton, S. L., Ivanov, J., Miller, R. D., and Parsons, R. L., 2020, Characterizing a physical model of a collapsing void using time-lapse surface-wave analysis: 2020 Annual Meeting of the Society of Exploration Geophysicists, p. 1,935–1,939, EXPANDED ABSTRACT.
- Peterie, S. L., Miller, R. D., Wilson, B. B., and Newell, K. D., 2020, Potential factors contributing to induced seismicity near Hutchinson, Kansas: 2020 Annual Meeting of the Society of Exploration Geophysicists, EXPANDED ABSTRACT.
- Proulx, M., Tsoflias, G., and Schneider, B., 2020, Ground-penetrating radar survey for detecting paleostratigraphic features in ash beds at Ashfall Fossil Bed Historical State Park, Nebraska: 18<sup>th</sup> International Conference on Ground-Penetrating Radar, Golden, Colorado.
- Proulx, M., Tsoflias, G., and Schneider, B., 2020, Utilizing ground penetrating radar (GPR) to detect paleontological features in ash beds: American Geophysical Union Fall Meeting.
- Schneider, B. B., Holmes, M. A., and Myles, L., 2020, Steps to ensuring a diverse and equitable honors and awards process: GSA Annual Meeting.
- Schneider, B. B., Knippel, E. P., and Miller, R. D., 2020, Utilizing ground penetrating radar to assist in a forensic cold case investigation: SEG Technical Program Expanded Abstracts, p. 3,324–3,330.
- Tomin, M., Smith, A. J., and Layzell, A. L., 2020, Ostracodes as hydrologic indicators in Plio-Pleistocene aquatic deposits in Meade County, Kansas: Geological Society of America, Abstracts with Programs, v. 51, no. 1. doi: 10.1130/abs/2020SC-343188
- Torres, C. M., Truitt, J. C., Ortega-Ariza, D., and Barineau, C. I., 2020, 100 million year old paleodrainage systems in western Georgia-eastern Alabama, Abstract: GSA Joint 69th Annual Southeastern/55th Annual Northeastern Section Meeting, Abstracts with Programs, v. 52, no. 2, poster.
- Whittemore, D. O., Butler, J. J., Jr., Wilson, B. B., and Knobbe, S., 2020, Impacts of local hydrogeology and climate on water levels in the High Plains aquifer in Kansas: Geological Society of America Abstracts with Programs, v. 52, no. 6. doi: 10.1130/abs/2020AM-354900

## **Presentations**

- Allen, G., and co-authors, including S. C. Zipper, 2020, Is our finger on the pulse? Assessing placement bias of the global river gauge network: American Geophysical Union Fall Meeting.
- Brookfield, A. E., and co-authors, including S. C. Zipper, 2020, Untangling the implications of water management on hydrologic systems: Geological Society of America.
- Butler, J. J., Jr., 2020, Assessing the sustainability of aquifers supporting irrigated agriculture: A High Plains aquifer case study: Colombian Chapter of the International Association of Hydrogeologists webinar series, May 11.
- Butler, J. J., Jr., 2020, The key steps for successful slug testing: Formations of low K, high, and everything in between (internet seminar): Midwest Geosciences Group, April 23.
- Butler, J. J., Jr., 2020, Pumping tests for aquifer evaluation: Practical design guidelines to get more from your test data (internet seminar): Midwest Geosciences Group, October 8.
- Butler, J. J., Jr., 2020, Recent work on assessing the future of the High Plains aquifer in Kansas: Winter meeting of the Kansas Water Congress, Topeka, February 4.
- Butler, J. J., Jr., 2020, Slug test strategies for challenging conditions (internet seminar): Midwest Geosciences Group, November 17.
- Butler, J. J., Jr., Reboulet, E., Knobbe, S., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2020, The new kid on the block: The Kansas River Alluvial Aquifer Index Well Program: 2020 Governor's Conference on the Future of Water in Kansas, November 10 (video at <https://www.youtube.com/watch?v=3k0xjPp4BB0&feature=youtu.be>).
- Butler, J. J., Jr., and Whittemore, D. O., 2020, Index Well Program: Kansas Water Office, web presentation, June 30.
- Compare, K., and co-authors, including S. C. Zipper, 2020, Groundwater-driven drying regimes in a seventh-order intermittent river: American Geophysical Union Fall Meeting.
- Dunham, J. W., 2020, Surficial geology of Bourbon County, Kansas: Map Blast (online digital showcase), Digital Mapping Techniques (DMT) AASG-USGS virtual Annual Workshop, June 8.
- Glose, T., and co-authors, including S. C. Zipper, 2020, Projecting the long-term effectiveness of groundwater conservation initiatives: A western Kansas case study: American Geophysical Union Fall Meeting.

Goldstein R. H., Mohammadi, S., and Hollenbach A. M., 2020, History and mechanisms of active fluid flow through low-permeability sedimentary rocks: South-Central Section-54<sup>th</sup> Annual Meeting.

Hammond, J., and co-authors, including S. C. Zipper, 2020, Assessing spatial patterns and drivers of intermittent flow in the contiguous U.S.: American Geophysical Union Fall Meeting.

Hasiuk, F., Holubnyak, E., Meng, J., Mohammadi, S., Hollenbach, J., and Wreath, D., 2020, CCUS stacked storage characterization at two new deep wells in Kearny County, Kansas (Patterson KGS 5-25, Hartland KGS 6-10): Society of Petroleum Engineers, Virtual Symposium: CCUS and Contaminants Managements, December 7–9, virtual.

Holubnyak, E., Hasiuk, F., Meng, J., Mohammadi, S., Hollenbach, J., Wreath, D., Smith, M., Smith, C., and Raines, J., 2020, CCUS stacked storage characterization of Hartland-Patterson site in South-West Kansas: Society of Petroleum Engineers, Virtual Symposium: CCUS and Contaminants Managements, December 7–9, virtual.

Huang, B., and co-authors, including S. C. Zipper, 2020, Groundwater effects on global ecosystem services: Ecological Society of America.

Huggins, X., and co-authors, including S. C. Zipper, 2020, Mapping the social-ecological hotspots of changing global freshwater availability: American Geophysical Union Fall Meeting.

Jaramillo, F., and co-authors, including S. C. Zipper, 2020, Exploring the existence of hydrological tipping points at the catchment-scale: European Geophysical Union.

Kerr, B., and co-authors, including S. C. Zipper, 2020, Connecting surface water and groundwater supply and demand over time and space to support sustainable water management: IWRA.

Layzell, A. L., 2020, Assessing the effectiveness of streambank stabilization projects: Environmental Protection Agency Region 7 Nonpoint Source Virtual Annual Meeting, July 16.

Layzell, A. L., 2020, Streambank stabilization research in Kansas: Kansas Water Office Webinar, virtual, August 25.

Mandel, R. D., 2020, Searching for evidence of the first people in the Americas: A geoarchaeological and paleoecological perspective: Department of Geography & Atmospheric Science Lecture Series, University of Kansas, January 24.

Mandel, R. D., 2020, Searching for evidence of the first people in the Americas: A geoarchaeological and paleoecological perspective: Fort Hays State University's Kansas Wetlands Educational Center Lecture Series, Cheyenne Bottoms, March 1.

McCarthy, A., and co-authors, including S. C. Zipper, 2020, Past and future drivers of surface water-groundwater interactions in the Kansas River alluvial aquifer: American Geophysical Union Fall Meeting, 2020.

Meng, J., Holubnyak, Y., Hollenbach, J., and Hasiuk, F., 2020, An integrated seal analysis for CO<sub>2</sub> sequestration in southwestern Kansas: 2020 AAPG Virtual Annual Meeting (oral presenter).

Miller, R. D., 2020, ExxonMobil, High frequency seismic recording and data enhancement, invited presentation, Houston, Texas.

Miller, R. D., 2020, SEG, Annual Meeting, Presidential Address, October.

Miller, R. D., 2020, SEG, Annual Meeting, Address to Council, October 11.

Miller, R. D., 2020, SEG, State of SEG to Foundation Trustees meeting, July 23.

Miller, R. D., 2020, SEG, Broadband, Wide Azimuth, Deepwater Seismic Imaging Workshop, July, Opening Address, Beijing, China (hybrid).

Miller, R. D., 2020, SEG, US-China Gas Industry Cooperation Workshop, June, Applied Geophysics an integral partner, Beijing, China (hybrid)

Miller, R. D., 2020, IPTC, Dhahran, Saudi Arabia, A view from SEG, January.

Miller, R. D., 2020, Current Trends in Kansas Seismicity, Kansas House Energy, Utilities, and Telecomm Committee.

Miller, R. D., 2020, SEG podcast, September 11.

Miller, R. D., 2020, Consortium to Study Trends in Seismicity, 2020 Annual Meeting, Studying Seismicity in Kansas Monitoring and Consortium Update: Seismicity across the State and impacts on CSTS core mission, August 12 (virtual).

Miller, R. D., 2020, SEG China Workshop on Broadband, Wide Azimuth, Deepwater Seismic Imaging, Opening Address, Beijing, China (hybrid) July 13.

Miller, R. D., 2020, US-China Gas Industry Cooperation Workshop, Applied Geophysics an integral partner, Beijing, China (hybrid), June 9.

Miller, R. D., 2020, American Society of Civil Engineers (ASCE), ASCE Geo-Congress, Minneapolis, Minnesota, February 27.

- Miller, R. D., 2020, International Petroleum Technology Conference (IPTC), Ask the Expert Series, Dhahran, Saudi Arabia, January 14.
- Morton Rupert, S. L., 2020, Seismic surface-wave methods applied to near-surface problems: University of Dhaka, American Association of Petroleum Geologists (AAPG) lecture series (invited–virtual), May 6.
- Morton Rupert, S. L., 2020, Time-lapse monitoring of subsidence features within the Lower Permian shales in Kansas: University of Wyoming, Department of Geology and Geophysics Near-Surface Geophysics Seminar (invited–virtual), September 23.
- Ortega-Ariza, D., 2020, Geoscientists Career Path Panel for graduate and undergraduate students: AWG Osage Chapter mentorship program, Department of Geology, University of Kansas, October.
- Ortega-Ariza, D., 2020, GSA GeoCareers Event: Spotlight on Careers in Government Day: GSA Annual Meeting, panelist at Student Career Panel, October.
- Ortega-Ariza, D., 2020, What controls the development of atypical carbonate tropical systems: Examples from Caribbean Miocene reservoir analogs: Department of Geology, Colloquium, University of Kansas, October.
- Ortega-Ariza, D., and Franseen, E. K., 2020, What controls the development of atypical carbonate tropical systems: Examples from Caribbean Miocene reservoir analogs: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, EXTENDED ABSTRACT, May.
- Schneider, B., 2020, Panel on diversity and inclusion in the Quaternary sciences: 2020 American Quaternary Association Meeting.
- Schneider, B., 2020, Panel speaker on creating and sustaining just, equitable, diverse, and inclusive spaces as an early career researcher: American Geophysical Union Fall Meeting.
- Schneider, B., 2020, Panel speaker on effective anti-harassment training techniques: Preventing harassment in STEM: Building a community of practice toward meaningful change.
- Schneider, B., 2020, Uncovering the truth: Utilizing geophysics in forensic and archaeological investigations: University of Kansas Department of Geology Colloquium presentation.
- Schneider, B., 2020, Utilizing geophysics to solve archaeological and forensic problems: University of North Dakota Applied Geoscience Conference.
- Smith, C., Smith, M., Holubnyak, E., Hasiuk, F., Mohammadi, S., and Raines, J., 2020, Volatiles analysis of geological materials for carbon capture utilizations and sequestration site screening: Advanced geochemical analysis on cuttings and core in Kansas and Oklahoma: Society of Petroleum Engineers, Virtual Symposium: CCUS and Contaminants Managements, December 7–9, virtual.
- Wang-Erlandsson, L., and co-authors, including S. C. Zipper, 2020, Towards a quantification of the water planetary boundary: European Geophysical Union.
- Whittemore, D. O., Seybold, E. C., and Butler, J. J., Jr., 2020, Assessment of groundwater mineralization in the upper Arkansas River corridor: Kansas Water Office, web presentation, June 23.
- Wilson, B. B., 2020, Testimony, Wichita County LEMA hearing.
- Zipper, S. C., 2020, Climate change and groundwater resources in Kansas: Kansas Department of Agriculture, Division of Water Resources.
- Zipper, S. C., 2020, No flow? No problem! Drivers of flow and long-term change in non-perennial streams: Kansas State University, Ecology and Evolutionary Biology Seminar.
- Zipper, S. C., 2020, No flow? No problem! Drivers of flow and long-term change in non-perennial streams: University of Tulsa, Department of Geosciences.
- Zipper, S. C., 2020, No flow? No problem! Drivers of flow and long-term change in non-perennial streams: Wichita State University, Department of Geology.
- Zipper, S. C., and co-authors, 2020, Trends and drivers of changing stream intermittency across the United States: American Geophysical Union Fall Meeting.

## **Awards & Honors**

- Butler, J. J., Jr.—M. King Hubbert Award, National Ground Water Association (2020).
- Morton, S. L.—Top 25 Best Paper presented at the 2020 SEG Annual Meeting, Society of Exploration Geophysicists (SEG), 2020.
- Morton, S. L.—First Place, National GeoVideo Student Competition, GeoCongress, 2020.

## Internal Service

Bohling, G. C.—Associate Editor, Midcontinent Geoscience  
Franseen, E. K.—Associate Editor, Midcontinent Geoscience  
Franseen, E. K.—Member, Stratigraphic Nomenclature Committee  
Hasiuk, F.—Associate Editor, Midcontinent Geoscience  
Layzell, A. L.—Member, Stratigraphic Nomenclature Committee  
Layzell, A. L.—Editor, Midcontinent Geoscience  
Ludvigson, G. A.—Member, Stratigraphic Nomenclature Committee  
Mandel, R. D. — Director and State Geologist  
Mandel, R. D. — Associate Editor, Midcontinent Geoscience  
Mandel, R. D. — Member, Stratigraphic Nomenclature Committee  
Meng J.—Organizer, KGS Geomechanical Application in Carbon Capture Technology Workshop, August 25–26, 2020  
Miller, R.—Associate Editor, Midcontinent Geoscience  
Miller, R. D. — KGS Promotion and Review Committee  
Miller, R. D. — KGS Arbuckle Working Group  
Ortega-Ariza, D.—Volunteer, KGS booth, Kaw Valley Eagles Day, Lawrence, Kansas, January  
Ortega-Ariza, D.— Interviewer, KGS Outreach Undergraduate Student Assistant job applicants, November  
Potter, N. — Volunteer, Kaw Valley Eagles Day  
Schneider, B.—Organizer, KGS Virtual Field Conference  
Schneider, B.—Member, Interagency Research Coordination Committee, Kansas Water Office  
Schneider, B.—KGS Coordinator, One Day. One KU fundraising campaign  
Schneider, B.—Member, KU Geology Department Geophysics Faculty Search Committee  
Schneider, B.—Coordinator, Logan Elementary STEM Fair  
Schneider, B.—Volunteer, Read Aloud Day at Pinckney Elementary School  
Schneider, B.—KGS Rocks and Rolls and On the Rocks Colloquium Series Coordinator  
Schneider, B.—Coordinator, KGS Newsletter  
Smith, J. J.—KGS STATEMAP Coordinator  
Smith, J. J.—Chair, KGS Associate Director for Research Search Committee  
Smith, J. J.— KGS Promotion and Review Committee  
Smith, J. J.—Member, Assistant Scientist in Stratigraphic Research Search Committee  
Smith, J. J.—Member, Field Research Technician Search Committee  
Smith, J. J.—Associate Editor, Midcontinent Geoscience  
Tollefson, J. M.—Technical Editor, Midcontinent Geoscience  
Tollefson, J. M.—Member (ex-officio), KGS Stratigraphic Nomenclature Committee  
Tollefson, J. M.—Editor, KGS Newsletter  
Zipper, S. C.—Co-director, Geohydrology Internship Program  
Zipper, S. C.—Search Committee, KGS Associate Director of Research, AIMS Project Manager  
Zipper, S. C.—Kansas state agency reviews (9x)  
Zipper, S. C.—Moore 4th Floor Beautification Project

## External Service

Butler, J. J., Jr.—Member, Kansas Water Resources Institute Administrative Council  
Butler, J. J., Jr.—Member, Kansas Water Bank Review Group  
Butler, J. J., Jr.—Moderator, Annual Meeting of the Geological Society of America, virtual session, October 2020  
Butler, J. J., Jr.—Panel Member, United States-Egypt Science and Technology Joint Fund—Cycle 20 Earth and Climate Modeling Review Panel  
Butler, J. J., Jr.—Reviewer for Ecohydrology, Environmental Research Letters, Groundwater, Mathematical Geosciences, Michigan State University, National Science Foundation, Nature Sustainability, Tsinghua University, Washburn School of Law, and Water Resources Research  
Dunham, J. W.—Represented KGS at the annual USGS-Association of American State Geologists (AASG) Digital Mapping Techniques (DMT) Virtual DMT, afternoons June 8–10; “DMT Lite,” afternoon December 8  
Dunham, J. W.—Member, USGS-AASG National Geologic Map Database (NGMDB) Working Group  
Dunham, J. W.—Member, USGS-AASG National Cooperative Geologic Mapping Program (NCGMP) Geologic Map Schema (GeMS) Working Group



Dunham, J. W.—Contributor, U.S. Geological Survey National Cooperative Geologic Mapping Program, 2020, GeMS (Geologic Map Schema)—A Standard Format for the Digital Publication of Geologic Maps: U.S. Department of the Interior-U.S. Geological Survey, Techniques and Methods 11-B10

Layzell, A. L.—Member, National Geologic Map Database Project Technical Advisory Working Group

Layzell, A. L.—Guest Lecturer, Geoarchaeology (ANTH 517), University of Kansas, Department of Anthropology, February 2020

Layzell, A. L.—Member, Kansas Watershed Restoration and Protection Strategy (WRAPS) Work Group

Layzell, A. L.—Reviewer for Geological Society of America Mackin, Howard, and Morisawa student awards (Quaternary Geology and Geomorphology Division)

Ludvigson, G. A.—Associate Editor, Journal of Sedimentary Research

Ludvigson, G. A.—Peer reviewer at the request of journals

Mandel, R. D. — Chair, National Academy of Sciences U.S. National Committee, International Union for Quaternary Research (INQUA)

Mandel, R. D. — Associate Editor, *Geoarchaeology: An International Journal*

Mandel, R. D. — Chair, Awards Committee, Geological Society of America’s Archaeological Geology Division

Mandel, R. D. — Member, Graduate Committee, KU Department of Anthropology

Mandel, R. D. — Reviewer, one manuscript submitted to Quaternary Science Reviews

Mandel, R. D. — Reviewer, one manuscript submitted to Geological Society of America Bulletin

Meng J.—Social Media Lead and CCUS Co-lead, Underground Storage and Utilization Technical Community of the American Rock Mechanics Association

Miller, R. D. — SEG, Nominations Committee

Miller, R. D. — SEG, Honors and Awards Committee

Miller, R. D. — SEG, Compensation Committee

Miller, R. D. — Geophysical Technology, Inc. (GTI) Advisory Board

Miller, R. D. — KU RGS Research Achievement Award Selection Committee

Mohammadi, S.—Peer Reviewer, Society for Sedimentary Geology Books

Ortega-Ariza, D.— Ph.D. committee, William Clark, University of Alabama, Department of Geology

Schneider, B.—Chair, SEG Women’s Network Committee

Schneider, B.—Workshop Presenter, Geological Society of America RISE Program

Schneider, B.—Workshop Presenter, Geological Society of America Council

Schneider, B.—Workshop Presenter, K-State Master Naturalists Training Program

Schneider, B.—Panelist and coordinator, SEG Women’s Network Committee Panel on Career Paths in Geophysics

Schneider, B.—Moderator, Governor’s Water Conference Session on Research Topics

Smith, J. J.—Co-chair, Adam Jackson, Ph.D. Committee, University of Kansas

Smith, J. J.—Co-chair, Maurício Nascimento Menezes, Ph.D. Committee, Ph.D., Universidade Federal de Rio de Janeiro

Smith, J. J.—Co-chair, Kevin Hanson, Ph.D. Committee, University of Kansas

Smith, J. J.—Member, Nick Ferry, Ph.D. Committee, University of Kansas

Zipper, S. C.—Review panelist, NSF Hydrologic Sciences program

Zipper, S. C.—3 ad hoc funding agency reviews: NSF CAREER, EU Biodiversa, European Research Council

Zipper, S. C.—Member, American Geophysical Union Ecohydrology Technical Committee (in charge of social media and website)

Zipper, S. C.—Session Co-Convener, Agrohydrology in a Changing World: From Global Processes to Local Outcomes. American Geophysical Union Fall Meeting

Zipper, S. C.—12 ad hoc journal reviews: Journal of Hydrology, Utilities Policy, Hydrogeology Journal, Water Resources Research, Agricultural Water Management, Hydrological Processes, Ground Water, Ecohydrology

Zipper, S. C.—Curator, CRAN Hydrology Task View (<https://cran.r-project.org/web/views/Hydrology.html>)

## Grants

Bohling, G. C., Wilson, B. B., and Butler, J. J., Jr.: Addressing Groundwater Goals of the Missouri Regional Planning Area—Phase II, \$93,200, Kansas Water Office, 2018–2024.

Butler, J. J., Jr., and Bohling, G. C.: High Plains aquifer index well program, \$305,000, Kansas Water Office, 2019–2024.

Butler, J. J., Jr., Bohling, G. C., and Wilson, B. B.: Development of the Kansas River alluvial aquifer observation well network and pre-modeling assessment, Kansas Water Office, \$250,000, 2017–2021.

Butler, J. J., Jr., and Liu, G.: Dynamic NMR logging technologies for high-resolution measurement of hydrogeologic properties and soil response, Vista Clara subcontract for DoE SBIR, \$145,371, 2018–2020.

Butler, J. J., Jr., and Liu, G.: INFEWS/T1: Developing pathways toward sustainable irrigation across the United States using process-based systems models (SIRUS), U.S. Dept. of Agriculture, \$148,704, 2018–2022.

Butler, J. J., Jr., and Seybold, E. C.: Assessment of groundwater mineralization in the upper Arkansas River corridor, \$77,000, Kansas Water Office, 2019–2021.

Layzell, A. L., and Mandel, R. D.: Streambank evaluation of the Cottonwood and Neosho Rivers above John Redmond Reservoir, \$100,000, Kansas Water Office, 2020.

Layzell, T., and Stotler, R. (PIs) and Zipper, S. C., Kastens, J., and Brookfield, A. E. (Co-PIs): Evaluating playas in western Kansas: Recharge to the High Plains aquifer and economics of cropping, \$277,615 (+\$95,298 matching funds), EPA Region 7 Wetland Program Development Fund, June 1, 2020–September 30, 2021.

Liu, G., and Butler, J. J., Jr.: Contaminant barriers or pathways? Hydraulic and chemical methods to improve characterization of shallow aquitards, \$29,786, Kansas Water Resources Research Institute, 2017–2019.

Liu, G., Butler, J. J., Jr., and Bohling, G. C.: Estimating mobile-immobile mass transfer parameters using direct push tools, \$229,964, DoD Strategic Environmental Research and Development Program, 2015–2020.

Mandel, R. D.: A statewide geographic information system (GIS) as a predictive tool for locating deeply buried archaeological deposits in Nebraska (PHASE II), \$75,000, History Nebraska/Nebraska Department of Transportation, December 1, 2019–December 31, 2020.

Mandel, R. D.: Geoarchaeological investigations at Peach Tree Crossing, Bear Creek, and Hairpin erosion control sites, Fort Sill, Oklahoma, \$40,775, U.S. Army Corp of Engineers, 2020.

Miller, R. D.: Burns & McDonnell Engineering Company, Passive seismic monitoring of high priority salt jugs near the Irsik & Doll Elevator, BNSF Railroad, V&S Railroad right-of-way, and parallel to William Street in Hutchinson, Kansas, 2020, \$32,083. (PI)

Miller, R. D.: Burns & McDonnell Engineering Company, Continuation of passive seismic monitoring of high priority salt jugs near the Irsik & Doll Elevator, BNSF Railroad, V&S Railroad right-of-way, and parallel to William Street in Hutchinson, Kansas, 2020, \$212,355. (PI)

Miller, R. D.: U.S. Army Corps of Engineers, Enhanced implementation of K-Scope and ASII tunnel detection analysis approach using FWI, modal segmentation methods, and integrated multi-modal techniques, 2020, \$171,300. (PI)

Miller, R. D.: Oregon State University, Sampling rock and water to improve correlations between above ground and below ground processes in the Konza Prairie near Manhattan, KS, 2020, \$18,262. (PI)

Mohammadi, S. (PI): Structural control of hydrothermal fluid migration, Northern Oklahoma and Kansas: Impact on reservoir properties, \$19,476, KICC-KS Interdisciplinary Carbonate Consortium, 2019–2021.

Mohammadi, S. (Co-PI): Carbon Utilization and Storage Partnership (CUSP) for the Western USA, \$6.24M total — KGS portion \$310,000, Department of Energy, 2019–2024.

Ortega-Ariza, D. (Co-PI): Carbon Utilization and Storage Partnership (CUSP) of the Western USA, \$5.5M total — KGS portion: \$178,396, U.S. Department of Energy, 2019–2021.

Ortega-Ariza, D. (PI) and Franseen, E. K.: Controls on Deposition and Reservoir Character of Atypical Shallow-water Tropical Carbonate Systems: Miocene, Cicuco Field, NW Colombia, \$39,805, Kansas University Center for Research – Kansas Interdisciplinary Carbonates Consortium (KICC), 2020–2022.

Seybold, E.: NSF Critical Zone Observatories Program: Collaborative Research - Using Big Data approaches to assess ecohydrological resilience across scales. PI. KGS Award \$94,675; part of larger \$5M network grant. Funded in 2020; 5-year project.

Seybold, E., and Zipper, S.: NSF EPSCoR: Aquatic Intermittency effects on Microbiomes in Streams (AIMS). Co-PIs. Total award amount \$6M to KU. Funded in 2020; 4-year project.

Seybold, E.: Kansas Water Resource Institute: Simulating the effects of reservoir management strategies on in-stream sediment load, streambank stability, and water quality. Co-PI. Total amount \$30,000. 2020 – 2022.

Seybold, E. (PI) and Zipper, S. C., and Zhang, C. (Co-PIs): Spatial variability and subsurface controls of groundwater recharge and nutrient mobilization in dry streams, \$40,000 (+\$80,004 matching funds), Kansas Water Resources Institute, March 1, 2020–February 28, 2022.

Smith, J. J. (PI), and Layzell, A., Ludvigson, G. A., Mandel, J. R., Newell, K. D., Hasiuk, F., Oborny, S., and Dunham, J. W. (Co-PIs): Geologic Mapping in Kansas for FY20, \$427,965, U.S. Geological Survey STATEMAP Program, 2020.

- Stewart, D. (PI), Co-PIs: Potter, N., and Dealy, M.T.: Preserving Kansas geologic data, documents, samples, and aerial photographs; and surveying drill hole/core holdings relating to critical mineral resource FY2020. U.S. Geological Survey, National Geological and Geophysical Data Preservation Program (NGGDPP). Total Combined Federal and State: \$117, 671.
- Wilson, B. B., Liu, G., Butler, J. J., Jr., and Bohling, G. C.: Development of GMD4 groundwater model, \$140,000, Kansas Water Office and Northwest Kansas Groundwater Management District #4, 2018–2021.
- Zipper, S. C.: Aquatic Intermittency effects on Microbiomes in Streams (AIMS)—A. Burgin (PI), \$5,998,875, NSF EPSCoR Research Infrastructure Improvement Program: Track-2 Focused EPSCoR Collaborations, September 1, 2020–August 31, 2024.

## 2019

### Refereed Publications

- Brookfield, A. E., and Layzell, A. L., 2019, Simulating the effects of reservoir management strategies on fluvial erosion: *Water Resources Management*, v. 33, no. 15, p. 4,983–4,995.
- Chen, M., Shafer-Peltier, K., Veisi, M., Randtke, S., and Peltier, E., 2019, Complexation and precipitation of scale-forming cations in oilfield produced water with polyelectrolytes: *Separation and Purification Technology*, v. 222, p. 1–10, ISSN 1383-5866. <https://doi.org/10.1016/j.seppur.2019.04.014>
- Core, E. E., and Franseen, E. K., 2019, The role of variable paleotopography and upwelling on deposition of late Oligocene and Miocene heterozoan-large benthic foraminifera-coral sequences, Jamaica: *American Association of Petroleum Geologists Search and Discovery Article #61603*, 4 p.
- Deines, J. M., Kendall, A. D., Butler, J. J., Jr., and Hyndman, D. W., 2019, Quantifying irrigation adaptation strategies in response to stakeholder-driven groundwater management in the US High Plains aquifer: *Environmental Research Letters*, v. 14, 044014. doi:10.1088/1748-9326/aafe39
- Flotron, A., Franseen, E. K., and Goldstein, R. H., 2019, Sedimentologic and stratigraphic controls on reservoir sweet spots in Wolfcamp “A,” Howard County, Midland Basin: *Unconventional Resources Technology Conference (URTeC) Conference Proceedings*, Paper 455, 20 p.
- Franseen, E. K., and Goldstein, R. H., 2019, Carbonate play models from Miocene outcrops, Western Mediterranean: Part I — Setting and stratigraphy: *American Association of Petroleum Geologists Search and Discovery Article 51630*, 18 p.
- Goldstein, R. H., and Franseen, E. K., 2019, Carbonate play models from Miocene outcrops, Western Mediterranean: Part 2 — Stratigraphic and diagenetic plays: *American Association of Petroleum Geologists Search and Discovery Article 51631*, 22 p.
- Jaiswal, P., Gregg, J. M., Smith, S., Holman, R., Mohammadi, S., and Grammer, G. M., 2019, Fault/fracture “hydrothermal” carbonate reservoirs: A potential Mississippian Play on the Southern Midcontinent; *in* G. M. Grammer, J. M. Gregg, J. O. Puckette, P. Jaiswal, M. Pranter, S. J. Mazzullo, and R. H. Goldstein (eds.), *Mississippian Reservoirs of the Mid-Continent, U.S.A.*: American Association of Petroleum Geologists Memoir 122. doi: 10.1306/13632161M1163366
- Joeckel, R. M., Ludvigson, G. A., Möller, A., Hotton, C. L., Suarez, M. B., Suarez, C. A., Sames, B., Kirkland, J. I., and Hendrix, B., 2019, Chronostratigraphy and terrestrial paleoclimatology of Berriasian-Hauterivian strata of the Cedar Mountain Formation, Utah, USA: *in* M. Wagreich, M. B. Hart, B. Sames, and I. O. Yilmaz (eds.), *Cretaceous Climate Events and Short-Term Sea-Level Changes*: Geological Society London, Special Publications 498. <https://doi.org/10.1144/SP498-2018-133>
- Layzell, A. L., and Mandel, R. D., 2019, Using soil survey data as a predictive tool for locating deeply buried archaeological deposits in stream valleys of the Midwest, USA: *Geoarchaeology*, v. 34, no. 1, p. 80–99.
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- Schneider, B., Ralph, M., Benson, D., Ward, D. and Vartia, A., 2019, Exploring the impact of classroom space design on student attitudes and success: A case study of an active learning organic chemistry course: American Geophysical Union Fall Meeting, San Francisco, California.
- Schneider, B. B., and Hoard, R. J., 2019, Ground penetrating radar survey of site 14DC320: Utilizing geophysical methods to protect Native American burials: SEG Technical Program Expanded Abstracts, p. 2,863–2,867.
- Smith, A. J., Ito, E., Fritz, S. C., Hatfield, R., Layzell, A. L., Lowenstein, T. K., McGee, D., Molnar, P., Stefanova, I., Valero-Garces, B. L., Werne, J. P., and Williams, J. W., 2019, Exploring hydroclimatic connections between the Blythe Basin, Arizona and western Pliocene lakes of North America: Geological Society of America, Abstracts with Programs, v. 51, no. 5.
- Smith, J. J., and Dunham, J. W., 2019, Preliminary surficial geology of the Bluff City West quadrangle, Harper County, Kansas: ESRI User Conference, San Diego, California, July 8–12.
- Smith, J. J., Field, H. L., Joeckel, R. M., Ludvigson, G. A., Möller, A., Tucker, S. T., and Layzell, A.L., 2019, New approach to U-Pb zircon dating and carbon isotope geochemistry of paleosols in the Miocene Ogallala Group, north-central Nebraska, USA: Geological Society of America, Joint South-Central, North-Central, and Rocky Mountains Sections Meeting, Abstracts with Program, v. 51, no. 2. doi: 10.1130/abs/2019SC-327630
- Smith, J. J., Joeckel, R. M., Otto, R. E., and Tucker, S. T., 2019, Life in the Dead Zone: A diverse ichnofossil assemblage preserved in volcanic ash, Ashfall Fossil Beds State Historical Park, Nebraska, USA: 11th

- North American Paleontological Conference Program with Abstracts. *PaleoBios* 36 (Supplement 1), ucmp\_paleobios\_44177.
- Smith, R. G., Majumdar, S., Oyler, L., Butler, J. J., and Lakshmi, V., 2019, Estimating groundwater extraction with integrated satellite datasets and machine learning: Geological Society of America Abstracts with Programs, v. 51, no. 5, Phoenix, Arizona, September 22 (oral presentation). doi: 10.1130/abs/2019AM-340862
- Snell, K. E., Uno, K. T., Lukens, W. E., Fetrow, A. C., Fox, D. L., Layzell, A. L., Burgess, C. S., Fox-Dobbs, K., Haveles, A. W., Polissar, P. J., and Martin, R. A., 2019, No change in clumped isotope temperatures during C4 grassland expansion in the Meade Basin, Kansas, during the Pliocene: Geological Society of America, Abstracts with Programs, v. 51, no. 5.
- Thompson, I. P., Goldstein, R. H., and Franseen, E. K., 2019, Influence of inundated erosional landscapes in localizing coarse-grained heterozoan carbonate reservoir facies: AAPG Annual Convention and Exhibition, San Antonio, May 19–22.
- Veisi, M., Whittemore, D. O., Alimoradi, S., and Peltier, E., 2019, Prediction of barium and strontium concentrations in produced water using major ion concentrations: Abstracts American Chemical Society, v. 257. <https://tpa.acs.org/abstract/acsnm257-3126006/prediction-of-barium-and-strontium-concentrations-in-produced-water-using-major-ion-concentrations>.
- Wang, N., Martin, R., Chevrot, S., and Borisov, D., 2019, On the joint inversion of seismic waveforms and gravimetric anomalies — Application to the Pyrenees: 2019 Fall Meeting, American Geophysical Union, San Francisco, California, December.
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2019, Spatial variation in inflow to the High Plains aquifer in Kansas derived from a new water-balance model: Geological Society of America Abstracts with Programs, v. 51, no. 2. doi: 10.1130/abs/2019SC-327233
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2019, Spatial variation in inflow to the High Plains aquifer in Kansas derived from a new water-balance approach: Geological Society of America Joint South-Central, North-Central, and Rocky Mountain Sections Meeting, Manhattan, Kansas, March 25 (oral presentation).
- Whittemore, D. O., Butler, J. J., Jr., Wilson, B. B., Liu, G., and Bohling, G. C., 2019, Spatial variation in specific yield in the High Plains aquifer in Kansas derived from a new water-balance approach: Geological Society of America Abstracts with Programs, v. 51, no. 5. doi: 10.1130/abs/2019AM-339233
- Zhu, L., Fan, M., Tripathi, A., Aslan, A., Smith, J. J., Flores, R., and Kelley-Cosio, A. M., 2019, Calibration of clumped isotopes temperatures of Quaternary carbonate cement and its application to paleoelevation reconstruction of the southern Rocky Mountains: Geological Society of America Abstracts with Programs, v. 51, no. 5. doi: 10.1130/abs/2019AM-341066
- Zhu, L., Fan, M., Yancey, T. E., and Smith, J. J., 2019, Oligocene-Miocene surface uplift of the southern Rockies based on volcanic glass hydrogen isotopes: Geological Society of America Abstracts with Programs, v. 51, no. 5. doi: 10.1130/abs/2019AM-339601

## Presentations

- Bennett, C. E., Franseen, E. K., and Goldstein, R. H., 2019, Evaluation of facies controls on distal fine-grained chalky facies in Miocene Agua Amarga Basin, SE Spain: An analog for fine-grained reservoirs: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Bode, I. Y., Molnar, A., and Grammer, M. G., 2019, Multi-scale quantitative analysis of microporosity in carbonate fabrics: American Geophysical Union 100th Annual Fall Meeting. Abstract with Program, December 9–13.
- Bode, I. Y., Zhang, C., and Grammer, M. G., 2019, NMR characterization of pore systems within diagenetically-complex Mississippian-aged carbonates (Reno County, Kansas): AAPG Midcontinent Section Meeting. Wichita, Kansas, October 7–8.
- Boerman, T., et al., including Zipper, S. C., 2019, Modelling the transient effects of groundwater pumping on groundwater storage and surface water using artificial neural networks: American Geophysical Union Fall Meeting, 2019.
- Borisov, D., Gao, F., Williamson, P., Simons, F., and Tromp, J., 2019, Robust surface-wave full-waveform inversion [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, San Antonio, Texas, September 15–20.
- Butler, J. J., Jr., 2019, Advanced aquifer testing analysis featuring Aqtesolv: New concepts, field methods, and data analysis procedures (three-day short course; taught half of course): West Chester, Pennsylvania, May 7–9.
- Butler, J. J., Jr., 2019, Aquifer testing for improved hydrogeologic site characterization featuring Aqtesolv and the in-situ LevelTroll (two-day short course; taught half of each course): Midwest Geosciences Group, Calgary, Alberta, April 25–26; Fort Collins, Colorado, October 15–16.

- Butler, J. J., Jr., 2019, Exploiting an underutilized trove of agrohydrology information: Interpretation of hydrographs from aquifers supporting irrigated agriculture: Fall Meeting of the American Geophysical Union, San Francisco, California, December 11.
- Butler, J. J., Jr., 2019, Ground-based methods for assessing the future of aquifers supporting irrigated agriculture: invited panelist presentation, Groundwater Recharge and Flow Workshop, National Academies of Sciences, Engineering, and Medicine, Washington, D.C., July 27. <https://www.youtube.com/watch?v=uLs6unlxCNw&list=PLi6VVotVxseDqVsWoRLJn7xHRPCMQl2WY&index=18&t=0s>
- Butler, J. J., Jr., 2019, The High Plains aquifer in Kansas: Current status and future prospects: American Geophysical Union Chapman Conference: The Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales, Valencia, Spain, October 21.
- Butler, J. J., Jr., 2019, The High Plains aquifer in Kansas: Current status and future prospects: presentation to graduate student class in the Department of Geology, Wichita State University, September 20.
- Butler, J. J., Jr., 2019, The High Plains aquifer in Kansas: Current status and future prospects: Science on Screen film series, Salina Arts Center Cinema, Salina, Kansas, April 1. <https://www.youtube.com/watch?v=jVvFxiw0rFE>
- Butler, J. J., Jr., 2019, The High Plains aquifer in Kansas: What's happening with your neighbor to the south? 2019 Kremer Memorial Lecture, University of Nebraska–Lincoln, February 27. <https://www.youtube.com/watch?v=LAN-F3TJK5A&t=490s>
- Butler, J. J., Jr., 2019, Hydrology and water quality of the Arkansas River basin in Southwest Kansas: Upper Arkansas Regional Advisory Committee, Garden City, April 12.
- Butler, J. J., Jr., 2019, Kansas River alluvial aquifer index well network: field trip presentation for the Geological Society of America Joint South-Central, North-Central, and Rocky Mountain Sections Meeting, Manhattan, Kansas, March 27.
- Butler, J. J., Jr., 2019, A roadblock on the pathway to aquifer sustainability: Underestimating the impact of pumping reductions: Geology Department Seminar, Kansas State University, September 12.
- Butler, J. J., Jr., 2019, A roadblock on the pathway to aquifer sustainability: Underestimating the impact of pumping reductions: Helmholtz Center for Environmental Research — UFZ, Leipzig, Germany, October 30.
- Butler, J. J., Jr., and Whittemore, D. O., 2019, Index Well Program: Kansas Water Office, Topeka, May 22.
- Core, E. E., and Franseen, E. K., 2019, The role of variable paleotopography and upwelling on deposition of late Oligocene and Miocene heterozoan-large benthic foraminifera-coral sequences, Jamaica: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Dunham, J. W., 2019, Examples of new and legacy NCGMP09/GeMS-compliant geodatabases from Kansas: Digital Mapping Techniques (DMT) AASG-USGS Annual Workshop, Montana Technological University, Butte, Montana, May 21.
- Dunham, J. W., 2019, Oil and gas fields of Kansas: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, July 8.
- Dunham, J. W., 2019, Preliminary surficial geology of the Bluff City West Quadrangle, Harper County, Kansas: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, July 8.
- Ebert, L., et al., including Zipper, S. C., 2019, Using remotely piloted aircrafts to evaluate potato water stress in Central Wisconsin: American Geophysical Union Fall Meeting.
- Flotron, A. N., Franseen, E. K., and Goldstein, R. H., 2019, Sedimentologic and stratigraphic controls on reservoir sweet spots in the Wolfcamp “A,” Howard County, Midland Basin: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Franseen, E. K., 2019, Invited short course, Carbonate sequence stratigraphy and applications to reservoir characterization: Repsol Oil Co., Madrid, Spain, June 27, 2019.
- Franseen, E. K., 2019, Teaching: Advanced Topics in Geology, Special Studies in Geology, Master’s Thesis, Topics in Regional Field Geology
- Gleeson, T., et al., including Zipper, S. C., 2019, Water cycle modifications and Earth System resilience: Roadmap to a new water planetary boundary: American Geophysical Union Fall Meeting.
- Glose, T., Zipper, S. C., et al., 2019, Simplifying streambed heterogeneity representation for the investigation of streamflow depletion: American Geophysical Union, Chapman Conference on Aquifer Sustainability.
- Hosseini, A., Dunham, J. W., and Smith, E., 2019, Role of LiDAR-derived stream network datasets: 2019 Kansas Association of Mappers (KAM) Conference, Lawrence, Kansas, October 17.
- Huggins, X., et al., including Zipper, S. C., 2019, The human dimensions of changing global freshwater availability: American Geophysical Union Fall Meeting.
- Killion, M., Stewart, D., and Potter, N., 2019, Interactive mappers on the Kansas Geological Survey website: An

- overview of data, tools, and core repository: Rocks and Rolls, Kansas Geological Survey, University of Kansas, Lawrence, Kansas, November 12.
- Layzell, A. L., 2019, The use of unmanned aircraft systems to assess streambank erosion and related engineering solutions: Governor's Conference on the Future of Water in Kansas, Wichita, Kansas, November 9–10.
- Layzell, A. L., and Mandel, R. D., 2019, Holocene landscape evolution in the Republican River Valley, South-Central Nebraska: Joint Section Meeting of the Geological Society of America, North-Central, South-Central, and Rocky Mountain Sections, Manhattan, Kansas, March.
- Layzell, A. L., and Mandel, R. D., 2019, The application of Holocene alluvial stratigraphy to address streambank erosion and reservoir sedimentation in the Midwestern U.S.A: 20<sup>th</sup> Congress of the International Union for Quaternary Research (INQUA), O-3217, Dublin, Ireland, July 25–31.
- Layzell, A. L., and Mandel, R. D., 2019, Holocene river terraces and alluvial fans in the Republican River valley: Implications for geoarchaeology in the central Great Plains, USA: 20<sup>th</sup> Congress of the International Union for Quaternary Research (INQUA), P-2901, Dublin, Ireland, July 25–31.
- Layzell, A. L., Newell, K. D., Mandel, R. D., and Dunham, J. W., 2019, Preliminary surficial geologic map of Miami County, Kansas: Geological Society of America 2019 Joint 53rd South-Central/53rd North-Central/71st Rocky Mountain Section Meeting, Manhattan, Kansas, March 26.
- Li, Q., et al., including Zipper, S. C., 2019, Quantifying the environmental flow response time to groundwater pumping using analytical depletion functions: American Geophysical Union Fall Meeting.
- Ludvigson, G. A., 2019, Guest lecture on the spherosiderite paleoclimate proxy: GEOL 729, Department of Geology, University of Kansas, Lawrence, Kansas, March 7.
- Ludvigson, G. A., 2019, Invited panelist for discussion of global warming — historical and modern: 2019 AAPG Mid-Continent Section Meeting, Doubletree Hilton Hotel, Wichita Kansas, October 6.
- Mandel, R. D., 2019, The peopling of the Great Plains near the end of the Pleistocene: A geoarchaeological and paleoecological perspective: Department of Ecology and Evolutionary Biology Lecture Series, University of Kansas, Lawrence, September 10.
- Meng, J., 2019, Safe carbon storage: From onshore to offshore: Wichita State University (invited seminar talk).
- Meng, J., Holubnyak, Y., Hollenbach, J., and Hasiuk, F., 2019, An integrated seal analysis for CO<sub>2</sub> sequestration in the Patterson Field at Southwest Kansas: American Geophysical Union 2019 Annual Conference, San Francisco, California (poster presentation).
- Meng, J., Holubnyak, Y., Hollenbach, J., and Hasiuk, F., 2019, Evaluating seal integrity for CO<sub>2</sub> storage complex at Patterson Oil Field, Southwest Kansas: 2019 AAPG Mid-continent Section Meeting, Wichita, Kansas (oral presentation).
- Meng, J., Pashin, J. C., Nygaard, R., and Chandra, A., 2019, Fault and seal analysis in the DeSoto Canyon Salt Basin: Implications for offshore CO<sub>2</sub> storage: 2019 AAPG Annual Meeting, San Antonio, Texas (poster presenter).
- Meng, J., Pashin, J., Nygaard, R., and Chandra, A., 2019, Geomechanical characteristics of the prospective CO<sub>2</sub> sinks and seals, eastern Gulf of Mexico: 2019 HGS Applied Geoscience Conference, Houston, Texas (poster presentation).
- Miller, R. D., 2019, ICEG, Al Ain, UAE, Technical Keynote, invited presentation, October.
- Miller, R. D., 2019, SEG, Annual Meeting, Foundation Luncheon, Program Success and Impacts, September, San Antonio.
- Miller, R. D., 2019, American Geophysical Union, Fall Meeting, San Francisco, California, December 11-12.
- Miller, R. D., 2019, Kansas Public Radio, Interview with Stephen Koranda, November 22.
- Miller, R. D., 2019, Governor's Conference on the Future of Water in Kansas, Topeka, Kansas, November 7.
- Miller, R. D., 2019, Earthquake Talk, Hutchinson Public Library, Hutchinson, Kansas, September 26.
- Miller, R. D., 2019, Kansas Water Authority Meeting, Arbuckle Presentation, Goodland, Kansas, September 3.
- Miller, R. D., 2019, Consortium to Study Trends in Seismicity, 2019 Annual Meeting, Consortium Status and Consortium Future Activities, Hutchinson, Kansas, July 23.
- Miller, R. D., 2019, Seismic Network and Seismic Activity Update, Geological Survey Advisory Board (GSAC), July 20.
- Miller, R. D., 2019, Kansas Field Conference, June 12.
- Miller, R. D., 2019, Kansas Department of Health and Environment, Meadowlark Room, May 28.
- Miller, R. D., 2019, Kansas Department of Health and Environment, Mosaic meeting, February 21.
- Miller, R. D., 2019, RISC Annual Meeting, Austin, Texas, January 15-16.
- Potter, N., 2019, Kansas Historical Aerial Images: Preservation & Presentation: NGGDPP Lightning Talks, Golden, Colorado, September 24–25.



- Schneider, B., 2019, Addressing bias in teaching: Earth Educator Rendezvous workshop.
- Schneider, B., 2019, Creating inclusive classrooms and workplaces: Exploring different types of identities: Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, Kansas.
- Schneider, B., 2019, Make it better: Assessing and addressing departmental and workplace culture issues: Earth Educator Rendezvous workshop.
- Schneider, B., 2019, Women geoscientists in the workforce in 2019: What have we overcome, and what do we continue to face? Kansas Biological Survey, University of Kansas, Lawrence, Kansas.
- Schneider, B., and Barnes, R., 2019, Improving workplace climate: Responding to harassment: Inclusive graduate education network national meeting.
- Schneider, B., and Burns, K., 2019, Creating a positive workplace culture: University of Kansas School of Engineering workshop.
- Schneider, B., and Case, S., 2019, Broadening participation: Strategies for developing and maintaining a positive workplace climate: NSEC 2019 National Conference workshop.
- Smith, J. J., 2019, Life in the Dead Zone: A diverse Miocene ichnofauna preserved in volcanic ash, Ashfall Fossil Beds State Historical Park, Nebraska: Kansas Geological Survey Lecture Series, KU Energy & Environment Center, March 19.
- Stewart, D., 2019, Kansas's website, well data and documents, Lightning Talk: USGS National Geological and Geophysical Data Preservation Workshop, Golden, Colorado, September 24.
- Stewart, D., 2019, Oil and gas data on the KGS website, log scanning and materials and resources in the Data Resources Library: University of Kansas Geology 535, September 10.
- Stewart, D., Killion, M., and Potter, N., 2019, Interactive mappers on the Kansas Geological Survey website: An overview of data, tools, and core repository: Rocks and Rolls, EEEEC, University of Kansas Geology 535, November 12.
- Thompson, I. P., Franseen, E. K., and Goldstein, R. H., 2019, Paleotopographic controls on the distribution of late Cenozoic coarse-grained heterozoan reservoir facies, Southeast Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Zipper, S. C., et al., 2019, Exploring the potential and limits of analytical depletion functions for estimating streamflow: American Geophysical Union Fall Meeting.
- Zipper, S. C., et al., 2019, Lots of streams, not much time or money? Rapid and accurate analytical tools for evaluating groundwater pumping impacts on streamflow and ecosystems: American Geophysical Union, Chapman Conference on Aquifer Sustainability.
- Ziska, C., Johnson, N. L., and Layzell, A. L., 2019, The Nebraska buried sites GIS in practice: Initial results and next steps: 77<sup>th</sup> Plains Anthropological Conference, Bloomington, Indiana, October 16–19.

## **Awards & Honors**

- Meng, J., et al. — 2019 HGS Applied Geoscience Conference, third-place poster presentation, “Geomechanical Characteristics of the prospective CO<sub>2</sub> sinks and Seals, Eastern Gulf of Mexico”
- Miller, R. D. — President and Chair of the Board, SEG
- Miller, R. D. — Institutional Contribution Award, EEGS
- Morton, S. L. — Award for Excellence in Geotechnical Eng. Education and Student Activities, American Society of Civil Engineers Kansas City Geo-Institute Chapter, 2019
- Morton, S. L. — Second Place, Best Student Paper Award for Oral Presentation, International Conference on Engineering Geophysics, 2019
- Morton, S. L. — Lee C. & Darcy Gerhard Field Research Student Award, Kansas Geological Survey (KGS), 2019
- Morton, S. L. — Third Place, National GeoPoster Student Competition, GeoCongress, 2019
- Schneider, B. — 2019 Facilitators’ Choice Recognition, 2019 NSF STEM for All Video Showcase
- Schneider, B. — 2019 SEG Special Commendation Award

## **Internal Service**

- Bode, I. Y. — Co-organizer of KGS/KU United Way Campaign fundraising event
- Dunham, J. W. — Chair, search committee for Cartographic Services Specialist position
- Evans, C. S. — Kansas Field Conference, South-Central Kansas, June 10–12, 2019
- Franseen, E. K. — Chair, Promotion and Review Committee
- Franseen, E. K. — Member, Petroleum Geologist (3 positions) Search Committee
- Franseen, E. K. — Chair, Stratigraphic Nomenclature Committee

Franseen, E. K. — Member, Editorial Board, Midcontinent Geoscience  
 Hendershot, S. — KGS booth, KDHE Geology & Well Technology Seminar/Tech Fair, Wichita, Kansas, Oct 8–9  
 Hollenbach, J. — KGS booth, KIOGA, Wichita, Kansas, August 11–13, 2019  
 Layzell, A. L. — Member, Stratigraphic Nomenclature Committee  
 Layzell, A. L. — Editor, Midcontinent Geoscience  
 Ludvigson, G. A. — Chair, search committee for postdoctoral researcher in Paleozoic stratigraphy  
 Mandel, R. D. — Director and State Geologist  
 Mandel, R. D. — Member, Stratigraphic Nomenclature Committee  
 Miller, R. D. — KGS Arbuckle Working Group  
 Mohammadi, S. — Member, committee for the Dangermond, Gerhard, and Plummer student awards, May  
 Mohammadi, S. — Host, KGS chili cook-off fund raiser for United Way campaign  
 Schneider, B. — Host/committee member, KGS United Way Campaign  
 Schneider, B. — Coordinator, KGS Tuesday Lecture Series  
 Schneider, B. — Member, Interagency Research Coordination Committee, Kansas Water Office  
 Schneider, B. — Volunteer, KGS booth, Governor's Conference on the Future of Water in Kansas November 7–8  
 Schneider, B. — Volunteer, KGS booth, Kansas Sheriff's Association Conference, November 6  
 Schneider, B. — Volunteer, KGS booth, AAPG Mid-Continent Meeting, October 6–8  
 Schneider, B. — KGS booth, KIOGA, Wichita, Kansas, August 11–13  
 Schneider, B. — Volunteer, KGS booth, KIOGA Annual Meeting, October 11–12  
 Schneider, B. — Volunteer, KGS booth, KDHE Geology & Well Technology Seminar, October 8–9  
 Smith, J. J. — KGS STATEMAP Coordinator  
 Smith, J. J. — Chair, KGS Associate Director for Research Search Committee  
 Smith, J. J. — Member, Outstanding Support Staff Recognition Award Committee  
 Smith, J. J. — Member, Sabbatical Initial Review Committee  
 Smith, J. J. — Member, Postdoctoral Research Assistant Search Committee  
 Smith, J. J. — Member, Cartographer Search Committee  
 Smith, J. J. — Associate Editor, Midcontinent Geoscience  
 Smith, J. J. — Post-doc supervisor for Stephan Oborny, Kansas Geological Survey  
 Stewart, D. — KGS booth, KIOGA, Wichita, Kansas, August 11–13  
 Stewart, D. — KGS booth, KDHE Geology & Well Technology Seminar/Tech Fair, Wichita, Kansas, October 8–9  
 Tollefson, J. M. — Member (ex-officio), KGS Stratigraphic Nomenclature Committee  
 Zipper, S. C. — Member, Associate Director of Research search committee  
 Zipper, S. C. — Agency reviews (3x): City of Gove, City of Cimarron, City of Fredonia

## External Service

Borisov, D. — Visiting researcher, Princeton University  
 Borisov, D. — Professional journal reviews: Geophysics, Geophysical Journal International, Earthquake Science, and Near Surface Geophysics  
 Butler, J. J., Jr. — Member, Kansas Water Resources Institute Administrative Council  
 Butler, J. J., Jr. — Member, Kansas Water Bank Review Group  
 Butler, J. J., Jr. — Member, Organizing Committee, NovCare 2019 (Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice), Waterloo, Ontario, May 29–31  
 Butler, J. J., Jr. — Conference co-chair, American Geophysical Union Chapman Conference: The Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales, Valencia, Spain, October 21–24  
 Butler, J. J., Jr. — Moderator, 28th Annual Kansas Hydrology Seminar, Topeka, November 22  
 Butler, J. J., Jr. — Moderator and presenter, Fall Meeting of the American Geophysical Union, San Francisco, California, December  
 Butler, J. J., Jr. — Reviewer for the National Science Foundation, Kansas Water Resources Institute, Humphrys Fellowship Program, and the Geotechnical Testing Journal  
 Dunham, J. W. — Member, USGS-AASG National Cooperative Geologic Mapping Program (NCGMP) Geologic Map Schema (GeMS) Working Group  
 Dunham, J. W. — Member, USGS-AASG National Geologic Map Database (NGMDB) Working Group  
 Dunham, J. W. — Member, USGS-AASG Digital Mapping Techniques (DMT) NCGMP09 Working Group  
 Evans, C. S. — Developed Road Scholar (mapping) section for 2019 Northeast Kansas Regional Science Olympiad  
 Evans, C. S. — Member, KU Research Communications Council

Franseen, E. K. — Member, Nominations Committee, Department of Geology, University of Kansas  
 Franseen, E. K. — Co-organizer, KU Geology Career Symposium, Department of Geology, University of Kansas  
 Franseen, E. K. — Chair, Ph.D. committee; co-chair, 2 Ph.D. committees; co-chair, 3 M.S. committees; member 3 Ph.D. and 4 M.S. committees  
 Franseen, E. K. — Kansas Interdisciplinary Carbonates Consortium post-doc supervisor  
 Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison  
 Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee  
 Franseen, E. K. — Member, SEPM Executive Director Search Committee  
 Franseen, E. K. — External advisor, Earth and Space Sciences Department, Columbus State University, Georgia  
 Franseen, E. K. — Organizer and convener, 2019 Kansas Interdisciplinary Carbonates Consortium (KICC) Annual Meeting  
 Franseen, E. K. — Teaching: Advanced Topics in Geology, Special Studies in Geology, Master's Thesis, Topics in Regional Field Geology  
 Layzell, A. L. — Member, National Geologic Map Database Project Technical Advisory Working Group  
 Layzell, A. L. — Session chair, Landscape Response to Neogene Climate Change, Annual Meeting of the Geological Society of America, Phoenix, Arizona  
 Layzell, A. L. — Guest lecturer, Geoarchaeology Graduate Seminar (ANTH 849), University of Kansas, Department of Anthropology, April  
 Layzell, A. L. — Member, Kansas Watershed Restoration and Protection Strategy (WRAPS) Work Group  
 Layzell, A. L. — Student mentor; Roy J. Shlemon Mentors Program in Applied Geology, Geological Society of America Joint Section Meeting (South-Central, North-Central, Rocky Mountain sections), Manhattan, Kansas  
 Layzell, A. L. — Fieldtrip co-organizer: Looking Beneath the Plains: Geology of the Ogallala Formation and the Central High Plains of Kansas, Geological Society of America Joint Section Meeting (South-Central, North-Central, Rocky Mountain sections), Manhattan, Kansas  
 Liu, G. — Associate editor, Water Resources Research  
 Liu, G. — Technical advisory member, Kansas Department of Health and Environment drinking water protection committee  
 Liu, G. — Reviewer, Water Resources Research, Groundwater, Groundwater Monitoring and Remediation  
 Liu, G. — Judge, student presentations, American Geophysical Union annual meeting, Governor's Conference on the Future of Water in Kansas  
 Ludvigson, G. A. — Member, search committee for research technician in thin section laboratory in the KU Department of Geology  
 Ludvigson, G. A. — Associate editor, Journal of Sedimentary Research  
 Mandel, R. D. — Member, KU Center for Research's Search Committee for the Director of the Kansas Biological Survey  
 Mandel, R. D. — Associate Editor, Geoarchaeology: An International Journal, John Wiley & Sons, Inc.  
 Mandel, R. D. — Organizer and trip leader, "Late-Quaternary Landscape Evolution and Geoarchaeology in the Flint Hills of Northeastern Kansas: A Tale of Two Sites." 2019 Joint Geological Society of America Section Meeting: South-Central, North-Central, and Rocky Mountain Sections, Manhattan, Kansas, March 24, 2019  
 Mandel, R. D. — Chair, National Academy of Sciences U.S. National Committee, International Union for Quaternary Research (INQUA)  
 Mandel, R. D. — As chair of the U.S. National Committee for Quaternary Research-INQUA, represented the United States at the International Council Meetings, XX INQUA Congress, Dublin, Ireland, July 24–31, 2019.  
 Mandel, R. D. — On behalf of the U.S. National Committee for the International Union for Quaternary Research (INQUA) and the National Academy of Sciences, co-organized and chaired a mentoring event for early career Quaternary scientists at the XX INQUA Congress, Dublin, Ireland, July 24, 2019.  
 Mandel, R. D. — On behalf of the U.S. National Committee for the International Union for Quaternary Research (INQUA) and the National Academy of Sciences, organized and chaired a topical session, "The Application of Quaternary Science to Societal Issues in the 21st Century," XX INQUA Congress, Dublin, Ireland, July 24–31, 2019.  
 Mandel, R. D. — Chair, Awards Committee, Geological Society of America's Archaeological Geology Division  
 Mandel, R. D. — Member, Executive Committee, KU Department of Anthropology  
 Mandel, R. D. — Reviewer, one manuscript submitted to Quaternary Science Reviews  
 Mandel, R. D. — Reviewer, one manuscript submitted to Catena

Miller, R. D. — SEG, Compensation Committee  
 Miller, R. D. — Co-chair, ICEG, Scientific and Technical Program Committee, Al Ain, UAE, October  
 Miller, R. D. — Chair, SEG, Strategy and Planning Committee  
 Miller, R. D. — ICEG, Innovations in Geophysics Award, Selection Committee  
 Miller, R. D. — Geophysical Technology, Inc. (GTI) Advisory Board  
 Miller, R. D. — KU RGS Research Achievement Award Selection Committee  
 Mohammadi, S. — Peer reviewer, Carbonates and Evaporites Journal, 2017–Present  
 Schneider, B. — Vice-chair and chair, SEG Women’s Network Committee  
 Schneider, B. — Associate editor, Journal of Environmental and Engineering Geophysics  
 Schneider, B. — Member, AGU Honors and Recognition Committee  
 Schneider, B. — Peer reviewer, PLOS One and The Leading Edge  
 Schneider, B. — Member, AWG Paleontological Awards Selection Committee  
 Schneider, B. — Member, AWG Professional Excellence Awards Committee  
 Schneider, B. — Member, KU Geology Department Applied Geophysics Position Search Committee  
 Schneider, B. — Volunteer, Central Missouri Regional FIRST Robotics Competition  
 Smith, J. J. — Co-chair, Adam Jackson, Ph.D. Committee, University of Kansas  
 Smith, J. J. — Co-chair, Maurício Nascimento Menezes, Ph.D. Committee, Ph.D., Universidade Federal de Rio de Janeiro  
 Smith, J. J. — Session co-convenor: Behavioral Innovations and Environmental Feedbacks: Insights from the Trace Fossil Record and Other Archives, 11<sup>th</sup> North American Paleontological Convention, July 23–27, Riverside, California  
 Smith, J. J. — Session co-convenor: The Low Down on the High Plains: Geologic and Hydrogeologic Studies of the High Plains Aquifer, Geological Society of America, Joint South-Central, North-Central, and Rocky Mountains Sections Meeting  
 Smith, J. J. — Field trip co-leader: Looking Beneath the Plains: Geology of the Ogallala Formation and the Central High Plains of Kansas, Geological Society of America, Joint South-Central, North-Central, and Rocky Mountains Sections Meeting  
 Zipper, S. C. — Member, American Geophysical Union Ecohydrology Technical Committee (in charge of social media and website)  
 Zipper, S. C. — Session co-convenor, Agrohydrology in a Changing World: From Global Processes to Local Outcomes. American Geophysical Union Fall Meeting  
 Zipper, S. C. — Co-organized, staffed “Coding Help Desk” at American Geophysical Union Fall Meeting (with Sheila Saia)  
 Zipper, S. C. — 6 ad hoc journal reviews: 1x Proceedings of the National Academy of Sciences, 1x Journal of Hydrology: Regional Studies, 2x Environmental Research Letters, 2x Agricultural and Forest Meteorology  
 Zipper, S. C. — Curator, CRAN Hydrology Task View (<https://cran.r-project.org/web/views/Hydrology.html>)

## Grants

Butler, J. J., Jr., and Bohling, G. C.: High Plains aquifer index well program, \$305,000, Kansas Water Office, 2019–2024.  
 Butler, J. J., Jr., and Liu, G.: Dynamic NMR logging technologies for high-resolution measurement of hydrogeologic properties and soil response, Vista Clara subcontract for DoE SBIR, \$145,371, 2018–2020.  
 Butler, J. J., Jr., and Liu, G.: INFEWS/T1: Developing pathways toward sustainable irrigation across the United States using process-based systems models (SIRUS), U.S. Dept. of Agriculture, \$148,704, 2018–2022.  
 Butler, J. J., Jr., Perrone, D., and Hyndman, D.: Travel Grant Proposal: AGU Chapman Conference — The Quest for Sustainability of Heavily Stressed Aquifers at Regional to Global Scales, National Science Foundation, \$44,965, 2019.  
 Butler, J. J., Jr., and Seybold, E. C.: Assessment of groundwater mineralization in the upper Arkansas River corridor, \$77,000, Kansas Water Office, 2019–2021.  
 Liu, G., and Butler, J. J., Jr.: Contaminant barriers or pathways? Hydraulic and chemical methods to improve characterization of shallow aquitards, \$29,786, Kansas Water Resources Research Institute, 2017–2019.  
 Liu, G., Butler, J. J., Jr., and Bohling, G. C.: Estimating mobile-immobile mass transfer parameters using direct push tools, \$229,964, DoD Strategic Environmental Research and Development Program, 2015–2020.  
 Miller, R. D.: Kansas Corporation Commission, Time-lapse, high-resolution seismic reflection imaging of a void in the Hutchinson Salt beneath #1 Knackstedt disposal well, McPherson County, Kansas, 2019, \$14,803. (PI)

- Miller, R. D.: Fibertek, Inc. ESS, Acquisition design and data conditioning in advance of implementation of K-Scope for assessment of technology demonstrator capabilities to improve subterranean detection capabilities, 2019, \$87,701. (PI)
- Miller, R. D.: U.S. Army Corps of Engineers, Advancement in seismic imaging for tunnel detection: ASI to ASII-skinny, 2019, \$499,999. (PI)
- Miller, R. D.: U.S. Army Corps of Engineers, Enhanced implementation of K-Scope and ASII tunnel detection analysis approach using FWI, modal segmentation methods, and integrated multi-modal techniques, 2019, \$2,369,176. (PI)
- Mohammadi, S. (PI): KICC-KS Interdisciplinary Carbonate Consortium; Total amount: \$19,476.00; Period of support: September 30, 2019–September 30, 2020; Title: Structural control of hydrothermal fluid migration, Northern Oklahoma and Kansas: Impact on reservoir properties.
- Mohammadi, S. (Co-PI): Department of Energy; Total amount: \$5.5 M, KGS portion \$270 K; Period of support: September 2019–September 2022; Title: Carbon Utilization and Storage Partnership (CUSP) for the Western USA.
- Seybold, E.: Kansas Water Office: Assessment of Groundwater Mineralization in the Upper Arkansas River Corridor. Co-PI. Total amount \$77,000. 2019–2022.
- Smith, J. J. (PI), Co-PIs: Layzell, A., Ludvigson, G. A., Mandel, J. R., and Dunham, J. W., 2019, Geologic Mapping in Kansas for FY19. U.S. Geological Survey STATEMAP Program, federal and state match total: \$292,588.
- Stewart, D., Dealy, M., and Potter, N., National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, and KGS Library and Archive, Kansas Geological Survey, administered through U. S. Geological Survey, 2018–2019, \$79,519. (Stewart PI)
- Stewart, D., Dealy, M., and Potter, N., National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, and KGS Library and Archive, Kansas Geological Survey, administered through U. S. Geological Survey, 2019–2020, \$82,549. (Stewart PI)
- Wilson, B. B., Liu, G., Butler, J. J., Jr., Bohling, G. C., and Brookfield, A.: GMD2 groundwater model update, Kansas Water Office and Equus Beds Groundwater Management District #2, \$115,000, 2017–2019.
- Wilson, B. B., Liu, G., Butler, J. J., Jr., and Bohling, G. C.: Development of GMD4 groundwater model, \$140,000, Kansas Water Office and Northwest Kansas Groundwater Management District #4, 2018–2020.
- Zipper, S. C. — Stockholms Universitet/Formas, Ripples of Resilience: Navigating cross-scale SDG interactions of water, land, and climate within planetary boundaries, \$210,755 (\$24,243 to KGS)

**Refereed Publications**

- Butler, J. J., Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2018, Sustainability of aquifers supporting irrigated agriculture: A case study of the High Plains aquifer in Kansas: *Water International*, v. 43, no. 6, p. 815–828. doi: 10.1080/02508060.2018.1515566
- Core, E. E., and Franseen, E. K., 2018, Depositional and reservoir character of mixed heterozoan-large benthic foraminifera-siliciclastic sequences, Middle Miocene, Dominican Republic: *American Association of Petroleum Geologists Search and Discovery Article #51506*, 10 p.
- Flotron, A., Franseen, E. K., and Goldstein, R. H., 2018, Sedimentologic and stratigraphic controls on reservoir sweet spots in Wolfcamp ‘A,’ Howard County, Midland Basin: *American Association of Petroleum Geologists Search and Discovery Article #11142*, 6 p.
- Franseen, E. K., Sawin, R. S., Watney, W. L., West, R. L., Layzell, A. L., and Ludvigson, G. A., 2018, Mississippian stratigraphic nomenclature revisions in Kansas: *Current Research in Earth Sciences*, Kansas Geological Survey Bulletin 264. <http://www.kgs.ku.edu/Current/2018/Franseen/index.html>
- Golab, J. A., Smith, J. J., and Hasiotis, S. T., 2018, Paleoenvironmental and paleogeographic implications of paleosols and ichnofossils in the Upper Pennsylvanian-Permian Halgaito Formation, Southeastern Utah: *PALAIOS*, v. 33, p. 296–311. doi: <http://dx.doi.org/10.2110/palo.2017.074>
- Liu, G., Borden, R., and Butler, J. J., Jr., 2018, Simulation assessment of direct push injection logging for high resolution aquifer characterization: *Groundwater*. doi: 10.1111/gwat.12826
- Modrak, R. T., Borisov, D., Lefebvre, M., and Tromp, J., 2018, Seisflows—flexible waveform inversion software: *Computers & Geosciences*, v. 115, p. 88–95.
- Peterie, S. L., Miller, R. D., Buchanan, R., and DeArmond, B., 2018, Fluid injection wells can have a wide seismic reach: *EOS*, v. 98, n. 7, p. 25–30. <https://doi.org/10.1029/2018EO096199>
- Peterie, S. L., Miller, R. D., Intfen, J. W., and Gonzales, J. B., 2018, Earthquakes in Kansas induced by extremely far-field pressure diffusion: *Geophysical Research Letters*, v. 45, p. 1,395–1,401. <https://doi.org/10.1002/2017GL076334>
- Richey, J. D., Upchurch, G. R., Montañez, I. P., Lomax, B. H., Suarez, M. B., Crout, N. M., Joeckel, R. M., Ludvigson, G. A., and Smith, J. J., 2018, Changes in CO<sub>2</sub> during the Ocean Anoxic Event 1d indicate similarities to other carbon cycle perturbations: *Earth and Planetary Science Letters*, v. 491, p. 172–182. <https://doi.org/10.1016/j.epsl.2018.03.035>
- Seybold, E. C., and McGlynn, B. L., 2018, Hydrologic and biogeochemical drivers of dissolved organic carbon and nitrate uptake in headwater stream networks: *Biogeochemistry*. <https://doi.org/10.1007/s10533-018-0426-1>
- Smith, J. J., Turner, E., Möller, A., Joeckel, R. M., and Otto, R., 2018, First U-Pb zircon ages for late Miocene Ashfall Konservat-Lagerstätte and Grove Lake ashes from eastern Great Plains, USA: *PLoS ONE*, v. 13, no. 11, e0207103. <https://doi.org/10.1371/journal.pone.0207103>
- Wang, N., Li, J., Borisov, D., Gharti, H., Shen, Y., Zhang, W., and Savage, B., 2018, Modeling three-dimensional wave propagation in anelastic models with surface topography by a collocated-grid finite-difference method: *Journal of Geophysical Research*.
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2018, Status of the High Plains aquifer in Kansas: *Kansas Geological Survey, Technical Series 22*, 14 p.

**Nonrefereed Publications**

- Bennett, B., and Brohammer, M., 2018, 2017 water level data acquisition statistics: *Kansas Geological Survey Open-File Report 2018-1*. [http://www.kgs.ku.edu/Hydro/Publications/2018/OFR18\\_1/index.html](http://www.kgs.ku.edu/Hydro/Publications/2018/OFR18_1/index.html)
- Bennett, B., and M. Brohammer, 2018, 2018 Water level data acquisition statistics: *Kansas Geological Survey Open-File Report 2018-18*. [http://www.kgs.ku.edu/Hydro/Publications/2018/OFR18\\_18/index.html](http://www.kgs.ku.edu/Hydro/Publications/2018/OFR18_18/index.html)
- Bohling, G. C., Whittemore, D. O., Brookfield, A. E., Reboulet, E. C., Wilson, B. B., and Butler, J. J., Jr., 2019, Addressing groundwater goals of the Missouri Regional Planning Area, Phase II: First year progress report: *Kansas Geological Survey Open-File Report 2019-3*, 48 p.
- Butler, J. J., Jr., Whittemore, D. O., Reboulet, E., Knobbe, S., Wilson, B. B., and Bohling, G. C., 2018, High Plains aquifer index well program: 2017 annual report: *Kansas Geological Survey Open-File Report 2018-17*, 60 p.

- Evans, C. S., Stover, S., and Tollefson, J., 2018, Rocks, minerals, and fossils of Kansas: Kansas Geological Survey, Educational Series 18, 24 p.
- Ivanov, J., Miller, R. D., Peterie, S. L., Schwenk, J. T., Nolan, J. J., Bennett, B., Wedel, B., Anderson, J., Chandler, J., and Green, S., 2013, Preliminary report: Enhanced passive seismic characterization of high priority salt jugs in Hutchinson, Kansas: Kansas Geological Survey Open-File Report 2018-2, 23 p.
- Johnson, W. C., Schlagel, N. A., and Dunham, J. W., 2018, Preliminary surficial geology of the Akron quadrangle, Cowley County, Kansas: Kansas Geological Survey, Open-File Report 2018-4, scale 1:24,000, unpublished.
- Johnson, W. C., Schlagel, N. A., and Dunham, J. W., 2018, Preliminary surficial geology of the Arkansas City quadrangle and the Cowley County portion of the Geuda Springs quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2018-3, scale 1:24,000, unpublished.
- Johnson, W. C., Schlagel, N. A., and Dunham, J. W., 2018, Preliminary surficial geology of the Hackney quadrangle, Cowley County, Kansas: Kansas Geological Survey, Open-File Report 2018-5, scale 1:24,000, unpublished.
- Layzell, A. L., and Dunham, J. W., 2018, Preliminary surficial geology of the Adamsville quadrangle, Sumner and Cowley counties, Kansas: Kansas Geological Survey, Open-File Report 2018-8, scale 1:24,000, unpublished.
- Layzell, A. L., and Dunham, J. W., 2018, Preliminary surficial geology of the Oxford quadrangle, Sumner and Cowley counties, Kansas: Kansas Geological Survey, Open-File Report 2018-9, scale 1:24,000, unpublished.
- Layzell, A. L., and Dunham, J. W., 2018, Preliminary surficial geology of the South Haven quadrangle, Sumner County, Kansas: Kansas Geological Survey, Open-File Report 2018-6, scale 1:24,000, unpublished.
- Miller, R. D., 2018, President's Page: Membership matters: *Leading Edge*, v. 37, n. 11, p. 800.
- Morton, S. L., Peterie, S., Ivanov, J., Miller, R., Anderson, J., Bennett, B., Farwell, M., Fishburn, J., Intfen, J., Scobee, J., and Wedel, B., 2018, Passive characterization of high priority salt jugs near Hutchinson, Kansas: November 2017: Kansas Geological Survey Open-File Report 2018-16, 26 p.
- Parcell, W. C., Dinkel, G. L., Post, S. D., and Dunham, J. W., 2018, Preliminary surficial geology of the Sedgwick County portion of the Andover quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2018-10, scale 1:24,000, unpublished.
- Parcell, W. C., Dinkel, G. L., Post, S. D., and Dunham, J. W., 2018, Preliminary surficial geology of the Wichita East quadrangle, Sedgwick County, Kansas: Kansas Geological Survey, Open-File Report 2018-11, scale 1:24,000, unpublished.
- Smith, J. J., and Dunham, J. W., 2018, Preliminary surficial geology of the Bluff City East quadrangle, Harper and Sumner counties, Kansas: Kansas Geological Survey, Open-File Report 2018-12, scale 1:24,000, unpublished.
- Smith, J. J., and Dunham, J. W., 2018, Preliminary surficial geology of the Bluff City West quadrangle, Harper County, Kansas: Kansas Geological Survey, Open-File Report 2018-13, scale 1:24,000, unpublished.
- Smith, J. J., and Dunham, J. W., 2018, Preliminary surficial geology of the Spring quadrangle, Harper County, Kansas: Kansas Geological Survey, Open-File Report 2018-14, scale 1:24,000, unpublished.
- Stover, S., and Evans, C. S., 2018, North-central Kansas — New developments in agriculture, water management, and local economies, Kansas Field Conference guidebook: Kansas Geological Survey, Open-File Report 2018-15, 74 p. [http://www.kgs.ku.edu/Field/Reports/KGS\\_OF\\_2018-15.pdf](http://www.kgs.ku.edu/Field/Reports/KGS_OF_2018-15.pdf)

## Abstracts

- Ansari, E., Bidgoli, T., Hollenbach, A., and Nolte, K., 2018, Interplay between pore pressure and poroelastic stress induces midcontinent seismicity: American Geophysical Union, Washington, D.C.
- Borisov, D., Gao, F., Williamson, P., Simons, F., and Tromp, J., 2018, Waveform inversion of surface and body waves for near-surface onshore imaging: 2018 Fall Meeting, American Geophysical Union, December, Washington, D.C.
- Borisov, D., Gao, F., Williamson, P., Simons, F., and Tromp, J., 2018, Waveform inversion of surface and body waves for near-surface onshore imaging: 32nd IUGG Conference on Mathematical Geophysics, International Union of Geodesy and Geophysics.
- Butler, J. J. Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G., 2018, The hour is late, but all is not lost: Striving for sustainability of the High Plains aquifer in Kansas: Abstract H33E-06, American Geophysical Union Fall Meeting. <https://agu.confex.com/agu/fm18/meetingapp.cgi/Paper/410393>



- Christensen, A. D., Smith, J. J., Sanderson, B., Stotler, R., Katz, B., and Mandel, R., 2018, Particle size analyses of a long continuous core retrieved from Cenozoic High Plains aquifer in Thomas County, Kansas: Transactions of the Kansas Academy of Science, Abstracts from the 150th Annual Meeting of the Kansas Academy of Science.
- Core, E. E., and Franseen, E. K., 2018, Sea level and paleotopographic controls on mixed heterozoan-large benthic foraminifera-siliciclastic sequences in a tropical setting, Middle Miocene, Dominican Republic: Implications for reservoir characterization: AAPG Annual Convention and Exhibition, Salt Lake City, Utah, May 20–23, 2018.
- Feigenbaum, D. Z., Ivanov, J., Miller, R. D., and Sloan, S. D., 2018, Joint analysis of refractions and reflections (JARR) for calculating long-wavelength static corrections: SEG Technical Program Expanded Abstracts 2018, p. 2,858–2,862.
- Flotron, A., Franseen, E. K., and Goldstein, R. H., 2018, Sedimentologic and stratigraphic controls on reservoir sweet spots in Wolfcamp ‘A,’ Howard County, Midland Basin: 2018 Geological Society of America South-Central Section Annual Meeting, Little Rock, Arkansas.
- Flotron, A., Franseen, E. K., and Goldstein, R. H., 2018, Sedimentologic and stratigraphic controls on reservoir sweet spots in Wolfcamp ‘A,’ Howard County, Midland Basin: AAPG Annual Convention and Exhibition, Salt Lake City, Utah, May 20–23, 2018.
- Hoch, A. M., Ivanov, J., Peterie, S. L., and Miller, R. D., 2018, Improved seismic diffraction velocity estimation with fixed-depth semblance analysis: SEG Technical Program Expanded Abstracts 2018, p. 2,702–2,706.
- Ivanov, J., Miller, R. D., Peterie, S. L., and Hoch, A. M., 2018, Detecting subsurface objects and identifying voids possibilities using seismic diffractions: SEG Technical Program Expanded Abstracts 2018, p. 2,692–2,696.
- Knight, J. A. II, Suarez, M. B., and Ludvigson, G. A., 2018, Paleotemperature and paleoprecipitation analysis of paleosols from the early Cretaceous Ruby Ranch Member of the Cedar Mountain Formation, east-central Utah: Geological Society of America, Abstracts with Programs, v. 50, no. 1. doi: 10.1130/abs/2018SC-309952
- Ludvigson, G. A., Joeckel, R. M., Doveton, J. H., and Mandel, R. D., 2018, The KGS Gaydusek #1 core in Washington County, Kansas: A record of the OAE 1d and OAE2 in Albian-Turonian strata; in C. R. Fielding and R. M. Joeckel, eds., New Insights into Carboniferous Cyclothems, The Fourth Biennial Field Conference of the AAPG Mid-Continent Section, University of Nebraska School of Natural Resources Conservation and Survey Division, Field Guide No. 28, p. 45–46.
- Ludvigson, G. A., Möller, A., Joeckel, R. M., Upchurch, G. R., Jr., and Smith, J. J., 2018, Scientific investigations on Cretaceous (Albian-Turonian) strata from the Rose Creek Escarpment (RCE) along the Nebraska-Kansas border, cratonic margin of the Western Interior Basin: Geological Society of America, North-Central Section Meeting, Abstracts with Programs, v. 50, no. 4. doi:10.1130/abs/2018NC-312703
- Ludvigson, G. A., Ross, J. B., and Schroder-Adams, C. J., 2018, Same as it ever was: Persistent case for very low  $\delta^{18}\text{O}$  values for polar paleoprecipitation in Cretaceous greenhouse worlds and new example from the Sverdrup Basin of northern Canada: 20<sup>th</sup> International Sedimentological Congress, Quebec City, Canada, August 13–17, 2018, Book of Abstracts, v. 1, ISC2018.ORG, p. 432.
- Morton, S. L. C., Lane, J. W., Jr., Thomas, M. A., and Liu, L., 2018, Seismic hazard classifications and VS30 in Connecticut using MASW and HVSr Methods: SEG Technical Program Expanded Abstracts 2018, p. 2,521–2,525.
- Morton, S. L. C., Miller, R. D., Ivanov, J., Peterie, S. L., Parsons, R. L., and Livers-Douglas, A. J., 2018, Time-lapse monitoring of subsidence features within the Hutchinson Salt in Kansas: SEG Technical Program Expanded Abstracts 2018, p. 2,642–2,646.
- Peterson, A., Smith, J. J., Layzell, A., and Bidgoli, T. S., 2018, Structural mapping in the Humboldt Fault Zone using remote sensing, Chase County, Kansas: Transactions of the Kansas Academy of Science, Abstracts from the 150th Annual Meeting of the Kansas Academy of Science.
- Peterson, A., Smith, J. J., Layzell, A., and Ludvigson, G. A., 2018, Mapping potential surface expressions of structural features from LiDAR and high resolution imagery in east-central Kansas: Geological Society of America Abstracts with Programs, v. 50, no. 6. doi: 10.1130/abs/2018AM-324848
- Ross, J. B., Ludvigson, G. A., and Schroder-Adams, C. J., 2018, High latitude meteoric oxygen isotope compositions from the Cenomanian lower Kanguk Formation, Axel Heiberg Island, Canadian Arctic Archipelago: Geological Society of America, Abstracts with Programs, v. 50, no. 4. doi: 10.1130/abs/2018NC-312779
- Schwenk, J. T., and Miller, R. D., 2018, Velocity characterization and subsidence-feature imaging using seismic methods [Abs.]: Louisiana Coastal Geology Symposium, Baton Rouge, Louisiana, July 10–11, 2018.

- Smith, J. J., Joeckel, R. M., Otto, R. E., and Tucker, S. T., 2018, Life in the dead zone: A diverse Miocene ichnofaunal assemblage preserved in volcanic ash, Ashfall Fossil Beds State Historical Park, Nebraska, USA: Geological Society of America Abstracts with Programs, v. 50, no. 6. doi: 10.1130/abs/2018AM-318389
- Smith, J. J., Ludvigson, G. A., Layzell, A., and Dunham, J. W., 2018, Geologic mapping in Kansas: Overview of programmatic directions and current projects: 2018 Geologic Mapping Forum, Minnesota Geological Survey, University of Minnesota, Minneapolis, March 27–29.
- Smith, J. J., Ludvigson, G. A., Layzell, A., and Dunham, J. W., 2018, Overview and direction of the geologic mapping projects at the Kansas Geological Survey: Transactions of the Kansas Academy of Science, Abstracts from the 150th Annual Meeting of the Kansas Academy of Science, Washburn University, Topeka, Kansas, April 6–7.
- Smith, J. J., Ludvigson, G. A., Layzell, A., and Möller, A., 2018, Recent advances in developing a U-Pb zircon chronostratigraphy of Cenozoic strata in the High Plains of western U.S.A.: 20th International Sedimentological Congress, Quebec City, Canada, August 13–17, Book of Abstracts, v. 1, ISC2018.ORG, p. 439.
- Smith, J. J., Turner, E., Möller, A., Joeckel, R. M., Tucker, S. T., and Otto, R. E., 2018, Discovery of zircons in the Ashfall Fossil Beds and Grove Lake volcanic deposits of northeastern Nebraska: U-Pb ages and successful sampling strategies: Geological Society of America, North-Central Section Meeting, Abstracts with Programs, v. 50, no. 4. doi:10.1130/abs/2018NC-312753
- Wang, Y., Miller, R. D., Tu, X., Sloan, S. D., Moran, M. L., and Cudney, H. H., 2018, Tunnel detection by full-waveform inversion of land streamer data: SEG Technical Program Expanded Abstracts 2018, p. 2,672–2,676.
- Whittemore, D. O., Butler, J. J. Jr., and Wilson, B. B., 2018, Predicting irrigation pumping reductions to achieve sustainability at different scales in the High Plains aquifer, Kansas: Geological Society of America Abstracts with Programs, v. 50, no. 6. doi: 10.1130/abs/2018AM-317810
- Whittemore, D. O., Butler, J. J. Jr., and Wilson, B. B., 2018, Status of the High Plains aquifer in Kansas: Governor's Conference on Future of Water in Kansas, Manhattan, Kansas. [https://kwo.ks.gov/docs/default-source/governor's-water-conference/2018-gov-conf/whittemorehpa\\_status\\_gov\\_conf\\_2018-final.pdf?sfvrsn=b5c58414\\_0](https://kwo.ks.gov/docs/default-source/governor's-water-conference/2018-gov-conf/whittemorehpa_status_gov_conf_2018-final.pdf?sfvrsn=b5c58414_0)
- Zhu, L., Fan, M., Thomas, Y. E., and Smith, J. J., 2018, Volcanic glass hydrogen isotope evidence for latest Eocene high-elevation of the southern Rockies: Geological Society of America Abstracts with Programs, v. 50, no. 6. doi: 10.1130/abs/2018AM-323920

## Presentations

- Ansari, E., Bidgoli, T., and Dubois, M., 2018, Integrated CCS for Kansas (ICKAN), DOE review meeting, Pittsburgh, Pennsylvania.
- Ansari, E., Bidgoli, T., and Hollenbach, A., 2018, The role of pressure diffusion in U. S. midcontinent seismicity, American Association of Petroleum Geologists (AAPG), Salt Lake City.
- Ansari, E., Bidgoli, T., and Hollenbach, A., 2018, Statistical analysis of the Arbuckle pressure and static fluid level, GSA midcontinent, Little Rock.
- Bennett, C. E., Franseen, E. K., and Goldstein, R. H., 2018, Evaluation of facies controls on distal fine-grained chalky facies in the Miocene Agua Amarga Basin, SE Spain: An analog for fine-grained reservoirs: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Core, E. E., and Franseen, E. K., 2018, Depositional and reservoir character of mixed heterozoan-large benthic foraminifera-siliciclastic sequences, Middle Miocene, Dominican Republic: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Core, E. E., and Franseen, E. K., 2018, Not just a regional ramp system: The role of variable paleotopography on Late Oligocene and Miocene heterozoan-large benthic foraminifera-coral sequences, Jamaica: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Dunham, J. W., 2018, Preliminary surficial geology of the Lyons SE quadrangle, Rice County, Kansas: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, July 9.
- Dunham, J. W., 2018, Preliminary surficial geology of Miami County, Kansas: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, July 9.

- Flotron, A. N., Franseen, E. K., and Goldstein, R. H., 2018, Sedimentologic and stratigraphic controls on reservoir sweet spots in the Wolfcamp 'A', Howard County, Midland Basin: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Franseen, E. K., 2018, Invited talk: Primary factors affecting depositional and stratigraphic nature of heterozoan and mixed heterozoan-limited photozoan carbonate systems, Repsol Oil Co., Madrid, Spain, June 25.
- Franseen, E. K., 2018, Organizer and convener, 2018 Kansas Interdisciplinary Carbonates Consortium (KICC) Annual Meeting.
- Ludvigson, G. A., 2018, Geologic mapping program at the Kansas Geological Survey: Utility Division, Kansas Contractors Association Annual Meeting, Intercontinental Hotel, Kansas City, Missouri, January 25, 2018.
- Hoch, A. M., Ivanov, J., Peterie, S. L., and Miller, R. D., 2018, Improved seismic diffraction velocity estimation with fixed-depth semblance analysis [Exp. Abs.]: Presentation at Annual Meeting of the Society of Exploration Geophysicists, Anaheim, California, October 14–19.
- Ivanov, J., 2018, Practical seismic surface wave methods: Basics to cutting edge, Short course at the Annual Meeting of the Society of Exploration Geophysicists., Anaheim, California, October 13–14.
- Ivanov, J., 2018, SurfSeis workshops, March 1–2, May 24–25, July 12–13, November 8–9, November 29–30, Kansas Geological Survey.
- Ivanov, J., 2018, SurfSeis workshop, Doha, Qatar, July 21–22.
- Ivanov, J., Miller, R. D., Peterie, S. L., and Hoch, A. M., 2018, Detecting subsurface objects and identifying voids possibilities using seismic diffractions [Exp. Abs.]: Presentation at Annual Meeting of the Society of Exploration Geophysicists, Anaheim, California, October 14–19.
- Miller, R. D., 2018, Seismicity in Hutchinson KS Area, Kansas Senators and House Reps from Reno County Area.
- Miller, R. D., 2018, Kansas Department of Health and Environment, Topeka, Kansas, December 12.
- Miller, R. D., 2018, Association for Women Geoscientists, AWG Mini-Symposium, Wichita, Kansas, October 29.
- Miller, R. D., 2018, Kansas Department of Health and Environment, Tech Fair, Wichita, Kansas, October 9–10.
- Miller, R. D., 2018, Newmont webinar, July 19.
- Miller, R. D., 2018, Consortium to Study Trends in Seismicity, 2018 Annual Meeting, Kansas Seismic Monitoring Network/Consortium Monitoring Network Update, Wichita, Kansas, July 18.
- Miller, R. D., 2018, Town Hall Meeting, Hutchinson Public Library, Hutchinson, Kansas, May 16.
- Miller, R. D., 2018, Association for Women Geoscientists, Wichita, Kansas, May 10.
- Miller, R. D., 2018, Mississippi Department of Environmental Quality (MDEQ), Technical Review Series, Jackson, Mississippi, April 23–24.
- Miller, R. D., 2018, API Meeting, Great Bend, Kansas, April 11.
- Miller, R. D., 2018, Association for Women Geoscientists, Wichita, Kansas, March 16.
- Miller, R. D., 2018, Army meeting, Washington, DC, March 13.
- Miller, R. D., 2018, Oklahoma Geological Survey, Seismic Workshop, Norman, Oklahoma, February 21.
- Miller, R. D., 2018, Hearing at the Capitol, February 15.
- Miller, R. D., 2018, Association for Women Geoscientists (KDHE/KCC), Meeting, January 10.
- Mohammadi, S., 2018, Diagenesis of Mississippian carbonates on the southern midcontinent, USA, Kansas Geological Society.
- Mohammadi, S., 2018, Diagenesis of Mississippian carbonates on the southern midcontinent, USA, University of Kansas.
- Morton, S. L. C., Miller, R. D., Ivanov, J., Peterie, S. L., Parsons, R. L., and Livers-Douglas, A. J., 2018, Time-lapse monitoring of subsidence features within the Hutchinson Salt in Kansas [Exp. Abs.]: Presentation at Annual Meeting of the Society of Exploration Geophysicists, Anaheim, California, October 14–19.
- Smith, J. J., 2018, A cast of thousands: Ant-nest ichnofossils and casting modern western harvester nests, Kansas Biological Survey, Lawrence, Kansas.
- Smith, J. J., 2018, Getting to the bottom of the Ogallala: Chronostratigraphic investigations in the High Plains of Western Kansas, Kansas Geological Survey Advisory Committee.
- Stover, S. G., 2018, Carbon capture, utilization and storage: Legal, regulatory and public policies framework and gaps, Kansas Geological Society, Wichita, October 3.
- Stover, S. G., 2018, Climate change and water, Sierra Club Annual Meeting, Baker Wetlands Center, Lawrence, Kansas, March 24.
- Stover, S. G., 2018, A drive through Kansas: It's all about geology, water, and time, Basehor Public Library, June 20.
- Stover, S. G., 2018, Kansas geology and physiography, Naturalist Class, Dillon Nature Center, Hutchinson, Kansas, March 1.

- Stover, S. G., 2018, Kansas water history and conditions, Topeka Sierra Club, May 8, Topeka, Kansas.
- Stover, S. G., 2018, Kansas water: Where is it? Who owns it? Symphony in the Flint Hills, June 9.
- Stover, S. G., 2018, Science: More amazing than fiction quiz, Women In Science Day, (260 eighth-grade girls), Washburn University, October 22.
- Stover, S. G., Water in Kansas and its imperfect management, University of Kansas Geography Class, May 1.
- Thompson, I. P., Franseen, E. K., and Goldstein, R. H., 2018, Paleotopography as a depositional control on Late Cenozoic carbonate reservoir analogs in the Cabo de Gata Region, Southeast Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Wang, Y., Miller, R. D., Tu, X., Sloan, S. D., Moran, M. L., and Cudney H. H., 2018, Tunnel detection by full-waveform inversion of land streamer data [Exp. Abs.]: Presentation at Annual Meeting of the Society of Exploration Geophysicists, Anaheim, California, October 14–19.

## Awards & Honors

- Dunham, J. W. — 2018 Esri International User Conference Map Gallery, 3rd place, Large Format Printed Map category, for “Preliminary Surficial Geology of Miami County, Kansas”
- Miller, R. D. — Elected, President-Elect, SEG
- Miller, R. D. — Elected, Chairman, SEG Global Inc, Board of Directors
- Morton, S. L. — Director’s Award and Student Award of Excellence, KGS, 2018
- Morton, S. L. — First Place, Geotechnical Engineering Student Poster Competition, American Society of Civil Engineers Kansas City Geo-Institute Chapter, 2018

## Internal Service

- Delaney, A. — KGS representative, KU's United Way campaign
- Evans, C. S. — Kansas Field Conference, August 13–15, 2018
- Evans, C. S. — Member, Outstanding Student Awards Committee, Kansas Geological Survey
- Evans, C. S. — Revised and collected for rocks, minerals and fossils box, KGS
- Jones, E. — Host, KGS bake sale fund raiser for KU’s United Way campaign
- Ludvigson, G. A. — Chair, Search committee for Energy Research project manager
- Ludvigson, G. A. — Chair, KGS Lab Space Committee to identify lab spaces for early career scientists
- Ludvigson, G. A. — Led KGS staff initiative to prompt renovation and modernization of the KGS Core Lab
- Ludvigson, G. A. — Host and coordinator, KGS stratigraphic research seminar, A decade of global analysis of late Paleozoic stratigraphy: What do we know and where do we go from here? (by Erik L. Gulbranson, University of Wisconsin-Milwaukee)
- Mandel, R. — Kansas Field Conference, August 13–15, 2018
- Miller, R. D. — KGS Arbuckle Working Group
- Smith, J. J. — KGS STATEMAP Coordinator
- Smith, J. J. — Member, Associate Research Director Search Committee
- Smith, J. J. — Member, KGSS Lab Space Utilization Committee
- Smith, J. J. — Member, Current Research in Earth Sciences Advisory Board
- Smith, J. J. — Member, Geospatial Analyst Search Committee
- Stewart, D. — Host, KGS chili cook-off fund raiser for KU’s United Way campaign
- Stover, S. G. — Kansas Field Conference, August 13–15, 2018
- Stover, S. G. — Revised and collected for rocks, minerals and fossils box, KGS
- Stover, S. G. — 12 environmental reviews of proposed projects as part of inter-agency coordination
- Stover, S. G. — Chaired the Legal, Regulatory and Public Policy team for CarbonSAFE project, KGS
- Stover, S. G. — 2018 Legislative Session, bills and hearing tracking and attendance
- Stover, S. G. — Kansas Geologic Mapping Advisory Committee member, KGS
- Stover, S. G. — Established a KGS office at the Earth, Energy and Environment Center
- Stover, S. G. — Member, Interagency Research Coordination Committee, Kansas Water Office
- Suchy, D. R. — Volunteer, KGS booth, Kaw Valley Eagles Day, January 20, 2018, Lawrence, Kansas
- Suchy, D. R. — Volunteer, KGS booth, Governor’s Conference on the Future of Water in Kansas November 13-14, 2018
- Tollefson, J. M. — Member (ex-officio), KGS Stratigraphic Nomenclature Committee

## External Service

- Ansari, E. — Taught reservoir simulation software to petroleum engineers at KU CPE department and administered a waterflood project
- Dunham, J. W. — Member, USGS-AASG National Cooperative Geologic Mapping Program (NCGMP) Geologic Map Schema (GeMS) Working Group
- Dunham, J. W. — Member, USGS-AASG National Geologic Map Database (NGMDB) Working Group
- Dunham, J. W. — Member, USGS-AASG Digital Mapping Techniques (DMT) NCGMP09 Working Group
- Evans, C. S. — Developed geologic mapping section questions for 2018 Northeast Kansas Regional Science Olympiad
- Evans, C. S. — Volunteer, KGS booth, Kaw Valley Eagles Day, January 20, 2018
- Franseen, E. K. — Member, Nominations Committee, Department of Geology, University of Kansas
- Franseen, E. K. — Co-organizer, KU Geology Career Symposium, Department of Geology, University of Kansas
- Franseen, E. K. — Chair, Elson Core, Ph.D. committee
- Franseen, E. K. — Co-chair, Cesar Cuapio-Perez, Ph.D. committee
- Franseen, E. K. — Co-chair, master's committees for Ian (Rick) Thompson, Craig Bennett, and Alyssa Flotron
- Franseen, E. K. — Member, Ph.D. committees for Leila Joyce, Jason Rush, and Thomas Neal
- Franseen, E. K. — Member, master's committees for Adrienne Duarte, Thomas Neal, Arwin Dobber, Andrew Hollenbach, Karin Abrahamsson, and Erich DeZoeten
- Franseen, E. K. — Post-doc supervisor for Hassan Eltom, KICC, University of Kansas
- Franseen, E. K. — Chair, Promotion and Tenure Committee, Kansas Geological Survey
- Franseen, E. K. — Member, Petroleum Geologist (2 positions) Search Committee, Kansas Geological Survey
- Franseen, E. K. — Chair, Stratigraphic Nomenclature Committee, Kansas Geological Survey
- Franseen, E. K. — Member, Editorial Board, Current Research on Earth Sciences, Kansas Geological Survey
- Franseen, E. K. — Invited member, SEPM Strategic Plan Retreat, Quebec, Canada, August 17–19, 2018
- Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison
- Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee
- Franseen, E. K. — Member, SEPM Executive Director Search Committee
- Franseen, E. K. — Member, Review committee for abstracts submitted to the 2018 AAPG Annual Meeting
- Franseen, E. K. — External advisor, Earth and Space Sciences Department, Columbus State University, Georgia
- Ludvigson, G. — KGS Core Display, Open House, Earth Energy and Environment Center, May 5, 2018, Lawrence, Kansas
- Ludvigson, G. A. — Topical session organizer, Session 3.7 on Mesozoic-Cenozoic terrestrial environments and climates, 20<sup>th</sup> International Sedimentological Congress, Quebec, Canada, August 13–17, 2018
- Ludvigson, G. A. — Member, Search committee for research technician in thin section laboratory in the KU Department of Geology
- Miller, R. D. — Town Hall Meeting, Hutchinson, Kansas, May 16, 2018
- Miller, R. D. — WDAF-TV Interview, May 11, 2018
- Miller, R. D. — Chair, SEG, Strategy and Planning Committee
- Miller, R. D. — Geophysical Technology, Inc. (GTI) Advisory Board
- Miller, R. D. — SEG, Appointed, Global Inc., Board of Directors
- Miller, R. D. — KU RGS Research Achievement Award Selection Committee
- Miller, R. D. — SEG Technical Session Chair
- Mohammadi, S. — Poster judge, G-Hawker Symposium, University of Kansas
- Mohammadi, S. — Co-PI, Interdisciplinary Carbonate Consortium, University of Kansas
- Mohammadi, S. — Courtesy appointment, Geology Department, University of Kansas
- Mohammadi, S. — Peer Reviewer, Carbonates and Evaporites Journal, 2017–present
- Mohammadi, S. — Peer Reviewer, Journal of African Earth Sciences, 2017–present
- Potter, N. — KGS Core Display, Open House, Earth Energy and Environment Center, May 5, 2018, Lawrence, Kansas
- Smith, J. J. — Session co-convener, Recent Advances in Ichnology: Traces of Modern and Ancient Behavior, Geological Society of America Annual Meeting
- Smith, J. J. — Invited member: Taphonomy and Stratigraphic Paleobiology Research Group, Brazilian Council for Research (CNPq)
- Smith, J. J. — Member, Deserae Jennings, Ph.D. dissertation committee, University of Kansas

Stewart, D. — KGS booth, Kaw Valley Eagles Day, Lawrence Free State High School, Lawrence, Kansas

Stover, S. G. — Planning Committee, Ogallala Aquifer Summit, KSU–CSU, 9–10 April 2018, Garden City, Kansas

Stover, S. G. — Selection Committee, E-An Zen Geology Outreach Grant, Geological Society of America

Stover, S. G. — Member, KU Geology Associates Advisory Board, 4–5 May 2018

Stover, S. G. — Co-chair for Field Trips, South Central, North Central and Rocky Mountain Sections joint meeting, to be held in Kansas in March 2019

Stover, S. G. — Member, Advisory Committee, Kansas River Sustainable Rivers Program

Stover, S. G. — KGS Booth, Kaw Valley Eagle Days, Lawrence Free State High School, Lawrence, Kansas

Stover, S. G. — Radio update on the Ogallala High Plains aquifer, for National Ground Water Association, February 2, 2018

Stover, S. G. — KGS Booth, Science Day, Prairie Park Elementary School, Lawrence, Kansas, March 10, 2018

Stover, S. G. — KGS Booth, Kansas Rural Water Association, Wichita, Kansas, March 27–29, 2018

Stover, S. G. — KGS Core Display, Open House, Earth Energy and Environment Center, May 5, 2018, Lawrence, Kansas

Stover, S. G. — Hands-on workshop on rocks, minerals and fossils for all second graders at Coffeyville Elementary School, Kansas

Stover, S. G. — Chair, Geology & Society Division, Geological Society of America

Stover, S. G. — Convener and presenter, Women Rising: Removing Barriers and Achieving Parity in the Geosciences, Pardee Symposium, November 5, 2018, GSA Annual Meeting, Indianapolis, Indiana

Stover, S. G. — Borehole Geology spring semester class, by John Doveton and Gene Rankey, University of Kansas

Stover, S. G. — Geological Ethics Codes, Webinar, AGI, March 1, 2018

Suchy, D. R. — Member and Chairman, Board of Directors, Rural Water District #5, Douglas County, Kansas

Suchy, D. R. — Member and Treasurer, Board of Directors, Public Wholesale Water Supply District #25, Douglas and Osage Counties, Kansas

## Grants

Mandel, R. D.: GWPC-Regional Induced Seismicity Collaborative (RISC), \$65,000, U.S. Department of Energy. 2018–2023.

Miller, R. D.: U.S. Army Corps of Engineers, Advancement in seismic imaging for tunnel detection: ASI to ASII–skinny, 2018, \$1,500,000. (PI)

Miller, R. D., Buchanan, R., and Peterie, S. L., 2018, Regional Induced Seismicity Collaborative (RISC): University of Texas at Austin, GWPC, \$65,000. (Miller PI)

Miller, R. D., and Peterie, S. L., 2018, Norcal Geophysical Consultants, High-resolution seismic reflection to characterize Quaternary and younger sediments associated with the Silver Creek Fault beneath the Santa Clara Valley, California, \$107,441. (Miller PI)

Miller, R. D., and Peterie, S. L., 2018, ONEOK Underground Storage Company, LLC, Establishing a Kansas CSTS compatible seismograph station near Bushton in Rice County, Kansas, \$15,953. (Miller PI)

Mohammadi, S., and Goldstein, R., 2018, KICC-KS Interdisciplinary Carbonate Consortium, Structural Control of Hydrothermal Fluid Migration, Northern Oklahoma and Kansas: Impact on Reservoir Properties. \$19,476.00. (Mohammadi PI)

Smith, J. J., 2018, Merriam Research Award, Kansas Geological Survey. KU Endowment funds, \$500. (Smith PI)

Smith, J. J., Ludvigson, G. A., Layzell, A., Mandel, R. D., Newell, K. D., and Dunham, J. W., 2018, Geologic Mapping in Kansas for FY18. United States Geological Survey, STATEMAP Program. Federal and state match totaling \$295,861. (Smith PI)

Stewart, D., Dealy, M., and Potter, N., 2018, National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, and KGS Library and Archive, Kansas Geological Survey, administered through U. S. Geological Survey, 2018–2019, \$79,519. (Stewart PI)

Suchy, D. R., Stewart, D., Dealy, M. T., and Potter, N., 2018, National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, and KGS Library and Archive, Kansas Geological Survey, administered through U. S. Geological Survey, 2017–2018, \$79,488. (Suchy PI)

**Website**

Placed 26 Bulletins, 33 other publications, and 11 maps online.

Placed 22 open-file reports online.

2,335 water-well forms came in using KOLAR; the Data Library processed 4,695 forms that arrived on paper. All older water well forms have been scanned.

16,000 aerial photos have been scanned and placed online; 5,000 of them have longitude-latitude centroids to help in location mapping.

Added oil and gas well documents from 11,391 wells to the website; added wireline logs from 4,551 wells.

Developed several new forms for Kansas On-Line Automated Reporting (KOLAR): paper forms required by the state to regulate the oil and gas industries and water well drilling can now be completed, submitted, and processed by the government online.



**Refereed Publications**

- Brookfield, A., Gnau, C., and Wilson, B., 2017, Incorporating surface water operations in an integrated hydrologic model: Model development and application to the Lower Republican River Basin, USA: *Journal of Hydrologic Engineering*, v. 22, no. 4. doi: 10.1061/(ASCE)HE.1943-5584
- Brookfield, A. E., Macpherson, G. L., and Covington, M. D., 2017, Effects of changing meteoric precipitation patterns on groundwater temperature in karst environments: *Groundwater*, v. 55, no. 2, p. 227–236. doi: 10.1111/gwat.12456
- Brookfield, A. E., Stotler, R. L., and Reboulet, E., 2017, Interpreting temporal variations in river response functions: An example from the Arkansas River, Kansas, USA: *Hydrogeology Journal*, v. 25, no. 5, p. 1,271–1,282.
- Feigenbaum, D., Ivanov, J., and Miller, R. D., 2017, Determining migration velocity for the near surface using joint analysis of refractions and reflections [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 2,654–2,659.
- Fleure, T., Halvorson, W., and Miller, R., 2017, Receiver ground coupling revisited; a laboratory experiment to investigate the effects of an autonomous nodal recording system [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 264–268.
- Franseen, E. K., and Goldstein, R. H., 2017, Build-and-fill stratigraphic sequences in carbonates: American Association of Petroleum Geologists Search and Discovery Article #51403, 13 p.
- Franseen, E. K., and Goldstein, R. H., 2017, The impact of paleotopography on transport of reef carbonates to basinal settings: Lessons from the Upper Miocene of SE Spain: American Association of Petroleum Geologists Search and Discovery Article #51404, 13 p.
- 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*, v. 351, p. 1–10.  
<http://dx.doi.org/10.1016/j.sedgeo.2017.02.001>
- 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*, v. 456, p. 138–155. doi: 10.1016/j.palaeo.2016.10.025
- Gomez-Hernandez, J. J., Butler, J. J., Jr., Fiori, A., Bolster, D., Cvetkovic, V., Dagan, G., and Hyndman, D., 2017, Introduction to special section on "Modeling highly heterogeneous aquifers: Lessons learned in the last 30 years from the MADE experiments and others": *Water Resources Research*, v. 53, p. 2,581–2,584. doi: 10.1002/2017WR020774, 2017
- Griggs, B. W., and Butler, J. J., Jr., 2017, Groundwater in the American West: How to harness hydrogeological analysis to improve groundwater management; *in* The Water Problem: Climate Change and Water Policy in the United States, P. Mulroy, ed.: Brookings Institution Press, p. 113–144 (invited contribution).
- Guelard, J., Beaumont, V., Rouchon, V., Guyot, F., Pillot, D., Adler, M., Newell, K. D., and Deville, E., 2017, Natural H<sub>2</sub> in Kansas: Deep or shallow origin? *Geochemistry, Geophysics, Geosystems*, v. 18, no. 10, p. 1,841–1,865. doi:10.1002/2016GC006544
- Hembree, D. I., Smith, J. J., Buynevich, I. V., and Platt, B. F., 2017, Neoichnology of semiarid environments: Soils and burrowing animals of the Sonoran Desert, Arizona: U.S.A. *PALAIOS*, v. 32, p. 1–19. doi: <http://dx.doi.org/10.2110/palo.2017.009>
- Holubnyak, Y., Watney, W., Birdie, T., Rush, J., Fazalalavi, M., and Wreath, D., 2017, Pilot scale CO<sub>2</sub> EOR in Mississippian carbonate reservoir at Wellington Field in South-Central Kansas: *Energy Procedia*, EGYPRO30710.
- Holubnyak, Y., Williams, E., Watney, W., Bidgoli, T., Rush, J., Fazalalavi, M., and Gerlach, P., 2017, Calculation of CO<sub>2</sub> storage capacity for Arbuckle Group in Southern Kansas: Implications for a seismically active region: *Energy Procedia*, EGYPRO30482.
- Ivanov, J., Miller, R. D., Feigenbaum, D., Morton, S. L. C., Peterie, S. L., and Dunbar, J. B., 2017, Revisiting levees in southern Texas using Love-wave multi-channel analysis of surface waves (MASW) with the high-resolution linear radon transform (HRLRT): *Interpretation*, v. 5, no. 3, T287–T298.

- Ivanov, J., Miller, R. D., Feigenbaum, D. Z., and Peterie, S. L., 2017, Detecting subsurface objects and identifying voids possibilities using the backscatter analysis of surface wave (BASW) method [Ext. Abs.]: Fourth International Conference on Engineering Geophysics, Al Ain, UAE, p. 116–119.
- Ivanov, J., Miller, R. D., Feigenbaum, D. Z., and Schwenk, J. T., 2017, Benefits of using the high-resolution linear radon transform (HRLRT) with the multi-channel analysis of surface waves (MASW) method [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 2,647–2,653.
- Joeckel, R. M., Ludvigson, G. A., and Kirkland, J. I., 2017, Lower Cretaceous paleo-vertisols and sedimentary interrelationships in stacked alluvial sequences, Utah, USA.: *Sedimentary Geology*, v. 361, p. 1–24. <https://doi.org/10.1016/j.sedgeo.2017.09.009>
- Layzell, A. L., Sawin, R. S., Mandel, R. D., Ludvigson, G. A., Franseen, E. K., West, R. R., and Watney, W. L., 2017, Quaternary stratigraphy and stratigraphic nomenclature revisions in Kansas: Current Research in Earth Sciences, Kansas Geological Survey Bulletin 263, 9 p. <http://www.kgs.ku.edu/Current/2017/Layzell/index.html>
- Li, Z., Goldstein, R. H., and Franseen, E. K., 2017, Meteoric calcite cementation: Diagenetic response to relative sea-level fall and effect on porosity and permeability: *Sedimentary Geology*, 348, p. 1–18.
- Miller, R. D., Peterie, S. L., and Ivanov, J., 2017, Anomalies: Detect or resolve using 2-D seismic reflection imaging [Ext. Abs.]: Fourth International Conference on Engineering Geophysics, Al Ain, UAE, p. 380–383.
- Morton, S. L. C., Peterie, S. L., Ivanov, J. M., Miller, R. D., and Sloan, S. D., 2017, Joint interpretation of multi-component surface wave data for tunnel detection [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 5,458–5,464.
- Oborny, S. C., Cramer, B. D., Heckel, P. H., Ludvigson, G. A., and Henthorne, R. W., 2017, Development of phylloid-algal carbonate mounds during regression: Expanding the build-and-fill model: *Journal of Sedimentary Research*, v. 87, p. 688–706. doi: <http://dx.doi.org/10.2110/jsr.2017.38>
- Peterie, S. L., Newell, K. D., Miller, R. D., Intfen, J. W., Gonzales, J. B., Buchanan, R. C., DeArmond, B., and Cochran, M., 2017, Possible evidence of a regional pressure front in Kansas caused by deep fluid injection [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 5,362–5,367.
- Ross, J. B., Ludvigson, G. A., Möller, A., González, L. A., and Walker, J. D., 2017, Stable isotope paleohydrology and chemostratigraphy of the Albian Wayan Formation from the wedge-top depozone, North American Western Interior Basin: *SCIENCE CHINA — Earth Sciences*, v. 60, p. 44–57. doi: [10.1007/s11430-016-0087-5](https://doi.org/10.1007/s11430-016-0087-5)
- Smith, J., Borisov, D., Modrak, R., Tromp, J., Cudney, H., Moran, M., Sloan, S., Miller, R., and Peterie, S., 2017, Near-surface seismic imaging of tunnels using 3D elastic full-waveform inversion [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 2,637–2,641.
- Smith, J. J., Ludvigson, G. A., Layzell, A., Möller, A., Harlow, R. H., Turner, E., Platt, B., and Petronis, M., 2017, Discovery of Paleogene deposits of the central High Plains aquifer in the western Great Plains, USA: *Journal of Sedimentary Research*, v. 87, p. 880–896. doi: <http://dx.doi.org/10.2110/jsr.2017.48>
- Stover, S. G., and Buchanan, R., 2017, The High Plains aquifer: Can we make it last? *Groundworks*, GSA Today, v. 27, no. 6, p. 44.
- Suarez, M. B., Ludvigson, G. A., González, L. A., and You, H.-L., 2017, Continental paleotemperatures from an early Cretaceous dolomitic lake, Gansu Province, China: *Journal of Sedimentary Research*, v. 87, p. 486–499. doi: <http://dx.doi.org/10.2110/jsr.2017.31>
- Suarez, M. B., Suarez, C. A., Al-Suwaidi, A. H., Hatzell, G., Kirkland, J. I., Slazar-Verdin, J., Ludvigson, G. A., and Joeckel, R. M., 2017, Terrestrial carbon isotope chemostratigraphy in the Yellow Cat Member of the Cedar Mountain Formation: Complications and pitfalls; *in* *Terrestrial Depositional Systems: Deciphering Complexities through Multiple Stratigraphic Methods*, K. E. Zeigler and W. Parker, eds.: Elsevier, Amsterdam, p. 303–336. doi: <http://dx.doi.org/10.1016/B978-0-12-803243-5.00008-X>
- Vero, S. E., Macpherson, G. L., Sullivan, P. L., Brookfield, A. E., Kirk, M. F., Datta, S., and Kempton, P., 2017, Developing a conceptual framework of landscape and hydrology on tallgrass prairie: *Vadose Zone Journal*. doi: [10.2136/vzj2017.03.0069](https://doi.org/10.2136/vzj2017.03.0069)
- Wang, Y., Miller, R. D., Peterie, S. L., Sloan, S. D., Moran, M. L., and Cudney, H. H., 2017, A focusing study of near surface full-waveform inversion based on wave mode separation [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 2,632–2,636.
- Wang, Y., Miller, R. D., Peterie, S. L., Sloan, S. D., Moran, M. L., and Cudney, H. H., 2017, Tunnel detection by full-waveform inversion at Yuma Proving Grounds, Arizona [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 2,660–2,665.

## Books and Edited Volumes

Baker, H., and Miller, R. D., eds., 2017, Proceedings of the Fourth International Conference on Engineering Geophysics, Al-Ain, UAE, 382 p.

## Nonrefereed Publications

- Brookfield, A., 2017, Evaluating alternatives to increase the water available to water rights in the Lower Republican River Basin scenarios: Final report: Submitted to Kansas Water Office, 28 p.
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- Liu, G., Knobbe, S., Butler, J. J., Jr., Reboulet, E. C., Borden, R., and Bohling, G., 2017, Direct push injection logging for high resolution characterization of low permeability zones: Abstract 9.2, NovCare (Novel Methods for Subsurface Characterization and Monitoring) 2017 Conference, Technical University of Dresden, June 9, 2017.
- Liu, G., Knobbe, S., Butler, J. J., Jr., Reboulet, E. C., Borden, R. C., and Bohling, G. C., 2017, Direct push injection logging for high resolution characterization of low permeability zones: Abstract H32A-08, 2017 Fall Meeting, American Geophysical Union, New Orleans, December 13, 2017.
- Ludvigson, G. A., González, L. A., Suarez, M. B., Joeckel, R. M., Möller, A., and Ross, J. B., 2017, Aptian-Albian terrestrial paleoclimatology of the North American Western Interior Basin; *in* 10<sup>th</sup> International Symposium on the Cretaceous — Abstracts, B. Sames, ed.: 21–26 August 2017, Vienna. Berichte der Geologischen Bundesanstalt, 120, p. 167.
- Ludvigson, G. A., Möller, A., Joeckel, R. M., Blum, M. D., and McLean, N., 2017, Uranium-lead ages of Cretaceous (Albian-Cenomanian) strata from the Rose Creek Escarpment of the cratonic margin of the Western Interior Basin: Geological Society of America, Abstracts with Programs, v. 49; no. 6. doi:10.1130/abs/2017AM-304010
- Miller, R. D., Peterie, S., and Ivanov, J., 2017, Anomalies: Detect or resolve using 2-D seismic reflection imaging: International Conference on Engineering Geophysics, Al Ain, United Arab Emirates, 9–12 October 2017, p. 380–383. <https://doi.org/10.1190/iceg2017-070>



- Morton, S. L. C., Peterie, S. L., Ivanov, J., Miller, R. D., and Sloan, S. D., 2017, Joint interpretation of multicomponent surface-wave data for tunnel detection: SEG Technical Program Expanded Abstracts 2017, p. 5,458–5,464.
- Newell, K. D., Bidgoli, T., Doveton, J. H., Whittemore, D. O., and Victorine, J., 2017, Water quality and flow in saltwater-containing formations in Kansas: Governor's Conference on Future of Water in Kansas, Manhattan, Kansas. <https://kwo.ks.gov/docs/default-source/governor's-water-conference/2017-governor's-conference-presentations/newell---water-quality-and-flow.pdf?sfvrsn=2>
- Ortega-Ariza, D., and Franseen, E. K., 2017, Effects of sea level and upwelling on development of a Miocene shallow-water tropical carbonate ramp system, Ponce, Puerto Rico: Sequence Stratigraphy: The Future Defined, 2017 GCSSEPM Conference, December 4–5, 2017, Houston, Texas.
- Smith, J. J., Ludvigson, G. A., Layzell, A. L., 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, Abstracts with Programs, v. 49, no. 1. doi: 10.1130/abs/2017SC-289486
- Smith, J. J., Ludvigson, G. A., Layzell, A. L., Möller, A., and Turner, E., 2017, Scientific drilling in Cenozoic strata of the central High Plains aquifer: Recent advances toward developing a U-Pb zircon chronostratigraphy in western Kansas: Governor's Conference on the Future of Water in Kansas, November 8–9, 2017, Manhattan, Kansas.
- 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, v. 120, no. 1-2, p. 122.
- Suarez, M. B., Ludvigson, G. A., González, L. A., and You, H., 2017, Petrographic, XRD, and clumped isotope study of a Cretaceous dolomitic lake in northwest China: Geological Society of America, Abstracts with Programs, v. 49, no. 1. doi: 10.1130/abs/2017SC-289201
- Suarez, M. B., Montgomery, E., Paige, M., Ludvigson, G. A., González, L. A., Kirkland, J. I., and You, H.-L., 2017, Continental paleotemperatures from lacustrine carbonates in Asia and North America; *in* 10<sup>th</sup> International Symposium on the Cretaceous — Abstracts, B. Sames, ed.: 21–26 August 2017, Vienna. *Berichte der Geologischen Bundesanstalt*, 120, p. 250.
- 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, v. 120, no. 1-2, p. 125.
- 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, v. 49, no. 1. doi: 10.1130/abs/2017SC-289615
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2017, Simple water-balance modeling approach for High Plains aquifer management: Geological Society of America Abstracts with Programs, v. 49, no. 6. doi: 10.1130/abs/2017AM-303413, Oct. 24, 2017
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2017, Sustainability assessment for Equus Beds Groundwater Management District No. 2: Governor's Conference on Future of Water in Kansas, Manhattan, Kansas. <https://kwo.ks.gov/docs/default-source/governor's-water-conference/2017-governor's-conference-presentations/whittemore---sustainability-assessment.pdf?sfvrsn=0>
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2017, Sustainability of the High Plains aquifer in the groundwater management districts of Kansas: Transactions of the Kansas Academy of Science, v. 120, no. 1-2, p. 127.

## Presentations

- Borisov, D., Smith, J., Tromp, J., Miller, R., Peterie, S., Cudney, H., Sloan, S., and Moran, M., 2017, Multi-component 3D elastic full waveform inversion using surface and body waves for detecting near-surface anomalies: European Association of Geoscientists and Engineers (EAGE) 79th Conference and Exhibition, Paris, France, (poster).
- Brookfield, A. E., 2017, The food, energy, and water nexus: Research in Kansas: Invited presentation, Aquanty Seminar, Waterloo, Ontario, Canada, April 24.
- Butler, J. J., Jr., 2017, Assessing prospects for sustainability in the High Plains aquifer in Southwest Kansas: GMD3 Board, Topeka, Kansas, February 8, 2017.

- Butler, J. J., Jr., 2017, Assessing the prospects for the sustainability of aquifers supporting irrigated agriculture: National Groundwater Association Brownbag Webinar, October 26, 2017.
- Butler, J. J., Jr., 2017, Assessing the sustainability of aquifers supporting irrigated agriculture: A Kansas case study: Geophysics Seminar, Stanford University, May 30, 2017.
- Butler, J. J., Jr., 2017, GMD2 sustainability assessment: Equus-Walnut RAC Meeting, Newton, Kansas, February 27, 2017.
- Butler, J. J., Jr., 2017, GMD2 sustainability assessment: GMD2 42<sup>nd</sup> Annual Meeting, Halstead, Kansas, March 16, 2017.
- Butler, J. J., Jr., 2017, GMD2 sustainability assessment: Project results: GMD2 Board, Halstead, Kansas, January 31, 2017.
- Butler, J. J., Jr., 2017, Kansas River Alluvial Aquifer Index Well Network: KGS Field Conference, September 12, 2017.
- Butler, J. J., Jr., 2017, Overview of KU water research: Aquifers and Groundwater, Fostering Forward-Thinking Interdisciplinary Water Solutions: A University of Kansas Workshop, Lawrence, Kansas, October 11, 2017.
- Butler, J. J., Jr., 2017, Prospects for aquifer sustainability and the impact of water-use efficiency measures: Methods development, application, and promotion in the High Plains aquifer in Kansas: PRECISA Project Meeting, NIFA Water CAP project, Michigan State University, East Lansing, Michigan, September 29, 2017.
- Butler, J. J., Jr., 2017, The Ogallala/High Plains aquifer in Kansas: Meeting of group advocating for a LEMA northwest of Garden City, Kansas, Garden City Community College, January 6, 2017.
- Butler, J. J., Jr., 2017, Two 2-day short courses (taught half of each course) — Aquifer testing for improved hydrogeologic site characterization featuring Aqtesolv and the in-situ LevelTroll: Midwest Geosciences Group, San Marcos, Texas, January 24–25, 2017, and Fort Collins, Colorado, October 17–18, 2017.
- Butler, J. J., Jr., and Liu, G., 2017, Overview and recent advances in characterization of the shallow subsurface using direct-push technology: EPRI (Electric Power Research Institute) Groundwater Resources Center Workshop, Palo Alto, California, August 29, 2017.
- Butler, J. J., Jr., and Whittemore, D. O., 2017, Index well program: Kansas Water Office, Topeka, Kansas, May 22, 2017.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2017, A new approach for assessment of aquifers supporting irrigated agriculture over a range of spatial scales: NovCare (Novel Methods for Subsurface Characterization and Monitoring) 2017 Conference, Technical University of Dresden, June 9, 2017.
- Core, E. E., and Franseen, E. K., 2017, Sea level and paleotopographic controls on mixed heterozoan-large benthic foraminifera-siliciclastic sequences in a tropical setting, Middle Miocene, Dominican Republic: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT.
- Dunham, J. W., 2017, Geologic mapping at the Kansas Geological Survey: Kansas Geologic Mapping Advisory Committee semiannual meeting, Lawrence, Kansas, May 17, 2017.
- Dunham, J. W., 2017, Preliminary surficial geology of the Lincoln Quadrangle, Lincoln County, Kansas: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, July 10, 2017.
- Dunham, J. W., 2017, Preliminary surficial geology of the Louisburg Quadrangle, Miami County, Kansas: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, July 10, 2017.
- Dunham, J. W., Wilson, A., and Obermeyer, B., 2017, Using maps in schools to create a sense of place and promote stewardship: Kansas Association of Mappers Annual Conference, Lawrence, Kansas, October 18, 2017.
- Flotron, A. N., Franseen, E. K., and Goldstein, R. H., 2017, Sedimentologic and stratigraphic controls on reservoir sweet spots in Wolfcamp “A,” Howard County, Midland Basin: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT.
- Franseen, E. K., 2017, Reservoir character of the Avalon Shale (Bone Spring Formation) of the Delaware Basin, West Texas and Southeast New Mexico: Effect of carbonate-rich sediment gravity flows: Invited talk, SIPES, Wichita, Kansas, May 4, 2017.
- Franseen, E. K., 2017, Sedimentologic and stratigraphic controls on reservoir sweet spots in Wolfcamp “A,” Howard County, Midland Basin: Invited talk, SM Energy, Midland, Texas, May 9, 2017.
- Franseen, E. K., Goldstein, R. H., and Sweeney, R. J., 2017, The impact of substrate paleotopography on transport of reef carbonates to basinal settings, Upper Miocene, SE Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT.
- Holubnyak, Y., Watney, W., Birdie, T., and Hollenbach, J., 2017, Experiences of Wellington Field small scale demonstration project with US EPA UIC Class VI application process, 12th CO<sub>2</sub> GeoNet Open Forum, May 8–9, 2017.

- Holubnyak, Y., Watney, W., Birdie, T., and Hollenbach, J., 2017, Small scale field test demonstrating CO<sub>2</sub> sequestration in Arbuckle saline aquifer and by CO<sub>2</sub>-EOR at Wellington Field, Sumner County, Kansas: DE-FE0006821, U.S. DOE Annual Review meeting in Pittsburgh, August 3–5, 2017.
- Holubnyak, Y., Watney, W., Birdie, T., Hollenbach, J., and Tsoflias, G., 2017, Small scale field test demonstrating CO<sub>2</sub> sequestration in Arbuckle saline aquifer and by CO<sub>2</sub>-EOR at Wellington Field, Sumner County, Kansas, U.S. DOE NETL Update Meeting, Morgantown, West Virginia, March 20, 2017.
- Holubnyak, Y., Watney, W., Birdie, T., Hollenbach, J., Tsoflias, G., and Bidgoli, T., 2017, Small scale field test demonstrating CO<sub>2</sub> sequestration in Arbuckle saline aquifer and by CO<sub>2</sub>-EOR at Wellington Field, Sumner County, Kansas, 12th CO<sub>2</sub> GeoNet Open Forum, May 8–9, 2017.
- Holubnyak, Y., Williams, E., Watney, L., Bidgoli, T., Rush, J., FazelAlavi, M., and Gerlach, P., 2017, Calculation of fluid storage capacity for Arbuckle Group in Southern Kansas: Implications for a seismically active region, presented to Oklahoma Corporation Commission and other Oklahoma and Kansas regulators, July 7, 2017.
- Layzell, A. L., 2017, Holocene alluvial stratigraphy as a research tool in Kansas: University of Kansas, Department of Geology Colloquium Series, Lawrence, Kansas.
- Layzell, A. L., 2017, Systematic mapping of Holocene paleoliquefaction features in south-central Kansas: Kansas Geological Survey Mapping Advisory Committee, Lawrence, Kansas.
- Layzell, A. L., Mandel, R. D., Ziska, C., and Bozell, J. R., 2017, Systematic approach to identifying deeply buried archaeological deposits: Nebraska Department of Transportation.
- Layzell, A. L., and Peterson, A., 2017, The application of UAVs (drones) to Kansas Geological Survey research: Kansas Geological Survey Advisory Council, Lawrence, Kansas.
- Lechtenberg, K. S., Goldstein, R. H., and Franseen, E. K., 2017, Controls on the architecture of Lower Ismay zone of the Honaker Trail Formation (Pennsylvanian), San Juan River, Utah, USA: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT.
- Miller, R. D., 2017, Colorado School of Mines, Golden, Colorado, Seminar Series, invited presentation, October.
- Miller, R. D., 2017, ICEG, Al Ain, UAE, Technical Keynote, invited presentation, October.
- Miller, R. D., 2017, Enhanced Funding KS Seismic Network, Kansas House Ways and Means Committee.
- Miller, R. D., 2017, GSAC Meeting, Kansas Geological Survey, Lawrence, Kansas, November 1.
- Miller, R. D., 2017, Geology Colloquium, Induced Seismicity, University of Kansas Department of Geology, Lawrence, Kansas, August 31.
- Miller, R. D., 2017, Kansas Department of Health and Environment, Geology & Well Technology, Seminar and Workshop, Wichita, Kansas, August 16.
- Miller, R. D., 2017, Kansas Department of Health and Environment, Governor's Brief, Topeka, Kansas, June 23.
- Miller, R. D., 2017, American Society of Civil Engineers (ASCE), Annual Kansas City Specialty Seminar, Seismic methods for site characterization and investigations, Burns & McDonnell, Kansas City, Missouri, January 20.
- Robertson, C., Franseen, E. K., and Enos, P., 2017, Sedimentologic controls, stratigraphic architecture, and reservoir potential of Mississippian (Osagean) carbonate and chert facies, Anadarko Basin: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT.
- Stewart, D. L., 2017, Oil and gas data on the KGS website, log scanning and materials and resources in the Data Resources Library: University of Kansas Geology 535, September 7, 2017.
- Stover, S. G., 2017, "Book Bytes" on Ogallala aquifer water: High Plains Public Radio, aired January and February 2017. <http://hpr.org/programs/hpr-radio-readers-book-club?page=2&ajax=1>
- Stover, S. G., 2017, Communicating science: Graduate students orientation, Geology Department, University of Kansas, Lawrence, Kansas, August 18, 2017.
- Stover, S. G., 2017, Geoscience for lawmakers: Geological Society of America, Seattle, Washington, October 25, 2017.
- Stover, S. G., 2017, My careers in geosciences: STEM event, University of Kansas, Overland Park, Kansas, November 21, 2017.
- Stover, S. G., 2017, Water and the environment: Kansas Health Foundation, Topeka, Kansas, March 1, 2017.
- Stover, S. G., 2017, Water and Kansas: A brief history: History class, Washburn University, Topeka, Kansas, April 25, 2017.
- Stover, S. G., 2017, Water and politics: Examples from Kansas: invited keynote speaker, Human Water conference, Wichita, Kansas, October 28, 2017.
- Stover, S. G., 2017, Water in Kansas: Conditions, problems, possible solutions: Geography class, University of Kansas, Lawrence, Kansas, April 13, 2017.

## **Awards & Honors**

Franseen, E. K. — Nominated for KU Graduate Student Advisor Award, 2017  
Franseen, E. K. — Recipient, Merriam International Studies Award  
Franseen, E. K. — Two featured articles in AAPG Search and Discovery Digest, October 2017  
Miller, R. D. — Elected, Chairman, SEG Global Inc, Board of Directors

## **Internal Service**

Brookfield, A. E. — Five agency reviews  
Butler, J. J., Jr. — Member, KGS Outstanding Support Staff Recognition Award Committee  
Evans, C. S. — Kansas Field Conference, September 11–13, 2017  
Dealy, M. T. — KGS booth, General Electric Strother, Community Day, 2017, Winfield, Kansas  
Dealy, M. T. — Twelve environmental reviews of wastewater or water supply projects, inter-agency coordination  
Dealy, M. T. — Volunteer, University of Kansas, Kansas State Fair booth, Hutchinson, Kansas  
Delaney, A. — Assistant, KGS chili cook-off and cookie sale fund raiser for KU's United Way campaign  
Franseen, E. K. — Member, Promotion and Tenure Committee  
Franseen, E. K. — Member, Petroleum Geologist Search Committee (two positions)  
Franseen, E. K. — Member, Stratigraphic Nomenclature Committee  
Franseen, E. K. — Member, Editorial Board, Current Research in Earth Sciences  
Jones, E. — Assistant, KGS chili cook-off and cookie sale fund raiser for KU's United Way campaign  
Layzell, A. L. — Member, Stratigraphic Nomenclature Committee  
Layzell, A. L. — Member, Petroleum Geoscientist Search Committee (2 positions)  
Ludvigson, G. A. — Member, KGS Stratigraphic Nomenclature Committee  
Ludvigson, G. A. — KGS STATEMAP Coordinator  
Ludvigson, G. A. — Interim chair, KGS Promotion and Review Committee  
Mandel, R. — Kansas Field Conference, September 11–13, 2017  
Peterson, A. — Assistant, KGS chili cook-off and cookie sale fund raiser for KU's United Way campaign  
Potter, N. — Assistant, KGS chili cook-off and cookie sale fund raiser for KU's United Way campaign  
Sawin, R. S. — Chair, KGS Stratigraphic Nomenclature Committee  
Smith, J. J.—Member, Kansas Geological Mapping Advisory Committee (KGMAC)  
Smith, J. J.—Member, search committee for geochemist, KGS  
Smith, J. J.—Assisted with KGS Field Conference, September 12–13, 2017  
Stewart, D. L. — KGS representative, KU's United Way campaign  
Stewart, D. L. — Host, KGS chili cook-off and cookie sale fund raiser for KU's United Way campaign  
Stover, S. G. — Kansas Field Conference, September 11–13, 2017  
Stover, S. G. — Nine environmental reviews of proposed projects as part of inter-agency coordination  
Stover, S. G. — Key personnel, CarbonSAFE study; led the Legal, Regulatory and Public Policy team  
Stover, S. G. — Member, Interagency Research Coordination Committee  
Stover, S. G. — Member, KU Geology Associates Advisory Board  
Stover, S. G. — Member, Kansas Geologic Mapping Advisory Committee  
Stover, S. G. — Member, Ogallala Summit Planning Committee  
Stover, S. G. — KGS booth, Kaw Valley Eagles Day, January 21, 2017, Lawrence, Kansas  
Stover, S. G. — KGS booth, Kansas Rural Water Association, March 28–30, 2017, Wichita, Kansas  
Stover, S. G. — KGS booth, Third Annual Science Discovery Day, April 15, 2017, Prairie Park Elementary School, Lawrence, Kansas  
Suchy, D. R. — KGS booth, Kaw Valley Eagles Day, January 21, 2017, Lawrence, Kansas  
Suchy, D. R. — KGS booth, Third Annual Science Discovery Day, April 15, 2017, Prairie Park Elementary School, Lawrence, Kansas  
Tollefson, J. M. — Chair, KGS Outstanding Support Staff Recognition Award Committee  
Tollefson, J. M. — Member (ex-officio), KGS Stratigraphic Nomenclature Committee  
Watney, L. — Member, KGS Stratigraphic Nomenclature Committee

## External Service

- Brookfield, A. E. — Editor, Hydrogeology Division of Geological Society of America newsletter
- Brookfield, A. E. — Associate Editor, Ground Water
- Brookfield, A. E. — Courtesy Assistant Professor, University of Kansas Geology Department
- Brookfield, A. E. — WRAPS representative
- Brookfield, A. E. — Representative, KU Center for Science and Research Support
- Brookfield, A. E. — World Water Day Outreach — Hills Pet Nutrition
- Brookfield, A. E. — Volunteer, Douglas County Water Festival
- Brookfield, A. E. — Volunteer, GSA Hydro Division career and networking event
- Brookfield, A. E. — Judge, GSA student poster
- Brookfield, A. E. — Professional manuscript reviews: Computing in Science and Engineering (1); Journal of Hydrologic Engineering (1); Groundwater (8); Reviews of Geophysics (1); Water Resources Research (2); CATENA (1); Journal of Hydrology (5); Water (1); HESS (1)
- Brookfield, A. E. — Member, doctoral committee, University of Kansas Geology Department
- Butler, J. J., Jr. — Testified to the House Committee on Water and the Environment at the request of Dwane Roth, irrigator in southwest Kansas, February 2, 2017, Topeka, Kansas
- Butler, J. J., Jr. — Briefed Governor Brownback on the KGS sustainability approach and its findings, June 15, 2017, Governor's Office, Topeka, Kansas
- Butler, J. J., Jr. — Participated in two press events with Governor Brownback and Lieutenant Governor Colyer to present the findings of the KGS sustainability approach to irrigators in western Kansas, July 18, 2017, Hoxie and Garden City
- Butler, J. J., Jr. — Associate Editor, Ground Water (reviewed seven papers in 2017)
- Butler, J. J., Jr. — Cox Visiting Professor, Department of Geophysics, Stanford University (spring quarter 2017 — taught course on assessment of aquifers supporting irrigated agriculture)
- Butler, J. J., Jr. — Member, Kansas Water Resources Institute Administrative Council
- Butler, J. J., Jr. — Member, Organizing Committee, NovCare 2017 (Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice), June 2017, Dresden, Germany
- Butler, J. J., Jr. — Panel member, United States–Egypt Science and Technology Joint Fund, National Academies of Sciences, Engineering and Medicine
- Butler, J. J., Jr. — Reviewer, National Science Foundation, Water Resources Research, the New Mexico Geological Survey, the Ecohydrology Journal, Mathematical Geology, Geophysical Research Letters, and others
- Butler, J. J., Jr. — Tenure and promotion evaluator, University of Wisconsin at Madison
- Butler, J. J., Jr. — Member, Erin Haacker Ph.D. committee, Michigan State University
- Butler, J. J., Jr. — Member, Brooks Bailey M.S. committee, University of Kansas
- Dealy, M. T. — Member, Kansas Corporation Commission, Oil and Gas Advisory Committee
- Dealy, M. T. — Member, Kansas Geological Society, Nomenclature Committee
- Dealy, M. T. — Event Coordinator, Wichita State University, Kansas Science Olympiad
- Dealy, M. T. — Judge, Exploration Place, Sedgwick County Science and Discovery Center, Wichita Regional Science Fair, Wichita, Kansas
- Dealy, M. T. — Judge, Kansas State Science and Engineering Fair, Wichita, Kansas
- Evans, C. S. — Volunteer, 2017 Northeast Kansas Regional Science Olympiad (wrote Road Scholar section for competition)
- Franseen, E. K. — Organizer and Convener, 2017 Kansas Interdisciplinary Carbonates Consortium (KICC) Annual Meeting
- Franseen, E. K. — Member, Nominations Committee, Department of Geology, University of Kansas
- Franseen, E. K. — Co-Organizer, KU Geology Career Symposium, Department of Geology, University of Kansas
- Franseen, E. K. — Evaluator, Faculty Teaching, Department of Geology, University of Kansas
- Franseen, E. K. — Chair, two doctoral and two master's degree candidate committees, University of Kansas
- Franseen, E. K. — Co-chair, one doctoral and two master's degree candidate committees, University of Kansas
- Franseen, E. K. — Member, two doctoral and five master's degree candidate committees, University of Kansas
- Franseen, E. K. — Post-doc supervisor; Research topic: Integrative petroleum characterization studies, Kansas Interdisciplinary Carbonates Consortium
- Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison
- Franseen, E. K. — Chair, SEPM Officer Election Committee
- Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee

Franseen, E. K. — Member, SEPM Executive Director Search Committee  
 Franseen, E. K. — Member, review committee for abstracts submitted to the 2018 AAPG Annual Meeting  
 Franseen, E. K. — Member, review committee for abstracts submitted to the 2017 AAPG Annual Meeting  
 Franseen, E. K. — External Advisor, Earth and Space Sciences Department, Columbus State University, Georgia  
 Layzell, A. L. — Member, National Geologic Map Database Project Technical Advisory Working Group  
 Layzell, A. L. — Member, Kansas Streambank Research Team  
 Ludvigson, G. A. — Chair, University of Kansas Search Committee for KGS Director  
 Ludvigson, G. A. — Member, University of Kansas Office of Research Intermediate Review Committee  
 Ludvigson, G. A. — Associate Editor, Journal of Sedimentary Research  
 Ludvigson, G. A. — Co-instructor, University of Kansas Graduate Reading Seminar EVRN 700 on the Anthropocene, fall semester  
 Ludvigson, G. A. — Member, University of Kansas graduate thesis committees for Brian Sitek, Holly Field, Bridget Pettit, Jeff Ross, Brittany Hendrix, Caroline Nazworth, Clark Sturdevant, Thomas Neal, Maggie Graham, Isaac Allred, and Keelan Umbarger  
 Miller, R. D. — ICEG, Innovations in Geophysics Award, Selection Committee  
 Miller, R. D. — Geophysical Technology, Inc. (GTI) Advisory Board  
 Miller, R. D. — ICEG, Co-Chair, Scientific and Technical Program Committee, Al Ain, UAE, October  
 Miller, R. D. — SEG, Appointed, Global Inc., Board of Directors  
 Miller, R. D. — SEG, Inter-Society Presidential Task Force  
 Miller, R. D. — KU RGS Research Achievement Award Selection Committee  
 Smith, J. J.—Member, Deserae Jennings, Ph.D. dissertation committee, University of Kansas  
 Smith, J. J.—Peer Reviews: PALAIOS (one manuscript), Palaeogeography, Palaeoclimatology, Palaeoecology (three manuscripts), and American Chemical Society-Petroleum Research Fund, New Directions Grant (one proposal)  
 Smith, J. J.—Invited Mentor, Roy J. Shlemon Mentors Program in Applied Geoscience, Geological Society of America South-Central Section meeting, San Antonio, Texas  
 Smith, J. J.—Rocks and fossils presentation to all third-grade classes at Eudora Elementary School, February 2017, Eudora, Kansas  
 Stover, S. G. — Organizer and moderator, Governor's Conference on the Future of Water in Kansas, November 8–9, 2017, Manhattan, Kansas  
 Stover, S. G. — Organizer and presenter, Women in Science Day, October 31, 2017, Washburn University, Topeka, Kansas  
 Stover, S. G. — Chair, Geology and Society Division, Geological Society of America  
 Stover, S. G. — Mentor, GSA annual meeting, October 23, 2017, Seattle, Washington  
 Stover, S. G. — Convener, Distinguished Lecture: Darwin in Galapagos, Geological Society of America, October 24, 2017, Seattle, Washington  
 Stover, S. G. — Co-convener, Geoscience and the Legal System, Geological Society of America, October 25, 2017, Seattle, Washington  
 Stover, S. G. — Coordinator and judge, Geological Society of America Geology and Society's 2017 Outstanding Student Paper  
 Stover, S. G. — Member at large, subject matter expert, and Public Outreach/Uniform Procedures Committee member, Association of State Boards of Geology (ASBOG)  
 Stover, S. G. — Member, Association for Women Geoscientists, Osage Chapter  
 Stover, S. G. — Fellow, Geological Society of America  
 Suchy, D. R. — Member and Chairman, Board of Directors, Rural Water District #5, Douglas County, Kansas  
 Suchy, D. R. — Member and Treasurer, Board of Directors, Public Wholesale Water Supply District #25, Douglas and Osage Counties, Kansas

## Grants

Geologic Mapping in Kansas for FY17. United States Geological Survey, STATEMAP Program Contract No. G17AC00261. Principle investigator: G. A. Ludvigson,. Co-PIs: R. D. Mandel, K. D. Newell, A. Layzell, J. Smith, W. C. Johnson, T. Bidgoli, and J. W. Dunham. Federal and state match totaling \$311,046.  
 Merriam Research Award, Kansas Geological Survey. Principle investigator: G. A. Ludvigson. KU Endowment funds, \$3,482.

Miller, R. D.: S.S. Papadopoulos & Associates, Inc., High resolution seismic reflection study to detect accumulations of free gas in Quaternary and Tertiary units overlying Eminence Dome in SE Mississippi, 2017, \$273,192. (PI)

Miller, R. D.: Kansas Department of Health and Environment, Microseismic monitoring and analysis with focus on trends and clusters in proximity to UIC Class 1 wells in Kansas, 2017, \$40,000. (PI)

Miller, R. D.: Burns & McDonnell Engineering Company, Passive seismic monitoring of high priority salt jugs near the Irsik & Doll Elevator, BNSF Railroad, V&S Railroad right-of-way, and parallel to William Street in Hutchinson, Kansas, 2017, \$179,715. (PI)

National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, and KGS Library and Archive, Kansas Geological Survey, D. R. Suchy, PI; D. Stewart, co-PI; administered through U. S. Geological Survey, 2017–2018, \$79,488.

National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, and KGS Library and Archive, Kansas Geological Survey, M. T. Dealy and D. Stewart, Co-PI; administered through U. S. Geological Survey, 2016–2017, \$64,599.

### **Website**

- Placed 55 publications online.
- Placed 47 open-file reports online.
- Scanned more than 17,000 water well records (completed scanning of all older records).
- Scanned almost 4,000 wireline logs.



### Refereed Publications

- Bohling, G. C., Liu, G., Dietrich, P., and Butler, J. J., Jr., 2016, Reassessing the MADE direct-push hydraulic conductivity data using a revised calibration procedure: *Water Resources Research*, v. 52, no. 11, p. 8,790–8,985. doi: 10.1002/2016WR019008
- Brookfield, A., and Gnau, C., 2016, Optimizing water management for irrigation under climate uncertainty: Evaluating operational and structural alternatives in the Lower Republican River Basin, Kansas, USA: *Water Resources Management*, v. 20, no. 2, p. 607–622.
- Brookfield, A., Gnau, C., and Wilson, B., 2016, Incorporating surface water operations in an integrated hydrologic model: Model development and application to the Lower Republican River Basin, USA: *Journal of Hydrologic Engineering*, doi: 10.1061/(ASCE)HE.1943-5584
- Brookfield, A. E., Macpherson, G. L., and Covington, M. D., 2016, Early view. Effects of changing meteoric precipitation patterns on groundwater temperature in karst environments: *Groundwater*. doi: 10.1111/gwat.12456
- Butler, J. J., Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2016, A new approach for assessing the future of aquifers supporting irrigated agriculture: *Geophysical Research Letters*, v. 43, no. 5, p. 2,004–2,010. doi: 10.1002/2016GL067879
- Feigenbaum, D. Z., Ivanov, J., Miller, R. D., Peterie, S. L., and Morton, S. L. C., 2016, Near-surface Qp and Qs estimations using multichannel analysis of surface waves (MASW) and the effect of non-fundamental mode energy on Q-estimation: An example from Yuma Proving Ground, Arizona [Exp. Abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Dallas, Texas, p. 4,971–4976.
- Ivanov, J., Miller, R. D., and Peterie, S. L., 2016, Detecting and delineating voids and mines using surface wave methods in Galena, Kansas [Exp. Abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Dallas, Texas, p. 2,344–2,350.
- Ivanov, J., Tsoflias, G., Miller, R. D., Peterie, S., Morton, S., and Xia, J., 2016, Impact of density information on Rayleigh surface wave inversion results: *Journal of Applied Geophysics*, v. 135, p. 43–54.
- 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
- Knight, R., Walsh, D. O., Butler, J. J., Jr., Grunewald, E., Liu, G., Parsekian, A. D., Reboulet, E. C., Knobbe, S., and Barrows, M., 2016, NMR logging to estimate hydraulic conductivity in unconsolidated aquifers: *Groundwater*, v. 54, no. 1, p. 104–114. doi: 10.1111/gwat.12324
- 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*, v. 144, p. 45–55. <http://dx.doi.org/10.1016/j.catena.2016.05.003>
- Liu, G., Knobbe, S., Reboulet, E. C., Whittemore, D. O., Handel, F., and Butler, J. J., Jr., 2016, Field investigation of a new artificial recharge approach for ASR projects in near-surface aquifers: *Groundwater*, v. 54, no. 3, p. 425–433. doi: 10.1111/gwat.12363
- Malehmir, A., Socco, L. V., Bastani, M., Krawczyk, C. M., Pfaffhuber, A. A., Miller, R. D., Maurer, H., Frauenfelder, R., Suto, K., Bazin, S., Merz, K., and Dahlin, T., 2016, Near-surface geophysical characterization of areas prone to natural hazards: A review of the current and perspective on the future; in, *Advances in Geophysics*, v. 57, L. Nielsen, ed.: Elsevier Inc., Amsterdam, The Netherlands, p. 51–146.
- Miller, R. D., Black, W., Miele, M., Morgan, T., Ivanov, J., Peterie, S., and Wang, Y., 2016, High resolution seismic reflection to improve accuracy of hydrogeologic models in Ventura County, California, USA: *Leading Edge*, v. 35, n. 9, p. 760–769.
- Morton, S. L. C., Peterie, S. L., Ivanov, J., Miller, R. D., Feigenbaum, D., Sloan, S. D., Moran, M. L., and Cudney, H. H., 2016, Feasibility study using surface wave attenuation and seismic quality factor for tunnel detection at the Yuma Proving Ground, Arizona [Exp. Abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Dallas, Texas, p. 2,351–2,356.
- Peterie, S. L., Miller, R. D., Ivanov, J., Wang, Y., Morton, S., Sloan, S. D., Moran, M., and Cudney, H., 2016, Tunnel detection using SH-wave diffraction imaging [Exp. Abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Dallas, Texas, p. 5,006–5,010.

- Poteet, J., Goldstein, R. H., and Franseen, E. K., 2016, Diagenetic controls on stepwise shifts in location of reservoir sweet spots relative to structural highs: *in*, Reservoir Quality of Clastic and Carbonate Rocks: Analysis, Modelling and Prediction, Armitage, P. J., Butcher, A. R., Churchill, J. M., Csoma, A. E., Hollis, C., Lander, R. H., Omma, J. E., and Worden, R. H., eds.: Geological Society, London, Special Publications, 435, 39 p.
- Sawin, R. S., 2016, Classification of red beds at Point of Rocks, Morton County, Kansas: A historical review: Kansas Geological Survey, Current Research in Earth Sciences, Bulletin 262, 6 p.  
<http://www.kgs.ku.edu/Current/2016/Sawin/Bulletin262.pdf>
- Sawin, R. S., and West, R. R., 2016, Surficial geology of Morris County, Kansas: Kansas Geological Survey, Map M-125, scale 1:50,000. <http://www.kgs.ku.edu/General/Geology/County/klm/morrisLarge.html>
- Schwenk, J. T., Sloan, S. D., Ivanov, J., and Miller, R. D., 2016, Surface-wave methods for anomaly detection: Geophysics, v. 81, p. EN29–EN42.
- Sloan, S. D., Cudney, H. H., Miller, R. D., Ivanov, J., and Moran, M. L., 2016, Depth estimation of voids using backscattered surface waves [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Dallas, Texas, p. 2,362–2,366.
- Sloan, S. D., Miller, R. D., Smith, J., Peterie, S. L., Borisov, D., Moran, M. L., Tromp, J., and Cudney, H. H., 2016, Feasibility study on applying full waveform inversion of 3D multicomponent near-surface seismic data to tunnel detection: Proceedings of the 2016 Meeting of the Military Sensing Symposia (MSS) Specialty Group on Battlefield Acoustic and Seismic, Magnetic and Electric Field Sensors, Gaithersburg, Maryland. Published on CD.
- 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*, Unfolding the Geology of the West, Keller, S. M., and Morgan, M. L., eds.: Geological Society of America Field Guide 44, p. 93–124. doi:10.1130/2016.0044(04)
- Suarez, C. A., Flaig, P. P., Ludvigson, G. A., González, L. A., Tian, R., Zhou, H., McCarthy, P. J., Van Der Kolk, D. A., and Fiorillo, A. R., 2016, Reconstructing the paleohydrology of a Cretaceous Alaskan paleopolar coastal plain from stable isotopes of bivalves: Palaeogeography, Palaeoclimatology, Palaeoecology, v. 441, p. 339–351. <http://dx.doi.org/10.1016/j.palaeo.2015.07.025>
- Wang, Y., Baker, G. S., and Miller, R. D., 2016, Near-surface vibroseis signal enhancement using a fractional Fourier domain method [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Dallas, Texas, p. 2,372–2,376.
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2016, Assessing the major drivers of water-level declines: New insights into the future of heavily stressed aquifers: Hydrological Sciences Journal, v. 61, no. 1, p. 134–145. doi: 10.1080/02626667.2014.959958

### Nonrefereed Publications

- Alig, P., Mandel, R. D., Layzell, A. L., Meade, T., Perkl, B., Keeney, K., and Hall, S. M., 2016, Phase II intensive archaeological inventory survey of eight areas and the National Register of Historic Places site evaluation of two sites within the Fort Leavenworth, U.S. Army Garrison Command, Leavenworth County, Kansas: Report to U.S. Army Garrison Command, Fort Leavenworth, Kansas by the U.S., Army Corps of Engineers, Kansas City District. Report prepared for the U.S. Army Garrison Command, Fort Leavenworth, Kansas.
- Bennett, B., and Brohammer, M., 2016, 2016 Water level data acquisition statistics: Kansas Geological Survey, Open-File Report 2016-32, 19 p.
- Brookfield, A., 2016, Evaluating alternatives to increase the water available to water rights in the Lower Republican River Basin scenarios: Progress report: Technical Report for Kansas Water Office, 14 p.
- Brookfield, A., Stotler, R., and Hill, M., 2016, Quantifying recharge in the High Plains aquifer in Kansas by coupling space and ground observations: Technical Report for Kansas NASA EPSCoR, 17 p.
- Brookfield, A. E., 2016, Minimum saturated thickness calculator: Method overview and spreadsheet description: Kansas Geological Survey, Open-File Report 2016-3, 7 p.
- Brookfield, A. E., 2016, Water is for fighting over and other myths about water in the West: Groundwater, v. 55:1. doi: 10.1111/gwat.12485
- Butler, J. J., Jr., Whittemore, D. O., Reboulet, E., Knobbe, S., Wilson, B. B., Stotler, R. L., and Bohling, G. C., 2016, High Plains aquifer index well program: 2015 annual report: Kansas Geological Survey, Open-File Report 2016-4, 179 p.

- Dunham, J. W. (compiler), 2016, The Flint Hills with prairie areas (map): Kansas Geological Survey, Open-File Report 2016-1, scale 1:325,000.
- Evans, C., 2016, Earthquakes in Kansas: Causes and remediation: KEMSA Chronicle, Kansas Emergency Medical Services Association, v. 2, issue 3, p. 23–25.
- Gomez-Hernandez, J. J., Butler, J. J., Jr., and Fiori, A., 2016, Groundwater transport in highly heterogeneous aquifers: *Eos*, v. 97. doi:10.1029/2016EO047263
- Holubnyak, Y., Watney, W., Birdie, T., Rush, J., and Fazelalavi, M., Reservoir modeling of CO<sub>2</sub> injection in Arbuckle saline aquifer at Wellington Field, Sumner County, Kansas: Kansas Geological Survey, Open-File Report 2016-29, 150 p.
- Ludvigson, G. A., 2016, Geologic mapping in the state of Kansas: Kansas Geological Society Bulletin, v. 91, no. 4, p. 12–13. <http://www.kgslibrary.com/downloads/bulletins/2016/July%20-%20August%202016.pdf>
- 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. [http://www.kgs.ku.edu/Publications/OFR/2016/OFR16\\_31/index.html](http://www.kgs.ku.edu/Publications/OFR/2016/OFR16_31/index.html)
- Miller, R. D., Peterie, S. L., Gonzales, J. B., Intfen, J. W., and Buchanan, R. C., 2016, Earthquake Highlights, Issue 1: Kansas Geological Survey, Open-File Report 2016-20, 29 p.
- Peterie, S. L., Miller, R. D., Bennett, B., Anderson, J., and Scobee, J., 2016, Baseline seismicity observed at seismograph station RC01 near Bushton, Kansas: Kansas Geological Survey, Open-File Report 2016-22, 17 p.
- Peterie, S. L., Miller, R. D., Gonzales, J. B., Bennett, B. C., Anderson, J. M., and Scobee, J. R., 2016, Seismicity observed at seismograph station RC01 located near Bushton, Kansas: January 1 to June 30, 2016: Kansas Geological Survey, Open-File Report 2016-33 13 p.
- Peterie, S. L., Miller, R. D., Gonzales, J. B., Intfen, J. W., and Buchanan, R. C., 2016, Earthquake Highlights, Issue 2: Kansas Geological Survey, Open-File Report 2016-21, 14 p.
- Peterie, S., Miller, R. D., and Ivanov, J., 2016, Overview of passive seismic characterization and monitoring recommendations for high priority salt jugs near the Irsik & Doll Elevator, BNSF Railroad, and William Street in Hutchinson, Kansas: Report to Burns & McDonnell Engineering Company, June 2016, Kansas Geological Survey, Open-File Report 2016-26, 27 p.
- Peterie, S., Miller, R. D., and Ivanov, J., 2016, Overview of passive seismic characterization and monitoring recommendations for high priority salt jugs near the V&S Railroad right-of-way in Hutchinson, Kansas: Report to Burns & McDonnell Engineering Company, June 2016, Kansas Geological Survey, Open-File Report 2016-25, 26 p.
- Sawin, R. S., 2016, Preliminary surficial geology of the Lincoln County portion of the Juniata and Brookville SW quadrangles, Kansas: Kansas Geological Survey, Open-File Report 2016-5, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2016-05\\_Juniata\\_Brookville\\_SW.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2016-05_Juniata_Brookville_SW.pdf)
- Sawin, R. S., 2016, Preliminary surficial geology of the Lincoln County portion of the Sylvan Grove quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2016-8, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2016-08\\_Sylvan\\_Grove.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2016-08_Sylvan_Grove.pdf)
- Sawin, R. S., 2016, Preliminary surficial geology of the Lincoln quadrangle, Lincoln County, Kansas: Kansas Geological Survey, Open-File Report 2016-6, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2016-06\\_Lincoln.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2016-06_Lincoln.pdf)
- Sawin, R. S., 2016, Preliminary surficial geology of the Vesper quadrangle, Lincoln County, Kansas: Kansas Geological Survey, Open-File Report 2016-9, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2016-09\\_Vesper.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2016-09_Vesper.pdf)
- Sawin, R. S., 2016, Preliminary surficial geology of the Westfall NW quadrangle and the Lincoln County portion of the Westfall SW quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2016-11, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2016-11\\_Westfall\\_NW\\_Westfall\\_SW.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2016-11_Westfall_NW_Westfall_SW.pdf)
- Sawin, R. S., 2016, Preliminary surficial geology of the Westfall quadrangle and the Lincoln County portion of the Westfall SE quadrangle, Kansas: Kansas Geological Survey, Open-File Report 2016-10, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2016-10\\_Westfall\\_Westfall\\_SE.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2016-10_Westfall_Westfall_SE.pdf)
- Sawin, R. S., and West R. R., 2016, Data control points used to construct the surficial geology map (M-125) of Morris County, Kansas: Kansas Geological Survey, Open-File Report 2016-2, 240 p. [http://www.kgs.ku.edu/Publications/OFR/2016/OFR16\\_02/index.html](http://www.kgs.ku.edu/Publications/OFR/2016/OFR16_02/index.html)

- Stover, S., and Evans, C. S., 2016, West-Central Kansas — Natural resources, economics, and decisions for the future, 2016 Kansas Field Conference guide: Kansas Geological Survey, Open-File Report 2016-23, 68 p. [http://www.kgs.ku.edu/Field/Reports/KGS\\_OF\\_2016-23.pdf](http://www.kgs.ku.edu/Field/Reports/KGS_OF_2016-23.pdf)
- Suchy, D., and Stewart, D., 2016, WWC5 forms and KOLAR: Location reporting: Kansas Geological Survey, Open-File Report 2016-27, 59 p.
- Wilson, B. B., 2016, Establishing Kansas as a data provider to the National Ground-water Monitoring Network: Kansas Geological Survey, Open-File Report 2016-28, 12 p. [http://www.kgs.ku.edu/Hydro/Publications/2016/OFR16\\_28/index.html](http://www.kgs.ku.edu/Hydro/Publications/2016/OFR16_28/index.html)
- Woods, J. J., and Wilson, B. B., 2016, Western Kansas GMD1 maps: Kansas Geological Survey, Open-File Report 2016-19, 7 maps. [http://www.kgs.ku.edu/Hydro/Publications/2016/OFR16\\_19/index.html](http://www.kgs.ku.edu/Hydro/Publications/2016/OFR16_19/index.html)

## Abstracts

- Brookfield, A. E., Hill, M. C., Stotler, R. L., and Porter, M. E., 2016, Interpreting satellite-based data from the GRACE mission using in-situ measurements from the High Plains aquifer in Kansas: Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 14–15.
- Brookfield, A. E., Macpherson, G. L., and Covington, M. D., 2016, Effects of changing meteoric precipitation patterns on groundwater temperature in karst environments: Presentation with abstract, GSA Annual Meeting, Denver, Colorado, September 25–28.
- Butler, J. J., Jr., 2016, Assessing the sustainability of aquifers supporting irrigated agriculture, invited presentation for Earth Resources Engineering Symposium, National Academy of Engineering, Washington, D.C., October 11. <http://blog.uvm.edu/webwizrd-nae/presentations/>
- Butler, J. J., Jr., 2016, Subsurface characterization over a range of temporal and spatial scales, invited presentation for 2016 CUAHSI Biennial Symposium — Finding your place in big data: Using observations to understand hydrologic processes for predicting a changing world, Shepherdstown, West Virginia, July 26 (p. 21 at [www.cuahsi.org/Files/Pages/documents/25003/2016\\_cuahsi\\_biennial\\_program\\_-\\_online.pdf](http://www.cuahsi.org/Files/Pages/documents/25003/2016_cuahsi_biennial_program_-_online.pdf)).
- Butler, J. J. Jr., Whittemore, D. O., and Wilson, B. B., 2016, Assessing prospects for sustainability in the High Plains aquifer in southwest Kansas, Governor's Conference on Future of Water in Kansas, Manhattan, Kansas, November 15. [http://www.kwo.org/Projects/2016\\_Govs\\_Conf/PowerPoints/Day%202/Butler\\_Sustainability%20Assessment%20for%20SW%20Kansas.pdf](http://www.kwo.org/Projects/2016_Govs_Conf/PowerPoints/Day%202/Butler_Sustainability%20Assessment%20for%20SW%20Kansas.pdf)
- Butler, J. J. Jr., Whittemore, D. O., and Wilson, B. B., 2016, The High Plains aquifer: A Kansas perspective, invited presentation for American Geosciences Institute Critical Issues Forum — Addressing Changes in Regional Groundwater Resources: Lessons from the High Plains Aquifer, Golden, Colorado, October 27. <https://www.americangeosciences.org/policy/ci-forum-2016/presentations>
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2016, The High Plains aquifer in Kansas: Current conditions and future projects: Geological Society of America Abstracts with Programs v. 48, no. 7, invited presentation at the 2016 GSA Conference, September 27. doi:10.1130/abs/2016AM-281471
- Butler, J. J., Jr., Whittemore, D. O., Wilson, B. B., and Bohling, G. C., 2016, A sustainability index for assessment and management of aquifers supporting irrigated agriculture, Abstract H54B-05, 2016 Fall Meeting, American Geophysical Union, San Francisco, December 15.
- Butler, J. J. Jr., Whittemore, D. O., Wilson, B. B., and Knobbe, S., 2016, Monitoring the hydrologic impacts of the Sheridan 6 Local Enhanced Management Area, Governor's Conference on Future of Water in Kansas, Manhattan, Kansas, November 15. [http://www.kwo.org/Projects/2016\\_Govs\\_Conf/PowerPoints/Day%202/Butler\\_LEMA.pdf](http://www.kwo.org/Projects/2016_Govs_Conf/PowerPoints/Day%202/Butler_LEMA.pdf)
- Core, E. E., Ramirez, W. R., Santos, H., Ortega-Ariza, D., and Franseen, E. K., 2016, Miocene-Pliocene Heterozoan-Dominated Systems in the Dominican Republic: Analogs for Neogene Reservoirs in the Caribbean: AAPG/SEPM Annual Meeting, Calgary, Canada.
- Core-Suárez, E. E., Ramirez, W. R., Santos-Mercado, H., Ortega-Ariza, D., and Franseen, E. K., 2016, Miocene-Pliocene Heterozoan-Dominated Systems in the Dominican Republic: Analogs for Neogene Reservoirs in the Caribbean: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Feigenbaum, D. Z., Ivanov, J., Miller, R. D., Peterie, S. L., and Morton, S. L. C., 2016, Near-surface Qp and Qs estimations using multichannel analysis of surface waves (MASW) and the effect of non-fundamental mode energy on Q-estimation: An example from Yuma Proving Ground, Arizona: Annual Meeting of the

- Society of Exploration Geophysicists, Dallas, Texas, October 16–21, p. 4971–4976. EXPANDED ABSTRACT
- Flotron, A. N., Goldstein, R. H., and Franseen, E. K., 2016, Sedimentologic and Stratigraphic Controls on Reservoir Sweet Spots in Wolfcamp ‘A,’ Howard County, Midland Basin: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Franseen, E.K., 2016, Some Primary Factors on Depositional and Stratigraphic Nature of Heterozoan and Mixed Heterozoan-Photozoan Carbonate Systems: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Franseen, E. K., and Goldstein, R. H., 2016, Build-and-Fill Stratigraphic Sequences in Carbonates: Abstract Book, Dolomieu Conference on Carbonate Platforms and Dolomite, Selva Di Val Gardena, Italy, October 4-7, p. 53-54.
- 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
- 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, v. 48, no. 7. doi: 10.1130/abs/2016AM-281965
- 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, v. 48, no. 7. doi: 10.1130/abs/2016AM-279868
- Holubnyak, Y., Watney, L., and Bidgoli, T. S., 2016, Lessons learned from waste water disposal in Kansas: Applications for CO<sub>2</sub> geological storage: 15th Annual Conference on Carbon Capture Utilization & Storage, Tysons, Virginia, June 13–16, 2016.
- Holubnyak, Y., Watney, W., Birdie, T., Rush, J., Fazelalavi, M., and Wreath, D., 2016, Pilot scale CO<sub>2</sub> EOR at Wellington Field in South-Central Kansas: 15th Annual Conference on Carbon Capture Utilization & Storage, Tysons, Virginia, June 13–16.
- Ivanov, J., Miller, R. D., and Peterie, S. L., 2016, Detecting and delineating voids and mines using surface wave methods in Galena, Kansas: Annual Meeting of the Society of Exploration Geophysicists, Dallas, Texas, October 16–21, p. 2,344–2,350. EXPANDED ABSTRACT
- Joeckel, R. M., Tucker, S. T., Ludvigson, G. A., Möller, A., Field, H. L., and Korus, J. T., 2016, The emerging deeper understanding of Cenozoic stratigraphy in Nebraska and the power of interstate cooperation: Geological Society of America, Abstracts with Programs, v. 48, no. 7. doi: 10.1130/abs/2016AM-285804
- Layzell, A. L., Ludvigson, G. A., and Fox, D. L., 2016, Stable isotopic paleohydrology of pedogenic carbonate nodules from Pliocene paleosols in the Meade Basin, southwestern Kansas: Geological Society of America, Abstracts with Programs, v. 48, no. 7. doi: 10.1130/abs/2016AM-281581
- Lechtenberg, K. S., Goldstein, R. H., and Franseen, E. K., 2016, Modeling Controls on the Architecture of Phylloid Algal and Associated Reservoirs from Outcrop Analogs: Lower Ismay Zone (Pennsylvanian), Utah, USA: AAPG/SEPM Annual Meeting, Calgary, Canada.
- Ludvigson, G. A., González, L. A., Joeckel, R. M., Suarez, M. B., Möller, A., and Ross, J. B., 2016, Exploring the frontier of terrestrial Aptian-Albian (Cretaceous) C-isotope stratigraphy and paleoclimatology: A tribute to the scientific career of Michael A. Arthur: Geological Society of America, Abstracts with Programs, v. 48, no. 7. doi: 10.1130/abs/2016AM-281223
- Ludvigson, G. A., González, L. A., Suarez, M. B., Joeckel, R. M., and Möller, A., 2016, Terrestrial paleoclimatology of the Early Cretaceous Western Interior foreland basin of North America: AAPG Annual Convention & Exhibition, Calgary, Alberta, June 19–22.
- Ludvigson, G. A., González, L. A., Suarez, M. B., and Möller, A., 2016, Terrestrial records of carbon isotope excursions associated with Aptian-Albian (Cretaceous) OAEs: SEPM Research Conference on Oceanic Anoxic Events, November 2–7, Austin, Texas, USA.
- Morton, S. L. C., Peterie, S. L., Ivanov, J., Miller, R. D., Feigenbaum, D., Sloan, S. D., Moran, M. L., and Cudney, H. H., 2016, Feasibility study using surface wave attenuation and seismic quality factor for tunnel detection at the Yuma Proving Ground, Arizona: Annual Meeting of the Society of Exploration Geophysicists, Dallas, Texas, October 16–21, p. 2,351–2,356. EXPANDED ABSTRACT
- Ortega-Ariza, D., and Franseen, E. K., 2016, Effects of sea level and upwelling on development of a Miocene shallow-water tropica carbonate ramp system, Ponce, Puerto Rico, USA: Abstract Book, Dolomieu Conference on Carbonate Platforms and Dolomite, Selva Di Val Gardena, Italy, October 4-7, p. 113-114.



- Ortega-Ariza, D., Franseen, E. K., Santos-Mercado, H., Ramirez-Martinez, W., and Core-Suárez, E., 2016, Strontium-isotope stratigraphy for Oligocene-Miocene carbonate systems in Puerto Rico and the Dominican Republic: Implications for Caribbean processes affecting depositional history, XII International Scientific Research Congress, Ministry of Higher Education - Science and Technology (MESCYT), Santo Domingo, Dominican Republic.
- Peterie, S. L., Miller, R. D., Ivanov, J., Wang, Y., Morton, S., Sloan, S. D., Moran, M., and Cudney, H., 2016, Tunnel detection using SH-wave diffraction imaging: Annual Meeting of the Society of Exploration Geophysicists, Dallas, Texas, October 16–21, p. 5,006–5,010. EXPANDED ABSTRACT
- 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
- Pugliano, T., Goldstein, R. H., and Franseen, E. K., 2016, Diagenetic and stratigraphic impact on petrophysical properties of heterozoan carbonates: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Pugliano, T., Goldstein, R. H., and Franseen, E. K., 2016, Fining upward cyclothems and clinothems are fundamental units making up the architecture of many heterozoan carbonate systems: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Pugliano, T. M., Goldstein, R. H., and Franseen, E. K., 2016, Fundamental controls on modeling reservoir properties of fining-updip heterozoan carbonates: AAPG/SEPM Annual Meeting, Calgary, Canada.
- Pugliano, T. M., Goldstein, R. H., Franseen, E. K., and Eltom, H., 2016, Impact of low-temperature diagenesis on petrophysical properties in heterozoan carbonates: Abstract Book, Dolomieu Conference on Carbonate Platforms and Dolomite, Selva Di Val Gardena, Italy, October 4-7, p. 125–126.
- 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, v. 48, no. 7. doi: 10.1130/abs/2016AM-281004
- Sloan, S. D., Cudney, H. H., Miller, R. D., Ivanov, J., and Moran, M. L., 2016, Depth estimation of voids using backscattered surface waves: Annual Meeting of the Society of Exploration Geophysicists, Dallas, Texas, October 16–21, p. 2,362–2,366. EXPANDED ABSTRACT
- 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, v. 48, no. 7. doi: 10.1130/abs/2016AM-287381
- 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.
- 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, v. 48, no. 7. doi: 10.1130/abs/2016AM-287434
- Stotler, R. L., Butler, J. J., Jr., Hirmas, D. R., Johnson, W. C., Katz, B. S., Knobbe, S., 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 v. 48, no. 7. doi:10.1130/abs/2016AM-283041
- Vero, S. E., Macpherson, G. L., Sullivan, P. L., Brookfield, A. E., Kirk, M. F., Datta, S., and Kempton, P., 2016, The Konza Prairie, Northeast Kansas, USA: The hydrologic evolution of a merokarst landscape: Poster with abstract, AGU Fall Meeting, San Francisco, California, December 12–16.
- Wang, Y., Baker, G. S., and Miller, R. D., 2016, Near-surface vibroseis signal enhancement using a fractional Fourier domain method: Annual Meeting of the Society of Exploration Geophysicists, Dallas, Texas, October 16–21, p. 2,372–2,376. EXPANDED ABSTRACT
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2016, The importance of capture in stream valleys to water resources in the High Plains aquifer, Governor's Conference on Future of Water in Kansas, Manhattan, Kansas, November 15.  
[http://www.kwo.org/Projects/2016\\_Govs\\_Conf/PowerPoints/Day%202/Whittemore\\_Importance%20of%20Capture.pdf](http://www.kwo.org/Projects/2016_Govs_Conf/PowerPoints/Day%202/Whittemore_Importance%20of%20Capture.pdf)

## Presentations

- Brookfield, A. E., Hill, M., and Porter, E., 2016, Developing tools for data-model integration in fully-coupled hydrologic models: NASA Goddard Terrestrial Water Cycle Seminar Series, Greenbelt, Maryland, January 13.
- Butler, J. J., Jr., 2016, Aquifer testing for improved hydrogeologic site characterization featuring Aqtesolv and the In-Situ LevelTroll (two-day short course), Midwest Geosciences Group, Montreal, Quebec, April 14–15, and Fort Collins, Colorado, October 18–19.
- Butler, J. J., Jr., 2016, Assessing the future of the High Plains aquifer in Kansas (teleconference), Kansas Farm Bureau Tour, August 25.
- Butler, J. J., Jr., 2016, Assessing the sustainability of aquifers supporting irrigated agriculture: A case study of the High Plains aquifer in Kansas (invited presentation), Department of Earth and Environmental Sciences, Michigan State University, September 30.
- Butler, J. J., Jr., 2016, Assessing the sustainability of aquifers supporting irrigated agriculture (invited presentation), Earth Resources Engineering Symposium on Groundwater Depletion, National Academy of Engineering, Washington, D.C., October 11.
- Butler, J. J., Jr., 2016, Drought resilience and groundwater: A Kansas perspective (invited presentation), Drought Resilience and Groundwater Workshop, Robert S. Kerr Environmental Research Center, Environmental Protection Agency, Ada, Oklahoma, August 4.
- Butler, J. J., Jr., 2016, Geohydrology section overview, KGS Advisory Council, April 26.
- Butler, J. J., Jr., 2016, GMD2 sustainability assessment: Initial results, GMD2 Board Meeting, Halstead, June 24.
- Butler, J. J., Jr., 2016, Groundwater forum advanced aquifer testing program design (half-day short course), 24<sup>th</sup> NARPM Training Program, Environmental Protection Agency, Pittsburgh, Pennsylvania, May 3.
- Butler, J. J., Jr., 2016, Hydrogeological methods for estimation of spatial variations in hydraulic conductivity (invited presentation), National Ground Water Association Groundwater Sampling and Environmental Monitoring Workshop, Lawrence, Kansas, July 28.
- Butler, J. J., Jr., 2016, KGS Index Well Program update, KGS Advisory Council, November 4.
- Butler, J. J., Jr., 2016, KGS update: High Plains aquifer activities, Kansas Water Authority, Oakley, May 17.
- Butler, J. J., Jr., 2016, Prospects for extending the lifetime of the High Plains aquifer, Kansas Farm Bureau 9<sup>th</sup> District Meeting, Tribune, April 7.
- Butler, J. J., Jr., 2016, Prospects for extending the lifetime of the High Plains aquifer — The role of groundwater flow, 60<sup>th</sup> Annual Meeting of the Southwest Kansas Irrigation Association, Ulysses, February 9.
- Butler, J. J., Jr., 2016, Pumping tests for aquifer evaluation: Overview of theory and practice, KU Geology 592/792, March 30.
- Butler, J. J., Jr., 2016, Subsurface characterization over a range of temporal and spatial scales (invited presentation), 2016 CUAHSI Biennial Symposium, Shepherdstown, West Virginia, July 26.
- Butler, J. J., Jr., 2016, What does the future hold for the High Plains aquifer? KU Mini College, Lawrence, June 9.
- Butler, J. J., Jr., and Whittemore, D. O., 2016, Index Well Program, Kansas Water Office, Topeka, May 24.
- Butler, J. J., Jr., Whittemore, D.O., and Wilson, B. B., 2016, The High Plains aquifer: A Kansas perspective (invited presentation): American Geosciences Institute Critical Issues Forum – Addressing Changes in Regional Groundwater Resources: Lessons from the High Plains Aquifer, Golden, Colorado, October 27.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2016, The High Plains aquifer in Kansas: Current conditions and future prospects, Pardee Keynote Session – The High Plains Aquifer: Can It be Managed for Today and the Future? (invited presentation), 2016 Geological Society of America Annual Meeting, Denver, Colorado, September 27.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2016, Sustainability of aquifers supporting irrigated agriculture: A case study of the High Plains aquifer in Kansas (invited presentation), OECD-WFI Virtual Water in Agriculture Products: Quantification, Limitations, and Trade Policy Workshop, Lincoln, Nebraska, September 16.
- Dunham, J. W., 2016, Surficial geology of Morris County, Kansas: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, June 27.
- Dunham, J. W., 2016, ‘You are Here’ – Flint Hills Maps & Education Program: Map Gallery (poster) presentation, Esri International User Conference, San Diego, California, June 27.
- Franseen, E. K., 2016, Organizer and Convener, 2016 Kansas Interdisciplinary Carbonates Consortium (KICC) Annual Meeting
- Franseen, E. K., 2016, Scientific Committee Member - Dolomieu Conference on Carbonate Platforms and Dolomite, Selva di Val Gardena, Italy, October 4-7



- Franseen, E. K., 2016, Session Chair – Carbonate Platforms Through Space and Time, Dolomieu Conference on Carbonate Platforms and Dolomite, Selva di Val Gardena, Italy, October 4-7
- Franseen, E. K., 2016, Invited speaker – Permian Basin Section-SEPM, Character of the Avalon Shale (Bone Spring Formation) of the Delaware Basin, West Texas and Southeast New Mexico: Effect of Carbonate-rich Sediment Gravity Flows, Midland, Texas, January 19.
- Franseen, E. K., 2016, Invited talk, Total E&P, Some Primary Factors on Depositional and Stratigraphic Nature of Heterozoan and Mixed Heterozoan-Photozoan Carbonate Systems, Houston, Texas, May 17.
- Franseen, E. K., 2016, Invited talk, Total E&P, Potential Caribbean Outcrop Analog Sites for Cenozoic Mixed Heterozoan-Photozoan Caribbean reservoir systems, Houston, Texas, May 17.
- Johnson, W. C., Dunham, J. W., and Child, S. F., 2016, Geologic Mapping of Rice County, Kansas: poster presented by William C. Johnson, Geological Society of America 2016 Annual Meeting, Denver, Colorado, September 25–28.
- Layzell, A. L., 2016, A stratigraphic assessment of streambank erodibility in northeastern Kansas: Kansas Geological Survey Advisory Council Meeting, November
- Layzell, A. L., and Mandel, R. D., 2016, Variability of streambank erosion in northeast Kansas: The importance of litho- and soil-stratigraphy: Transactions of the Kansas Academy of Science, vol. 119, no. 2, p. 252.
- Layzell, A. L., Mandel, R. D., Ziska, C., and Bozell, R., 2016, Developing a geographic information system (GIS) as a predictive tool for locating deeply buried archaeological deposits in Nebraska: 74<sup>th</sup> Plains Anthropological Conference, Lincoln, Nebraska.
- Ludvigson, G. A., 2016, The emerging terrestrial record of Mid-Cretaceous global change: Department of Earth and Environmental Sciences, University of Iowa, Iowa City, Iowa, October 21.
- Miller, R. D., 2016, Earthquake network in Kansas, Kansas House Energy, Utilities, and Telecomm Committee.
- Miller, R. D., 2016, Geotech Conference, November 10.
- Miller, R. D., 2016, Consortium, Lawrence, Kansas, August 15.
- Miller, R. D., 2016, Kansas Department of Health and Environment Seminar, Wichita, Kansas, September 8.
- Miller, R. D., 2016, Kansas Department of Health and Environment, Seismic Consortium Meeting, Wichita, Kansas, July 28.
- Miller, R. D., 2016, GSAC Presentation, Section Summary, Kansas Geological Survey, Lawrence, Kansas, April 26.
- Miller, R. D., 2016, Kansas Department of Health and Environment, Mosaic, Topeka, Kansas, March 22.
- Miller, R. D., 2016, K-Scope Report Meeting, March 22.
- Miller, R. D., 2016, OGS/OCC/KCC/KGS, Earthquakes, Norman, Oklahoma, February 29.
- Miller, R. D., 2016, Legislative Info Hearing on Kansas Earthquake Activity in 2015, Topeka, Kansas, January 21.
- Smith, J. J., 2016, Getting to the Bottom of the High Plains Aquifer: New insights into the Depositional History and Stratigraphy of the Cenozoic High Plains: National Association of State Boards of Geology, Council of Examiners Workshop Subject Matter Experts meeting, November 4, 2016, Lawrence, KS
- Smith, J. J., 2016, High Plains-Ogallala Drilling Program: Progress Report and Preliminary Findings: Kansas Geological Mapping Advisory Committee, April 2, 2016, Lawrence, Kansas.
- Smith, J. J., Ludvigson, G. A., Layzell, A. L., Stotler, R., Möller, A., 2016, Scientific drilling in the Cenozoic strata of the High Plains of western Kansas: Transactions of the Kansas Academy of Science, vol. 119, no. 2, p. 261.
- Smith J. J., Stover, S., and Johnston, P., 2016, The Neal Trace Fossil Locality: A new Pennsylvanian ichnofossil assemblage in Greenwood County, Kansas: Poster presentation at Geological Society of America, September 28, Denver, Colorado.
- Stover, S. G., 2016, Water in Kansas: Kaw Valley High School, January 19.
- Stover, S. G., 2016, Expanding interest and opportunities for girls and women in science, technology, engineering and math (STEM) fields: Zonta International Women's Club, February 16, Topeka, Kansas.
- Stover, S. G., 2016, Water in Kansas: University of Kansas geography class, April 12, Lawrence, Kansas.
- Stover, S. G., 2016, Water and Kansas: A Brief History: Washburn University, April 19, Topeka, Kansas.
- Stover, S. G., 2016, The Kansas Neosho River: A short history: Fredonia Library, March, Fredonia, Kansas.
- Stover, S. G., 2016, Ogallala aquifer: Are we making progress? Science on Tap, Free State Brewing Company, July 27, Lawrence, Kansas.
- Stover, S. G., 2016, The High Plains aquifer: Are we making progress: Optimist Club, August 2, Topeka, Kansas.
- Stover, S. G., 2016, Science Quiz, Women In Science day: Washburn University, October 11, Topeka, Kansas.
- Stover, S. G., 2016, Water and negotiation in the west, invited speaker, Addressing changes in regional groundwater resources: Lessons from the High Plains aquifer: AGI Critical Issue Forum, Oct 27–28, Golden, Colorado.

Stover, S. G., and Buchanan, R., moderators, 2016, The High Plains aquifer: Can it be managed for today and the future? Invited Pardee Session, Geological Society of America annual meeting, September 27, Denver, Colorado.

Suchy, D. R., and Stewart, D., September 2016, WWC-5 forms and KOLAR: Location reporting, KDHE Geology and Well Technology Section Fall 2016 Seminar and Training Event, Wichita, Kansas.

Wilson, B. B., 2016, Southwest Kansas Irrigators Association.

Wilson, B. B., 2016, Western Kansas GMD1 Annual Meeting, Tribune.

Wilson, B. B., 2016, Southwest Kansas GMD3 Annual Meeting.

Wilson, B. B., 2016, Wichita County WCA Group.

Wilson, B. B., 2016, Wallace County Irrigators.

Wilson, B. B., 2016, Kansas Rural Water Association Conference.

Wilson, B. B., 2016, KU's Speed Dating Researchers.

Wilson, B. B., 2016, National Groundwater Monitoring Network conference.

Wilson, B. B., 2016, National geographic Magazine Interview.

### **Awards & Honors**

Dunham, J. W., 2016 Esri International User Conference Map Gallery, International Cartographic Association (ICA) and International Map Industry Association (IMIA) Excellence in Cartography Award for "Surficial Geology of Morris County, Kansas"

Dunham, J. W., 2016 Esri International User Conference Map Gallery, 2nd place, Large Format Printed Map category, also for "Surficial Geology of Morris County, Kansas"

Miller, R. D. — Elected, Treasurer, SEG Global Inc., Board of Directors

Miller, R. D. — Merriam Research Award, KGS

### **Internal Service**

Brookfield, A. E. — Representative, KU Center for Science and Research Support

Brookfield, A. E. — Organized section seminars from February through June

Brookfield, A. E. — Performed 8 agency reviews

Buchanan, R. — Kansas Field Conference, West-Central Kansas, August 17-18, 2016

Butler, J. J., Jr. — Co-Chair, KGS Director Search Committee

Evans, C. S. — KGS Eagle Days booth, Lawrence, Kansas, January 23

Evans, C. S. — Kansas Field Conference, West-Central Kansas, August 17-18, 2016

Franseen, E. K. — Member, Promotion and Review Committee

Franseen, E. K. — Member, Stratigraphic Nomenclature Committee

Franseen, E. K. — Member, Editorial Board for Current Research on Kansas Geology Bulletin

Layzell, A. L. — Member, KGS Stratigraphic Nomenclature Committee

Ludvigson, G. A. — Chair, Search Committee for Director of the Kansas Geological Survey

Ludvigson, G. A. — Member, KU Research Promotion Committee

Ludvigson, G. A. — Co-Chair, Search Committee for Director of the Kansas Geological Survey

Sawin, B. — Kansas Field Conference, West-Central Kansas, August 17-18, 2016

Sawin, R. S. — Chair, KGS Stratigraphic Nomenclature Committee

Smith, J. J.—Member, Kansas Geological Mapping Advisory Committee (KGMAC)

Smith, J. J.—Member, search committee for Quaternary Geologist, KGS

Smith, J. J.—Member, Outstanding Support Staff Recognition Award Committee, KGS

Stover, S. G. — Kansas Field Conference, West-Central Kansas, August 17-18, 2016

Stover, S. G. — Member, Kansas Geologic Mapping Advisory Committee

Stover, S. G. — KGS booth, Kansas Rural Water Association, March 29–31, Wichita, Kansas

Stover, S. G., KGS booth, Earth Day at the Zoo, April 23, Topeka, Kansas

Stover, S. G. — KGS booth, Kansas Independent Oil and Gas Association, August 14–15, Wichita, Kansas

Stover, S. G. — Edu-Lobby Committee, Earth, Energy, and Environment Center, University of Kansas

Stover, S. G. — Six environmental reviews of proposed projects, as part of inter-agency coordination.

Suchy, D. R. — Volunteer, KGS booth at Kaw Valley Eagles Day event, Free State High School, Lawrence, Kansas, January 23

Suchy, D. R. — Volunteer, KGS Earth Day booth, Topeka Zoo, Topeka, Kansas, April 23

Suchy, D. R. — Volunteer, KGS table at Earth Science Day, KU Natural History Museum, Lawrence, Kansas, October 15

Tollefson, J. M. — Member, KGS Outstanding Support Staff Recognition Award Committee

Tollefson, J. M. — Ex-officio member, KGS Stratigraphic Nomenclature Committee

## External Service

Brookfield, A. E., Newsletter editor, Hydrogeology Division of Geological Society of America

Brookfield, A. E. — Associate Editor, Ground Water

Brookfield, A. E. — Courtesy Assistant Professor, KU Geology Department

Brookfield, A. E. — WRAPS Representative

Brookfield, A. E. — manuscript reviews: Water Resources Research (1), Ground Water (4), Journal of Hydrology (2), Journal of Geosciences Education (1), Hydrology Research (1)

Brookfield, A. E. — Member, 1 PhD and 1 MSc committee (KU Geology)

Brookfield, A. E. — Instructor, Geo 591/791 Differential Equations for Hydrology, Spring 2016

Brookfield, A. E. — Member, KU Geology's Career Panel

Brookfield, A. E. — Guest lecturer, KU Geology Hydro Field School, Practical Modeling

Butler, J. J., Jr. — Associate Editor, Ground Water

Butler, J. J., Jr. — Member, Search Committee for Chapman Conference Series Chair, American Geophysical Union

Butler, J. J., Jr. — Member, Kansas Water Resources Institute Administrative Council

Butler, J. J., Jr. — Member, Organizing Committee, NovCare 2017 (Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice), Dresden, Germany

Butler, J. J., Jr. — Panel member, United States Geological Survey/National Institutes for Water Resources National Competitive Grants Program

Butler, J. J., Jr. — Reviewer for the National Science Foundation, Water Resources Research, the Wisconsin Geological and Natural History Survey, the Ecohydrology Journal, and Geophysical Research Letters

Butler, J. J., Jr. — Promotion evaluator for King Fahd University of Petroleum and Minerals, Saudi Arabia

Butler, J. J., Jr. — Member, Erin Haacker Ph.D. committee, Michigan State University

Butler, J. J., Jr. — Member, Brooks Bailey M.S. committee, University of Kansas

Evans, C. S. — Developed geologic mapping section questions for 2016 Northeast Kansas Regional Science Olympiad

Franseen, E. K. — Evaluator, Faculty Teaching, Department of Geology, University of Kansas

Franseen, E. K. — Co-Organizer, KU Geology Career Symposium, Department of Geology, University of Kansas

Franseen, E. K. — Students Supervised: Diana Ortega-Ariza, Ph.D. (chair); Elson Core, Ph.D. (chair); Cesar Cuapio-Perez, Ph.D. (co-chair); Clay Robertson, MS (co-chair); Alyssa Flotron, MS (co-chair); Rafferty Sweeney, MS (co-chair); Tony Pugliano, MS (co-chair); Leila Joyce, Ph.D. (committee member); Adrienne Duarte, MS (committee member); Jason Rush, Ph.D. (committee member); Jennifer Lowry, MS (committee member); Thomas Neal, MS (committee member); Maritha Huber, MS (committee member); Erich DeZoeten, MS (committee member); Sean Fischer, MS (committee member); Alex Nolte, MS (committee member); Andrew Hollenbach, MS (committee member)

Franseen, E. K. — KICC (Kansas Interdisciplinary Carbonates Consortium) post-docs supervised: Hassan Eltom, University of Kansas (2014–present)

Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison

Franseen, E. K. — Chair, SEPM Officer Election Committee

Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee

Franseen, E. K. — Member, Review Committee for abstracts submitted to the 2017 AAPG Annual Meeting

Franseen, E. K. — External Advisor, Earth and Space Sciences Department, Columbus State University, Georgia

Franseen, E. K. — Scientific Committee Member, Dolomieu Conference on Carbonate Platforms and Dolomite, Selva di Val Gardena, Italy, October 4-7

Franseen, E. K. — Session Chair, Carbonate Platforms Through Space and Time, Dolomieu Conference on Carbonate Platforms and Dolomite, Selva di Val Gardena, Italy, October 4-7

Layzell, A. L. — Reviewer, Geological Society of America Mackin, Howard, and Morisawa student awards, Quaternary Geology and Geomorphology Division

Layzell, A. L. — Chair, Topical Session (Soils and Geology), Kansas Academy of Science Annual Meeting

Ludvigson, G. A. — Citationist, Geological Society of America Eugene and Caroline Shoemaker Public Service Award to Rex C. Buchanan, Annual Meeting of the Geological Society of America, Denver, Colorado, September 25–28

Ludvigson, G. A. — Topical Session Organizer, Topical Session T201 on Cenozoic Geology of the Great Plains and Western United States: Toward an Integrated Understanding of a Sedimentary, Paleocologic, and Geohydrologic System, Annual Meeting of the Geological Society of America, Denver, Colorado, September 25–28

Ludvigson, G. A. — Associate Editor, *Journal of Sedimentary Research*, Society for Sedimentary Geology

Miller, R. D. — Geophysical Technology, Inc. (GTI) Advisory Board

Miller, R. D. — SEG, Chair, China Operations Presidential Task Force

Miller, R. D. — SEG, Appointed, Global Inc., Board of Directors

Miller, R. D. — State of Kansas, Governor's Seismicity Task Force

Miller, R. D. — SEG Near Surface Presidential Task Force

Miller, R. D. — SEG, Inter-Society Presidential Task Force

Miller, R. D. — KU RGS Research Achievement Award Selection Committee

Miller, R. D. — SEG Technical Session Chair

Smith, J. J.—Panelist, National Science Foundation-Sedimentary Geology and Paleobiology Proposal Review Panel, Washington DC, April 18-20, 2016

Smith, J. J.—Member, SEPM Election Committee

Smith, J. J.—Co-Chair, James Golab, KU Ph.D. Dissertation, with Luis Gonzalez

Smith, J. J.—Co-Chair, Elijah Turner, KU Undergraduate Honors Thesis, with Andreas Möller

Smith, J. J.—Earth Science Day event, KU Natural History Museum, Lawrence, Kansas

Smith, J. J.—Peer Reviews: one manuscript for *Journal of Sedimentary Research*, one manuscript for *Palaeogeography, Palaeoclimatology, Palaeoecology*, and one manuscript for *PALAIOS*

Smith, J. J.—Rocks and fossils presentation to all third-grade classes at Eudora Elementary School, Eudora, KS, February 2016

Stewart, D. L. — Oil and gas data on the KGS website, log scanning and materials and resources in the Data Resources Library, presentation to University of Kansas Geology 535 class, September 13

Stewart, D. L. — Earth Day Celebration at the Topeka Zoo, April 23

Stewart, D. L. — KGS representative for the KU United Way Campaign, Lawrence, Kansas

Stover, S. G. — 2016, Vice Chair, Geology & Society Division, Geological Society of America

Stover, S. G. — Organizer and Moderator, Governor's Water Conference on the Future of Water in Kansas, November 14–15, 2016 Manhattan, Kansas

Stover, S. G. — Steering Committee, Women in Science STEM workshop, Washburn University

Stover, S. G. — Member, Geology Associates Advisory Committee, Geology Department, University of Kansas

Stover, S. G. — Geology & Society outstanding student presentation award judge and coordinator, GSA annual meeting, September 25–28, Denver, Colorado

Stover, S. G. — Mentor, GSA annual meeting, September 26, Denver, Colorado

Stover, S. G. — Subject Member Expert, Association of State Boards of Geology (ASBOG); evaluated tests for geologic licensing, August 4–5, November, Lawrence, Kansas

Stover, S. G. — Appointed Member, Water Vision Education Committee, Kansas Water Office

Stover, S. G. — GSA, Public Service Award Committee member, Geological Society of America

Stover, S. G. — USGS-GSA Congressional Science Fellow Selection Committee, Geological Society of America, March 4–7, Washington D.C.

Suchy, D. R. — Member and Chairman, Board of Directors, Rural Water District #5, Douglas County, Kansas

Suchy, D. R. — Member and Treasurer, Board of Directors, Public Wholesale Water Supply District #25, Douglas and Osage Counties, Kansas

## Grants

Establishing Kansas as a Data Provider to the National Groundwater Monitoring Network (NGWMN), B.B. Wilson, PI; U.S. Geological Survey, Grant G16AC00017, \$13,209.

Geologic Mapping in Kansas for FY16, PI Ludvigson, Co-PIs Johnson, Dunham, Mandel, Newell, Sawin, Smith, U.S. Geological Survey STATEMAP Program, 2016-2017, \$151,010.

Miller, R. D.: U.S. Army Corps of Engineers, Advancement in full wavefield seismic imaging: Modification to Active seismic imaging (ASI) system—Mission upgrade, 2016, \$791,175. (PI)

Miller, R. D.: U.S. Army Corps of Engineers, Advancing full wavefield seismic imaging for analysis, sensor concept development, analytical and field test evaluations, 2016, \$279,752. (PI)

National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Wichita Well Sample Library, and KGS Library and Archive, Kansas Geological Survey, Daniel R. Suchy, PI; administered through U. S. Geological Survey, 2016–2017, \$64,599.

## Computer Software

Victorine, J. R. — **PSI Tides Java Applet - Lunar and Solar Tidal Pressure**, developed to read the Wellington KGS 1-28 CSV pressure/temperature files, to analyze the pressure data and to understand the pressure changes. The computer program removes the solar & lunar tidal pressures from the filtered measured pressure data and plots the data as profile plot in time. The final pressure with the lunar and solar pressures removed are plotted with the barometric pressure times the barometric efficiency factor. The two curves have been shown to line up almost entirely across each weeks measurements. The program shows that you can account for the natural every day influences, lunar & solar pressure and the barometric pressure, and basically all that is left is fluid movement due to the formation.  
[http://www.kgs.ku.edu/PRS/Ozark/Software/PSI\\_Tides/index.html](http://www.kgs.ku.edu/PRS/Ozark/Software/PSI_Tides/index.html)

Victorine, J. R. — **Gridding & Mapping Animation Java Applets**, a gridding and mapping module that allows the user to plot brine data for the CO<sub>2</sub> Project Wells Map.

Victorine, J. R. — **CO<sub>2</sub> Brine Data Gridding & Mapping Field Animation**

The map area is limited to 14 wells surrounding the CO<sub>2</sub> injection well, Wellington KGS 2-32. A limited set of brine sample measurements were taken on a regular basis to monitor the progression of the CO<sub>2</sub> in the Mississippian formation around the injection well, i.e. PH, Conductivity, Temperature, Alkalinity, Total Dissolved Solids (TDS), etc. The data was saved to the KGS database and each measurement set (sample date) was given a lab group number so the animation program could generate individual images by date for the animation. [http://www.kgs.ku.edu/PRS/Ozark/Software/GRID\\_FIELD/index.html](http://www.kgs.ku.edu/PRS/Ozark/Software/GRID_FIELD/index.html)

Victorine, J. R. — **Fluid Level Gridding & Mapping Animation**

The map area is limited to 14 wells surrounding the CO<sub>2</sub> injection well, Wellington KGS 2-32. The fluid level was monitored on a regular basis to monitor the progression of the CO<sub>2</sub> in the Mississippian formation around the injection well, i.e. Oil Cut, Barrels of Oil per Day, Fluid Levels, Bottom Hole Pressure, etc. The data was saved to the KGS database and each measurement set (sample date) was given a fluid group number so the animation program could generate individual images by date for the animation.

[http://www.kgs.ku.edu/PRS/Ozark/Software/GRID\\_FLUID/index.html](http://www.kgs.ku.edu/PRS/Ozark/Software/GRID_FLUID/index.html)

## Website

- Placed 36 publications online
- Placed 44 open-file reports online
- Scanned more than 27,000 water well records
- Scanned more than 23,000 wireline logs
- Launched revised GeoKansas: A place to learn about Kansas geology

### Refereed Publications

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## Abstracts

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- Bidgoli, T. S., Holubnyak, Y., and FazelAlavi, M., 2015, Evaluating potential for induced seismicity through reservoir-geomechanical analysis of fluid injection in the Arbuckle saline aquifer, south-central Kansas: AAPG Datapages/Search and Discovery Article #90216.
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- Bohling, G. C., Liu, G., and Butler, J. J., Jr., 2015, Reassessing the MADE direct-push hydraulic conductivity data using an improved calibration procedure (abstract), Proceedings of NovCare 2015, p. 66.
- Brookfield, A., and Gnau, C., 2015, Simulating the effects of climate change and water management strategies on water availability in the Lower Republican River Basin: Presentation with abstract, AEG Kansas Hydrology Seminar, Topeka, Kansas, November 20.
- Brookfield, A., and Gnau, C., 2015, Simulating integrated water management for irrigation in the Lower Republican River Basin, Kansas: Presentation with abstract, IAH-CNC 2015, Waterloo, Ontario, Canada, October 27–30.
- Brookfield, A., Reboulet, E., and Wilson, B. B., 2015, Characterizing temporal variability at the groundwater/surface water interface: Presentation with abstract, NovCare 2015, Lawrence, Kansas, May 19–21.
- Brookfield, A., Reboulet, E., and Wilson, B., 2015, Variability of groundwater/surface water interactions along the Arkansas River: Presentation with abstract, Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 18–19.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2015, A new approach for assessing aquifer sustainability and the impact of proposed management actions, Abstract H21B-1366 presented at 2015 Fall Meeting, American Geophysical Union, December 15, San Francisco.
- Butler, J. J., Jr., Liu, G., Knobbe, S., Reboulet, E., Bohling, G. C., and Walsh, D. O., 2015, Recent advances in hydrogeologic characterization of the shallow subsurface using direct-push technology, Abstract 48281 presented at the AGU Chapman Conference: The MADE Challenge for Groundwater Transport in Highly Heterogeneous Aquifers: Insights from 30 Years of Modeling and Characterization at the Field Scale and Promising Future Directions, October 6, Valencia, Spain.
- Butler, J. J., Jr., and Reboulet, E., 2015, Aquifer characterization by continuous monitoring of groundwater levels: Examples from the High Plains aquifer (abstract), Proceedings of NovCare 2015, p. 59.
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- Guelard, J., Beaumont, V., Goyot, F., Deville, E., and Newell, K., 2015, Origin and fate of natural H<sub>2</sub> occurrences in a saline sedimentary aquifer: V. M. Goldschmidt Conference, Prague, Czech Republic, Program and Abstracts, v. 25, p. 237.
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- Holubnyak, Y., Bidgoli, T., and Watney, L., 2015, Evaluating risks of induced seismicity for CO<sub>2</sub> geological storage in the Arbuckle saline aquifer, south-central Kansas: 14th Annual Conference on Carbon Capture Utilization & Storage, 28 April–1 May 2015, Pittsburgh, Pennsylvania.
- Holubnyak, Y., FazelAlavi, M., Bidgoli, T., and Watney, L., 2015, Permeability estimations for Arbuckle Formation in south central and southwestern Kansas: AAPG Datapages/Search and Discovery Article #90216.
- Holubnyak, Y., FazelAlavi, M., Rush, J., and Watney, L., 2015, Pilot scale CO<sub>2</sub> EOR project in upper Mississippian formation at Wellington Field in southern Kansas: AAPG Mid-Continent Section Meeting, 4–6 October 2015, Tulsa, Oklahoma.
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- Holubnyak, Y., Watney, L., Bidgoli, T., Doveton, J., Fazelalavi, M., Hollenbach, J., Newell, K. D., and Birdie, T., 2015, Update on induced seismicity studies by the Kansas Geological Survey: Kansas Geological Society, Wichita, Kansas, December, 9, 2015.
- Holubnyak, Y., Watney, L., FazelAlavi, M., Rush, J., Bidgoli, T., Williams, E., and Gerlach, P., 2015, Modeling potential scenarios for induced seismicity in Arbuckle Group saline aquifer in southern Kansas: AAPG Mid-Continent Section Meeting, 4–6 October 2015, Tulsa, Oklahoma.
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- Holubnyak, Y., Williams, E., Watney, L., FazelAlavi, M., Rush, J., Bidgoli, T., and Gerlach, P., 2015, Regional CO<sub>2</sub> storage capacity estimations for Arbuckle saline aquifer in south central and southwestern Kansas: AAPG Annual Convention and Exhibition, 31 May–3 June 2015, Denver, Colorado.
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- Kraus, M. J., Woody, D., and 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.

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- Ludvigson, G. A., González, L. A., Joeckel, R. M., and Möller, A., 2015, Terrestrial carbonate records of Cretaceous (Aptian-Albian) carbon isotope excursions from deposits in North America and China: Geological Society of America, Abstracts with Programs, v. 47, no. 7, p. 173.
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- Mandel, R. D., Goldberg, P., Layzell, A. L., and Hass, J. R., 2015, Unraveling the site formation process at Finch (47JE0902): A multicomponent habitation in southeastern Wisconsin: 80<sup>th</sup> Annual Meeting of the Society for American Archaeology, San Francisco, California.
- Miller, R. D., Markiewicz, R. D., Ivanov, J., Peterie, S. L., and Xia, J., 2015, Seismic reflection for near-surface characterization of earthen dams and dikes: Upstream, downstream [Ext. Abs.]: Third International Conference on Engineering Geophysics, Al-Ain, UAE, p. 200–204.
- Miller, R., Peterie, S., Bidgoli, T., Fontana, J., Watney, W. L., and Buchanan, R., 2015, Elevated seismicity in southern Kansas: Symposium on the Application of Geophysics to Environmental and Engineering Problems 2015, p. 294–305.
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- Myers, M., Kamola, D., Ludvigson, G. A., and Walker, J. D., 2015, Implications for large-scale shoreline translation in the Turonian Western Interior Seaway: Evidence from the Codell Sandstone, Colorado: AAPG Annual Convention & Exhibition, Denver, Colorado, May 31–June 3, 2015, Official Program Abstracts CD, Abstract No. 2104488.
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- Ortega-Ariza, D., and Franseen, E. K., 2015, Regional upwelling as a major control in development of a Miocene heterozoan-dominated carbonate system in a tropical setting, Puerto Rico: AAPG Annual Meeting, Denver, Colorado.
- Ortega-Ariza, D., Franseen, E. K., Santos-Mercado, H., Ramirez-Martinez, W., and Core-Suarez, E., 2015, Strontium-isotope Stratigraphy for Oligocene-Miocene carbonate systems in Puerto Rico and Dominican Republic: Implications for Caribbean processes affecting depositional history: STRATI 2015, 2<sup>nd</sup> International Congress on Stratigraphy, Graz, Austria, July 19–23.
- Peterie, S. L., Miller, R. D., Intfen, J., Bidgoli, T., and Buchanan, R., 2015, A geologically based approach to mitigate potentially induced seismicity in Kansas: SEG Technical Program Expanded Abstracts 2015, p. 4,871–4,876.
- Platt, B. F., Smith, J. J., Ludvigson, G. A., and Thomasson, J. R., 2015, Making a mountain out of an anthill: Ancient hymenopteran 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, Minnesota, November 15–18, 2015.
- Pugliano, T. M., Goldstein, R. H., and Franseen, E. K., 2015, Fundamental reservoir units of heterozoan carbonates: Sedimentologic and reservoir properties of shoaling- and fining-upward cycles: AAPG Annual Meeting, Denver, Colorado.
- Ross, J. B., Ludvigson, G. A., González, L. A., Möller, A., and Walker, J. D., 2015, Stable isotope paleohydrology of pedogenic carbonates from the wedge-top depozone of the North American Sevier orogenic belt: Abstract Volume, International Workshop on Climate and Environmental Evolution in the Mesozoic

- Greenhouse World and 3<sup>rd</sup> IGCP 609 Workshop on Cretaceous Sea-Level Change, Nanjing University, Nanjing, China, p. 41–42.
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- Ross, J. B., Ludvigson, G. A., Möller, A., and Walker, D., 2015, Stable isotope paleohydrology of pedogenic carbonates in the Wayan and Blackleaf formations (mid-Cretaceous) of Idaho and Montana: Geological Society of America, Abstracts with Programs, v. 47, no. 7, p. 718.
- Schwab, D., Bidgoli, T., and Taylor, M., 2015, Characterizing CO<sub>2</sub> injection using subsurface structural mapping and stress field analysis, cGPS, and InSAR, Wellington Field, Sumner County, KS: Kansas Environmental Conference, August 17–20, Topeka, Kansas.
- Schwab, D. R., Bidgoli, T. S., Taylor, M. H., and Stearns, L. A., 2015, Characterizing the potential for fault reactivation related to CO<sub>2</sub> injection through subsurface structural mapping and stress field analysis, Wellington Field, Sumner County, KS: Abstract S13B-2822 presented at the 2015 fall meeting.
- Schwab, D. R., Bidgoli, T. S., Taylor, M. H., and Stearns, L. A., 2015, Determining the risk for induced seismicity associated with pilot-scale CO<sub>2</sub> injection at Wellington Field, Sumner County, Kansas: GSA Abstracts with Programs, v. 47, p. 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, v. 47, no. 7, p. 425.
- 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, Kansas, May 18–21, 2015.
- 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, v. 47, no. 7, p. 803.
- Stolz, D. J., Franseen, E. K., and Goldstein, R. H., 2015, Character of the Avalon Shale (Bone Spring Formation) of the Delaware Basin, West Texas and Southeast New Mexico: Effect of carbonate-rich sediment gravity flows: Unconventional Resources Technology Conference (URTeC), San Antonio, Texas, June 19–22.
- Stotler, R. L., Katz, B. S., Whittemore, D. O., Butler, J. J., Jr., 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.
- Sweeney, R. J., Goldstein, R. H., and Franseen, E. K., 2015, Platform controls on basin sedimentation: The role of paleotopography and relative sea level, La Rellana Platform and Agua Amarga Basin, Cabo de Gata, Southeast Spain: AAPG Annual Meeting, Denver, Colorado.
- Turner, E., Smith, J. J., Ludvigson, G. A., Layzell, A. L., and Moller, 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, v. 47, no. 7, p. 801.
- Whittemore, D. O., Butler, J. J., Jr., and Wilson, B. B., 2015, Prediction of water-level changes and water use in the High Plains aquifer from radar precipitation, Abstract H14B-04 presented at 2015 Fall Meeting, American Geophysical Union, December 14, San Francisco, California.

## Presentations

- Bidgoli, T. S., Earthquakes in Kansas: An update of research at the Kansas Geological Survey: Kansas Environmental Conference, August 20, Topeka, Kansas.
- Bidgoli, T. S., 2015, Low-temperature thermochronology of the Central Basin and Range: San Francisco State University Speaker Series, September 8, San Francisco, California (invited).
- Bidgoli, T. S., FazelAlavi, M., and Holubnyak, Y., 2015, Reservoir-geomechanical analysis of fluid injection in the Arbuckle saline aquifer, south-central Kansas: Joint Meeting of the Groundwater Protection Council, National Rural Water Association, and Interstate Oil and Gas Compact Commission, September 28, Oklahoma City, Oklahoma (invited).

- Bidgoli, T. S., Holubnyak, Y., and FazelAlavi, M., 2015, Evaluating potential for induced seismicity through reservoir-geomechanical analysis of fluid injection in the Arbuckle saline aquifer, south-central Kansas: AAPG Annual Convention and Exhibition, June 3, Denver, Colorado.
- Bidgoli, T. S., Schwab, D. R., Watney, W. L., and Gerlach, P., 2015, Subsurface faults and present-day stresses in southern Kansas: Implications for brine disposal and long-term storage of CO<sub>2</sub>: AAPG Midcontinent Section Meeting, October 4, Tulsa, Oklahoma.
- Brookfield, A. E., 2015, Groundwater/surface water interactions at Konza: Flow and thermal transport in N4D: Konza LTER Workshop, May 29, Manhattan, Kansas.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2015, Assessing the future of the High Plains aquifer, 36th Annual Oklahoma Governor's Water Conference and Research Symposium, December 2, Norman, Oklahoma.
- Butler, J. J., Jr., Liu, G., Knobbe, S., Reboulet, E., Bohling, G., and Walsh, D., 2015, Recent advances in characterization of the shallow subsurface using direct-push technology, 47th Annual Geotechnical Engineering Conference, November 12, University of Kansas, Lawrence, Kansas.
- Butler, J. J., Jr., Whittemore, D. O., and Wilson, B. B., 2015, Understanding Kansas groundwater declines, 2015 Ogallala Aquifer Program Annual Workshop, March 12, Manhattan, Kansas.
- Dunham, J. W., 2015, Surficial geology of Dickinson County, Kansas: Map gallery (poster) presentation, Esri International User Conference, July 20, San Diego, California.
- Dunham, J. W., 2015, Surficial geology of Pawnee County, Kansas: Map gallery (poster) presentation, Esri International User Conference, July 20, San Diego, California.
- Franseen, E. K., Goldstein, R. H., Johnson, C. L., and Byrnes, A., 2015, Stratigraphic architecture and reservoir character for Upper Miocene deep-water heterozoan carbonates, SE Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. Extended abstract.
- Holubnyak, Y., 2015, Reservoir modeling update on small-scale CO<sub>2</sub> EOR at Wellington Field, KS: KIOGA, Wichita, Kansas.
- Holubnyak, Y., Watney, L., FazelAlavi, M., Rush, J., Bidgoli, T., Williams, E., Gerlach, P., and Datta, S., 2015, Regional assessment of reservoir properties and waste disposal modeling for the Arbuckle Group in South-Central and Southwestern Kansas: Invited speaker at AAPG Geosciences Technology Workshop (GTW), August 11–12, Golden, Colorado.
- Layzell, A. L., 2015, Historic drought variability in Kansas: Kansas Water Symposium, March 7, Dyck Arboretum of the Plains.
- Ludvigson, G. A., 2015, Reflections on Cretaceous terrestrial paleoclimatology from the September 2015 IGCP 609 Workshop in Nanjing, China: Department of Geology, University of Kansas, Lawrence, Kansas, September 24.
- Ludvigson, G. A., 2015, Building a 3D model of sediments in the High Plains aquifer: It's about time: Red Hot Research, The Commons, Spooner Hall, University of Kansas, August 28.
- Miller, R. D., 2015, ICEG, Al Ain, UAE, Technical Keynote, invited presentation, October.
- Miller, R. D., 2015, NovCare, Lawrence, Kansas, Technical Keynote, invited presentation, May.
- Miller, R. D., 2015, Kansas Earthquakes and State Network, Kansas House Energy, Utilities, and Telecomm Committee.
- Miller, R. D., 2015, GSAC Presentation, Induced seismicity, Kansas Geological Survey, Lawrence, Kansas, November 13.
- Miller, R. D., 2015, KDHE ONEOK Meeting, Topeka, Kansas, November 10.
- Miller, R. D., 2015, GTI Board Meeting, Houston, Texas, November 2.
- Miller, R. D., 2015, Meeting, Harper County, Earthquake in Harper County, Kansas, September 8.
- Miller, R. D., 2015, GSAC Presentation, Kansas Geological Survey, Lawrence, Kansas, July 31.
- Miller, R. D., 2015, KGS Seismic Testimony to the Kansas Legislature, Topeka, Kansas, January 26.
- Miller, R. D., Ivanov, J., Peterie, S. L., Morton, S. L. C., Livers, A., and Wang, Y., 2015, Cutting the seismic wavefield deck of cards for optimized characterizations: Technical Keynote—Invited presentation at the 2015 NovCare International Conference (Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice), University of Kansas, Lawrence, Kansas, May 20.
- Ortega-Ariza, D., Franseen, E. K., Santos-Mercado, H., Ramirez-Martinez, W., and Core, E., 2015, Strontium-isotope stratigraphy for Oligocene-Miocene carbonate systems in Puerto Rico and the Dominican Republic: Implications for Caribbean processes affecting depositional history: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. Extended abstract.



- Pugliano, T., Goldstein, R. H., and Franseen, E. K., 2015, Fundamental units of heterozoan carbonates: Sedimentologic and reservoir properties of shoaling- and fining-upward cycles: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. Extended abstract.
- Smith, J. J., 2015, Chronostratigraphic assessment of enigmatic red beds at Point of Rocks, Cimarron National Grassland, Kansas: U-Pb age constraints from detrital zircons: Kansas Geological Survey Advisory Committee meeting, Lawrence, Kansas.
- Smith, J. J., 2015, Lessons from the living: Using modern organisms to answer paleontological questions: Kansas-Missouri Paleontological Society meeting, January 25.
- Stewart, D., Suchy, D. R., and Reboulet, E., 2015, WWC-5 forms and KOLAR: Reporting latitude, longitude and datum: Kansas Ground Water Association Convention, January 23, Hutchinson, Kansas.
- Stover, S. G., 2015, Kansas Water Plan: Kansas Environmental Women Network panel, January 20, Lawrence, Kansas.
- Stover, S. G., 2015, Kansas water: Where is it? Who uses it? And why does it matter anyway? Basehor-Linwood High School, January 27, Basehor, Kansas.
- Stover, S. G., 2015, Kansas geology, water and physiography: Kansas Master Naturalists Class, KSU Research & Extension, April 8, Olathe, Kansas.
- Stover, S. G., 2015, Kansas water: Conditions, problems, possible solutions: Geography class, University of Kansas, April 16, Lawrence, Kansas.
- Stover, S. G., 2015, What's the matter with Kansas water? Association of Earth Science Editors, October 8, Lawrence, Kansas.
- Stover, S. G., 2015, Kansas water management: Water Ideate, October 24, Anschutz Library, University of Kansas, Lawrence, Kansas.
- Watney, L., and Holubnyak, Y., 2015, Update on induced seismicity studies by the Kansas Geological Survey: Kansas Geological Society, December 9, Wichita, Kansas.
- Wilson, B. B., 2015, Kansas Agriculture and Rural Leadership (KARL), Greensburg.
- Wilson, B. B., 2015, KSU Extension Service, Cover Your Acres Conference, Oberlin.
- Wilson, B. B., 2015, KU GEOG558 (Intermediate GIS), Lawrence.
- Wilson, B. B., 2015, Northwest Kansas GMD4 Annual Meeting, Colby.
- Wilson, B. B., 2015, Central Plains Irrigation Conference, Colby.
- Wilson, B. B., 2015, USFWS Darter Species Assessment Workshop, Manhattan.
- Wilson, B. B., 2015, Southwest Kansas GMD3 Annual Meeting, Liberal.
- Wilson, B. B., 2015, KRWA Conference, Booth display and presentation, Wichita.
- Wilson, B. B., 2015, KWEA and KsAWWA Joint Annual Conference, Topeka.
- Wilson, B. B., 2015, El Dorado Rotary Club, El Dorado.
- Wilson, B. B., 2015, ACWI SOGW meeting (remote), Reston, Virginia.
- Wilson, B. B., 2015, Pioneer Electric Cooperative, Ulysses.
- Wilson, B. B., 2015, Western Kansas GMD#1 Board (x2), Scott City.
- Wilson, B. B., 2015, Radio (WIBW) and TV (KSN Garden City) interviews.

## **Awards & Honors**

- Bidgoli, T. S. — American Association of Petroleum Geologists, Award of Excellence, Top 10 Oral Presentation, 2015
- Dunham, J. W. — GIS Professional (GISP) certification, GIS Certification Institute (GISCI)
- Franseen, E. K. — AAPG 2015 Award of Excellence “Top 10” Poster Presentation, AAPG/SEPM Annual Convention and Exhibition, Denver, Colorado
- Franseen, E. K. — Featured article: Research on unconventional reservoirs was highlighted in an article in the AAPG Explorer, July 2015
- Franseen, E. K. — SEPM 2014–2015 Past President of SEPM, the International Society for Sedimentary Geology
- Miller, R. D. — Selected Top 31 paper at SEG annual meeting
- Miller, R. D. — Elected, Treasurer, SEG Global Inc., Board of Directors
- Miller, R. D. — Merriam Research Award, KGS
- Stover, S. G. — Geological Society of America Fellow
- Stover, S. G. — Geological Society of America, Geology and Public Policy Committee Chair (through June 2015); Past Chair (until June 2016)
- Stover, S. G. — Geological Society of America, Geology and Society Division, Vice Chair

## **Internal Service**

Bidgoli, T. S. — Member, Merriam Research Award Selection Committee  
Bidgoli, T. S. — Volunteer, KGS Earth Day Booth  
Bidgoli, T. S. — Supervisor, KGS Energy Research Section interns Minh C. Nguyen and Christa M. Jackson  
Butler, J. J., Jr. — Co-Chair, KGS Director Search Committee  
Brookfield, A. E. — KU Center for Science and Research Support Representative  
Brookfield, A. E. — Member, GIS student hourly search Committee  
Brookfield, A. E. — Performed six agency reviews  
Brookfield, A. E. — Member, Merriam Research Award Committee  
Dunham, J. W. — Chair, search committee, GIS Support-Cartographic Services position  
Franseen, E. K. — Member, KGS Stratigraphic Nomenclature Committee  
Franseen, E. K. — Member, Editorial Board for Current Research in Earth Sciences Bulletin, Kansas Geological Survey  
Layzell, A. L. — Member, KGS Stratigraphic Nomenclature Committee  
Ludvigson, G. A. — Member, KGS Stratigraphic Nomenclature Committee  
Ludvigson, G. A. — KGS STATEMAP Program Coordinator  
Ludvigson, G. A. — Chair, KGS Promotion & Review Committee  
Ludvigson, G. A. — Co-Chair, KGS Director Search Committee  
Ludvigson, G. A. — Member, Committee on Promotions for Intermediate Review by the KU Office of Research  
Ludvigson, G. A. — Member, search committee for new lab manager for the Keck Paleoenvironmental & Environmental Stable Isotope Laboratory (KPESIL)  
Ludvigson, G. A. — Research hours faculty supervisor for KU graduate students Jeff Ross and Holly Field  
Ludvigson, G. A. — Member, two Ph.D. thesis committees (Tony Layzell and Julianne Emry), University of Kansas  
Ludvigson, G. A. — Member, six MS thesis committees (Jeff Ross, Holly Field, Brittany Hendrix, Thomas Neal, Brian Sitek, and Jason Hallman), University of Kansas  
Sawin, R. S. — Chair, KGS Stratigraphic Nomenclature Committee  
Smith, J. J. — Member, Kansas Geological Mapping Advisory Committee (KGMAC)  
Smith, J. J. — Performed eight agency reviews on potential environmental concerns for proposed construction and improvement projects in Kansas as requested by federal, state, and private agencies as part of their environmental due diligence requirements (supervised by Dan Suchy)  
Smith, J. J. — Member, KGS Outstanding Support Staff Recognition Award Committee  
Stover, S. G., Member, Kansas Geologic Mapping Advisory Committee  
Tollefson, J. M. — Ex officio member, KGS Stratigraphic Nomenclature Committee

## **External Service**

Bidgoli, T. S. — Member, Kansas Induced Seismicity Taskforce  
Bidgoli, T. S. — Member, American Association of Petroleum Geologists, Grant-In-Aid Committee  
Bidgoli, T. S. — Member, American Association of Petroleum Geologists, Education Committee  
Bidgoli, T. S. — Co-chair, M.S. thesis committees for two students, Drew R. Schwab and James P. Tyrrell  
Bidgoli, T. S. — Co-supervisor, Visiting Scholar (China University of Geosciences) Wei Wang  
Bidgoli, T. S. — Instructor, Special Studies in Geology: (U-Th)/He Thermochronology  
Bidgoli, T. S. — Co-Instructor, Advanced Topics in Geology: Induced Seismicity in Kansas  
Bidgoli, T. S. — Co-Instructor, Geology for Petroleum Engineers  
Buchanan, R. C. — Host co-chair, 49<sup>th</sup> annual meeting of the Association of Earth Science Editors, October 6–10, Lawrence, Kansas  
Butler, J. J., Jr. — Member, Ph.D. committee, Erin Haacker, Department of Geological Sciences, Michigan State University, 2013–present  
Butler, J. J., Jr. — Member, Ph.D. committee, Jose Solis, Department of Civil, Environmental and Architectural Engineering, University of Colorado, 2012–present  
Butler, J. J., Jr. — Workshop instructor, Direct-Push Methods for High-Resolution Characterization of Subsurface Properties: From Theory to the Field, Consortium of Universities for the Advancement of the Hydrologic Sciences, Inc. (CUAHSI), September 28–October 1, Lawrence, Kansas

Butler, J. J., Jr. — Workshop instructor, Practical Guidelines to Get More from Your Pumping Test Data (Internet seminar), Midwest Geosciences Group, January 22

Butler, J. J., Jr. — Slug Tests for Site Characterization: The Six Key Steps (Internet seminar), Midwest Geosciences Group, January 15

Butler, J. J., Jr. — President (July 2013 to April 2015), International Commission on Ground Water, International Association of Hydrological Sciences

Butler, J. J., Jr. — Appointed Member, Kansas Water Resources Institute Administrative Council, 2011–present

Butler, J. J., Jr. — Associate Editor, Ground Water, 2002–present

Butler, J. J., Jr., Instructor, Geology 851, Physical and Transport Hydrology, 2011–present

Brookfield, A. E. — Newsletter editor, Hydrogeology Division of Geological Society of America

Brookfield, A. E. — Associate editor, Ground Water

Brookfield, A. E. — Courtesy assistant professor, University of Kansas Geology Department

Brookfield, A. E. — WRAPS representative

Brookfield, A. E. — Professional Reviews: two manuscripts, Water Resources Research; three manuscripts, Ground Water; two manuscripts, Journal of Hydrologic Engineering; two manuscripts, Advances in Water Resources; one manuscript, Mathematical Geosciences; one manuscript, Hydrogeology Journal

Brookfield, A. E. — Member, one Ph.D. and two MS committees (University of Kansas) and one MS committee (McGill)

Brookfield, A. E. — Instructor, Geology 591/791: Differential Equations for Hydrology, Spring 2015

Evans, C. S. — Earth Day Celebration and Water Festival, Lawrence, Kansas

Franseen, E. K. — Organizer and Convener, 2015 Kansas Interdisciplinary Carbonates Consortium (KICC) Annual Meeting

Franseen, E. K. — Co-instructor for AAPG Education Program: "Controls on Porosity Types and Distribution in Carbonate Reservoirs," June 8–13, Almeria, Spain

Franseen, E. K. — Co-leader for field trip to look at Lansing–Kansas City strata for Worldwide Petroleum Services and Flatiron Oil geoscientists, November 8

Franseen, E. K. — Past President, SEPM (Society of Sedimentary Research)

Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison

Franseen, E. K. — Chair, SEPM Twenhofel Medal Award Committee

Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee

Franseen, E. K. — Member, Promotion and Tenure Committee, Department of Geology, University of Kansas

Franseen, E. K. — Member, Graduate Students Admissions Committee, Department of Geology, University of Kansas

Franseen, E. K. — Evaluator, Faculty Teaching, Department of Geology, University of Kansas

Franseen, E. K. — Students Supervised: Diana Ortega-Ariza, Ph.D. (chair); Elson Core, Ph.D. (chair); Alyssa Flotron, MS (co-chair); Rafferty Sweeney (co-chair); Karen Ohmes-Lechtenburg, MS (co-chair); Tony Pugliano, MS (co-chair); Leila Joyce, Ph.D. (committee member); Adrienne Duarte, MS (committee member); Jason Rush, Ph.D. (committee member); Jennifer Lowry, MS (committee member); Thomas Neal, MS (committee member); Maritha Huber, MS (committee member); Sean Fischer, MS (committee member); Alex Nolte, MS (committee member); Erich DeZoeten, MS (committee member)

Franseen, E. K. — Post-docs supervised: Hassan Eltom, Kansas Interdisciplinary Carbonates Consortium (KICC), University of Kansas (2014–present)

Holubnyak, Y. — Member, Kansas Induced Seismicity State Task Force

Holubnyak, Y. — EPA Class VI Well permit application

Ludvigson, G. A. — Associate editor, Journal of Sedimentary Research. Coordinated peer reviews of four manuscripts

Ludvigson, G. A. — External reviewer for the promotion of Associate Professor André Desrochers to Full Professor, University of Ottawa, Ottawa, Ontario, Canada, November 2015

Ludvigson, G. A. — Peer review of two manuscripts for Palaeogeography, Palaeoclimatology, Palaeoecology, one manuscript for Sedimentology, one manuscript for Cretaceous Research, and two manuscripts for Nature Geoscience

Ludvigson, G. A. — Peer review of proposal for the U.S. National Science Foundation

Miller, R. D. — Geophysical Technology, Inc. (GTI) Advisory Board

Miller, R. D. — ICEG, Co-Chair, Scientific and Technical Program Committee, Al Ain, UAE, November

Miller, R. D. — SEG, Chair, China Operations Presidential Task Force

Miller, R. D. — SEG, Appointed, Global Inc., Board of Directors  
 Miller, R. D. — State of Kansas, Governor's Seismicity Task Force  
 Miller, R. D. — SEG Near Surface Presidential Task Force  
 Miller, R. D. — SEG, Inter-Society Presidential Task Force  
 Miller, R. D. — KU RGS Research Achievement Award Selection Committee  
 Miller, R. D. — ASTM Geophysics Subcommittee on Seismic Standards  
 Miller, R. D. — Geophysical Society of Kansas, Editor  
 Miller, R. D. — SEG Technical Session Chair  
 Smith, J. J. — Earth Science Day event, KU Natural History Museum, Lawrence, Kansas  
 Smith, J. J. — University of Kansas graduate thesis committee service: James Golab, Ph.D. candidate co-advised with Luis Gonzalez  
 Smith, J. J. — Technical assistance and training to KU students: Elijah Turner, Brian Sitek, Tony Pugliano, Abdul Wahab  
 Stewart, D. L. — Oil and gas data on the KGS website, log scanning and materials and resources in the Data Resources Library, presentation to University of Kansas Geology 535 class  
 Stewart, D. L. — Earth Day Celebration and Water Festival, Lawrence, Kansas  
 Stewart, D. L. — KGS representative for the KU United Way Campaign, Lawrence, Kansas  
 Stover, S. G. — Chair, GSA, Congressional Science Fellow Selection Committee  
 Stover, S. G. — Member, GSA, Public Service Award Committee  
 Stover, S. G. — Steering Committee, Women In Science Day, Washburn University  
 Stover, S. G. — Energy Expo planning committee, Kansas Corporation Commission  
 Stover, S. G. — Member, Geology Associates Advisory Committee, University of Kansas  
 Stover, S. G. — Earth Day Celebration, April 11, Lawrence, Kansas  
 Stover, S. G. — Earth Science Week, Natural History Museum, University of Kansas, October 17, Lawrence, Kansas  
 Stover, S. G. — Organizer and Moderator, Governor's Water Conference on the Future of Water in Kansas, November 18–19, Manhattan, Kansas  
 Stover, S. G. — Information Fair for new faculty, University of Kansas, December 7, Lawrence, Kansas  
 Suchy, D. R. — Research Senator, Unclassified Professional Staff Senate, University of Kansas (2012–April 2015)  
 Suchy, D. R. — Member and Vice Chairman, Board of Directors, Rural Water District #5, Douglas County, Kansas (2007–present)  
 Suchy, D. R. — Member and Treasurer, Board of Directors, Public Wholesale Water Supply District #25, Douglas and Osage Counties, Kansas (2007–present)  
 Tollefson, J. M. — Host co-chair, 49<sup>th</sup> annual meeting of the Association of Earth Science Editors, October 6–10, Lawrence, Kansas

## Grants

National Geological and Geophysical Data Preservation Program Grant to Data Resources Library and Wichita Well Sample Library, Kansas Geological Survey, D. R. Suchy, PI; administered through U. S. Geological Survey, 2015–2016, \$50,474.  
 The MADE challenge for groundwater transport in highly heterogeneous aquifers: Insights from 30 years of modeling and characterization at the field scale and promising future directions, J. J. Butler, Jr., co-PI; National Science Foundation, 2015, \$45,120.  
 High Plains aquifer calibration monitoring well program, J. J. Butler, Jr., PI; Kansas Water Office, 2015–2016, \$90,000.  
 Estimating mobile-immobile mass transfer parameters using direct push tools, J. J. Butler, Jr., co-PI; Strategic Environmental Research and Development Program (SERDP), 2015–2018, \$171,520.  
 Developing and promoting water-, nutrient-, and climate-smart technologies to help agricultural systems adapt to climate and societal changes, J. J. Butler, Jr., PI (Kansas component); National Institute of Food and Agriculture, U.S. Dept. of Agriculture, 2015–2020, \$235,481.  
 Miller, R. D.: S.S. Papadopoulos & Associates, Inc., Feasibility of high-resolution seismic reflection to delineate the hydrostratigraphy, geologic structure, and presence of free gas in Quaternary and Tertiary units underlying Eminence Dome in SE Mississippi, 2015, \$98,386. (PI)  
 Miller, R. D.: U.S. Army Corps of Engineers, Advancing full wavefield seismic imaging for analysis, sensor concept development, analytical and field test evaluations, 2015, \$1,173,549. (PI)

- Miller, R. D.: OneOK Partners, Establishing a Kansas temporary network compatible seismograph station near Bushton in Rice County, Kansas, 2015, \$15,774. (PI)
- Miller, R. D.: Kansas Department of Transportation, Seismic characterization of abandoned mine overburden along U.S. 69 Hwy north of the Kansas/Oklahoma state line, 2015, \$35,357. (PI)

### **Computer Software**

- Victorine, J. R. — PS Wave Java Applet (creates velocity model for predicting shallow earthquakes under the Wellington Seismic Array). <http://www.kgs.ku.edu/PRS/Ozark/Software/PSWave/index.html>
- Victorine, J. R. — LoQuake Applet (computes the location of shallow seismic event using 3 sensors to triangulate the position of the event). <http://www.kgs.ku.edu/PRS/Ozark/Software/LoQuake/index.html>
- Victorine, J. R. — 2D Plot of Kansas Earthquakes by Magnitude versus Date Java Applet (two-dimensional plot of earthquake magnitudes versus dates for Kansas Earthquakes). [http://www.kgs.ku.edu/PRS/Ozark/Software/KS\\_Earthquake\\_2DPlot/index.html](http://www.kgs.ku.edu/PRS/Ozark/Software/KS_Earthquake_2DPlot/index.html)
- Victorine, J. R. — 3D Plot Kansas Earthquakes by Location Java Applet (two- and three- dimensional plots of Kansas earthquakes in Sumner and Harper counties). [http://www.kgs.ku.edu/PRS/Ozark/Software/KS\\_Earthquake\\_3DPlot/index.html](http://www.kgs.ku.edu/PRS/Ozark/Software/KS_Earthquake_3DPlot/index.html)
- Victorine, J. R. — 3D Plot Animation Kansas Earthquakes by Location Java Applet (animated 2 and 3 dimensional plots of Kansas earthquakes in Sumner and Harper counties). [http://www.kgs.ku.edu/PRS/Ozark/Software/KS\\_Earthquake\\_3DMovie/index.html](http://www.kgs.ku.edu/PRS/Ozark/Software/KS_Earthquake_3DMovie/index.html)
- Victorine, J. R. — Gridding & Mapping Brine Data Java Applet (allows the user to plot brine data for the CO<sub>2</sub> project wells map). <http://www.kgs.ku.edu/PRS/Ozark/Software/GRID/index.html>
- Victorine, J. R. — Principal Component Analysis Brine Data Java Applet (allows the user to perform a principal component analysis on CO<sub>2</sub> brine data and to present the covariance, eigenvalues, eigenvectors matrices and plots to illustrate the data). <http://www.kgs.ku.edu/PRS/Ozark/Software/PC/index.html>

### **Website**

- Placed 32 publications online
- Placed 48 open-file reports online
- Scanned 23,338 water well records
- Scanned 18,785 wireline logs

### Refereed Publications

- Andrew, J. E., Rittase, W. M., Monastero, F. M., Bidgoli, T., and Walker, J. D., 2014, Geologic map of the northern Lava Mountains and Summit Range, San Bernardino County, California: Geological Society of America Digital Map and Chart Series 19. doi:10.1130/2014.DMCH019
- Benson, G. S., Franseen, E. K., Goldstein, R. H., and Li, Z., 2014, Workflows for incorporating stratigraphic and diagenetic relationships into a reservoir-analogue model from outcrops of Miocene carbonates in southeastern Spain: *Petroleum Geoscience*, v. 20, p. 50–78.
- Butler, J. J., Jr., Bohling, G. C., Brookfield, A. E., Liu, G., Whittemore, D. O., and Wilson, B. B., 2014, Importance of a sound hydrologic foundation for assessing the future of the High Plains aquifer in Kansas: *Proceedings of the National Academy of Sciences of the United States of America*, v. 111, no. 5, E531. doi:10.1073/pnas.1322176111
- Dogan, M., Van Dam, R. L., Liu, G., Meerschaert, M. M., Butler J. J., Jr., Bohling, G. C., Benson, D. A., and Hyndman D. W., 2014, Predicting flow and transport in highly heterogeneous alluvial aquifers: *Geophysical Research Letters*, v. 41, p. 7,560–7,565. doi:10.1002/2014GL061800
- Doveton, J., and Watney, W. L., 2014, Textural and pore size analysis of carbonates from integrated core and nuclear magnetic resonance logging: An Arbuckle study: *Interpretation*, v. 3, p. SA77–SA89.
- Dvoretzky, R. A., Goldstein, R. H., Franseen, E. K., and Byrnes, A., 2014, Reservoir-analog modeling of focused-flow and dispersed-flow deepwater carbonates: Miocene Agua Amarga Basin, Southeast Spain; *in*, SEPM Special Publication 105, Deposits, Architecture and Controls of Carbonate Margin, Slope, and Basin Systems, p. 334–358.
- Fazelalavi, M., Fazelalavi, M., and Fazelalavi, M., 2014, Determination of reservoir permeability based on irreducible water saturation and porosity from log data and FZI (Flow Zone Indicator) from Core Data. Control number: 13IPTC-P-1156-IPTC, 7th International Petroleum Technology Conference (IPTC) (patent pending).
- Händel, F., Liu, G., Dietrich, P., Liedl, R., and Butler, J. J., Jr., 2014, Numerical assessment of ASR recharge using small-diameter wells and surface basins: *Journal of Hydrology*, v. 517, p. 54–63. doi:10.1016/j.jhydrol.2014.05.003
- Heidari, A., González, L. A., Mahboubi, A., Moussavi-Harami, R., Ludvigson, G. A., and Chakrapani, G. J., 2014, Diagenetic model of carbonate rocks of Guri Member of Mishan Formation (Lower to Middle Miocene) SE Zagros Basin, Iran: *Journal of the Geological Society of India*, v. 84, p. 87–104.
- Heidari, A., Shokri, N., Ghasemi-Nejad, E., González, L., and Ludvigson, G., 2014, Application of petrography, major and trace elements, carbon and oxygen isotope geochemistry to reconstruction of diagenesis of carbonate rocks of the Sanganeh Formation (Lower Cretaceous), East Kopet-Dagh Basin, NE Iran: *Arabian Journal of Geoscience*. doi:10.1007/s12517-014-1548-y
- Hembree, D. I., Platt, B. F., and Smith, J. J., (eds.), 2014, Experimental approaches to understanding fossil organisms: Lessons from the living; *in*, *Topics in Geobiology*, v. 41: New York, Springer, 420 p.
- Holubnyak, Y., Watney, W. Rush, J., and Fazelalavi, F., 2014, Reservoir engineering aspects of pilot scale CO<sub>2</sub> EOR project in Upper Mississippian Formation at Wellington Field in Southern Kansas: *Energy Procedia* 00 (2013) 000–000, 9 p.
- Ivanov, J., Tsoflias, G., Miller, R. D., and Peterie, S. L., 2014, Near-surface Qs and Qp estimations from Rayleigh waves using multi-channel analysis of surface waves (MASW) at an Arctic ice-sheet site [Exp. Abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Denver, Colorado, p. 2,006–2,012.
- Judy, B., and Miller, R. D., 2014, Utility of high-resolution seismic reflection surveying to contrast dynamic and static natural dissolution within the Hutchinson Salt Member [Exp. Abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Denver, Colorado, p. 2,060–2,065.
- Layzell, A. L., and Mandel, R. D., 2014. An assessment of the erodibility of Holocene lithounits comprising streambanks in northeastern Kansas, USA: *Geomorphology* 213, p. 116–127.
- Li, Z., Goldstein, R. H., and Franseen, E. K., 2014, Climate, duration, and mineralogy controls on meteoric diagenesis: *Interpretation*, v. 2, p SF111–SF123.
- Li, Z., Goldstein, R. H., and Franseen, E. K., 2014, Geochemical record of fluid flow and dolomitization of carbonate platforms: Ascending freshwater-mesohaline mixing, Miocene of Spain; *in*, *Fundamental*

- Controls on Fluid Flow in Carbonates, S. M. Agar and S. Geiger, eds.: Geological Society, London, Special Publications, 406, First published May 13, 2014.
- Meixner, T., Manning, A. H., Stonestrom, D., Ajami, H., Allen, D. M., Blasch, K., Brookfield, A., Castro, C. L., Clark, J. F., Gochis, D., Flint, A., Neff, K., Niraula, R., Rodell, M., Scanlon, B., Singha, K., and Walvoord, M., Implications of projected climate change for groundwater recharge in the western United States. Submitted for publication in *Environmental Research Letters*.
- Merriam, D. F. and Newell, K. D., 2014, The producing oil mine in Kansas: *Transactions of the Kansas Academy of Science*, v. 117, no. 1–2, p. 88–90.
- Miller, R. D., Ivanov, J., Sloan, S. D., Peterie, S. L., and Bailey, B., 2014, Near surface seismic imaging: One size does not fit all [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Denver, Colorado, p. 183–187.
- Miller, R. D., and Wang, Y., 2014, Suppressing near-surface RTM artifact using a band-selecting imaging condition [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Denver, Colorado, p. 2,055–2,059.
- Newell, K. D., Watney, W. L., and Gerlach, P., 2014, An overview and preliminary economic assessment of horizontal wells drilled in the Mississippian Limestone Play in Kansas, 2010–2012: *Kansas Geological Society, Bulletin*, v. 89, no. 1, p. 10–15.
- Peterie, S. L., Bennett, B., Miller, R. D., and Morton, S. L. C., 2014, Downhole geophone modification for horizontal signal optimization [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Denver, Colorado, p. 5,102–5,106.
- Ramaker, E. M., Goldstein, R. H., Franseen, E. K., and Watney, W. L., 2014, What controls porosity in cherty fine-grained carbonate reservoir rocks? Impact of stratigraphy, unconformities, structural setting and hydrothermal fluid flow: Mississippian, southeast Kansas; *in*, *Fundamental Controls on Flow in Carbonates*, S. M. Agar, S. Geiger, and J. Lamarche, eds.: Geological Society of London: Special Publications, V. 406, p. 179–208.
- Schwenk, J. T., Sloan, S. D., Miller, R. D., and Ivanov, J., 2014, Correlation of the backscatter analysis of surface waves method (BASW) for anomaly detection [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Denver, Colorado, p. 2,029–2,035.
- Suarez, C. A., González, L. A., Ludvigson, G. A., Kirkland, J. I., Cifelli, R. L., and Kohn, M. J., 2014, Multi-taxa isotopic investigation of paleohydrology in the Lower Cretaceous Cedar Mountain Formation, eastern Utah: Deciphering effects of the Nevadaplano plateau on regional climate: *Journal of Sedimentary Research*, v. 84, p. 975–987. <http://dx.doi.org/10.2110/jsr.2014.76>
- Walker, J. D., Bidgoli, T. S., Diderickson, B. D., Stockli, D. F., and Andrew, J. F., 2014, Middle Miocene to recent exhumation of the Slate Range, eastern California, and implications for the timing of extension and the transition to transtension: *Geosphere*. doi:10.1130/GES00947.1
- Whittemore, D. O., Macfarlane, P. A., and Wilson, B. B., 2014, Water resources of the Dakota aquifer in Kansas: *Kansas Geological Survey, Bulletin* 260, 60 p.
- 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*, v. 29, p. 266–276.

### **Nonrefereed Publications**

- Bidgoli, T. S., 2014, Low-temperature thermochronometric constraints on Cenozoic intraplate deformation in the central Basin and Range [Ph.D. dissertation]: Lawrence, Kansas, University of Kansas, 225 p.
- Birdie, T., Raney, J., et al., 2014, Berexco, LLC, UIC Class 6 Permit Application: Wellington oil field small scale carbon capture and storage project, submitted to US EPA, May 23, 416 p.
- Buchanan, R. C., Newell, K. D., Evans, C. S., and Miller, R. D., 2014, Induced seismicity — The potential for triggered earthquakes in Kansas: *Kansas Geological Survey, Public Information Circular* 36, 6 p.
- Butler, J. J., Jr., Whittemore, D. O., Reboulet, E., Stotler, R. L., Bohling, G. C., Olson, J. C., and Wilson, B. B., 2014, High Plains aquifer index well program: 2013 annual report: *Kansas Geological Survey Open-File Report* 2014-1, 90 p.
- Lyle, S. A. and Evans, C. S., eds., 2014, Central Kansas and the Arkansas River valley — Surface water, wetlands, and petroleum industries, *Kansas Field Conference, field guide*: *Kansas Geological Survey, Open-File Report* 2014-4, 76 p.



- Mandel, R. D., and Newell, K. D., 2014, Preliminary surficial geology of the Miami County portion of the Lane Quadrangle, Kansas: Kansas Geological Survey, Open-File Report no. 2014-10, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2014-10\\_Lane.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2014-10_Lane.pdf)
- Mandel, R. D., and Newell, K. D., 2014, Preliminary surficial geology of the Miami County portion of the Osawatimie Quadrangle, Kansas Publication: Kansas Geological Survey, Open-File Report no. 2014-11, 1 sheet, scale 1:24,000. [http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS\\_OFR2014-11\\_Osawatimie.pdf](http://www.kgs.ku.edu/Publications/OFR/GeoMaps/KsGS_OFR2014-11_Osawatimie.pdf)
- Newell, K. D., and Stalder, K. R., 2014, Analysis of Marmaton and Cherokee Group coal and shale samples for gas content in four Petron Resources Core Holes in Bates and Cass Counties, Missouri: #1-24 Jacobs, S2 NW sec. 24-T.42N.-R.33W., #1-26 Lacy, S2 NE sec. 26-T.43N.-R.33W., #1-21 Cockrell, SW SW SW sec. 21-T.44N.-R.32W., #1-30 Zimmerman, SE NW NW sec. 30-T.45N.-R.32W.: Kansas Geological Survey, Open-File Report no. 2014-12, 132 p., with appendices.
- Newell, K. D., Watney, W. L., and Gerlach, P., 2014, An overview and preliminary economic assessment of horizontal wells drilled in the Mississippian Limestone Play in Kansas, 2010–2012: Kansas Geological Society, Bulletin, v. 89, no. 1, p. 10–15.
- Peterie, S. L., Miller, R. D., and Ivanov, J., 2014, Seismology and its applications in Kansas: Kansas Geological Survey, Public Information Circular 37, 6 p.
- Smith, J. J., 2014, Preliminary geology field maps and stratigraphic column, Haskell County, Kansas (Hickok and North of Santana USGS 7.5 minute quadrangle): Kansas Geological Survey, Open-File Report, 2 sheets, scale 1:24,000.
- Smith, J. J., and Ludvigson, G. A., 2014, A report to the Calvert Corporation on a geologic inspection of the Calvert volcanic ash mine: Kansas Geological Survey, Open-File Report 2014-3, 5 p. [http://www.kgs.ku.edu/Publications/OFR/2014/OFR14\\_3/index.html](http://www.kgs.ku.edu/Publications/OFR/2014/OFR14_3/index.html)
- Smith, J. J., Ludvigson, G. A., Harlow, H., and Platt, B., 2014, Ogallala–High Plains aquifer special study phase III: Lithologic calibration of practical saturated thickness in the Ogallala–High Plains Aquifer: Kansas Geological Survey, Open-File Report 2014-2, 9 p. [http://www.kgs.ku.edu/Publications/OFR/2014/OFR14\\_2/index.html](http://www.kgs.ku.edu/Publications/OFR/2014/OFR14_2/index.html)
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- Ortega-Ariza, D., and Franseen, E. K., 2014, Nutrients in the Miocene Caribbean Sea: A significant control on carbonate systems in the region? The role of depositional setting: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Pugliano, T., Goldstein, R. H., and Franseen, E. K., 2014, Sedimentologic and reservoir character of abraded-upward cycles: Fundamentals of heterozoan carbonate reservoirs: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting. EXTENDED ABSTRACT
- Smith, J. J., 2014, Getting to the bottom of the Ogallala: Scientific drilling in the High Plains of Western Kansas, University of Mississippi, April 17, 2014.
- Smith, J. J., 2014, Lessons from the living: Two Neoichnological case studies, New Mexico Highlands University, October 24, 2014.
- Suchy, D. R., Wilson, B., Adkins-Heljeson, D., and Stewart, D. L., 2014, Groundwater management resources and tools on the Kansas Geological Survey website (poster): 59<sup>th</sup> Annual Midwest Ground Water Conference, October 1, 2014, Lawrence, Kansas.
- Stewart, D. L., and Suchy, D. R., 2014, Coordinate systems: Latitude, longitude and datum for water well completion forms: KDHE Geology and Well Technology Section Fall 2014 Seminar, Wichita, Kansas, September 10, 2014.
- Stolz, D., Franseen, E. K., and Goldstein, R. H., 2014, Reservoir character of the Avalon Shale (Bone Spring Formation) of the Delaware Basin, West Texas and Southeast New Mexico: Effect of carbonate-rich

- sediment gravity flows: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting.  
EXTENDED ABSTRACT
- Watney, W. L., 2014, Fluid migration and accumulation within the Mississippian: Why 2% oil cut here, 15% one mile away? AAPG Search and Discovery Article #90201 © AAPG Education Directorate Mississippi Lime Forum, February 20, 2014.
- Watney, W. L., Bidgoli, T. S., and Holubnyak, E., 2014, Earthquakes in the southern midcontinent: What we know and what we need to know — Current research at KU and the Kansas Geological Survey.  
[http://www.kgs.ku.edu/PRS/Seismicity/KS\\_Geo\\_Society\\_Talk\\_12022014.pdf](http://www.kgs.ku.edu/PRS/Seismicity/KS_Geo_Society_Talk_12022014.pdf)
- Watney, W. L., Birdie, T., Doveton, J., Rush, J., Fazelalavi, M., Holubnyak, Y., Scheffer, A., Hedke, D., Datta, S., and Roberts, J., 2014, Integrating modern suite of geophysical logs, geochemistry, and seismic data for characterizing deep aquifers, tools, techniques and methods session: NGWA Annual Summit, Denver, Colorado. [http://www.kgs.ku.edu/PRS/Ozark/Reports/2014/NGWA\\_Integrating\\_logs\\_geochemistry.pdf](http://www.kgs.ku.edu/PRS/Ozark/Reports/2014/NGWA_Integrating_logs_geochemistry.pdf)
- Watney, W. L., Birdie, T., Holubnyak, Y., Rush, J., Fazelalavi, M., Doveton, J., Hansen, T., Walker, C., Cooper, K., Wreath, D., and Raney, J., 2014, Geologic carbon storage in the Lower Ordovician Arbuckle Group saline aquifer in Kansas: NGWA Annual Summit, Brine and Deep Aquifers, Denver, Colorado.  
<https://ngwa.confex.com/ngwa/2014gws/webprogram/Paper9776.html>
- Watney, W. L., and Rush, J., 2014, Small scale field test demonstrating CO<sub>2</sub> sequestration in Arbuckle saline aquifer and by CO<sub>2</sub>-EOR at Wellington Field, Sumner County, Kansas, Project Number (DE-FE0006821): Carbon Storage R&D Project Review Meeting, DOE-NETL, August 20–22, Pittsburgh.  
[http://www.kgs.ku.edu/PRS/Ozark/SmallScale/2014/Watney-Raney\\_DE-FE0006821\\_2014\\_CarbonStoragePittsburgh.pdf](http://www.kgs.ku.edu/PRS/Ozark/SmallScale/2014/Watney-Raney_DE-FE0006821_2014_CarbonStoragePittsburgh.pdf)
- Watney, W. L., Rush, J., and Raney, J., 2014, Carbon storage and utilization in Kansas — Are we ready?: Kansas Next Step Oil and Gas Conference, Hays, Kansas.  
[http://www.kgs.ku.edu/PRS/Ozark/Reports/2014/Watney\\_Ks\\_nextstep\\_Aug7\\_2014\\_v2.pdf](http://www.kgs.ku.edu/PRS/Ozark/Reports/2014/Watney_Ks_nextstep_Aug7_2014_v2.pdf)
- Watney, W. L., Rush, J., and Raney, J., 2014, Modeling CO<sub>2</sub> sequestration in saline aquifer and depleted oil reservoir to evaluate regional CO<sub>2</sub> sequestration potential of Ozark Plateau Aquifer System, South-Central Kansas, Project Number (DE-FE0002056): Carbon Storage R&D Project Review Meeting, DOE-NETL, August 20–22, Pittsburgh. [http://www.kgs.ku.edu/PRS/Ozark/Reports/2014/Watney-Raney\\_DE-FE0002056\\_2014\\_CarbonStorage.pdf](http://www.kgs.ku.edu/PRS/Ozark/Reports/2014/Watney-Raney_DE-FE0002056_2014_CarbonStorage.pdf)
- Whittemore, D. O., 2014, Development of an endorheic basin in the watershed of the upper Arkansas River, USA: Geological Society of America Annual Meeting, Vancouver, British Columbia, October 20, 2014.
- Whittemore, D. O., 2014, Water quality of the upper Arkansas River and impact on aquifer water quality: to local cities and agencies, U.S. Bureau of Reclamation, Southwest Groundwater Management District No. 3, and Kansas Water Office, Garden City and Lakin, Kansas, February 25; Syracuse, Kansas, February 26; and Holly, Colorado, February 27, 2014.
- Whittemore, D. O., and Kettle, W. D., 2014, Symposium overview — Ecohydrology and climate change at Kansas natural areas and research stations: Kansas Academy of Science Annual Meeting, April 4, 2014.
- Whittemore, D. O., and Wilson, B. B., 2014, The Kansas River alluvial aquifer as a managed reservoir system: 23rd Annual Kansas Hydrology Seminar, Topeka, Kansas, November 23, 2014.
- Wilson, B. B., 2014, 50-Year Vision Planning Meetings (Colby, Goodland, Lawrence).
- Wilson, B. B., 2014, Governor's Conference on Water and the Future of Kansas.
- Wilson, B. B., 2014, Hays Rotary Club.
- Wilson, B. B., 2014, Kansas Corn Growers Annual Meeting.
- Wilson, B. B., 2014, Kansas Energy Conference.
- Wilson, B. B., 2014, Kansas Environmental Conference.
- Wilson, B. B., 2014, Kansas Groundwater Association Conference.
- Wilson, B. B., 2014, Kansas Rural Water Association Conference.
- Wilson, B. B., 2014, Midwest Groundwater Conference.
- Wilson, B. B., 2014, Northwest GMD4 Board Meeting.
- Wilson, B. B., 2014, Southwest Kansas GMD3 Annual Meeting.
- Wilson, B. B., 2014, Southwest Kansas GMD3 County LEMA Meetings (Dodge City, Plains, Sublette, Hugoton, Lakin).
- Wilson, B. B., 2014, Southwest Kansas Irrigation Association Annual Meeting.
- Wilson, B. B., 2014, USDA Lane County Conservation District.
- Wilson, B. B., 2014, Western Kansas GMD1 (Board Meeting and Model Advisory Committee).



Wilson, B., Suchy, D. R., Adkins-Heljeson, D., and Butler, J., Online groundwater resources and tools from the Kansas Geological Survey: Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, November 13, 2014.

### **Awards & Honors**

Bidgoli, T. S. — University of Kansas, Erasmus Haworth Graduate Honors in Geology, 2014  
Bidgoli, T. S. — University of Kansas, Geology Department, Ph.D. Final Examination, Pass with Honors, 2014  
Franseen, E. K. — 2014 E.F. Schramm Lecturer, University of Nebraska-Lincoln  
Franseen, E. K. — SEPM 2014–2015 Past president of SEPM, the International Society for Sedimentary Geology  
Franseen, E. K. — SEPM 2013–2014 President of SEPM, the International Society for Sedimentary Geology  
Miller, R. D. — Life Membership Award, SEG  
Miller, R. D. — Elected, Treasurer, SEG Global Inc., Board of Directors  
Miller, R. D. — Merriam Research Award, KGS

### **Internal Service**

Bidgoli, T. S. — Outreach Coordinator Search Committee (member)  
Bidgoli, T. S. — Supervisor, KGS-Energy Research Section intern Minh C. Nguyen  
Brookfield, A. E. — Geohydrology Geochemist Search Committee (member)  
Brookfield, A. E. — KU CSRS representative  
Evans, C. S. — Outreach Coordinator Search Committee (co-chair)  
Franseen, E. K. — Stratigraphic Nomenclature Committee (member)  
Franseen, E. K. — Editorial Board for Current Research on Kansas Geology Bulletin (member)  
Ludvigson, G. A. — KGS Promotion and Review Committee (chair)  
Ludvigson, G. A. — KGS Stratigraphic Nomenclature Committee (member)  
Sawin, R. S. — KGS Stratigraphic Nomenclature Committee (chair)  
Sawin, R. S. — Outreach Coordinator Search Committee (co-chair)  
Sawin, R. S. — Petroleum Geoscientist Search Committee (member)  
Sawin, R. S. — Merriam Research Award Committee (member)  
Smith, J. J. — Helped coordinate and participated in the Kansas Geological Mapping Advisory Committee (KGMAC) meetings on May 28 and September 12, 2014  
Smith, J. J. — Performed 13 agency reviews on potential environmental concerns for proposed construction and improvement projects in Kansas as requested by federal, state, and private agencies as part of their environmental due diligence requirements (supervised by Dan Suchy).  
Watney, W.L., Associate Director Search Committee (member)

### **External Service**

Adkins-Heljeson, D. — Earth Day Celebration and Water Festival, Lawrence, Kansas  
Adkins-Heljeson, D. — Oil and gas data on the KGS website, log scanning and materials and resources in the Data Resources Library, presentation to University of Kansas Geology 535 class  
Bidgoli, T. S. — Member, AAPG Grant-In-Aid Committee, 2014–present  
Bidgoli, T. S. — Member, AAPG, Education Committee, 2014–present  
Bidgoli, T. S. — Co-chair, M.S. thesis committee for KU graduate student Andrew (Drew) Schwab  
Bidgoli, T. S. — Co-chair, M.S. thesis committee for KU graduate student James P. Tyrrell  
Bidgoli, T. S. — Teaching Aid, Core Workshop for KU — OSHER Lifelong Learning Institute, 2014  
Brookfield, A. E. — Newsletter editor, Hydrogeology Division of Geological Society of America  
Brookfield, A. E. — Associate Editor, Ground Water  
Brookfield, A. E. — Courtesy Assistant Professor, University of Kansas Geology Department  
Brookfield, A. E. — WRAPS Representative  
Brookfield, A. E. — Professional reviews for Water Resources Research (3 manuscripts), Ground Water (3 manuscripts), Journal of Hydrologic Engineering (2 manuscripts), HESS (1 manuscript), Journal of Hydrology (1 manuscript), Deutsche Forschungsgemeinschaft (DFG) (1 proposal), NSF Hydro Division (1 proposal)  
Brookfield, A. E. — Served on 2 doctoral and 2 master's committees, University of Kansas Geo/Eng  
Franseen, E. K. — Member, Promotion and Tenure Committee, Department of Geology, University of Kansas  
Franseen, E. K. — Member, Graduate Students Admissions Committee, Department of Geology, University of Kansas

Franseen, E. K. — Member, Search Committee for Geophysicist, Department of Geology, University of Kansas  
 Franseen, E. K. — Evaluator, Faculty Teaching, Department of Geology, University of Kansas  
 Franseen, E. K. — Advising, Undergraduates, Department of Geology, University of Kansas  
 Franseen, E. K. — Chair, University of Kansas graduate committee, (1 doctoral student)  
 Franseen, E. K. — Co-chair, University of Kansas graduate committees (4 students)  
 Franseen, E. K. — Member, University of Kansas graduate committees (2 doctoral students and 5 master's students)  
 Franseen, E. K. — President, SEPM, Society of Sedimentary Research  
 Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison  
 Franseen, E. K. — Chair, SEPM Strategic Plan Committee  
 Franseen, E. K. — Chair, SEPM Twenhofel Medal Award Committee  
 Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee  
 Laflen, D. — Earth Day Celebration and Water Festival, Lawrence, Kansas  
 Liu, G. — M.S. committee, two students in Department of Geology, University of Kansas  
 Liu, G. — Student paper judge at American Geophysical Union annual meeting  
 Ludvigson, G. A. — Topical session organizer, Topical Session T120 on Proxies for Paleoprecipitation. Annual Meeting of the Geological Society of America, Vancouver, British Columbia, Oct. 19–22, 2014  
 Ludvigson, G. A. — Theme session organizer, Theme session on Cenozoic Stratigraphy of the Great Plains, North-Central Section meeting, Geological Society of America, Lincoln, Nebraska, April 24–25, 2014  
 Ludvigson, G. A. — Elected Sedimentology Councilor, SEPM, The Society for Sedimentary Geology  
 Ludvigson, G. A. — Sedimentary Geology Division Representative, Joint Technical Program Committee, Geological Society of America  
 Ludvigson, G. A. — University of Kansas graduate thesis committee service: Matthew Meyers, MS, 2014; Michael Waynick, MS, 2014; Tony Layzell, Ph.D. candidate; Jeffrey Ross, M.S. candidate; Holly Field, M.S. candidate; Brian Sitek, M.S. candidate; Brittanry Hendrix, M.S. candidate; Julianne Emry, Ph.D. candidate; Thomas Neal, M.S. candidate; Jason Hallman, M.S. candidate  
 Lyle, S. — Earth Day Celebration and Water Festival, Lawrence, Kansas  
 Miller, R. D. — SEG, Chair, China Operations Presidential Task Force  
 Miller, R. D. — SEG, Chair, IDC Presidential Task Force  
 Miller, R. D. — SEG, Chairman/Convener, NS Imaging and modeling workshop, Bahrain, March  
 Miller, R. D. — SEG, Appointed, Global Inc., Board of Directors  
 Miller, R. D. — State of Kansas, Governor's Seismicity Task Force  
 Miller, R. D. — SEG Near Surface Presidential Task Force  
 Miller, R. D. — SEG, Inter-Society Presidential Task Force  
 Miller, R. D. — SEG/NSG EEGS Collaboration Committee, Chair  
 Miller, R. D. — KU RGS Research Achievement Award Selection Committee  
 Miller, R. D. — SEG Near-Surface Geophysics Section Publications Committee, Chairman  
 Miller, R. D. — ASTM Geophysics Subcommittee on Seismic Standards  
 Miller, R. D. — Editor, Geophysical Society of Kansas  
 Miller, R. D. — SEG Technical Session Chair  
 Potter, N. — Earth Day Celebration and Water Festival, Lawrence, Kansas  
 Reboulet, E. — Earth Day Celebration and Water Festival, Lawrence, Kansas  
 Sawin, R. S. — Member, Kansas State University Geology Advisory Council (1995–present)  
 Smith, J. J. — Session Co-Chair, Cenozoic Stratigraphy of the Great Plains, North-Central Section Annual Meeting of the Geologic Society of America  
 Smith, J. J. — Participant, KU Water Research Community Team Leads meetings, January 3 and March 13, 2014  
 Smith, J. J. — Co-leader (with Randy Stotler), High Plains Working Group  
 Stewart, D. L. — Oil and gas data on the KGS website, log scanning and materials and resources in the Data Resources Library, presentation to University of Kansas Geology 535 class  
 Stewart, D. L. — Earth Day Celebration and Water Festival, Lawrence, Kansas  
 Suchy, D. R. — Research Senator, Unclassified Professional Staff Senate, University of Kansas (2012–present)  
 Suchy, D. R. — Member and Vice-Chairman, Board of Directors, Rural Water District #5, Douglas County, Kansas (2007–present)  
 Suchy, D. R. — Member and Treasurer, Board of Directors, Public Wholesale Water Supply District #25, Douglas and Osage Counties, Kansas (2007–present)  
 Watney, W. L. — AAPG Education Committee

Watney, W. L. — Student research review, SEPM

Watney, W. L. — Advising of students – Co-Advise Luis Montalvo with Luis Gonzalez; committee member for Allison Joy, Becky Doward, Clyde Redger, Yousuf Fadolkarem, Christa Jackson, Brent Campbell (KSU)

Whittemore, D. O. — Organized, with Dean Kettle of the Kansas Biological Survey, the Symposium on Ecohydrology and Climate Change at Kansas Natural Areas and Research Stations, held at Kansas Academy of Science Annual Meeting, Emporia, KS, April 4, 2014

Whittemore, D. O. — Main organizer and coordinator of 59<sup>th</sup> Annual Midwest Groundwater Conference and field trip, Lawrence, Kansas, September 30–October 2, 2014

Whittemore, D. O. — Council Member, Kansas Academy of Science

Whittemore, D. O. — Member, Upper Arkansas River Conservation Reserve Enhancement Program (CREP) Steering Committee

Whittemore, D. O. — Member, Molly Long M.S. committee, Department of Geology, University of Kansas (degree received 2014)

Whittemore, D. O. — Member, Jose Solis Ph.D. committee, University of Colorado, (comprehensives passed 2014)

Whittemore, D. O. — Geochemical identification of saltwater source, for Kansas Corporation Commission

Wilson, B. B. — Presentation to University of Kansas GEOG558 class

Wilson, B. B. — Presentation for University of Kansas mini-wheat state tour

## Grants

Ludvigson, G. A. — 2014-2015: Principal investigator, Geologic Mapping in Kansas for FY14. United States Geological Survey, STATEMAP Program Contract No. G14AC00226. Co-PIs are R.D. Mandel, K.D. Newell, R.S. Sawin, W.C. Johnson, J.W. Dunham, J.J. Smith, and R. Stotler. Federal and state match totaling to \$308,293

Ludvigson, G. A. — 2013-2014: Principal investigator, Geologic Mapping in Kansas for FY13. United States Geological Survey, STATEMAP Program Contract No. G13AC00168. Co-PIs are R.D. Mandel, K.D. Newell, R.S. Sawin, W.C. Johnson, J.W. Dunham, J.J. Smith, and R. Stotler. Federal and state match totaling to \$223,129

Liu, G. — Aquifer storage and recovery in near-surface aquifers: Development of a new recharge approach using small-diameter, low-cost wells: NIWR/USGS National Competitive Grant Program, \$177,336, 2011-2014. (\$83,377 for 2014)

Miller, R. D.: Kansas Department of Health and Environment, Support of statewide seismic monitoring network, 2014, \$25,000. (PI)

Miller, R. D.: Kansas Corporation Commission, Memorandum of Understanding for the purchase of portable seismic arrays, 2014, \$83,780. (PI)

Miller, R. D.: Norcal Geophysical Consultants, High-resolution seismic reflection to characterize the basement faults in southern Oregon, 2014, \$65,877. (PI)

Miller, R. D.: Barr Engineering Company, Surface wave characterization of wind turbine sites in Jamaica using the MASW and Side Scatter methods, 2014, \$40,899. (PI)

Miller, R. D.: Burns & McDonnell Engineering Company, Extended term passive seismic characterization of high priority salt jugs in Hutchinson, Kansas [Mosaic], 2014, \$34,070. (PI)

Miller, R. D.: Burns & McDonnell Engineering Company, Feasibility of passive seismic characterization of selected salt jugs in Hutchinson [Cargill], Kansas, 2014, \$33,672. (PI)

Miller, R. D.: XRI Geophysics LLC, High resolution seismic reflection to delineate the hydrostratigraphy of Cretaceous and Triassic formations in Big Lake Ranch Area, Reagan County, Texas, 2014, \$60,097. (PI)

Suchy, D. R. — National Geological and Geophysical Data Preservation Program Grant to Data Resources Library and Wichita Well Sample Library, Kansas Geological Survey, Daniel R. Suchy, PI; administered through U. S. Geological Survey, 2014–2015, \$50,006

## Computer Software

Victorine, J. R., 2014, Hingle & Pickett Plots Web Site (<http://www.kgs.ku.edu/software/Pf/>).

Victorine, J. R., 2014, Gamma Ray Colorlith Cross Section Web Site ([http://www.kgs.ku.edu/stratigraphic/GR\\_CROSS\\_SECTION/](http://www.kgs.ku.edu/stratigraphic/GR_CROSS_SECTION/)).

Victorine, J. R., 2014, Brine Data Plot & Data Entry (<http://www.kgs.ku.edu/stratigraphic/BRINE/>).

Wilson, B. B., 2014, Numerical Groundwater Model for Western Kansas Groundwater Management District.

**Website**

- Placed 13 bulletins and 7 books from other series online.
- Placed, or replaced, 3 Public Information Circulars online.
- Placed all 2014 open-file reports (that were suitable for the web) online. In addition, added several from earlier years (mostly from the 1990s) for a total of 20.
- Scanned 17,685 water well records.
- Scanned 11,000 wireline logs.
- Added 5,909 other oil and gas documents.

**Refereed Publications**

- Bailey, B. B., Miller, R. D., Peterie, S., and Ivanov, J., 2013, Implications of Vp/Vs ratio on shallow P and S reflection correlation and lithology discrimination [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 1,944–1,949.
- Butler, J. J., Jr., Stotler, R. L., Whittemore, D. O., and Reboulet, E. C., 2013, Interpretation of water-level changes in the High Plains aquifer in western Kansas: *Groundwater*, v. 51, no. 2, p. 180–190. doi: 10.1111/j.1745-6584.2012.00988.x
- Dvoretzky, R. A., Goldstein, R. H., Franseen, E. K., and Byrnes, A., in press, Reservoir-analog modeling of focused-flow and dispersed-flow deepwater carbonates: Miocene Agua Amarga Basin, Southeast Spain: SEPM Special Publication, Deposits, Architecture and Controls of Carbonate Margin, Slope, and Basin Systems.
- Goldstein, R. H., Franseen, E. K., and Lipinski, C. J., 2013, Topographic and sea-level controls on oolite-microbialite-coralgal reef sequences: The terminal carbonate complex of Southeast Spain: *AAPG Bulletin*, v. 97, pp. 1,997–2,054.
- Haney, M. M., and Miller, R. D., 2013, Introduction to this special section — Nonreflection seismic and inversion of surface and guided waves: *Leading Edge*, v. 32, n. 6, p. 610–611.
- Ivanov, J., Schwenk, J. T., Miller, R. D., and Peterie, S., 2013, Dispersion-curve imaging nonuniqueness studies from multi-channel analysis of surface waves (MASW) using synthetic seismic data [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 1,794–1,800.
- Judy, B., and Miller, R. D., 2013, Geoforensic analysis of high-resolution seismic reflection data to unravel the complex past of natural salt dissolution features in the upper 250 m [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 1,934–1,938.
- Li, Z., Goldstein, R. H., and Franseen, E. K., in press, A model for dolomitization of carbonate platforms: Ascending freshwater-mesohaline mixing, La Molata, Spain: Geological Society London Special Publication.
- Li, Z., Goldstein, R. H., and Franseen, E. K., 2013, Ascending freshwater-mesohaline mixing: A new scenario for dolomitization: *Journal of Sedimentary Research*, v. 83, p. 277–283.
- Liu, G., Knobbe, S., and Butler, J. J. Jr., 2013, Resolving centimeter-scale flows in aquifers and their hydrostratigraphic controls: *Geophysical Research Letters*, v. 40, p. 1098–1103. doi:10.1002/grl.50282
- Lipinski, C. J., Franseen, E. K., and Goldstein, R. H., 2013, Reservoir analog model for oolite-microbialite sequences, Miocene Terminal Carbonate Complex, Spain: *AAPG Bulletin*, v. 97, pp. 2,035–2,057.
- Ludvigson, G. A., González, L. A., Fowle, D. A., Roberts, J. A., Driese, S. G., Villarreal, M. A., Smith, J. J., and Suarez, M. B., 2013, Paleoclimatic applications and modern process studies of pedogenic siderite; in: S. Driese and L. Nordt, eds., *New Frontiers in Paleopedology and Terrestrial Paleoclimatology*: SEPM Special Publication No. 104, p. 79–87. doi: 10.2110/sepm.sp.104.01
- Miller, R. D., 2013, Introduction to this special section — Urban geophysics: *Leading Edge*, v. 32, n. 3, p. 248–249.
- Miller, R. D., 2013, Near-surface applied geophysics: Unraveling mysteries of and characterizing geohazards, groundwater, archaeology, and engineering [Keynote Presentation]: *Proceedings of the Second International Conference on Engineering Geophysics*, p. 24–29.
- Miller, R. D., Luczaj, J., and Evans, T. J., 2013, Delineating shallow basement faults on high-resolution seismic reflection data plagued with extreme static in NE Wisconsin, USA [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 1,718–1,722.
- Miller, R. D., and Singha, K., 2013, Introduction to this special section — Hydrogeophysics: *Leading Edge*, v. 32, n. 7, p. 740–741.
- Nolan, J. J., Miller, R. D., Ivanov, J., Peterie, S., and Lindgren, E., 2013, Near-surface salt dissolution void identification using passive MASW [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 2,212–2,217.
- Ortega-Ariza, D., Santos-Mercado, H., Franseen, E. K., and Ramírez-Martínez, W., 2013, Las Calizas de la Costa Norte de Puerto Rico: *Espeleo Revista Puerto Rico*, Federacion Espeleologica de Puerto Rico, Junio-Diciembre 2013, p. 6–17.
- Ramaker, E. M., Goldstein, R. H., Franseen, E. K., and Watney, W. L., in press, What controls porosity in cherty fine-grained carbonate reservoir rocks? Impact of stratigraphy, unconformities, structural setting and hydrothermal fluid flow: Mississippian, southeast Kansas: *Petroleum Geoscience Special Volume*.

- Sawin, R. S., Franseen, E. K., Ludvigson, G. A., Watney, W. L., and West, R. R., 2013, Precambrian nomenclature in Kansas: Kansas Geological Survey, Bulletin 259, pt. 1, 5 p.  
<http://www.kgs.ku.edu/Current/2013/Sawin/index.html>
- Suarez, C. A., Ludvigson, G. A., González, L. A., Fiorillo, A. R., Flaig, P., and McCarthy P. J., 2013, Use of multiple oxygen isotope proxies for elucidating Arctic Cretaceous paleohydrology; in, A.-V. Bojar, M. C. Melinte-Dobrinescu, and J. Smit, eds., *Isotopic Studies in Cretaceous Research*, Geological Society, London, Special Publications 382. doi 10.1144/SP382.3
- Suarez, M. B., Ludvigson, G. A., González, L. A., Al-Suwaidi, A. H., and You, H., 2013, Stable isotope chemostratigraphy in lacustrine strata of the Xiagou Formation, Gansu Province, NW China; in, A.-V. Bojar, M. C. Melinte-Dobrinescu, and J. Smit, eds., *Isotopic Studies in Cretaceous Research*: Geological Society, London, Special Publications 382. doi 10.1144/SP382.1
- Sloan, S. D., Peterie, S. L., Miller, R. D., Ivanov, J., McKenna, J. R., Broadfoot, S. W., and Metheny, O. M., 2013, Tunnel detection using near-surface seismic methods: *GSH Journal*, v. 4, n. 3, p. 13–16.
- Sloan, S. D., Peterie, S. L., Miller, R. D., Snow, T. L., McKenna, J. R., and Metheny, O. M., 2013, In-theater seismic acquisition: Operational examples from a tunnel detection team [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, p. 1,801–1,805.
- Walsh, D., Turner, P., Grunewald, E., Zhang, H., Butler, J. J. Jr., Reboulet, E., Knobbe, S., Christy, T., Lane, J. W. Jr., Johnson, C. D., Munday, T., and Fitzpatrick, A., 2013, A small-diameter NMR logging tool for groundwater investigations: *Groundwater*, v. 51, no. 6, p. 914–926.
- Xia, J., Shen, C., Xu, Y., and Miller, R. D., 2013, Near-surface shear-wave velocities and quality factors derived from high-frequency surface waves: *Proceedings of the Near Surface Geophysics Asia Pacific Conference*, Beijing, China, p. 1–4.
- Zschornack, L., Bohling, G. C., Butler, J. J. Jr., and Dietrich, P., 2013, Hydraulic profiling with the direct-push permeameter: Assessment of probe configuration and analysis methodology: *Journal of Hydrology*, v. 496, p. 195–204.

### Nonrefereed Publications

- Butler, J. J., Jr., Whittemore, D. O., Bohling, G. C., Reboulet, E., Stotler, R. L., and Wilson, B. B., 2013, High Plains aquifer index well program: 2012 annual report: Kansas Geological Survey Open-File Report 2013-1, 127 p.
- Cramer, B. D., Vandenbroucke, T. R., and Ludvigson, G. A., in review, Review article: Asking old rocks new questions: High-resolution stratigraphy and the Phanerozoic time scale: submitted as invited review article to *Marine and Petroleum Geology* (submitted March 2013).
- Evans, C. S., and Newell, K. D., 2013, The Mississippian limestone play in Kansas — Oil and gas in a complex geologic setting: Kansas Geological Survey, Public Information Circular 33, 6 p.
- Franseen, E. K., 2013, Presidents comments: *The Sedimentary Record*, SEPM, v. 11, n. 4, December 2013, p. 13.
- Franseen, E. K., 2013, Presidents comments: *The Sedimentary Record*, SEPM, v. 11, n. 3, September 2013, p. 10.
- Franseen, E. K., 2013, Presidents comments: *The Sedimentary Record*, SEPM, v. 11, n. 2, June 2013, p. 11.
- Layzell, A. L., and Evans C. S., 2013, Kansas droughts — Climatic trends over 1,000 years: Kansas Geological Survey, Public Information Circular 35, 6 p.
- Lyle, S. A., Evans, C. S., Buchanan, R. C., and Sawin, R. S., eds., 2013, South-central Kansas — Oil exploration, water allocation, and range management, 2013 Kansas Field Conference, field guide: Kansas Geological Survey, Open-File Report 2013-3, 73 p.
- Ludvigson, G. A., Joeckel, R. M., Murphy, L. R., Stockli, D. F., González, L. A., Suarez, C. A., Kirkland, J. I., and Al-Suwaidi, A., in revision, Review paper: The emerging terrestrial record of Aptian-Albian global change: submitted as invited review paper to *Cretaceous Research*, 32 p.
- 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.
- Suarez, C. A., González, L. A., Ludvigson, G. A., Kirkland, J. I., Cifelli, R. L., and Kohn, M. J., in review, Multiproxy investigation of paleohydrology in the Early Cretaceous Cedar Mountain Formation, eastern Utah: Deciphering effects of the Nevadaplano plateau on regional climate: *Journal of Sedimentary Research* (submitted April 2013).

Suchy, D. R., 2013, The Mineral industry of Kansas; in, U.S. Geological Survey, 2013, Area Reports — Domestic: U.S. Geological Survey Minerals Yearbook 2009, v. II, p. 18.0–18.5.  
<http://minerals.usgs.gov/minerals/pubs/state/ks.html>

## Computer Software

Victorine, J. R., 2013, Production Plot & Decline Curve Analysis Web Site.  
<http://www.kgs.ku.edu/software/production/>

## Abstracts

- Butler, J. J., Jr., Bohling, G. C., Reboulet, E. C., and Olson, J., 2013, Signal not noise: Getting more from water-level responses to barometric-pressure fluctuations: Abstract 9198 presented at 2013 Ground Water Summit, National Ground Water Association, San Antonio, Texas, May 2013.
- Butler, J. J., Jr., Liu, G., Knobbe, S., Reboulet, E., and Dietrich, P., 2013, Subsurface characterization: Some recent developments and future prospects: International Association of Hydrological Sciences, 2013 Joint Assembly Program with Abstracts, Gothenburg, Sweden, July 2013.
- Butler, J. J. Jr., Whittemore, D. O., and Wilson, B. B., 2013, A simple, first-order approach for assessing aquifer response to anthropogenic and climatic stresses: New insights into the future of the High Plains aquifer in Kansas: Abstract H13O-02, American Geophysical Union Meeting, San Francisco, California.
- Duarte, A., Smith, J. J., Sleezer, R. O., Platt, B. F., and Ludvigson, G. A., 2013, Chronostratigraphic investigations of the McPherson Channel deposits in south-central Kansas: Preliminary interpretations from particle size and stable isotopic analyses: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 136.
- Dvoretzky, R., Franseen, E. K., and Goldstein, R. H., 2013, Static reservoir-analog modeling of focused-flow and dispersed-flow resedimented deepwater carbonate deposits: Fourth Annual Deepwater Reservoirs Geosciences Technology Workshop, Jan. 15–16, 2013, Houston, Texas.
- Händel, H., Liu, G., Dietrich, P., Liedl, R., and Butler, J. J. Jr., 2013, Numerical investigation of shallow aquifer recharge using small-diameter, low-cost wells and infiltration basins: Abstract 9197 presented at 2013 Ground Water Summit, National Ground Water Association, San Antonio, Texas, May 2013.
- Händel, H., Liu, G., Dietrich, P., Liedl, R., Fank, J., and Butler, J. J. Jr., 2013, Numerical comparison of artificial recharge by small-diameter wells to common systems, Abstract H11F-1214: American Geophysical Union fall meeting, San Francisco, California, December 2013.
- Harlow, R. H., González, L. A., Ludvigson, G. A., and Petronis, M., 2013, Employment of non-traditional techniques to improve stratigraphic correlation in the Ogallala Formation and their applications for future groundwater management: Official Program, Midcontinent Section Meeting, American Association of Petroleum Geologists, October 12–15, Wichita, Kansas, p. 40.
- Harlow, R. H., Ludvigson, G. A., Smith, J. J., Doveton, J. H., and Murphy, L. R., 2013, Evolution of the Neogene High Plains succession depositional history through paleoclimatic and vertical sequence analysis: southwestern Kansas: Program & Abstracts for the 2013 Meeting of the Society for Cenozoic Research (TER-QUA), Lawrence, Kansas, p. 12.
- Harlow, R. H., Ludvigson, G. A., Smith, J. J., Doveton, J. H., Petronis, M., and 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, Kansas.
- Hasiotis, S. T., Halfen, A. F., Counts, J. W., Kraus, M. J., Smith, J. J., and Hembree, D. I., 2013, Bioturbation is the major process in the evolution of soils and landscapes — Evidence from modern and deep time: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 633.
- Hasiotis, S. T., Halfen, A. F., Counts, J. W., Wasserman, H., Platt, B. F., Hembree, D. I., Jones, M. F., Hirmas, D. R., and Smith, J. J., 2013, Exploring old and new frontiers in continental ichnology — Evaluating its place in ichnology and its role in geology: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 898.
- Joeckel, R. M., Ludvigson, G. A., Kirkland, J. I., and Suarez, C. A., 2013, Alluvial architecture, paleosols, vertic features, and preliminary chemostratigraphy of the Yellow Cat Member (Lower Cretaceous) of the Cedar Mountain Formation in Grand County, Utah, USA: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 133.



- Katz, B. S., Stotler, R. L., Hirmas, D. R., Whittemore, D. O., Butler, J. J., Smith, J. J., and Ludvigson, G. A., 2013, Implications of  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$  stable isotopes for recharge to the High Plains Aquifer, northwestern Kansas: Geological Society of America, Abstracts with Programs, v. 45, no.7, p. 350.
- Layzell, A. L., and Mandel, R. D., 2013. An assessment of the lithostratigraphy and erodibility of Holocene alluvial fills (Deforest Formation) in northeastern Kansas, USA: Geological Society of America, Abstracts with Programs, Vol. 45, No. 7, p. 120
- Li, Z., Goldstein, R. H., and Franseen, E. K., 2013, Meteoric calcite cementation: Diagenetic response to relative sea-level fall and effect on porosity and permeability, Upper Miocene, Southeast Spain: AAPG Annual Meeting, Pittsburgh, Pennsylvania, May 2013.
- Long, M. M., Whittemore, D. O., and Stotler, R. L., 2013, Characterizing surface and groundwater interactions of different subsurface geologic environments using geochemical and isotopic analyses in Kansas: Geological Society of America Abstracts with Programs, v. 45, no. 7, p. 350.
- Ludvigson, G. A., González, L. A., Fowle, D. A., Roberts, J. A., Driese, S. G., and Suarez, M., 2013, Recent progress on the pedogenic paleoclimate siderite proxy: Geological Society of America, Abstracts with Programs, v. 45, no.7, p. 736.
- Ludvigson, G. A., González, L. A., Suarez, C., Fiorillo, A. R., McCarthy, P., and Flaig, P., 2013, Exploring the role of the hydrologic cycle in Arctic Amplification during the greenhouse worlds of the Cretaceous and Paleogene: Geological Society of America, Abstracts with Programs, v. 45, no.7, p. 897.
- Ludvigson, G. A., Smith, J. J., Harlow, R. H., Doveton, J. A., Mandel, R. D., González, L. A., Zeigler, K., Petronis, M., Möller, A., Feldman, J., Stotler, R., and Rittenour, T. M., 2013, A scientific drilling program in the Cenozoic strata of the high plains in western Kansas, Program & Abstracts for the 2013 Meeting of the Society for Cenozoic Research (TER-QUA), Lawrence, Kansas, p. 16.
- Ortega-Ariza, D., and Franseen, E. K., 2013, Evaluating Controls on Miocene Carbonate-Dominated Sequences in Puerto Rico and the Dominican Republic: GSA Southeastern Section — 62nd Annual Meeting (20–21 March 2013).
- Platt, B. F., Smith, J. J., and Ludvigson, G. A., 2013, Ichnological and stratigraphic investigations of the Neogene Ogallala Formation of western Kansas: Traces, timing, and timing: Program & Abstracts for the 2013 Meeting of the Society for Cenozoic Research (TER-QUA), Lawrence, Kansas, p. 22.
- Richey, J. D., Upchurch, G. R., Joeckel, R., Smith, J. J., Ludvigson, G. A., and Lomax, B. H., 2013, Atmospheric carbon dioxide and its relation to carbon cycle perturbations during Ocean Anoxic Event 1d: A high resolution record from dispersed plant cuticle: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 333.
- Richey, J. D., Upchurch, G. R., Joeckel, R., Smith, J. J., Ludvigson, G. A., and Lomax, B. H., 2013, Atmospheric carbon dioxide and its relation to carbon cycle perturbations during Ocean Anoxic Event 1d: A high resolution record from dispersed plant cuticle: American Geophysical Union Fall Meeting, San Francisco, California; PP33B-1923.
- Smith, J. J., Ludvigson, G. A., Harlow, R. H., Doveton, J. H., Zeigler, K. E., Petronis, M., Möller, A., Feldman, J., Stotler, R. L., and Rittenour, T., 2013, Paleogene strata of the High Plains in western Kansas? Preliminary radiometric dates from volcanogenic zircons in mature paleosols: Geological Society of America, Abstracts with Programs, v. 45, no.7, p. 478.
- Smith, J. J., Platt, B. F., Thomasson, J. R., Ludvigson, G. A., Packauskas, R., 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: Program & Abstracts for the 2013 Meeting of the Society for Cenozoic Research (TER-QUA), Lawrence, Kansas, p. 25–26
- Solis, J. A., Rajaram, H., Whittemore, D. O., Butler, Jr. J. J., Eichinger, W. E., and Reboulet, E. C., 2013, Comparison of riparian evapotranspiration estimated using Raman LIDAR and water balance based estimates from a soil moisture sensor network: Abstract H13J-1503, American Geophysical Union Meeting, San Francisco, California.
- Stolz, D., Mouton, K., Goldstein, R. H., Franseen, E., and Doveton, J., 2013, Sediment gravity flow deposits in the Avalon Shale Play of the Delaware Basin, West Texas and Southeast New Mexico: AAPG Annual Meeting, Pittsburgh, Pennsylvania, May 2013.
- 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: submitted for Groundwater and Global Palaeoclimate Signals, ICSU-INQUA-IGCP-GRAPHIC Workshop, Bobole, Mozambique, October 14–19, 2013.

- Suchy, D. R., Stewart, D. L., and Adkins-Heljeson, D., 2013, Kansas Geological Survey water well, water level, and water usage information on the Internet (abst.): Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas.
- Trevino, S. F., Zeigler, K. E., Petronis, M., Smith, J. J., Ludvigson, G. A., and Doveton, J. H., 2013, New magnetic polarity data from the High Plains–Ogallala drilling project core HP1A: A preliminary magnetostratigraphy from the Eocene-Oligocene White River Group, southwestern Kansas: Geological Society of America, Abstracts with Programs, v. 45, no. 7, p. 135.
- Whittemore, D. O., and Butler, J. J. Jr., 2013, Drought impacts on Kansas groundwater levels: Program with Abstracts, 58<sup>th</sup> Annual Midwest Ground Water Conference, Bismarck, North Dakota.
- Whittemore, D. O., Butler, J. J. Jr., and Wilson, B. B., 2013, A new approach for assessing the impact of climatic and pumping stresses on the High Plains aquifer in Kansas: Governor's Conference on Future of Water in Kansas, Topeka, Kansas.
- Whittemore, D. O., Butler, J. J. Jr., and Wilson, B. B., 2013, Prediction of water-level changes in the High Plains aquifer in Kansas from climatic indices: Geological Society of America Abstracts with Programs, v. 45, no. 7, p. 490.
- Whittemore, D. O., and Kettle, W. D., 2013, Ecohydrology and climate change at Kansas natural areas and research stations: Transactions of the Kansas Academy Science, v. 116, no. 1/2.  
<http://www.bioone.org/doi/full/10.1660/062.116.0114>

## **Presentations**

- Brookfield, A. E., 2013, Integrated hydrologic models: Building new tools for water management, University of Nebraska-Lincoln Spring 2013 Water Seminar Series, January 16.
- Butler, J. J. Jr., Presentation on the High Plains aquifer as part of “Beyond the Long Hot Summer: The Future of Water in Kansas” symposium, Lawrence, March 1, 2013.
- Butler, J. J. Jr., Presentation on the Index Well Program to the Ogallala Aquifer Advisory Committee, Scott City, April 8, 2013.
- Butler, J. J. Jr., Presentation on the Index Well Program at the Kansas Water Office, April 25, 2013.
- Butler, J. J. Jr., Presentation on the Haskell Index Well to the Ogallala Aquifer Advisory Committee, Dodge City, Nov. 5, 2013.
- Butler, J. J., Jr., Bohling, G. C., Reboulet, E. C., and Olson, J., 2013, Signal not noise: Getting more from water-level responses to barometric-pressure fluctuations: 2013 Ground Water Summit, National Ground Water Association, San Antonio, Texas, May 2013.
- Butler, J. J., Jr., Liu, G., Knobbe, S., Reboulet, E., and Dietrich, P., 2013, Subsurface characterization: Some recent developments and future prospects: International Association of Hydrological Sciences, 2013 Joint Assembly, Gothenburg, Sweden, July 2013.
- Butler, J.J., Jr., Whittemore, D. O., and Wilson, B. B., 2013, A simple first-order approach for assessing aquifer response to anthropogenic and climatic stresses: New insights into the future of the High Plains aquifer in Kansas, American Geophysical Union fall meeting, San Francisco, California, December 2013.
- Dunham, J., 2013, Surficial geology of Hodgeman County, Kansas: Map Gallery (poster) presentation, ESRI International User Conference, San Diego, California, July 8, 2013.
- Dunham, J., 2013, Using ArcScan in geologic mapping to convert hand-drawn geologic contacts: Map Gallery (poster) presentation, ESRI International User Conference, San Diego, California, July 8, 2013.
- Dunham, J., 2013, Scanning and digital cleanup of out-of-print maps: Digital Mapping Techniques (DMT) AASG-USGS Annual Workshop, Colorado School of Mines, Golden, Colorado, June 3, 2013.
- Dunham, J. W., Koop, A. N., and Johnson, W. C., 2013, Applying ArcScan in geologic mapping to convert hand-drawn geologic contacts: poster presented by W. C. Johnson, Geological Society of America 2013 Annual Meeting, Denver, Colorado, October 28, 2013.
- Franseen, E. K., 2013, Invited speaker, University of Nebraska-Lincoln, Mylan T. Stout Lecture Series Seminar: A new concept in sequence stratigraphy: Build-and-fill sequences in carbonate-dominated systems, April 2013.
- Franseen, E. K., 2013, Invited luncheon speaker, Build-and-fill sequences in carbonate-dominated systems: A developing concept for sequence-stratigraphy, GCAGS-GCSSEPM Annual Meeting, New Orleans, Louisiana, Oct. 6–8, 2013.

- Franseen, E. K., 2013, Invited presentation — Unconventional reservoirs: Mississippian Lime Play, Kansas; Avalon Shale, Texas & New Mexico; Miocene Chalks, SE Spain: Chevron Energy Technology Center, Houston, Texas, March 2013.
- Franseen, E. K., 2013, Invited Presentation — Controls on Mississippian (Osagean) inner ramp heterozoan carbonate & biosiliceous deposits in a midcontinent setting: Repsol Oil Company, Madrid, Spain, November 2013.
- Franseen, E. K., 2013, Session chair — Interplay of evaporites and carbonates including microbialites: 2013 AAPG Annual Convention, Pittsburgh, Pennsylvania, May 19–22.
- Franseen, E. K., 2013, Session chair — Modern carbonates: 2013 AAPG Annual Convention, Pittsburgh, Pennsylvania, May 19–22.
- Franseen, E. K., 2013, Session chair — Carbonates and evaporites I & II: 2013 AAPG Annual Convention, Pittsburgh, Pennsylvania, May 19–22.
- Franseen, E. K., 2013, Co-instructor for Total Oil Company geologists to Miocene-Pliocene carbonate complexes, SE Spain, November 27–29, 2013.
- Franseen, E. K., 2013, Co-instructor for AAPG Education Program: Controls on porosity types and distribution in carbonate reservoirs: Almeria, Spain, June 2–7, 2013.
- Händel, H., Liu, G., Dietrich, P., Liedl, R., and Butler, J. J. Jr., 2013, Numerical investigation of shallow aquifer recharge using small-diameter, low-cost wells and infiltration basins: 2013 Ground Water Summit, National Ground Water Association, San Antonio, Texas, May 2013.
- Ludvigson, G. A., 2013, Preliminary findings from the HP1A core at the Haskell County Index Well Site, southwest Kansas: Kansas Geological Survey, Lawrence, Kansas, June 18, 2013.
- Ludvigson, G. A., What's up with the pedogenic siderite paleoclimate proxy?: Validation by modern process studies and new applications to the Cretaceous Arctic: Department of Geoscience, University of Iowa, Iowa City, Iowa, April 12, 2013.
- Miller, R. D., 2013, ICEG, Al Ain, UAE, Keynote Address, November.
- Miller, R. D., Luczaj, J., and Evans, T. J., 2013, Delineating shallow basement faults on high-resolution seismic reflection data plagued with extreme static in NE Wisconsin, USA [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, Texas, September 22–27.
- Miller, R. D., 2013, SEG Near Surface Asia Pacific Conference, Near Surface Honorary Lecture, Near-surface seismic: More than a problem of scale, Keynote Address, Beijing, China, July 2013.
- Miller, R. D., 2013, ASCE, Geotechnical Conference, Overland Park, Kansas, April 2013.
- Miller, R. D., 2013, SEG 2012 Near Surface Honorary Lecturer, Near-surface seismic: More than a problem of scale (26 lectures total):
- Tulsa Geophysical Society, Tulsa, Oklahoma, April 11, 2013.
  - Near Surface Asia Pacific Conference, Beijing, China, July 2013
  - Qatar Geoscience Society, Doha, Qatar, November 28, 2013.
  - Oman Geophysics Society, Muscat, Oman, December 2, 2013.
- Sawin, R. S., 2013, Benefits and uses of geologic maps: Joseph A. Holmes Safety Association, September 18, 2013, Lawrence, Kansas.
- Smith, J. J., and Duarte, A., 2013, Update: Sediment mapping within the McPherson Channel, with Adrienne Duarte. Kansas Geological Survey Advisory Committee meeting, November 15, 2013.
- Stewart, D., 2013, The Data Resources Library at the Kansas Geological Survey — Records processing and presentation on the web: Energy Library Conference, Oklahoma City, Oklahoma, October 24, 2013.
- Suchy, D. R., Stewart, D. L., Adkins-Heljeson, D., 2013, Kansas Geological Survey water well, water level, and water usage information on the Internet (poster): Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, October 24–25, 2013.
- Whittemore, D. O., and Butler, J. J. Jr., 2013, Drought impacts on Kansas groundwater levels: 58<sup>th</sup> Annual Midwest Ground Water Conference, Bismarck, North Dakota.
- Whittemore, D. O., Butler, J. J. Jr., and Wilson, B. B., 2013, Prediction of water-level changes in the High Plains aquifer in Kansas from climatic indices: Geological Society of America, Denver, Colorado, October 2013.
- Whittemore, D. O., Butler, J. J. Jr., and Wilson, B. B., 2013, A new approach for assessing the impact of climatic and pumping stresses on the High Plains aquifer in Kansas: Governor's Conference on Future of Water in Kansas, Topeka, Kansas.
- Whittemore, D. O., and Kettle, W. D., 2013, Ecohydrology and climate change at Kansas natural areas and research stations: Kansas Academy of Science.

## Grant Awards

National Geological and Geophysical Data Preservation Program Grant to Data Resources Library and Wichita Well Sample Library, Kansas Geological Survey; administered through U. S. Geological Survey, 2013-2014, \$46,350.

National Geological and Geophysical Data Preservation Program Grant to Data Resources Library, Kansas Geological Survey; administered through U. S. Geological Survey, 2012-2013, \$23,000.

U.S. Geological Survey, Geophysical methods development for subsurface characterization for various near-surface settings (Task 2–Data acquisition and technique enhancement), 2013, \$483,908. (PI: Miller)

MWH Americas Inc., Santa Susana Field Laboratory pilot seismic study, 2013, \$273,372. (Co-PI: Miller)

XRI Geophysics LLC, Advancing full wavefield seismic imaging and detection technologies, 2013, \$521,471. (PI: Miller)

## Awards

Franseen, E. K. — 2014 E.F. Schramm Lecturer, University of Nebraska-Lincoln

Franseen, E. K. — SEPM 2013–2014 President of SEPM, the International Society for Sedimentary Geology

Ludvigson, G. A. — Elected Sedimentology Councilor, SEPM; The Society for Sedimentary Geology, 2013–2014

Ludvigson, G. A. — Sedimentary Geology Division, Joint Technical Program Committee, Geological Society of America, 2013–2014

Miller, R. D. — Appointed, 1st Vice President, SEG Board, November 2012–2013

Miller, R. D. — USP Service Award, SEG 2012

Miller, R. D. — Merriam Research Award, KGS, 2013

## Internal Service

Franseen, E. K. — Member, KGS Stratigraphic Nomenclature Committee

Franseen, E. K. — Member, search committee for Budget Director

Franseen, E. K. — Member, Editorial Board for Current Research on Kansas Geology Bulletin

Ludvigson, G. A. — Member, KGS Stratigraphic Nomenclature Committee

Ludvigson, G. A. — STATEMAP Program Coordinator for the KGS

Ludvigson, G. A. — Member, search committee for Field Research Assistant Driller

Miller, R. D. — KGS Current Research Bulletin Advisory Board, 1992–present

Miller, R. D. — KGS Borehole Standards, Remediation, and Reclamation Committee, Chair, 1990–present

Miller, R. D. — KGS Emergency Preparedness Committee, 1987–present

Sawin, R. S. — Chair, KGS Stratigraphic Nomenclature Committee

Smith, J. J. — Member, search committee for Postdoctoral Research Assistant

## External Service

Butler, J. J., Jr. — President-Elect (July 2011–July 2013), President (July 2013–present), International Commission on Ground Water, International Association of Hydrological Sciences

Butler, J. J., Jr. — Elected Member, Board of Directors, Scientists and Engineers Division, National Ground Water Association (2010–2013)

Butler, J. J., Jr. — Appointed Member, Chair (2012–13), Awards Committee, Scientists and Engineers Division, National Ground Water Association

Butler, J. J., Jr. — Appointed Member, Kansas Water Resources Institute Administrative Council

Butler, J. J., Jr. — Associate Editor — Ground Water

Butler, J. J., Jr. — National Science Foundation — Hydrologic Sciences Proposal Panelist November 2013)

Butler, J. J., Jr. — Promotion and Tenure Evaluator, Department of Geosciences, Colorado State University (2013)

Butler, J. J., Jr. — Member, Erin Haacker Ph.D. committee, Department of Geological Sciences, Michigan State University (2013–present)

Butler, J. J., Jr. — Member, Brooks Bailey M.S. committee, Department of Geology, University of Kansas (2013–present)

Butler, J. J., Jr. — Meeting or Special Session Convener:

- Characterizing Water Quantity and Water Quality: New Approaches and Future Directions, International Association of Hydrological Sciences, 2013 Joint Assembly, Gothenburg, Sweden, July 2013
- Eliminating or Exploiting Environmental Fluctuations to Improve Hydraulic Characterization, National Ground Water Association, Ground Water Summit, San Antonio, Texas, May 2013

Butler, J. J., Jr. — Member, Organizing Committee, NovCare 2013 (Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice), May 2013, Leipzig, Germany

Butler, J. J., Jr. — Associate, Center for East Asian Studies, University of Kansas

Butler, J. J., Jr. — Core Faculty Member, Center for Global and International Studies, University of Kansas

Butler, J. J., Jr. — Courtesy Full Professor, Department of Geology, University of Kansas

Butler, J. J., Jr. — Worked with NBC Learn and Michigan State University to develop educational video on the High Plains aquifer, April 2013 (<http://archives.nbclearn.com/portal/site/k-12/flatview?cuecard=65288>)

Butler, J. J., Jr. — Session Moderator:

- 2013 NGWA Ground Water Summit, San Antonio, Texas, May 2013
- International Association of Hydrological Sciences, 2013 Joint Assembly, Gothenburg, Sweden, July 2013
- 2013 Governor's Conference on Future of Water in Kansas, October 2013
- 22<sup>nd</sup> Annual Kansas Hydrology Seminar, Topeka, Kansas, November 2013
- 2013 Ground Water Expo, National Ground Water Assoc., Nashville, Tennessee, December 2013

Butler, J. J., Jr. — Visiting Researcher, Hydrogeology Group, Universitat Politècnica de València, September 2012–January 2013, Valencia, Spain (KU sabbatical leave)

Dunham, J. — Represented KGS at the annual USGS-AASG Digital Mapping Techniques (DMT) conference, Champaign, IL, Illinois State Geological Survey, University of Illinois, May 20–23, 2012

Dunham, J. — Represented KGS at the annual USGS-AASG Digital Mapping Techniques (DMT) conference, Golden, Colorado, Colorado Geological Survey, Colorado School of Mines, June 2–5, 2013

Franseen, E. K. — Member, Promotion and Tenure Committee, Department of Geology, University of Kansas

Franseen, E. K. — Member, Graduate Students Admissions Committee, Department of Geology, University of Kansas

Franseen, E. K. — Member, Search Committee for Petroleum Engineer, Chemical and Petroleum Engineering Department, University of Kansas

Franseen, E. K. — Member, Search Committee for Geophysicist, Department of Geology, University of Kansas

Franseen, E. K. — Evaluator, Faculty Teaching, Department of Geology, University of Kansas

Franseen, E. K. — Advising, Undergraduates (sophomores), Department of Geology, University of Kansas

Franseen, E. K. — President, SEPM (Society of Sedimentary Research)

Franseen, E. K. — Member, Board of Visitors (Alumni Board), Department of Geology, University of Wisconsin-Madison

Franseen, E. K. — Chair, SEPM Strategic Plan Committee

Franseen, E. K. — President-Elect, SEPM (Society of Sedimentary Research)

Franseen, E. K. — Chair, SEPM Shepard Medal Award Committee

Franseen, E. K. — Chair, SEPM Ethics Violations Committee

Franseen, E. K. — Chair, SEPM Sedimentary Record Editor Search Committee

Franseen, E. K. — Member, SEPM Student Research Grant Evaluation Committee

Franseen, E. K. — Chair, Ph.D. committee for Diana Ortega-Ariza

Franseen, E. K. — Co-chair, Ph.D. committee for Zhaoqi Li

Franseen, E. K. — Co-chair, MS committees for Dustin Stolz, Rafferty Sweeney, Karen Ohmes-Lechtenburg, Justin Fairchild, and Tony Pugliano

Franseen, E. K. — Member, Ph.D. committee for Jason Rush

Franseen, E. K. — Member, MS committees for Brad King, Jennifer Lowry, Thomas Neal, Maritha Huber, and Sean Fischer

Franseen, E. K. — Instructor for Geology 532 — Stratigraphy, Fall Semester, 2013, Geology Department, University of Kansas

Franseen, E. K. — Co-Instructor for Geology 761 — Regional Field Geology, Spring Semester, 2013, Geology Department, University of Kansas

Ludvigson, G. A. — Member, search committee for the KU Geology Department Ritchie Distinguished Professorship in Sedimentary Geology

Ludvigson, G. A. — Member, search committee for a new geochronologist for the KU Department of Geology

Ludvigson, G. A. — Elected 2013-2014 Councilor for Sedimentology for SEPM, The Society for Sedimentary Geology

Ludvigson, G. A. — Member, ad-hoc SEPM Council committee in fall 2013 to select the incoming co-editor for JSR

Ludvigson, G. A. — 2013-2014 GSA Sedimentary Geology Division Representative, GSA Joint Technical Program Committee (JTPC)

Ludvigson, G. A. — Associate Editor, Journal of Sedimentary Research

Ludvigson, G. A. — Participating faculty member in GEOL 791-020 seminar course Current Research in Sedimentary Geology, Department of Geology, University of Kansas; August–December 2013

Ludvigson, G. A. — Research hours faculty supervisor for KU graduate students Hunter Harlow and Jeff Ross; spring and summer semesters 2013

Ludvigson, G. A. — Mentored KGS postdoctoral researcher Dr. Brian Platt, spring and summer semesters 2013

Ludvigson, G. A. — Co-chair, M.S. thesis committee for KU student Hunter Harlow

Ludvigson, G. A. — Co-chair, M.S. thesis committee for KU graduate student Jeff Ross

Ludvigson, G. A. — Chair, M.S. thesis committee for KU graduate student Holly Field

Ludvigson, G. A. — Member, Ph.D. committee of KU graduate student Tony Layzell

Ludvigson, G. A. — Member, graduate committees of KU graduate students Julianne Emry (Ph.D), Matthew Meyers (M.S.), and Michael Waynick (M.S.)

Miller, R. D. — Chair, master's thesis committees, for Amanda Livers (University of Kansas), Jordan Nolan (University of Kansas), Yao Wang (University of Kansas), and Tyler Schwenk (University of Kansas)

Miller, R. D. — Co-chair, master's thesis committee, for Bevin Bailey (University of Kansas)

Miller, R. D. — Session Co-chair, Shallow Seismology, Near Surface Asia Pacific Conference, Beijing, China, July 18, 2013

Miller, R. D. — AGU, Session Co-convenor, “Developments and practical applications of the multichannel seismic-data surface-wave analysis method,” AGU Fall Meeting, San Francisco, December 9–13, 2013

Miller, R. D. — SEG Board, November 2012–2013. SEG-EEGS Merger Task Force, Continuing Education Committee, and Inter-Society Relations Committee

Miller, R. D. — KU Faculty Senate Research Committee, 2011–2013

Miller, R. D. — DOE-EM30 Scientific Opportunities for Monitoring of Environmental Remediation Sites (SOMERS) Task Force, 2010–present

Miller, R. D. — SEG Near Surface Task Force, 2010–present

Miller, R. D. — SEG, Intersociety Task Force, 2010–present

Miller, R. D. — SEG/NSG EEGS Collaboration Committee, Chair, 2010–present

Miller, R. D. — SEG, Special Issue Editor, *The Leading Edge*: July 2013 (v. 32, n. 7), hydrogeophysics; June 2013 (v. 32, n. 6), nonreflection seismic and inversion of surface and guided waves; March 2013 (v. 32, n. 3), urban geophysics

Miller, R. D. — KU RGS Research Achievement Award Selection Committee, 2008–2013

Miller, R. D. — SEG Near-Surface Geophysics Section Publications Committee, Chairman, 2008–present

Miller, R. D. — National Advisory Team for Geophysics in Hydrology, organized by the Consortium of Universities for the Advancement of Hydrologic Sciences Inc., 2006–present

Miller, R. D. — ASTM Geophysics Subcommittee on Seismic Standards, 2006–present

Miller, R. D. — Geophysical Society of Kansas, Editor, 2005–present

Miller, R. D. — SEG Technical Session Chair, 2012, 2013

Miller, R. D. — SAGEEP EEGS Technical Session Chair, 2013

Miller, R. D. — Consultant, APACHE CORP, 2013, High Resolution Seismic Imaging Geohazard

Sawin, R. S. — Member, Kansas State University Geology Advisory Council (1995–present)

Sawin, R. S. — Member, Reservoir Siting Technical Advisory Committee, Kansas Water Office

Smith, J. J. — Co-Chair, 2013 Annual Meeting of the Society for Cenozoic Research (TerQua), Lawrence, Kansas

Smith, J. J. — Co-Chair, Recent Advances in Stratigraphic Research, Annual Meeting of the Geological Society of America

Suchy, D. R. — Research Senator, Unclassified Professional Staff Senate, University of Kansas (2012–Present)

Suchy, D. R. — Member and Vice-Chairman, Board of Directors, Rural Water District #5, Douglas County, Kansas (2007–Present)

Suchy, D. R. — Board Member and Treasurer, Public Wholesale Water Supply District #25, Douglas and Osage Counties, Kansas (2007–Present)

Whittemore, D. O. — Geochemical identification of saltwater sources for Kansas Corporation Commission

Whittemore, D. O. — Council member of Kansas Academy of Science  
Whittemore, D. O. — State Steering Committee of Conservation Reserve Enhancement Program  
Whittemore, D. O. — Reviewer for following journals: *Journal of Contaminant Hydrology, Water Quality Exposure and Health, Environmental Science & Technology, Environmental Earth Sciences*  
Whittemore, D. O. — PhD committee, student at University of Colorado  
Whittemore, D. O. — M.S. committee, student in Department of Geology, University of Kansas

### **KGS Website Additions**

Placed online:

8 bulletins and 15 books from other series (most from the Irrigation series)

Three Public Information Circulars

21 open-file reports, including all 2013 open-file reports that were suitable for the web and several from earlier years  
(mostly from the 1990s)

41,500 wireline logs since mid-2012

16,600 other oil and gas documents

Scanned 21,000 water well records since mid-2012



### Refereed Publications

- Bailey, B. L., Steeples, D. W., Miller, R. D., Peterie, S. L., Ivanov, J., and Markiewicz, R. D., 2012, Evaluation of extended correlation on shallow Vibroseis data [Exp. Abs.]: Annual Meeting of the Soc. of Expl. Geophys., Las Vegas, Nevada, November 4-9, 3 p. (e-Poster.)
- Bohling, G. C., Liu, G., Knobbe, S. J., Reboulet, E. C., Hyndman, D. W., Dietrich, P., and Butler, J. J., Jr., 2012, Geostatistical analysis of centimeter-scale hydraulic conductivity variations at the MADE site: *Water Resources Research*, v. 48, W02525. doi:10.1029/2011WR010791
- Bunn, A. L., Wellman, D. M., Deeb, R. A., Hawley, E. L., Truex, M. J., Peterson, M. J., Freshley, M. D., Pierce, E. M., McCord, J., Young, M. H., Gilmore, T. J., Miller, R. D., Miracle, A. L., Kaback, D., Eddy-Dilek, C., Rossabi, J., Lee, M. H., Bush, R., Beam, P., Chamberlain, G. M., Marble, J., Whitehurst, L., Gerdes, K., and Collazo, Y. T., 2012, Scientific Opportunities for Monitoring at Environmental Remediation Sites (SOMERS): Integrated systems-based approaches to monitoring. DOE/PNNL-21379. Prepared for Office of Soil and Groundwater Remediation, Office of Environmental Management, U.S. Department of Energy, Washington, DC, by Pacific Northwest National Laboratory, Richland, WA.
- Bunn, A., Wellman, D., Freshley, M., Gilmore, T., Miracle, A., Truex, M., Deeb, R., Hawley, E., Eddy-Dilek, C., Kabak, D., McCord, J., Miller, R. D., Peterson, M., Pierce, E., Rossabi, J., Young, M., Bush, R., Beam, P., Chamberlain, S., Gerdes, K., and Collazo, Y., 2012, Scientific opportunities for monitoring of environmental remediation sites: Proceedings of the Waste Management Symposia — WM2012: Improving the Future in Waste Management, Phoenix, Arizona, February 26-March 1.
- Butler, J. J., Jr., in press, Slug tests in wells screened across the water table: Some additional considerations: *Ground Water*.
- Butler, J. J., Jr., Stotler, R. L., Whittemore, D. O., and Reboulet, E. C., in press, Interpretation of water-level changes in the High Plains aquifer in western Kansas: *Ground Water*.
- Devlin, J. F., Brookfield, A. E., Huang, B., and Schillig, P. C., 2012, Using the Domenico solution to teach contaminant transport modeling: *Journal of Geoscience Education*, v. 60, no. 2, p. 123–132.
- Doll, W. E., Miller, R. D., and Bradford, J., 2012, The emergence and future of near-surface geophysics: *Leading Edge*, v. 31, n. 6, p. 684–689.
- Emry, J. R., Goldstein, R. H., and Franseen, E. K., 2012, A first-cut field method to evaluate limestone aggregate durability: *ACI Materials Journal*, v. 109, p. 557–564.
- Franseen, E. K., and Byrnes, A. P., 2012, Arbuckle Group platform strata in Kansas — A Synthesis; *in*, The Great American Carbonate Bank: The Geology and Economic Resources of the Cambrian–Ordovician Sauk Megasequence of Laurentia: AAPG Memoir 98, J. R. Derby, R. D. Fritz, S. Longacre, W. A. Morgan, and C. A. Sternbach, eds., p. 1,031–1,047.
- Franseen, E. K., and Byrnes, A. P., 2012, Extended abstract — Arbuckle Group platform strata in Kansas — A Synthesis, *in*, The Great American Carbonate Bank: The Geology and Economic Resources of the Cambrian–Ordovician Sauk Megasequence of Laurentia: AAPG Memoir 98, J. R. Derby, R. D. Fritz, S. Longacre, W. A. Morgan, and C. A. Sternbach, eds., p. 445a–452a.
- Gleeson, T., Alley, W. M., Allen, D. M., Sophocleous, M. A., Zhou, Y., Taniguchi, M., and VanderSteen, J., 2012, Towards sustainable groundwater use: Setting long-term goals, backcasting and managing adaptively: *Ground Water*, v. 50, no. 1, p. 19–26.
- Goldstein, R. H., Franseen, E. K., Dvoretzky, R., and Sweeny, R., 2012, Controls on focused-flow and dispersed-flow deepwater carbonates: Miocene Agua Amarga Basin, Spain: *Journal of Sedimentary Research*, v. 82, p. 499–520.
- Halfen, A. F., Johnson, W. C., Hanson, P. R., Woodburn, T. L., Young, A. R., and Ludvigson, G. A., 2012, Activation history of the Hutchinson Dunes in east-central Kansas, USA, during the past 2200 years: *Aeolian Research*, v. 5, p. 9–20. <http://dx.doi.org/10.1016/j.aeolia.2012.02.001>
- Hasiotis, S. T., and Platt, B. F., 2012, Exploring the sedimentary, pedogenic, and hydrologic factors that control the occurrence and role of bioturbation in soil formation and horizonation in continental deposits: An integrative approach: *The Sedimentary Record*, p. 4–9.

- Hasiotis, S. T., Platt, B. F., Reilly, M., Amos, K., Lang, S., Kennedy, D., Todd, J. A., and Michel, E., 2012, Actualistic studies of the spatial and temporal distributions of terrestrial and aquatic organism traces in continental environments to differentiate lacustrine from fluvial, eolian, and marine deposits in the geologic record, *in*, Lacustrine Sandstone Reservoirs and Hydrocarbon Systems: American Association of Petroleum Geologists Memoir 95, Baganz, O. W., Bartov, Y., Bohacs, K., and Nummenda, D., eds., p. 433–489.
- Hirmas, D. R., Platt, B. F., and Hasiotis, S. T., 2012, Determination of calcite and dolomite content in soils and paleosols by continuous coulometric titration: *Soil Science Society of America Journal*, v. 75, p. 1,100–1,106.
- Kenward, P., Goldstein, R. H., Brookfield, A. E., Gonzalez, L. A., and Roberts, J. A. (2012). Model for how archaeal methanogenesis can preserve early porosity in dolomite and limestone reservoirs: *AAPG Bulletin*, v. 96, p. 399–413.
- Li, Z., Goldstein, R. H., and Franseen, E. K., in press, Ascending freshwater-mesohaline mixing: A new scenario for dolomitization: *Journal of Sedimentary Research*.
- Liu, G., Butler, J. J., Jr., Reboulet, E.C., and Knobbe, S., 2012, Hydraulic conductivity profiling with direct-push methods: *Grundwasser*, v. 17, no. 1, p. 19–29. doi: 10.1007/s00767-011-0182-9
- Liu, G., Knobbe, S., and Butler, J. J., Jr., in press, Resolving centimeter-scale flows in aquifers and their hydrostratigraphic controls, *Geophysical Research Letters*.
- Ludvigson, G. A., González, L. A., Fowle, D. A., Roberts, J. A., Driese, S. G., Villarreal, M. A., Smith, J. J., and Suarez, M. B., in press, Paleoclimatic applications and modern process studies of pedogenic siderite: Submitted for publication *in* *New Frontiers in Paleopedology and Terrestrial Paleoclimatology*, S. Driese, and L. Nordt, eds., *SEPM Special Publication*.
- Merriam, D. F., Brady, L. L., and Newell, K. D., 2012, Kansas energy resources, a geological review: *Natural Resources Research*, v. 21, no. 1, p. 163–175.
- Miller, R.D., 2012, Introduction to this special section — *Archaeology: Leading Edge*, v. 31, n. 8, p. 914–915.
- Miller R.D., 2012, President's Page: Advancing by division: *Leading Edge*, v. 31, n. 7, p. 748, 750.
- Miller R.D., 2012, President's Page: Surfacing our potential: *Leading Edge*, v. 31, n. 1, p. 8.
- Miller, R. D., Bailey, B. L., Peterie, S. L., Ivanov, J., and Markiewicz, R., 2012, Shallow P- and S-wave reflections to characterize the near-surface [Exp. Abs.]: *Annual Meeting of the Soc. of Expl. Geophys.*, Las Vegas, NV, November 4–9, 4 p.
- Murphy, L. R., and Mandel, R. D., 2012, Geoarchaeology and paleoenvironmental context of the Burntwood Creek rockshelter, High Plains of northwestern Kansas, U.S.A.: *Geoarchaeology: An International Journal*, v. 27, p. 344–362.
- Philippine National Water Resources Board, Philippine Nuclear Research Institute, and International Atomic Energy Agency IAEA (Dunning, C. P., and Sophocleous, M. A.), 2012, Investment needs for resource assessment capability in the Philippines to improve the planning and management of water infrastructure. A report of the Philippine IWAVE Pilot Study, part of the IAEA Water Availability Enhancement Project, August 2012, 130 p. [http://dl.dropbox.com/u/90583024/NWRB\\_book\\_FINAL.pdf](http://dl.dropbox.com/u/90583024/NWRB_book_FINAL.pdf)
- Platt, B. F., Hasiotis, S. T., and Hirmas, D. R., 2012, Empirical determination of physical controls on megafaunal footprint formation through neoichnological experiments with elephants: *PALAIOS*, v. 27, p. 725–737.
- Schwenk, J. T., Miller, R. D., Ivanov, J., Sloan, S. D., and McKenna, J. R., 2012, Dispersion interpretation from synthetic seismograms and multi-channel analysis of surface waves (MASW) [Exp. Abs.]: *Annual Meeting of the Soc. of Expl. Geophys.*, Las Vegas, Nevada, November 4–9, 8 p.
- Sloan, S. D., Peterie, S. L., Miller, R. D., Ivanov, J., McKenna, J. R., Broadfoot, S. W., and Metheny, O. M., 2012, Tunnel detection using near-surface seismic methods [Exp. Abs.]: *Annual Meeting of the Soc. of Expl. Geophys.*, Las Vegas, Nevada, November 4–9, 5 p.
- Sophocleous, M. A., 2012, Conserving and extending the useful life of the largest aquifer in North America: The future of the High Plains/Ogallala aquifer: *Ground Water*, v. 50 no. 6, p. 831–839.
- Sophocleous, M. A., 2012, The evolution of groundwater management paradigms in Kansas and possible new steps towards water sustainability: *Journal of Hydrology*, p. 414–415: 550–559.
- Sophocleous, M. A., 2012, On understanding and predicting groundwater response time: *Ground Water*, v. 50 no. 4, p. 528–540.
- Sophocleous, M. A., and Merriam, D. F., 2012, The Ogallala formation of the Great Plains in central U.S. and its containment of life-giving water: *Natural Resources Research*, v. 21, no. 4, p. 415–426.
- Suarez, C. A., González, L. A., Ludvigson, G. A., Cifelli, R. L., and Tremain, E., 2012, Water utilization of the Cretaceous Mussentuchit Member local vertebrate fauna, Cedar Mountain Formation, Utah, USA: Using

- oxygen isotopic composition of phosphate: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 313, p. 78–92. doi:10.1016/j.palaeo.2011.10.011
- Suarez, M. B., Ludvigson, G. A., González, L. A., Al-Suwaidi, A. H., and You, H., in press, Carbon isotope chemostratigraphy in lacustrine strata of the Xiagou Formation, Gansu Province, NW China: Geological Society London Special Publication Isotopic Studies in Cretaceous Research.
- Suarez, C. A., Ludvigson, G. A., González, L. A., Fiorillo, A. R., Flaig, P., and McCarthy P. J., in press, Use of multiple oxygen isotope proxies for elucidating Arctic Cretaceous paleohydrology: Geological Society London Special Publication Isotopic Studies in Cretaceous Research.
- Walsh, D., Turner, P., Grunewald, E., Zhang, H., Butler, J. J., Jr., Reboulet, E., Knobbe, S., Christy, T., Lane, J. W., Jr., Johnson, C. D., Munday, T., and Fitzpatrick, A., in press, A small-diameter NMR logging tool for groundwater investigations: *Ground Water*.
- Wang, X., Zheng, C., Liu, G., Li, W., Knobbe, S., Reboulet, E. C., and Butler, J. J., Jr., 2012, A review of recent developments in using direct-push technologies for rapid, high-resolution hydraulic conductivity measurements (in Chinese): *Hydrogeology and Engineering Geology*, v. 39, no. 1, p. 8–12.
- Whittemore, D. O., 2012, Potential impacts of stormwater runoff on water quality in urban sand pits and adjacent groundwater: *J. American Water Resources Association*, v. 48, no. 3, p. 584–602. doi: 10.1111/j.1752-1688.2011.00637.x
- Xia, J., Xu, Y., Luo, Y., Miller, R. D., Cakir, R., and Zeng, C., 2012, Advantages of using multichannel analysis of Love waves (MALW) to estimate near-surface shear-wave velocity: *Survey in Geophysics*, v. 33, p. 841–860.
- Xia, J., Xu, Y., Miller, R. D., and Ivanov, J., 2012, Estimation of near-surface quality factors by constrained inversion of Rayleigh-wave attenuation coefficients: *Journal of Applied Geophysics*, v. 82, p. 137–144.
- Zeng, C., Xia, J., Miller, R. D., and Tsoflias, G. P., 2012, An improved vacuum formulation for 2D finite-difference modeling of Rayleigh waves including surface topography and internal discontinuities: *Geophysics*, v. 77, p. T1–T9.
- Zeng, C., Xia, J., Miller, R. D., Tsoflias, G. P., and Wang, Z., 2012, Numerical investigation of MASW applications in presence of surface topography: *Journal of Applied Geophysics*, v. 84, p. 52–60.

### Nonrefereed/Unpublished Papers

- Butler, J. J., Jr., Stotler, R. L., Whittemore, D. O., Reboulet, E., Bohling, G. C., and Wilson, B. B., 2012, High Plains aquifer calibration monitoring well program: Fifth year progress report: Kansas Geological Survey Open-File Report 2012-2, 85 p.
- Dunham, J., 2012, Defining the Flint Hills (map). *Symphony in the Flint Hills — Field Journal 2012*, v. IV, p. 119. Strong City, Kansas: Symphony in the Flint Hills Press. 182 pp.
- Dunham, J. (compiler), 2012, Flint Hills Ecoregion (map): Kansas Geological Survey, Open-File Report 2012-6, scale 1:500,000.
- Dunham, J., 2012, Headwater streams in Lyon County (map): *Symphony in the Flint Hills — Field Journal 2012*, v. IV, p. 111. Strong City, Kansas: Symphony in the Flint Hills Press. 182 pp.
- Dunham, J., 2012, Streams and rivers in the Flint Hills (map): *Symphony in the Flint Hills — Field Journal 2012*, v. IV, p. 108. Strong City, Kansas: Symphony in the Flint Hills Press. 182 pp.
- Franseen, E. K., and Goldstein, R. H., 2012, Miocene-Pliocene carbonate complexes of SE Spain with emphasis on microbialite-oolite sequences of the terminal carbonate complex. 60 p.
- Fross, D., Sophocleous, M. A., Wilson, B., and Butler, J., 2012. Kansas High Plains Aquifer Atlas. [http://www.kgs.ku.edu/HighPlains/HPA\\_Atlas/index.html](http://www.kgs.ku.edu/HighPlains/HPA_Atlas/index.html)
- Gagnon, G. F., 2012, LEOWEB Version 11.0 User Manual, Kansas Geological Survey, Open-File Report 2012-14, 34 p. [http://www.kgs.ku.edu/Publications/OFR/2012/OFR12\\_14/index.html](http://www.kgs.ku.edu/Publications/OFR/2012/OFR12_14/index.html)
- Layzell, A. L., 2012. A thousand years of drought and climate variability in Kansas: Implications for water resources management: Kansas Geological Survey, Open-File Report 2012-18.
- Liu, G., Wilson, B. B., Whittemore, D. O., and Butler, J. J., Jr., 2012, Ground-water model for Southwest Kansas Groundwater Management District No. 3: Future scenarios, Kansas Geological Survey Open-File Report 2012-3, 121 p.
- Lyle, S. A., Evans, C. S., Buchanan, R. C. and Sawin, R. S., eds., 2012, Northwest Kansas — Water conservation and consumption, energy and transportation, and the agricultural economy, 2012 Kansas Field Conference, field guide: Kansas Geological Survey, Open-File Report 2012-4, 84 p.

- Mandel, R. D., 2012, Geoarchaeology; *in*, Archeological Investigations at Arkansas City, Kansas, R. J. Hoard, ed.: Kansas Historical Society, Topeka, Kansas, Archeology Publication No. 26, p. 85–100.
- Mandel, R. D., 2012, Geoarchaeology of Area A; *in*, Agate Basin Archaeology at Beacon Island, North Dakota, M. D. Mitchell, ed.: Paleocultural Research Group, Arvada, Colorado, Monograph Series, Research Contribution No. 86, p. 9–25.
- Murphy, L. R., and Mandel, R. D., 2012, Paleoenvironmental context: The stable carbon isotope and phytolith record; *in*, Agate Basin Archaeology at Beacon Island, North Dakota, M. D. Mitchell, ed.: Paleocultural Research Group, Arvada, Colorado, Monograph Series, Research Contribution No. 86, p. 191–199.
- Newell, K. D., Sawin, R. S., and Brady, L. L., 2012, Gas from coal in Kansas: Kansas Geological Survey Public Information Circular 19 (revised), 4 p.
- Platt, B. F., 2012, Quantification of ichnological, paleoecological, paleohydrological, and paleoclimatological information from the Upper Jurassic Morrison Formation: unpublished Ph.D. dissertation, University of Kansas, Lawrence, 501 p.
- Sawin, R. S., and West, R. R., 2012, Field geology maps, Morris County, Kansas; preliminary field geology maps for Americus, Lake Kahola, and Wilsey SE 1:24,000-scale quadrangles: Kansas Geological Survey, Open-File Report 2012-5, 39 p.
- 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.
- 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.
- Suchy, D. R., 2012, The mineral industry of Kansas; *in*, U.S. Geological Survey, Area Reports — Domestic: U.S. Geological Survey Minerals Yearbook 2008, v. II, 406 p., p. 18.0–18.5.  
<http://minerals.usgs.gov/minerals/pubs/state/ks.html>
- Watney, W. L., 2012, Ninth, tenth, eleventh, and twelfth quarter progress reports — Modeling CO<sub>2</sub> sequestration in saline aquifer and depleted oil reservoir to evaluate regional CO<sub>2</sub> sequestration potential of Ozark Plateau Aquifer System, south-central Kansas: NETL-DOE Contract DE-FE0002056.
- Watney, W. L., and Birdie, T., 2012, First, second, third, and fourth quarter progress reports — Small scale field test demonstrating CO<sub>2</sub> sequestration in Arbuckle saline aquifer and by CO<sub>2</sub>-EOR at Wellington Field, Sumner County, Kansas: NETL-DOE Contract DE-FE0006821.
- Whittemore, D. O., 2012, Distribution and change in salinity in the Equus Beds aquifer in the Burrton Intensive Groundwater Use Control Area: Kansas Geological Survey Open-File Report 2012-1, 33 p.
- Whittemore, D. O., 2012, Geochemical identification of saline water from an irrigation well in north-central Stafford County, Kansas: Kansas Geological Survey Open-File Report 2012-21, 5 p.

## Computer Software

- Gagnon, G. F., 2012, LEO 7.12.11.19. <http://www.kgs.ku.edu/software/LEO/index.html>
- Gagnon, G. F., 2012, LEOWEB 11. <http://chasm.kgs.ku.edu/apex/f?p=120418>
- Victorine, J. R., 2012, PffEFFER-java Web Site. <http://www.kgs.ku.edu/software/PffEFFER-java/>
- Victorine, J. R., 2012, Drill Stem Test (DST) Data Entry & Quantitative Analysis Web Site.  
<http://www.kgs.ku.edu/software/DST/>
- Victorine, J. R., 2012, Synthetic Seismic Profile Plot Web Site. <http://www.kgs.ku.edu/software/SS/>
- Victorine, J. R., 2012, Digitize Electric Well Log (E-Log) Image Plot Web Site.  
<http://www.kgs.ku.edu/software/DEWL/>
- Victorine, J. R., 2012, Predicting the Density and Viscosity of Supercritical Carbon Dioxide Applet.  
<http://www.kgs.ku.edu/PRS/Ozark/CO2/>
- Victorine, J. R., 2012, Type Logs Project Web Site. [http://www.kgs.ku.edu/PRS/Ozark/TYPE\\_LOG/](http://www.kgs.ku.edu/PRS/Ozark/TYPE_LOG/)

## Abstracts

- Bailey, B.L., Steeples, D.W., Miller, R.D., Peterie, S.L., Ivanov, J., and Markiewicz, R., 2012, Implications of Vp/Vs ratio on shallow P and S reflection correlation and lithology discrimination [Abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2013), Denver, Colorado, March 17-21, 2013. Published on CD.

- Barker, R., Watney, W. L., Scheffer, A., Ford, S., and Datta, S., 2012, Geochemical and mineralogical characterization of the Arbuckle aquifer: Studying mineral reactions and its implications for CO<sub>2</sub> sequestration, GSA Annual Meeting, Charlotte, Nov. 4–7.
- Benson, B. E., Tsoflis, G., and Mandel, R. D., Geophysical investigations of the Mound City borrow pits, Ross County, Ohio. Presented at the Annual Meeting of the Society of Exploration Geophysicists, Las Vegas, Nevada, November 2012. (Invited).
- Benson, G. S., Franseen, E. K., Goldstein, R. H., and Li, Z., 2012, Data collection, interpretation, and geologic modeling of outcrop: Cerro La Molata, Cabo de Gata, Spain: AAPG/SPE/SEG Hedberg Research Conference, Fundamental Controls on Flow in Carbonates, July 8–13, 2012, Saint-Cyr Sur Mer, Provence, France, 4 p. Extended abstract.
- Bohling, G. C., Liu, G., and Butler, J. J., Jr., Adaptive integration of auxiliary information into inverse problems: Application to direct-push hydraulic profiling, Abstract H41K-04 presented at 2012 Fall Meeting, AGU, San Francisco, Dec. 2012.
- Boss, S. K., Cothren, J., Suarez, C., Williamson, M., Platt, B. F., and Kvamme, J. A., 2012, Wide-field LIDAR imaging and online interactive measurement of a dinosaur trackway site from southwest Arkansas, USA: Geological Society of America Abstracts with Programs, v. 44.
- Brookfield, A., Enszt, A., Stover, S., Wilson, B., Lyon, A., and Beightel, C., 2012. Republican River basin study: The start of a multi-state research effort. Presentation with abstract, Governor's Conference on the Future of Water in Kansas, Manhattan, Kansas, October 30–31.
- Brookfield, A. E., and Sudicky, E. A., 2012, Implications of hyporheic flow on temperature-based estimates of GW/SW interactions. Presentation with published abstract, AGU 2012 Fall Meeting, San Francisco, California, Dec. 3–7.
- Brookfield, A., Wilson, B., Stover, S., Enszt, A., Beightel, C. and Lyons, A., 2012, Managing the water resources of the lower Republican River basin. Presentation with published abstract, GSA 2012 Annual Meeting, Minneapolis, Minnesota, November 4–7.
- Butler, J. J., Jr., Zheng, C., Hyndman, D. W., Bianchi, M., and Gorelick, S., 2012, A generation of research at the MADE site and a view to the future, Abstract 8556 presented at 2012 Ground Water Summit, NGWA, Garden Grove, California, May 2012.
- Dempsey, E. C., Mandel, R. D., and Hanson, P. R., 2012, Landscape evolution and geoarchaeology of the Current River Valley, Southeast Missouri. Presented at the Annual Midwest Archaeological Conference, East Lansing, Michigan, October 2012.
- Dempsey, E. C., Mandel, R. D., and Hanson, P. R., 2012, Late-Quaternary geoarchaeological investigations in the Current River Valley, Southeast Missouri. Poster presented at the 22<sup>nd</sup> Biennial Meeting of the American Quaternary Association, Duluth, Minnesota, June 2012.
- Dvoretzky, R. A., Goldstein, R. H., and Franseen, E. K., 2012, Static reservoir-analog modeling of focused-flow and dispersed-flow resedimented deep-water carbonate deposits: Upper Miocene, Agua Amarga Basin, Southeast Spain: AAPG Annual Meeting, Long Beach, California, April 2012.
- Fairchild, J., Franseen, E. K., and Goldstein, R. H., 2012, Paleotopography and sea-level controls on facies distribution and stratal architecture in the Westerville Limestone (Upper Pennsylvanian), NE Kansas and NW Missouri: AAPG Annual Meeting, Long Beach, California, April 2012.
- Franseen, E. K., 2012, Lower-Middle Mississippian shallow-water, mid-latitude heterozoan & siliceous sponge-spicule facies in a midcontinent setting, USA: 2012 GSA Annual Meeting & Exposition, Charlotte, North Carolina, November 4–7, 2012, Abstract # 209718.
- Fross, D., Sophocleous, M., Wilson, B., and Butler, J., 2012, Kansas High Plains Atlas. Governor's Conference on the Future of Water in Kansas, October 30–31, 2012, Manhattan, Kansas.
- Goldstein, R. H., Franseen, E. K., and Lipinski, C. J., 2012, Controls on high-frequency oolite-microbialite-coral reef sequences, Upper Miocene, SE Spain: AAPG Hedberg Research Conference, Microbial Carbonate Reservoir Characterization, Houston, Texas, June 3–8, 2012, 4 p. Extended abstract.
- Goldstein, R. H., Li, Z., and Franseen, E. K., 2012, Duration and climate effects on meteoric diagenesis: Non-Karstic control on distribution of porosity and permeability: AAPG/SPE/SEG Hedberg Research Conference, Fundamental Controls on Flow in Carbonates, July 8–13, 2012, Saint-Cyr Sur Mer, Provence, France, 4 p. Extended abstract.
- Harlow, H. R., Ludvigson, G. A., Smith, J. J., Doveton, J. H., and Petronis, M., 2012, Stratigraphic, chemostratigraphic, and geochemical investigations of the first intact drill core of the Neogene High Plains Succession in western Kansas: Geological Society of America, Abstracts with Programs, v. 44, no. 7, p. 585.



- Hoopes, J. W., Mandel, R. D., Stinson, P. M., and Egitto, A. C., 2012, Longterm water security in Afghanistan: Lessons from archaeology and history. Presented at the Environmental Security Conference, University of Kansas, Lawrence, Kansas, April 2012.
- Jackson, C., Scheffer, A., Fowle, D., Watney, W. L., Strazisar, B., and Roberts, J. A., 2012, Geochemical and microbiological influences on seal integrity during SC-CO<sub>2</sub> exposure, Arbuckle aquifer, SE Kansas, GSA Annual Meeting, Charlotte, Nov. 4–7.
- Judy, B. E., and Miller, R. D., 2012, High-resolution seismic reflection imaging of the natural salt-dissolution front of the Hutchinson Salt Member [Abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2013), Denver, Colorado, March 17–21, 2013. Published on CD.
- Knobbe, S., Liu, G., Butler, J. J., Jr., and Reboulet, E. C., 2012, A new thermal method for characterizing groundwater flux variations, Abstract 8448 presented at 2012 Ground Water Summit, NGWA, Garden Grove, California, May 2012.
- Li, Z., Goldstein, R. H., and Franseen, E. K., 2012, Diagenetic controls on porosity and permeability in Upper Miocene carbonates, La Molata, SE Spain: AAPG Annual Meeting, Long Beach, California, April 2012.
- Lipinski, C. J., Franseen, E. K., and Goldstein, R. H., 2012, Reservoir analog model for oolite-microbialite sequences, Miocene terminal carbonate complex, Spain: AAPG Hedberg Research Conference, Microbial Carbonate Reservoir Characterization, Houston, Texas, June 3–8, 2012, 4 p. Extended abstract.
- Liu, G., Butler, J. J., Jr., Knobbe, S., Reboulet, E. C., and Bohling, G. C., 2012, High-resolution hydraulic conductivity profiling with direct-push methods, Abstract 8528 presented at 2012 Ground Water Summit, NGWA, Garden Grove, California, May 2012.
- Liu, G., Knobbe, S., Butler, J. J., Jr., and Reboulet, E. C., 2012, A new method for characterizing groundwater flux variations, 21st Annual Kansas Hydrology Seminar, Topeka, Kansas.
- Lorenz, J. C., Cooper, S. P., Watney, W. L., Robertson, R., 2012, Natural fractures in limestone vs. dolomite: Comparing fracture characteristics in the Canyon (Sacroc Field, TX) and the Arbuckle (Wellington Field, KS) Formations: April 22–15, AAPG Annual Meeting, Long Beach, California.
- Ludvigson, G. A., González, L. A., Fowle, D. A., Roberts, J. A., Driese, S. G., Suarez, C. A., and Villarreal, M. A., 2012, The paleoclimatic record of pedogenic siderites: Validation by modern process studies and new applications to the Cretaceous Arctic (Invited): American Geophysical Union Fall Meeting, San Francisco, California; PP33D-06.
- Ludvigson, G. A., González, L. A., Fowle, D. A., Roberts, J. A., Driese, S. G., Villarreal, M. A., and Suarez, M., 2012, What's the low down on soil-formed siderite?: Modern process studies and validation of a deep-time terrestrial paleoclimate proxy: Geological Society of America, Abstracts with Programs, v. 44, no. 7, p. 363.
- Ludvigson, G. A., González, L. A., Suarez, M. B., Joeckel, R. M., Kirkland, J. I., You, H., Suarez, C. A., and Murphy, L. R., 2012, Progress and prospects for carbon isotope chemostratigraphy of Early Cretaceous terrestrial strata: Geological Society of America, Abstracts with Programs, v. 44, no. 5, p. 62–63.
- Lynott, M. J., Mandel, R. D., Brown, J. A., and Ruby, B., 2012, Earthen monument construction at Mound City, Ross County, Ohio: 2009–2011 Investigations. Presented at the 77<sup>th</sup> annual meeting of the Society for American Archaeology, Memphis, Tennessee, April 2012. (Invited).
- Mandel, R. D., 2012, Inferring Late-Quaternary flood magnitudes from buried alluvial paleosols in the Central Great Plains, USA. Presented at the annual meeting of the Geological Society of America, Charlotte, North Carolina, October 2012. (Invited).
- Mandel, R. D., 2012, Stratigraphy, geoarchaeology, and paleoenvironments of Late-Quaternary valley fills in draws on the High Plains of western Kansas. Poster presented at the 22<sup>nd</sup> biennial meeting of the American Quaternary Association, Duluth, Minnesota, June 2012.
- Mandel, R. D., 2012, The search for paleoindian and pre-paleoindian sites in the Central Great Plains of North America: A soils-geomorphic approach. Presented at the 77<sup>th</sup> annual meeting of the Society for American Archaeology, Memphis, Tennessee, April 2012. (Invited).
- Mandel, R. D., Stinson, P. M., Hoopes, J. W., and Egitto, A. C., 2012, Modeling cultural landscapes and water resources: A case study in Afghanistan. Presented at the 4<sup>th</sup> annual meeting of the COCOM Cultural Heritage Action Group, Arlington, Virginia, September 2012. (Invited).
- Miller, R. D., 2012, Near-surface seismic: More than a problem of scale [Abs.]: Abstracts of Lectures and Posters, GeoHannover 2012, October 1–3, p. 40.
- Murphy, L. R., and Mandel, R. D., 2012, Paleoenvironmental reconstruction at the Beacon Island Site, a paleoindian bison kill in northwestern North Dakota. Presented at the 77<sup>th</sup> annual meeting of the Society for American Archaeology, Memphis, Tennessee, April 2012.

- Oborny, S., Cramer, B. D., Ludvigson, G. A., and Henthorne, R., 2012, Limestone aggregate resources in northeast Kansas: Integrated lithostratigraphy, stable isotope chemostratigraphy, and cathodoluminescence as a tool to evaluate current and potential aggregate resources in Miami County, Kansas: Geological Society of America, Abstracts with Programs, v. 44, no. 7, p. 130.
- Ortega-Ariza, D., and Franseen, E. K., 2012, Sequence development of the Late Miocene mixed carbonate-siliciclastic Cercado Formation, NW Dominican Republic: AAPG Annual Meeting, Long Beach, California, April 2012.
- Parsekian, A., Dlubac, K., Butler, J., Grunewald, E., Knight, R., and Walsh, D., 2012, Borehole NMR permeability estimates and uncertainty in an unconsolidated fluvial aquifer, Kansas, USA, Abstract 1602 presented at the 2012 SAGEEP Conference, Environmental and Engineering Geophysics Society, Tucson, Arizona, March 28, 2012.
- Peterie, S. L., Miller, R. D., Ivanov, J., Schwenk, J. T., Bailey, B. L., Schwarzer, J., and Markiewicz, R. D., 2012, Multi-method determination of continuous 2D velocity profiles from the surface to 1 km [Abs.]: 2012 AGU Fall Meeting, San Francisco, California, December 3-7.
- Platt, B. F., Smith, J. J., and Ludvigson, G. A., 2012, Ichnology and calcrete stratigraphy of the Neogene Ogallala Formation, High Plains of western Kansas: Geological Society of America, Abstracts with Programs, v. 44, no. 7, p. 530.
- Scheffer, A., Stotler, R. L., Watney, W. L., Fowle, D., Doveton, J. H., Rush, J., Newell, K. D., Fazlalavi, M., Whittemore, D. O., and Roberts, J. A., 2012, Geochemical, microbiological, and permeability characteristics indicating vertical zonation of the Arbuckle saline aquifer, a potential CO<sub>2</sub> storage reservoir, GSA Annual Meeting, Charlotte, Nov. 4–7.
- Scheffer, A., Watney, W. L., Fowle, D. A., and Roberts, J. A., 2012, Geochemical and microbiological influences on seal integrity during SC-CO<sub>2</sub> exposure, Arbuckle aquifer, SE Kansas, Kansas Interdisciplinary Carbonate Consortium, Lawrence.
- Schwenk, J. T., Miller, R. D., Ivanov, J., Peterie, S. L., and Sloan, S. D., 2012, Analysis of synthetic seismograms for the detection of voids using the surface-wave backscatter-analysis technique [Abs.]: 2012 AGU Fall Meeting, San Francisco, California, December 3-7.
- Sirazhiev, A., Tsoflias, G. P., and Watney, W. L., 2012, Relating seismic amplitude and frequency response to porosity variability at the top of the Mississippian chert, south-central KS, Kansas Interdisciplinary Carbonate Consortium, Lawrence.
- Smith, J. J., Platt, B. F., Thomasson, J., Packauskas, R. J., Flores, T., Leiker, J., Walters, G., Barrick, R., and Ludvigson, G. A., 2012, A cast of thousands: preliminary analysis of a western harvester ant nest cast in aluminum from western Kansas and comparisons with ichnofossils of purported Formicidae construction. Geological Society of America, Abstracts with Program, v. 44, no. 7, p. 501.
- Smith, J. J., Sleezer, R. O., Platt, B. F., Ludvigson, G. A., and Harlow, R. H., 2012, Geologic mapping and subsurface investigations of Equus Beds aquifer sediments in south-central Kansas: Geological Society of America Abstracts with Programs, v. 44, no. 7, p. 259.
- Sophocleous, M. A., 2012, How water law and management practices are evolving towards groundwater sustainability in Kansas and possible new steps to accelerate this process. NGWA 2012 Groundwater Summit, Garden Grove, California, May 8, 2012. <http://groundwatersummit.org/program/>
- Sophocleous, M. A., 2012, How the State of Kansas is addressing the water stress related problems of the High Plains/Ogallala aquifer. Water for Food 2012 Global Conference, Lincoln, Nebraska, May 31, 2012.
- Sophocleous, M. A., 2012, Conserving and extending the useful life of the largest aquifer in North America: The High Plains/Ogallala aquifer. IAH 2012 Congress, Niagara Falls, Canada, September 16–21, 2012.
- Sophocleous, M. A., 2012, Management strategies for aquifers threatened by unsustainable water use: The case of the High Plains aquifer in Kansas. Geological Society of America, November 4–7, 2012, Annual Meeting, Charlotte, North Carolina.
- Sophocleous, M. A., 2012, Conserving and extending the useful life of the High Plains/Ogallala aquifer in Kansas. Governor's Conference on the Future of Water in Kansas, October 30–31, 2012, Manhattan, Kansas.
- Stotler, R. L., Butler, J. J., Jr., Whittemore, D. O., and Reboulet, E. C., 2012, Groundwater age and water levels in the High Plains aquifer, Abstract 8515 presented at 2012 Ground Water Summit, NGWA, Garden Grove, California, May 2012.
- Suarez, M. B., Ludvigson, G. A., González, L. A., and You, H., 2012, Linking Cretaceous continental climate change and ocean anoxic events: Evidence from the Xiagou Formation of Gansu Province, China: American Geophysical Union Fall Meeting, San Francisco, California, PP41C-01.

- Warusavitharana, C., Parcell, W. C., and Franseen, E. K., 2012, Outcrop and subsurface characterization of microbialite facies in the Ordovician Arbuckle Group of Missouri and Kansas: AAPG Hedberg Research Conference, Microbial Carbonate Reservoir Characterization, Houston, Texas, June 3–8, 2012, 6 p. Extended abstract.
- Watney, W. L., 2012, Business implications of a Class VI permit — The long view? — A Kansas perspective, putting the business elements together for CO<sub>2</sub> EOR using captured carbon, April 4–5, 2012, Golden, Colorado, sponsored by Permian Basin CCUS Center and Colorado PTTC.
- Watney, W. L., 2012, Carbon sequestration in Kansas update on DOE funded projects — a) characterization of CO<sub>2</sub> sequestration capacity southern Kansas (FE0002056) b) small scale field test at Wellington Field, Sumner County (FE0006821), August 8, Kansas Environmental Conference, Wichita, Kansas.
- Watney, W. L., 2012, Modeling CO<sub>2</sub> sequestration in saline aquifer and depleted oil reservoir to evaluate regional CO<sub>2</sub> sequestration potential of Ozark Plateau aquifer system, South-Central Kansas Project Number (DE-FE0002056), August 21, NETL Carbon Storage R&D Project Review Meeting, Pittsburgh, Pennsylvania.
- Watney, W. L., 2012, Small scale field test demonstrating CO<sub>2</sub> sequestration in Arbuckle saline aquifer and by CO<sub>2</sub>-EOR at Wellington Field, Sumner County, Kansas Project Number DE-FE0006821, August 22, NETL Carbon Storage R&D Project Review Meeting, Pittsburgh, Pennsylvania.
- Watney, W. L., Rush, J., Doveton, J., Fazelalavi, M., Newell, K. D., Hedke, D., Scheffer, A., Roberts, J., Fowle, D., Wreath, D., Koudele, R., Gerlach, P., Nicholson, L., Hansen, T., Victorine, J., Tsoflis, G., Sirazhiev, A., Barker, R., and Datta, S., 2012, Geologic assessment of the Mississippian System in southern Kansas incorporating log and core petrophysics and seismic data from Wellington Field, Sumner County, Kansas, AAPG GeoScience Technology Workshop (GTW), New Directions in Carbonates, February 27–29, 2012, Fort Worth, Texas.
- Watney, W. L., Rush, J., Doveton, J., Fazelalavi, M., and Scheffer, A., 2012, Geologic assessment of the Mississippian system in southern Kansas incorporating log and core petrophysics and seismic data from Wellington Field, Sumner County, Kansas, Kansas Interdisciplinary Carbonate Consortium, Lawrence.
- Whittemore, D. O., 2012, Long-term changes in chloride and nitrate concentrations in the Wichita well field: Transactions of the Kansas Academy of Science, v. 115, no. 1/2, p. 80.
- Whittemore, D. O., Butler, J. J., Jr., Reboulet, E. C., Rajaram, H., Solis, J. A., Stotler, R. L., Knobbe, S. J., Dealy, M. T., and Kluitenberg, G. J., 2012, Contrasts in stream-aquifer interactions driven by hydrogeology and geomorphology, Geological Society America, Abstracts with Programs v. 44, no. 7, p. 355, Charlotte, North Carolina, November 2012.
- Whittemore, D. O., and Wilson, B. B., 2012, Beyond (and beneath) the Ogallala: Water resources in the Dakota aquifer in Kansas: National Ground Water Association, Program with abstracts, Conference on Great Plains Aquifers, Omaha, Nebraska.
- Whittemore, D. O., and Wilson, B. B., 2012, Water resources of the Dakota aquifer in Kansas: 29<sup>th</sup> Annual Water and Future of Kansas Conference, Topeka, Kansas.
- Zeigler, K. E., Petronis, M. S., Smith, J. J., Ludvigson, G. A., and Doveton, J., 2012, The Neogene Ogallala Formation in southwestern Kansas and northeastern New Mexico: Preliminary magnetostratigraphic analyses for the High Plains-Ogallala drilling program. American Geophysical Union Fall Meeting, San Francisco, California, GC33C-1032.
- Zeigler, K. E., Petronis, M. S., Smith, J. J., Ludvigson, G. A., and Doveton, J., 2012. Preliminary magnetostratigraphic analyses of the Neogene Ogallala Formation in southwestern Kansas and northeastern New Mexico for the High Plains-Ogallala drilling program. Geological Society of America, Rocky Mountain Section — 64<sup>th</sup> Annual Meeting, Abstracts with Programs, v. 44, no. 6.
- Zung, A. B., Feddema, J. J., and Mandel, R. D., 2012, Using buried soils to reconstruct past climate: A quantitative approach, Soil Science Society of America Annual Meeting, Cincinnati, Ohio, October 2012.
- Zung, A. B., and Mandel, R. D., 2012, Late-Quaternary landscape evolution of the Caddo Canyons, Central Oklahoma. Poster presented at the 22<sup>nd</sup> Biennial Meeting of the American Quaternary Association, Duluth, Minnesota, June 2012.
- Zung, A. B., Mandel, R. D., and Feddema, J. J., 2012, Applying a quantitative method for reconstructing Late-Quaternary climate on the U.S. Great Plains based on buried soil properties. Presented at the Annual Meeting of the Geological Society of America, Charlotte, North Carolina, October 2012.



## **Presentations**

- Benson, G. S., Franseen, E. K., Goldstein, R. H., and Li, Z., Data Collection, Interpretation, And Geologic Modeling Of Outcrop: Cerro La Molata, Cabo de Gata, Spain: ExxonMobil FC<sup>2</sup> Conference, Houston, Texas, Nov. 8–9, 2012.
- Butler, J., Direct-Push Methods For Hydrogeologic Characterization (sole instructor), Kansas Department of Health and Environment, Topeka, Kansas, Jan. 30, 2012.
- Butler, J., Presentations on the Index Well Program and the Megawatershed Theory, 2012 Kansas Field Conference, June 6–7, 2012.
- Butler, J. J., Jr., Interpretation of water-well hydrographs from the High Plains aquifer: New insights from an old “tool”: Universitat Politècnica de València, Valencia, Spain, Oct. 23, 2012.
- Butler, J. J., Jr., Interpretation of well hydrographs: New insights into aquifer management from an old “tool”: Centre d’hydrogéologie et de géothermie, Université de Neuchâtel, Neuchâtel, Switzerland, Nov. 6, 2012.
- Butler, J., and Stotler, R., Presentation on the Index Well Program, Kansas Water Office, May 14, 2012.
- Dunham, J. W., Flint Hills Ecoregion. Map Gallery (poster) presentation, ESRI International User Conference, San Diego, California, July 23, 2012.
- Dunham, J. W., Surficial Geology of Saline County, Kansas. Map Gallery (poster) presentation, ESRI International User Conference, San Diego, California, July 23, 2012.
- Dunham, J. W., Surficial Geology of Saline County, Kansas. Electronic poster presentation, 13th Biennial MidAmerica GIS Symposium, MidAmerica GIS Consortium (MAGIC), Kansas City, Missouri, April 23, 2012.
- Franseen, E. K., The enigma of Osagean Low-Latitude, Shallow-Water Heterozoan & Biosiliceous Facies OR The Mississippian Lime Play: Pack Your Bags, We’re Heading North: Kansas Geological Survey Stratigraphic Research Seminar Series No. 23, Nov. 20, 2012.
- Franseen, E. K., The Geoscientist Retention & Recruitment Crisis, Kansas Geologic Survey Advisory Council, August 2012.
- Franseen, E. K., The Kansas Interdisciplinary Carbonates Consortium (KICC), Kansas Geologic Survey Advisory Council, April 2012.
- Franseen, E. K., Session Chair — Carbonates in Time and Space: Sedimentology, Stratigraphy, and Diagenesis: 2012 GSA Annual Meeting & Exposition, Charlotte, North Carolina.
- Franseen, E. K., Session Chair — Microbial Carbonate Reservoirs, Reservoir Analogs, and Geologic Models: AAPG Hedberg Research Conference, Microbial Carbonate Reservoir Characterization, Houston, Texas, June 3–8, 2012.
- Franseen, E. K., Session Chair — Interplay of Evaporites and Carbonates Including Microbialites: 2013 AAPG Annual Convention, Pittsburgh, Pennsylvania, May 19–22. Reviewed & selected abstracts in 2012.
- Franseen, E. K., Session Chair — Modern Carbonates: 2013 AAPG Annual Convention, Pittsburgh, Pennsylvania, May 19–22. Reviewed & selected abstracts in 2012.
- Franseen, E. K., Session Chair — Carbonates and Evaporites I & II: 2013 AAPG Annual Convention, Pittsburgh, Pennsylvania, May 19–22. Reviewed & selected abstracts in 2012.
- Franseen, E. K., Co-Instructor for Shell Oil Brazil and Total Oil Company geoscientists to Miocene-Pliocene Carbonate Complexes, SE Spain, Aug. 28–Sept. 2, 2012.
- Franseen, E. K., Organized and co-convended KICC Annual Meeting, April 2–3, 2012.
- Franseen, E. K., Organized and co-led KICC Annual Meeting field trip, March 4–6, 2012.
- Franseen, E. K., and Goldstein, R. H., Build and Fill Sequences In Carbonate-Dominated Systems: Towards Predictive Models From Global Examples Throughout The Rock Record: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, 2012.
- Gagnon, G. F., LEOWEB & Design Methodology, GIS Policy Board, Topeka, Kansas, July 13, 2012.
- Layzell, A. L., Historic Kansas Droughts, keynote address, 68th annual convention of Kansas Association of Conservation Districts, Wichita, Kansas, Nov. 19, 2012.
- Lechtenberg, K. S., Goldstein, R. H., and Franseen, E. K., Evaluating Build-and-Fill Architecture of Lower Ismay (Pennsylvanian) Carbonates along the San Juan River, Utah — A Progress Report: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, 2012.
- Li, Z., Goldstein, R. H., and Franseen, E. K., Early Diagenetic Effects on Redistribution of Porosity and Permeability in Upper Miocene Carbonates, La Molata, SE Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, 2012.
- Li, Z., Goldstein, R. H., and Franseen, E. K., Diagenetic Controls on Porosity and Permeability in Upper Miocene Carbonates, La Molata, SE Spain: ExxonMobil FC<sup>2</sup> Conference, Houston, Texas, Nov. 8–9, 2012.

- Liu, G., Recent Advances in Hydrogeologic Characterizations of the Shallow Subsurface Using Direct-Push and Distributed Temperature Sensing, KU Department of Geology Colloquium, Aug. 23, 2012.
- Ludvigson, G. A., What's Up with the Pedogenic Siderite Paleoclimate Proxy? Validation by Modern Process Studies and New Applications to the Cretaceous Arctic: Department of Geological Sciences, University of Missouri, Columbia, Missouri, Oct. 26, 2012.
- Ludvigson, G. A., The STATEMAP Geologic Mapping Program in Kansas: Kansas GIS Policy Board Meeting, Topeka, Kansas, March 9, 2012.
- Lyle, S. A., Groundwater Information at the Kansas Geological Survey (oral presentation); Kansas Rural Water Conference, Annual Meeting, Wichita, Kansas, March 27–29, 2012.
- Miller, R. D., GeoBahrain International Meeting, President's Address.
- Miller, R. D., SEG Virtual Course, Working the problems of near-surface seismic reflection, December 2012 (2 courses).
- Miller, R. D., SEG 2012 Near Surface Honorary Lecturer, Near-surface seismic: More than a problem of scale (22 lectures):
- Kansas Geophysical Society, Wichita, Kansas, August 9.
  - Boise State University Geophysical Society, Boise, Idaho, September 4.
  - Colorado School of Mines Student Society, Golden, Colorado, September 6.
  - University of Texas at El Paso Geophysical Society, El Paso, Texas, September 7.
  - Rutgers-Newark Geophysical Society, University of Rutgers, Newark, New Jersey, September 12.
  - City College of New York Student Chapter, Department of Earth and Atmospheric Sciences, New York, September 13.
  - Korean Society of Earth and Exploration Geophysicists (KSEG) International Symposium on Geophysics for Discovery and Exploration, Jeju, South Korea, September 19.
  - Student Geoscientific Society Berlin & Potsdam, Freie Universität Berlin, Berlin, Germany, October 1.
  - German Geophysical Society, GeoZentrum Hannover, Hannover, Germany, October 3.
  - Near-Surface Geophysics Section, University of Lausanne, Switzerland, October 5.
  - South African Geophysical Association, Johannesburg, South Africa, October, 8.
  - University of Kansas Geophysical Society, Lawrence, Kansas, October 25.
  - China University of Petroleum Geophysical Society, Beijing, China, November 16.
  - China University of Geosciences, Wuhan, China, November 17.
  - Kyoto University Geophysical Society, Kyoto, Japan, November 19.
  - Society of Exploration Geophysicists Japan (SEGJ), Tokyo, Japan, November 20.
  - Australian Society of Exploration Geophysicists Queensland, Brisbane, Australia, December 5.
  - Australian Society of Exploration Geophysicists Victoria, Melbourne, Australia, December 6.
  - Australian Society of Exploration Geophysicists New South Wales, Sydney, Australia, December 7.
  - Australian Society of Exploration Geophysicists Australian Capital Territory, Canberra, Australia, December 10.
  - Australian Society of Exploration Geophysicists South Australia, Adelaide, Australia, December 12.
  - Australian Society of Exploration Geophysicists Western Australia, Perth, Australia, December 14.
- Ortega-Ariza, D., and Franseen, E. K., Evaluating Controls on Miocene Carbonate-Dominated Sequences in Puerto Rico and the Dominican Republic: Progress Report: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, 2012.
- Platt, B. F., Integrating Ichnology with Sedimentology and Stratigraphy: Practical Applications and Research Directions: Department of Geology and Geological Engineering, University of Mississippi, Oxford, Mississippi, Dec. 4, 2012.
- Platt, B. F., Integrating Ichnology with Sedimentology and Stratigraphy: Practical Applications and Research Directions: Stratigraphic Research Seminar Series No. 24, Kansas Geological Survey, Lawrence, Kansas, Nov. 30, 2012.
- Platt, B. F., The Straw that Broke the Devil's Backbone: Trace Fossils in the Ogallala Formation, Western Kansas: Kansas and Missouri Paleontological Society, Park University, Parkville, Missouri, Nov. 18, 2012.
- Smith, J. J., Coring the Ogallala: Scientific Drilling in the High Plains of Western Kansas, KU Department of Geology Colloquium Series, 2012.
- Sophocleous, M. A., Invited colloquium speaker, Department of Geosciences, University of Missouri-Kansas City, on water resources sustainability and the Kansas water scene, March 15, 2012.
- Sophocleous, M. A., Invited colloquium speaker, Department of Geosciences, University of Arkansas, Fayetteville, on groundwater sustainability and the High Plains aquifer, Oct. 12, 2012.

- Sophocleous, M. A., Invited lecture, Unsaturated Zone Flow and Transport, for Prof. Devlin's Physical & Contaminant Hydrogeology class at the University of Kansas Department of Geology, Dec. 4, 2012.
- Stolz, D., Goldstein, R. H., and Franseen, E. K., Distribution and Reservoir Character of Deep-Water Sedimentary Gravity Flow Deposits in the Avalon Shale Play of the Delaware Basin: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, 2012.
- Suchy, D. R., Invited public presentation for Douglas County Conservation District on water wells and groundwater in Douglas County, Aug. 21, 2012.
- Tsau, J. S., Nguyen, M. C., Franseen, E., Goldstein, R., Benson, G., Ballard, M., and Liang, J., La Molata Model Simulation — Impact of Heterogeneous Carbonates on Flow Behavior and Oil Production: ExxonMobil FC<sup>2</sup> Conference, Houston, Texas, Nov. 8–9, 2012.
- Tsoflias, G. P., Knoph, K., Franseen, E. K., and Goldstein, R. H., Ground-Penetrating Radar Imaging of Depositional and Diagenetic Features in an Upper Miocene Carbonate Reservoir Analog, SE Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, 2012.
- Young, E., Goldstein, R. H., Franseen, E. K., and Watney, W. L., Stratigraphy, Porosity Evolution, and Fluid Flow History, Mississippian Lime, Southeast Kansas: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, 2012.
- Watney, W. L., Mississippian System and Horizontal Drilling in Kansas: Kansas Next Step Oil and Gas Seminar, Hays, Kansas, Aug. 2, 2012.
- Watney, W. L., Mississippian Carbonates in Kansas, AAPG E-Symposium, Aug. 30, 2012.
- Watney, W. L., Arbuckle Fluid Disposal Considerations — Regional and Local Perspectives in the Context of the Mississippian Play in Kansas, PTTC/TORP Oil and Gas in the Midcontinent, Wichita, Kansas, Dec. 4, 2012.
- Watney, W. L., Integration of the Recently Drilled Basement Test at Cutter Field, Stevens County, Kansas, into the Evaluation of Regional CO<sub>2</sub> Storage Potential, Kansas Geological Society, Dec. 18, 2012.
- Watney, W. L., et al., Geofest 2012, Kansas Geological Survey, focused on a review of the DOE funded CCUS research in a morning seminar and a core workshop in the afternoon to examine the entire 1600 ft long core from Wellington KGS #1-32, Lawrence, Kansas, Oct. 26, 2012.
- Watney, W. L., and Rush, J., Kansas Geological Survey and collaborating team, Evaluating CO<sub>2</sub>-EOR and CO<sub>2</sub> Storage Capacity in Kansas, Kansas Geological Society, March 6, 2012.
- Whittemore, D. O., Long-Term Changes in Chloride and Nitrate Concentrations in the Wichita Well Field: Kansas Academy of Science, 2012.
- Whittemore, D. O., Contrasts in Stream-Aquifer Interactions Driven by Hydrogeology and Geomorphology: Geological Society of America, 2012.
- Whittemore, D. O., and Wilson, B. B., Beyond (and Beneath) the Ogallala: Water Resources in the Dakota Aquifer in Kansas: National Ground Water Association, Conference on Great Plains Aquifers, Omaha, Nebraska, 2012.
- Whittemore, D. O., and Wilson, B. B., Water Resources of the Dakota Aquifer in Kansas: 29<sup>th</sup> Annual Water and Future of Kansas Conference, Topeka, Kansas, 2012.
- Wilson, B. B., Western Kansas GMD No. 1 Annual Meeting, March 2012.
- Wilson, B. B., Southwest Kansas GMD No. 3 Annual Meeting, March 2012.
- Wilson, B. B., Kansas Environmental Leadership Program, March 2012.
- Wilson, B. B., Kansas Rural Water Conference, March 2012.
- Wilson, B. B., Kansas Water Office Brownbag Professional Series, April 2012.
- Wilson, B. B., Kansas Geological Survey's GIS Seminar, April 2012.
- Wilson, B. B., Governor's Ogallala Stakeholder Meetings (Scott City and Garden City), August 2012.
- Wilson, B. B., Kansas Farm Bureau Great Bend Producers Meeting, September 2012.
- Wilson, B. B., Kansas Geological Survey's GeoFest, October 2012.
- Wilson, B. B., Kansas Department of Agriculture, Division of Water Resource LEMA Public Hearing, November 2012.
- Wilson, B. B., Western Kansas GMD No. 1 Board Meeting, November 2012.
- Wilson, B. B., Kansas Farm Bureau — Wallace County Producers Meeting, December 2012.
- Woodburn, T. L., Johnson, W. C., Dunham, J. W., and Phillips-Lander, C. M., Surficial geology of Hodgeman County, Kansas, poster presented by T. L. Woodburn, Geological Society of America 2012 Annual Meeting, Charlotte, North Carolina, November 5, 2012.

## **Awards**

- Butler, J. — Elected Member, Board of Directors, Scientists and Engineers Division, National Ground Water Association (2010–)
- Butler, J. — President-Elect, International Commission on Ground Water, International Association of Hydrological Sciences (2011–)
- Butler, J. — Sabbatical Leave Award, University of Kansas, 2012
- Butler, J. — Sabbatical leave award for visiting professors and researchers, Spanish Ministry of Education, 2012
- Dunham, J. W. — 2012 Esri Cartography Special Interest Group Map Award for “Flint Hills Ecoregion,” Esri International User Conference
- Franseen, E. K. — Elected as President of SEPM, the International Society for Sedimentary Geology, 2012
- Franseen, E. K. — Journal of Sedimentary Research paper selected as a key research article in the earth sciences: Earth Emphasis (<http://earthemphasis.com/key-research-articles/>), 2012
- Franseen, E. K. — SEPM 2012 Certificate of Recognition for Excellent Technical Presentation at National Meeting (replaces best presentation award)
- Layzell, A. L. — Governor's Award for Outstanding Graduate Poster, Governor's Conference on the Future of Water in Kansas, 2012
- Ludvigson, G. A. — Elected Fellow, Geological Society of America, 2012
- Mandel, R. D. — Kansas Board of Regents' Higuchi/Irvin E. Youngberg Award for Applied Sciences Research, 2012
- Miller, R. D. — Elected, First Vice President, SEG Board, Nov. 2012–present
- Miller, R. D. — Honorary Lecturer, Inaugural Near Surface, SEG, 2012
- Miller, R. D. — Elected, SEG Second Vice President, Executive Committee, 2011–Nov. 2012
- Platt, B. F. — Defended dissertation with honors, KU Geology Department, May 2012
- Platt, B. F. — Kansas Geological Survey Lee C. and Darcy Gerhard Field Research Student Award, 2012
- Platt, B. F. — Presented graduation robe and hood of N. Gary Lane (KU Geology MS '54, PhD '58), May 2012
- Platt, B. F. — Publication (Platt et al., 2012) featured on BioOne, December 2012
- Watney, W. L. — KU Employee of the Month, March 2012

## **Internal Service**

- Brookfield, A. E. — Courtesy Faculty, KU Department of Geology (2010–present)
- Brookfield, A. E. — Serving on dissertation committee at KU Dept. of Geology (Ph.D.) Rubina Firudous
- Brookfield, A. E. — 2012 KGS Student Awards Committee, Chair
- Brookfield, A. E. — Taught Geology 591/791, Differential Equations for Hydrology, Spring 2013
- Butler, J. — Co-Chair, Search Committee for Hydrogeologist to lead and coordinate High Plains aquifer activities in the Geohydrology Section
- Butler, J. — Chair, Search Committee, Applied Geohydrology Summer Research Assistantship Program
- Butler, J. — Associate, Center for East Asian Studies, University of Kansas
- Butler, J. — Core Faculty Member, Center for Global and International Studies, University of Kansas
- Butler, J. — Courtesy Full Professor, Department of Geology, University of Kansas
- Butler, J. — Member, University of Kansas Office of the Vice Provost for Research and Graduate Studies Promotion Committee (through first quarter of 2012)
- Deputy, J. — Member of KOLAR Web Developer search committee
- Dunham, J. W. — KGS search committee for Editor position
- Evans, C. S. — KGS search committee for Editor position
- Franseen, E. K. — Member — Promotion and Tenure Committee, Department of Geology, University of Kansas
- Franseen, E. K. — Member — Graduate Students Admissions Committee, Department of Geology, University of Kansas
- Franseen, E. K. — Member — Search Committee for Petroleum Engineer, Chemical and Petroleum Engineering Department, University of Kansas
- Franseen, E. K. — Teaching Evaluator, Department of Geology, University of Kansas
- Franseen, E. K. — Sophomore Advising, Department of Geology, University of Kansas
- Franseen, E. K. — Instructor for Geology 79 — Carbonate Sequence Stratigraphy/Modeling, spring semester, Department of Geology, University of Kansas

Franseen, E. K. — Students Supervised:  
 — Chair — Diana Ortega-Ariza, Ph.D., Expected Spring 2014  
 — Co-Chair — Katharine Knoph, MS, Completed Summer 2011  
 — Co-Chair — Anya Hess, MS, Completed Fall 2011  
 — Co-Chair — Dustin Stolz, MS, Expected Summer 2013  
 — Co-Chair — Rafferty Sweeney, MS, Expected Fall 2012  
 — Co-Chair — Zhaoqi Li, Ph.D., Expected Fall 2012  
 — Co-Chair — Karen Ohmes-Lechtenburg, MS, Expected Fall 2012  
 — Co-Chair — Justin Fairchild, MS, Expected Fall 2012  
 — Co-Chair — Nicholas Welsh, MS, Expected Fall 2014  
 — Member — Brad King, MS committee  
 — Member — Alejandra Rodriguez, MS committee  
 — Member — Jason Rush, Ph.D. committee  
 Franseen, E. K. — Member — Stratigraphic Nomenclature Committee, Kansas Geological Survey  
 Franseen, E. K. — Member — KGS Admin. Evaluation & Salary Process, Kansas Geological Survey  
 Franseen, E. K. — Member — Search committee for Budget Director, Kansas Geological Survey  
 Franseen, E. K. — Member — Editorial Board for Current Research on Kansas Geology Bulletin, Kansas Geological Survey  
 Liu, G. — Courtesy Assistant Professor, Department of Geology, University of Kansas  
 Liu, G. — Member of search committee, Energy Research Section (Geoscientist Position)  
 Liu, G. — Member of search committee, Energy Research Section (Petroleum Engineer Position)  
 Liu, G. — Member of search committee, Geohydrology Section (High Plains program leader Position)  
 Liu, G. — Current Graduate Student Advisees —  
 — Brant Konetchy, M.S., Department of Geology, University of Kansas (Chair)  
 — Angela Thompson, M.S., Department of Geology, University of Kansas  
 Ludvigson, G. A. — Host & coordinator, KGS Stratigraphic Research Seminar on Integrating Ichnology with Sedimentology and Stratigraphy: Practical Applications and Research Directions (by Brian Platt, Kansas Geological Survey), November 2012  
 Ludvigson, G. A. — Host & coordinator, KGS Stratigraphic Research Seminar on The Enigma of Osagean Low-Latitude, Shallow-Water Heterozoan & Biosiliceous Facies (by Evan Franseen, Kansas Geological Survey), November 2012  
 Ludvigson, G. A. — Host & coordinator, KU Geology Colloquium presentation on Obliquity forcing and the amplification of high-latitude climate processes during Oceanic Anoxic Event 2 (by Stephen R. Meyers, University of Wisconsin-Madison), October 2012  
 Ludvigson, G. A. — Host & coordinator, KU NSF IGERT C-Change Colloquium presentation on Future climate change: Clues from the deep past (by Dana Royer, Wesleyan University), October 2012  
 Ludvigson, G. A. — Host & coordinator, KGS Stratigraphic Research Seminar on High Fidelity: The Deep Time Earth History Revolution (by Brad Cramer, Kansas Geological Survey), July 2012  
 Ludvigson, G. A. — Member, KGS Stratigraphic Nomenclature Committee  
 Ludvigson, G. A. — STATEMAP Coordinator for the KGS  
 Ludvigson, G. A. — Service on KGS Search Committee for hiring Administrative Assistant to the Director  
 Ludvigson, G. A. — Service on KGS Search Committee for hiring Field Research Assistant in Exploration Services Section  
 Ludvigson, G. A. — Service on KU Geology Search Committee for the Ritchie Distinguished Professorship in Sedimentary Geology  
 Ludvigson, G. A. — Service on KU Geology Search Committee for tenure-track position in Thermochronology (2012-2013 academic year)  
 Ludvigson, G. A. — Co-instructor for the KU NSF IGERT Program Graduate Seminar: EVRN 701 Climate Change, Ecological Change, Social Change; August–December 2012  
 Ludvigson, G. A. — Research hours faculty supervisor for KU graduate students Hunter Harlow (Jan–Dec 2012) and Jeff Ross (Aug–Dec 2012); KU undergraduate student Stephan Oborny (Aug–Dec 2012)  
 Ludvigson, G. A. — Mentored KGS Postdoctoral researcher Dr. Brad Cramer (Feb–Aug 2012)  
 Ludvigson, G. A. — Co-mentored KGS Postdoctoral researcher Dr. Brian Platt (Aug–Dec 2012)  
 Ludvigson, G. A. — Cochaired M.S. thesis committee for KU MS student Mark Villarreal  
 Ludvigson, G. A. — Co-chairing M.S. thesis committee for KU MS student Hunter Harlow  
 Ludvigson, G. A. — Co-chairing Ph.D. Dissertation Committee for KU doctoral candidate Tony Layzell

Miller, R. D. — KU Faculty Senate Research Committee, 2011-2012  
 Miller, R. D. — KU RGS Research Achievement Award Selection Committee, 2008-2012  
 Miller, R. D. — KGS Current Research Bulletin Advisory Board, 1992-present  
 Miller, R. D. — KGS Borehole Standards, Remediation, and Reclamation Committee, Chair, 1990-present  
 Miller, R. D. — KGS Emergency Preparedness Committee, 1987-present  
 Miller, R. D. — Thesis committee member: Amanda Livers, masters, University of Kansas (chair); Jordan Nolan, masters, University of Kansas (chair); Yao Wang, masters, University of Kansas (chair); Bevin Bailey, masters, University of Kansas (co-chair); Tyler Schwenk, masters, University of Kansas (chair); Craig Hendrix, masters, University of Kansas (chair)  
 Platt, B. F. — Taught GEOL 532: Stratigraphy, Fall 2012  
 Sawin, R. S. — KGS Stratigraphic Nomenclature Committee (Chair)  
 Sawin, R. S. — Search committee member for KGS Librarian/Archivist  
 Sawin, R. S. — Search committee member for KGS Editor  
 Smith, J. J. — Courtesy Faculty, KU Department of Geology  
 Smith, J. J. — Member of search committee for Hydrogeologist position, KGS  
 Smith, J. J. — Member of search committee for Postdoctoral Research Assistant, KGS  
 Sophocleous, M. A. — KGS Promotion and Review Committee  
 Sophocleous, M. A. — Geohydrology Seminar Coordinator  
 Watney, W. L. — 2012, Review Committee: Kansas Transfer of Wealth 2012 Report by Center for Economic Development and Business Research, W. Frank Barton School of Business, Wichita State University  
 Watney, W. L., and Doveton, J. — 2012, Overview of Mississippian and Arbuckle research seminar to industry teams as part of KICC, February 15, July 26, and November 25  
 Whittemore, D. O. — Coordinator of KGS Analytical Laboratory  
 Whittemore, D. O. — M.S. thesis committee, Department of Geology (Molly Long)  
 Wilson, B. B. — Co-chair of search committee for Geohydrology's Hydrogeologist to lead the High Plains Aquifer Program and committee member for Cartographic Services' Assistant Cartographer (student position).  
 Kansas Geological Survey

## External Service

Brookfield, A. E. — Newsletter Editor, Geological Society of America Hydrogeology Division (2009–)  
 Brookfield, A. E. — Associate Editor, Ground Water (2011– )  
 Butler, J. — Associate Editor, Ground Water (2002–present)  
 Butler, J. — Co-Chair, 2012 NGWA Ground Water Summit, National Ground Water Association  
 Butler, J. — Special Session Convener, 2012 NGWA Ground Water Summit, National Ground Water Association  
 Butler, J. — Member, Kansas Water Resources Institute Administrative Council  
 Butler, J. — Member, Organizing Committee, NovCare 2013 (Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice)  
 Butler, J. — Chair, Awards Committee, Scientists and Engineers Division, National Ground Water Association  
 Butler, J. — Member, Erin Haacker doctoral dissertation committee, Dept. of Geological Sciences, Michigan State University (2012–)  
 Butler, J. J., Jr. — Workshop Instructor:  
 • Site Characterization — The Slug Test and Beyond, Empresa Nacional de Residuos Radiactivos, Madrid, Spain, Dec. 27, 2012  
 • Hydraulic Testing for Aquifer Characterization: Getting the Information Modelers Need, Universitat Politècnica de València, València, Spain, Dec. 10-13, 2012  
 Dunham, J. W. — Represented KGS at the annual USGS-AASG Digital Mapping Techniques (DMT) conferences listed below:  
 2011: Williamsburg, VA, Virginia Division of Geology and Mineral Resources, College of William & Mary, May 22–25  
 2012: Champaign, IL, Illinois State Geological Survey, University of Illinois, May 20–23  
 Dunham, J. W. — Member of USGS-AASG Digital Mapping Techniques (DMT) group working on development of Esri FGDC style and cartographic representation files  
 Franseen, E. K. — President-Elect — SEPM (Society of Sedimentary Research)  
 Franseen, E. K. — Chair — SEPM Shepard Medal Award Committee  
 Franseen, E. K. — Chair — SEPM Ethics Violations Committee

Franseen, E. K. — Chair — SEPM Sedimentary Record Editor Search Committee  
 Franseen, E. K. — Member — SEPM Student Research Grant Evaluation Committee  
 Franseen, E. K. — SEPM Councilor of Sedimentology  
 Franseen, E. K. — Member — SEPM Council  
 Franseen, E. K. — Chair — SEPM Pettijohn Medal Award Committee  
 Franseen, E. K. — Chair — SEPM Journal of Sedimentary Research Outstanding Paper Award Committee  
 Franseen, E. K. — Member — SEPM Foundation Board  
 Franseen, E. K. — Member — NSF Carbonate Focused Research Group, Community Modeling  
 Ludvigson, G. A. — Associate Editor for the Journal of Sedimentary Research for SEPM, The Society for Sedimentary Geology  
 Ludvigson, G. A. — Representatives for the GSA Sedimentary Geology Division on the GSA Joint Technical Program Committee (for annual meeting); Two-year term began in December 2012  
 Ludvigson, G. A. — Reviewed Canadian NSERC Discovery Grant Proposal (by Claudia Schroder-Adams, Carleton University, Ontario); January 2012  
 Ludvigson, G. A. — Reviewed NSF proposal to Arctic Natural Sciences program (by A. Hope Jahren, University of Hawaii); January 2012  
 Ludvigson, G. A. — Reviewed NSF proposal to Sedimentary Geology & Paleobiology Program (by Brian Hampton, Michigan State University); April 2012  
 Ludvigson, G. A. — Coordinated peer review and made Associate Editor recommendation for paper submitted to the Journal of Sedimentary Research (by Bojanowski et al., recommended publication; paper published in August 2012); April 2012  
 Ludvigson, G. A. — Coordinated peer review and made Associate Editor recommendation for paper submitted to the Journal of Sedimentary Research (by Mack et al., recommended publication; paper published in August 2012); May 2012  
 Ludvigson, G. A. — Reviewed manuscript for Palaeogeography, Palaeoclimatology, Palaeoecology (by Xianghui Li, et al.; recommended moderate revision); November 2012  
 Ludvigson, G. A. — Coordinated peer review and made Associate Editor recommendation for paper submitted to the Journal of Sedimentary Research (by Torres et al., recommended publication with minor revision); December 2012  
 Lyle, S.A. — Member, Kansas State University Geology Advisory Committee, (2011–present)  
 Lyle, S.A. — Member, Kansas Next Generation Science Standards Committee, (2011–present)  
 Mandel, R. D. — Chair, U.S. National Committee for the International Union for Quaternary Research (INQUA), The National Academies, 2012-2016  
 Mandel, R. D. — Chair, Awards Committee, Archaeological Geology Division, Geological Society of America, 2012  
 Mandel, R. D. — Associate Editor, Encyclopedia of Geoarchaeology, Springer Press, 2012  
 Mandel, R. D. — Associate Editor, Geoarchaeology: An International Journal, Wiley-Blackwell, 2012  
 Mandel, R. D. — Co-organizer of the SERC-NSF On the Cutting Edge Workshop. Teaching Climate Change from the Geologic Record: Insights from Large Lakes, co-sponsored by the U.S. National Committee for the International Union for Quaternary Research and the American Quaternary Association, University of Minnesota-Duluth, June 19–20, 2012  
 Miller, R. D. — AGU, Session Co-convenor, “Developments and practical applications of the multichannel seismic-data surface-wave analysis method,” AGU Fall Meeting, San Francisco, California, December 3–7, 2012  
 Miller, R. D. — SEG Board, Nov. 2012-present. SEG-EEGS Merger Task Force, Continuing Education Committee, and Inter-Society Relations Committee  
 Miller, R. D. — SEG Executive Committee, 2011-Nov. 2012. Liaison to Committee on University & Student Programs, Continuing Education Committee, Online Committee, Mining and Geothermal Committee, Near-Surface Task Force, Inter-Society Collaboration Committee, and the AGI Environmental Geoscience Advisory Committee  
 Miller, R. D. — SEG, President’s Page, *The Leading Edge*: July 2012 (v. 31, n. 7); January 2012 (v. 31, n. 1)  
 Miller, R. D. — SEG, Special Issue Editor, *The Leading Edge*: August 2012 (v. 31, n. 8), archaeology; February 2011 (v. 30, n. 2) near-surface geophysics  
 Miller, R. D. — SEG Near-Surface Geophysics Section Publications Committee, Chairman, 2008-present  
 Miller, R. D. — National Advisory Team for Geophysics in Hydrology, organized by the Consortium of Universities for the Advancement of Hydrologic Sciences Inc., 2006-present  
 Miller, R. D. — ASTM Geophysics Subcommittee on Seismic Standards, 2006-present



Miller, R. D. — Geophysical Society of Kansas, Editor, 2005-present  
 Miller, R. D. — Referee for SEG annual meeting abstracts, 2012  
 Miller, R. D. — Referee for EAGE annual meeting expanded abstracts, 2012  
 Platt, B. F. — Reviewer for Journal of Sedimentary Research — one manuscript  
 Sawin, R. S. — Member, Kansas State University Geology Advisory Council (1995–present)  
 Sawin, R. S. — Member, Reservoir Siting Technical Advisory Committee, Kansas Water Office  
 Sophocleous, M.A. — Editorial Advisory Board, Computers & Geosciences  
 Sophocleous, M.A. — Editorial Advisory Board, Natural Resources Research  
 Sophocleous, M.A. — Associate Editor-in-Chief, Journal of Arid Land  
 Sophocleous, M.A. — Advisor to the Editor-in-Chief, Ground Water  
 Sophocleous, M.A. — Co-chair of Session M3-F: Groundwater Sustainability II (with Prof. Kevin Hiscock of UK) at the 39<sup>th</sup> International Association of Hydrogeologists (IAH) Congress, Niagara Falls, Canada, Sept. 17, 2012  
 Sophocleous, M. A. — KGS representative for Kansas Watershed Restoration and Protection Strategy (WRAPS) Work Group  
 Sophocleous, M. A. — KGS representative for Wetland Program Plan for Kansas  
 Sophocleous, M. A. — Kansas Agencies service reviews:  
     — C&D Landfill in City of Wichita, KS (March 1, 2012)  
     — City of Salina, KS Public Water Supply (June 5, 2012)  
     — Butler County Landfill expansion (June 13, 2012)  
     — Chase Co. Public Wholesale Water Supply District #26 (June 21, 2012)  
     — City of Leoti, Wichita Co., Public Drinking Water System (July 3, 2012)  
     — Infill Recycling and Disposal, Atchison, KS (July 17, 2012)  
     — City of Smith Center, KS, Water System Improvements (Aug. 5, 2012)  
     — City of Argonia, KS, Water System Improvements (Aug. 28, 2012)  
     — City of Woodston, KS, Sewer System (Sept. 25, 2012)  
     — Tarkio CD Landfill, Riley Co (Sept. 26, 2012)  
     — City of Russell, Public Water Supply (Oct. 10, 2012)  
     — City of Minneola, Public Water Supply (Dec. 5, 2012)  
 Sophocleous, M. A. — Reviewer for NSF Hydrological Sciences  
 Sophocleous, M. A. — Reviewer for Estonian Research Council  
 Sophocleous, M. A. — Reviewer for Oklahoma Water Resources Research Institute  
 Sophocleous, M. A. — Reviewer for Journal of Hydrology  
 Sophocleous, M. A. — Reviewer for Water Resources Research  
 Sophocleous, M. A. — Reviewer for Hydrological Sciences Journal  
 Sophocleous, M. A. — Reviewer for Ground Water  
 Sophocleous, M. A. — Reviewer for EOS Transactions  
 Sophocleous, M. A. — Reviewer for Computers & Geosciences  
 Sophocleous, M. A. — Reviewer for Journal of Arid Land  
 Sophocleous, M. A. — Reviewer for Natural Resources Research  
 Sophocleous, M. A. — Reviewer for Hydrology and Earth System Science (HESS)  
 Sophocleous, M. A. — Reviewer for Proceedings of the National Academy of Science (PNAS)  
 Suchy, D. R. — Member, Board of Directors, Rural Water District #5, Douglas County, Kansas (March 2007–present); Vice Chairman (March 2008–present)  
 Suchy, D. R. — Alternate Board Member or Board Member (October 2007–present) and Treasurer (2012–2013), Public Wholesale Water Supply District #25  
 Suchy, D. R. — KGS contact for Kansas Division of Emergency Management’s Kansas Response Plan (2007–present)  
 Suchy, D. R. — Senator, KU Unclassified Professional Staff Senate (May 2012–present)  
 Watney, W. L. — 2012, Organizing Committee member, 2013 Mid-Continent AAPG Sectional Meeting, Wichita

- Watney, W. L. — 2012, Advising students as thesis committee member: Christa Jackson, Luis Montavo, Jennifer Raney, Aimee Scheffer, Robin Barker (KSU), Derek Robert (KSU), Randi Jo Lee (KSU)  
M.S. Theses:
- Aimee Scheffer, 2012, Geochemical and microbiological characterization of the Arbuckle Saline Aquifer, a potential CO<sub>2</sub> storage reservoir; Implications for hydraulic separation and caprock integrity
  - Ayrat Sirazhiev, 2012, Seismic attribute analysis of the Mississippian chert at the Wellington Field, south-central Kansas: M.S. Thesis, Department of Geology, The University of Kansas
  - Ohl, Derek Robert, 2012, Rock formation characterization for carbon dioxide geosequestration: 3D seismic amplitude and coherency anomalies, and seismic petrophysical facies classification, Wellington and Anson-Bates fields, Sumner County, Kansas, USA, M.S. Thesis, Department of Geology, Kansas State University, 77 p.
  - Randi Jo Lee, 2012, Integration of in situ and laboratory velocity measurements: Analysis and calibration for rock formation characterization Isham, M.S. Thesis, Department of Geology, Kansas State University.
- Whittemore, D. O. — Council Member, Kansas Academy of Science
- Whittemore, D. O. — Geochemical identification of saltwater sources for Kansas Corporation Commission in four Kansas counties
- Wilson, B. B., and Woods, J. J. — Developed maps and graphs showing trends in the water resource conditions and reported use for the Western Kansas GMD#1 in support of county-based Local Enhanced Management Area meetings

### **KGS Web Site Additions**

Placed online:

12 bulletins and books (most from the Ground Water series and Chemical Quality series)

One new and one revised Public Information Circular

31 open-file reports from 2012 and previous years

43,000 wireline logs

19,000 other oil and gas documents

Scanned 27,000 water well records since mid-2011

Fross, D., Sophocleous, M. A., Wilson, B. B., and Butler, J. J., Jr., 2012, Kansas High Plains Aquifer Atlas ([www.kgs.ku.edu/HighPlains/HPA\\_Atlas/index.html](http://www.kgs.ku.edu/HighPlains/HPA_Atlas/index.html)), Kansas Geological Survey.

Wilson, B. B., Adkins-Heljeson, D., Moore, M., and Wood, J. J., The Kansas Master Well Inventory project completed initial well matching across the state. The inventory contains more than 294,000 unique well sites that were matched and are linked to more than 357,000 well records maintained by individual state water agencies. The master well inventory was incorporated in the KGS database web sites in May 2012.

### Refereed Publications

- Beeton, J. M., and Mandel, R. D., 2011, Soils and late-Quaternary landscape evolution in the Cottonwood River basin, east-central Kansas: Implications for archaeological research: *Geoarchaeology: An International Journal*, v. 26, p. 693-723.
- Bianchi, M., Zheng, C., Wilson, C., Tick, G. R., Liu, G., and Gorelick, S. M., 2011, Spatial connectivity in a highly heterogeneous aquifer: From cores to preferential flow paths, *Water Resources Research*, 47, W05524. doi: 10.1029/2009WR008966
- Butler, J. J., Jr., Jin, W., Mohammed, G. A., and Reboulet, E. C., 2011, New insights from well responses to fluctuations in barometric pressure: *Ground Water*, v. 49, no. 4, pp. 525-533.
- Cordova, C. E., Johnson, W. C., Mandel, R. D., and Palmer, M. W., 2011, Late Quaternary environmental change inferred from phytoliths and other soil-related proxies: Case studies from the central and southern Great Plains, USA: *Catena*, v. 85, p. 87-108.
- Goldstein, R. H., Li, Z., and Franseen, E. K., 2011, Diagenetic controls on character of carbonate reservoirs: Surfaces and setting: *in Carbonate Geochemistry: Reactions and Processes in Aquifers and Reservoirs*, Karst Waters Institute Special Publication 16, p. 31-34.
- Holliday, V. T., Meltzer, D. J., and Mandel, R. D., 2011, Stratigraphy of the Younger Dryas chronozone and paleoenvironmental implications: Central and southern Great Plains: *Quaternary International*, v. 242, p. 520-533.
- Ivanov, J., Miller, R. D., Peterie, S. L., Zeng, C., Xia, J., and Schwenk, T., 2011, Multi-channel analysis of surface waves (MASW) of models with high shear-wave velocity contrast [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, San Antonio, Texas, September 18-23, p. 1384-1390.
- Leitner, B., Miller, R. D., and Ivanov, J., 2011, Optimal spread design for passive MASW [Ext. Abs.]: 17th European Meeting of Environmental and Engineering Geophysics, Association of Geoscientists and Engineers (EAGE), Leicester, United Kingdom, September 12-14, 4 p.
- Luo, Y., and Sophocleous, M., 2011, Two-way coupling of unsaturated-saturated flow by integrating the SWAT and MODFLOW models with application in an irrigation district in arid region of West China: *Journal of Arid Land*, v. 3, no. 3, p. 164-173.
- McCauley, J. R., 2011, Surficial geology of Saline County, Kansas; text and geologic-unit descriptions by C. M. Phillips-Lander and R. S. Sawin; cross section geology by R. S. Sawin: Kansas Geological Survey, Map M-123, 1 sheet, 59 x 40 inches, scale 1:50,000.
- Miller, R. D., and Baker, G., 2011, Introduction to this special section — Near-surface geophysics: *Leading Edge*, v. 30, no. 2, p. 138-139.
- Miller, R. D., Black, W., Miele, M., Morgan, T., Ivanov, J., Xia, J., and Peterie, S. L., 2011, Feasibility of high resolution seismic reflection to improve accuracy of hydrologic models in a culturally noisy part of Ventura County, CA [Exp. Abs.]: Annual Meeting of the Soc. of Exploration Geophysicists, San Antonio, Texas, September 18-23, p. 3,722-3,726.
- Mintz, J. S., Driese, S. G., Breecker, D. O., and Ludvigson, G. A., 2011, Influence of changing hydrology on pedogenic calcite precipitation in vertisols, Dance Bayou, Brazoria County, Texas, U.S.A. — Implications for estimating paleoatmospheric pCO<sub>2</sub>: *Journal of Sedimentary Research*, v. 81, p. 394-400.
- Park, Y.-J., Sudicky, E. A., Brookfield, A. E., and Jones, J. P., 2011, Hydrologic response of catchments to precipitation — Quantification of mechanical carriers and origins of water: *Water Resources Research* v. 47.
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## **Presentations**

- Bohling, G. C., Workshop on Petrophysical Modeling and Geostatistical Reservoir Characterization, Jan. 13-14, 2011, Columbus, OH.
- Brookfield, A. E., Critically Assessing Numerical Model Results, Kansas Department of Health and Environment, Topeka, Kansas, Dec. 12, 2011.
- Brookfield, A. E., Liu, G., and Sophocleous, M., Simulating the Effects of a Changing Climate on Water Resources in Kansas. Presentation with published abstract, Water and the Future of Kansas Conference, Topeka, Kansas, Sept. 30, 2011.
- Butler, J., Presentation on the Index Well Program, 28<sup>th</sup> Annual Water and the Future of Kansas Conference, Topeka, Kansas, Sept. 30, 2011.
- Butler, J., Presentation on the Index Well Program, American Institute of Hydrology meeting, Topeka, Kansas, Nov. 18, 2011.
- Butler, J., 50-minute classroom presentation (Sept. 20, 2011) and two-hour field demonstration (Sept. 22, 2011) on slug tests for Geology 851, University of Kansas.
- Dunham, J. W., Surficial Geology of Geary County, Kansas. Map Gallery (poster) presentation, ESRI International User Conference, San Diego, California, July 11, 2011.
- Franseen, E. K., Instructor – Workshop on Evaluating Controls on Carbonate Stratigraphic Sequences: A Field-based Approach: University of Puerto Rico-Mayaguez, June 14-16, 2011.
- Franseen, E. K., Field-trip leader – Miocene Carbonate Systems, Puerto Rico, for University of Puerto Rico-Mayaguez, June 15-16, 2011.
- Franseen, E. K., Co-instructor for BHP-Billiton Oil Company geologists to Miocene-Pliocene Carbonate Complexes of SE Spain, Oct. 9-14, 2011.
- Franseen, E. K., Organized and co-led Kansas Interdisciplinary Carbonate Consortium Meeting, March 30-31, 2011.

- Franseen, E. K., and Goldstein, R. H., 2011, Build-and-Fill Sequences in Carbonate Systems: An Emerging Picture: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 83-87.
- Franseen, E. K., and Goldstein, R. H., 2011, Miocene-Pliocene Carbonate Complexes in SE Spain – An Overview of 26 Years of Research: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 88-93.
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- Goldstein, R. H., Franseen, E. K., Li, Z., Young, E., Csoma, A., Buijs, G., and Poteet, J., 2011, Diagenetic Controls on Reservoir Character: Surfaces and Setting: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 38-43.
- Goldstein, R. H., Li, Z., and Franseen, E. K., Diagenetic Controls on the Character of Carbonate Reservoirs: Surfaces and Settings: ExxonMobil FC<sup>2</sup> Conference, Delft, Netherlands, September 2011.
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- Knoph, K., Franseen, E. K., Tsoflias, G. P., and Goldstein, R. H., 2011, Integrating Ground-Penetrating Radar and Field Relationships to Evaluate Porosity and Stratigraphic Models in Upper Miocene Microbial-Oolitic Carbonates, SE Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 29-33.
- Lechtenberg, K. S., Goldstein, R. H., and Franseen, E. K., 2011, Evaluating Origin of Build-and-Fill Geometries of Pennsylvanian Carbonate Systems Exposed in the Goosenecks, Paradox Basin, Utah, USA: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 106-108.
- Li, Z., Goldstein, R. H., and Franseen, E. K., 2011 Diagenetic Controls on Porosity and Permeability in Upper Miocene Carbonate, La Molata SE Spain: ExxonMobil FC<sup>2</sup> Conference, Delft, Netherlands, September, 2011.
- Ludvigson, G. A., Paleoclimatologic Research at the Kansas Geological Survey: Haskell Indian Nations University Environmental Research Studies Institute, Kansas Geological Survey, Lawrence, Kansas, July 12, 2011.
- Lyle, S.A., 2011, Geology of the Kansas Wine Growing Regions (oral presentation); Kansas Wine Growers Association Annual Meeting, Topeka, Kansas.
- Lyle, S.A., 2011, Groundwater Information at the Kansas Geological Survey, (oral presentation); Kansas Rural Water Conference, Annual Meeting, March 29-31, 2011, Wichita, Kansas.
- Miller, R. D., Kansas Department of Transportation Geology Section Annual Meeting, 2011.
- Newell, K. D., Natural Gas In Kansas, Salina Arts Center discussion on movie "Gasland," Salina, Kansas, Jan. 23, 2011.
- Newell, K. D., Recent Developments in Kansas CBM, Western Interior Coal Geologists Meeting, Mt. Magazine, Arkansas, May 17, 2011.
- Newell, K. D., Fracturing Geology and Environmental Considerations, KU TORP/PTTC Seminar on Horizontal Drilling and Fracturing Technology Seminar, Wichita, Kansas, June 8, 2011.
- Newell, K. D., Oil and Gas in Eastern Kansas, Eastern Kansas Royalty Owners Association, Chanute, Kansas, Oct. 6, 2011.
- Newell, K. D., Is Well Fracking an Issue In Kansas? Midcontinent Petroleum Accountants Society, Wichita, Kansas, Oct. 20, 2011.
- Newell, K. D., Oil and Gas in Eastern Kansas, Linn County Farmer Bureau, Mound City, Kansas, Nov. 14, 2011.
- Newell, K. D., Is Well Fracking an Issue In Kansas? Kansas Water Office, Topeka, Kansas, Nov. 2, 2011.

- Ortega-Ariza, D. and Franseen, E. K., 2011, Evaluating Controls on Carbonate Sequence Development: Middle to Late Miocene Ponce Limestone, Puerto Rico: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 77-82.
- Sawin, R. S., Geologic Mapping in Kansas, Kansas Department of Transportation, Geology Section, Feb. 16, 2011.
- Sawin, R. S., The Permian–Carboniferous Boundary, Kansas Department of Transportation, Geology Section, Feb. 16, 2011.
- Smith, J. J., Coring the Ogallala: Scientific Drilling in the High Plains of Western Kansas to the Kansas Geological Survey Advisory Committee meeting, Great Bend, Kansas, Aug. 19, 2011.
- Smith, J. J., Scientific Drilling in the High Plains of Western Kansas-FY2010 to the Kansas Geological Mapping Advisory Committee meeting, Lawrence, Kansas, July 19, 2011.
- Sophocleous, M. A., 2011, The Evolution of Groundwater Management Practices in the Kansas High Plains Aquifer Towards Sustainability: Water and the Future of Kansas Conference Proceeding, Topeka, Kansas, Sept. 30, 2011.
- Sweeney, R., Franseen, E. K., and Goldstein, R. H., 2011, Facies Distribution and Morphologies of Miocene Carbonate Platform Deposits: The Role of Paleotopography, La Rellana Platform, Southeastern Spain: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 98–101.
- Wilson, B. B. — National Ground Water Association Virtual Conference.
- Wilson, B. B. — Kansas House Committee on Agriculture and Natural Resources.
- Wilson, B. B. — Kansas Legislature- Joint Committee on Energy and Environmental Policy.
- Wilson, B. B. — GMD No. 1 Annual Meeting.
- Wilson, B. B. — GMD No. 3 Annual Meetings.
- Wilson, B. B. — Water and the Future of Kansas Conference (x2).
- Wilson, B. B. — Kansas Environmental Leadership Program.
- Wilson, B. B. — Governor’s Ogallala Aquifer Summit.
- Wilson, B. B. — Kansas Department of Agriculture Administrative Leadership Briefing.
- Wilson, B. B. — Kansas Agriculture and Rural Leadership Program.
- Young, E., Goldstein, R. H., Franseen, E. K., and Watney, W. L., 2011, Controls on Reservoir Character in Carbonate-Chert Strata, Mississippian (Osagean- Meramecian), Southeast Kansas: Kansas Interdisciplinary Carbonate Consortium Annual Review Meeting, Program with Extended Abstracts, p. 113–118.

## Awards

- Franseen, E. K. — SEPM Certificate of Recognition for Excellent Technical Presentation at National Meeting, 2011
- Franseen, E. K. — Invited Honoree, Cartografía Geotemática en Republica Dominicana Symposium, Servicio Geologico Nacional de la Republica Dominicana, July 20, 2011
- Mandel, R. D. — KU Center for Teaching Excellence Award, 2011
- Miller, R. D. — Elected, SEG 2nd Vice President, Executive Committee, 2011–2012
- Miller, R. D. — Richard S. Ladd Standards Development Award, ASTM, 2011
- Platt, B. F. — 3<sup>rd</sup> place oral presentation, University of Kansas Geology Department G-Hawker Student Symposium
- Platt, B. F. — Travel grant, Geological Society of America, South Central Section
- Platt, B.F. — Honorarium, University of Arizona Center for Astronomy Education, Legacy Program Teaching Excellence Workshop, Kohala Coast, Hawaii

## Internal Service

- Bohling, G. C. — Courtesy Associate Professor, Dept. of Chemical & Petroleum Engineering, KU (Fall 2009-present)
- Bohling, G. C. — Member of search committee for new hydrogeology faculty member, Dept. of Geology, KU, Spring 2011
- Brookfield, A. E. — Courtesy Faculty, KU Department of Geology
- Brookfield, A. E. — Serving on dissertation committee at KU Department of Geology (Ph.D.) Rubina Firdous and Thesis committee (M.Sc.) Carla Whisner (completed in 2011)
- Brookfield, A. E. — 2011 KGS Student Awards Committee
- Ludvigson, G. A. — Service on KGS Stratigraphic Nomenclature Committee
- Ludvigson, G. A. — Service as STATEMAP Coordinator for the KGS

Ludvigson, G. A. — Service on KU Geology Search Committee for the Ritchie Distinguished Professorship in Sedimentary Geology

Ludvigson, G. A. — Primary mentor for NSF Earth Science Postdoctoral Fellow Dr. Brad Cramer (Ph.D. Ohio State University). Dr. Cramer began two major international scientific initiatives in the IGCP Project 591 and the Digital Integrated Stratigraphy Project funded by the German Science Foundation (DFG)

Ludvigson, G. A. — Co-chaired KU M.S. thesis committee for Mark Villarreal

Ludvigson, G. A. — Co-chaired KU M.S. thesis committee for Hunter Harlow

Ludvigson, G. A. — Co-chaired KU Ph.D. committee for Tony Layzell

Ludvigson, G. A. — Supervision and collaboration with KGS GRA and KU Ph.D. student Laura Murphy on calculation of Cretaceous pCO<sub>2</sub> values from pedogenic carbonates for presentation at the November 2011 GSA and December 2011 AGU meetings, and for invited paper in *Cretaceous Research*

Ludvigson, G. A. — Co-Advisor, Graduate Student Advisees:  
J. Chad Lollar, M.S. with Honors, 2011, The University of Kansas

Mandel, R. D. — Chair, Kansas Geological Survey Promotion and Review Committee, 2011

Miller, R. — Thesis committee member, Bevin Bailey (Masters) 2013, University of Kansas (co-chair); Tyler Schwenk (Masters) 2012, University of Kansas (chair); Craig Hendrix (Masters) 2012, University of Kansas (chair); Benjamin Rickards (Masters) 2010, University of Kansas (co-chair)

Newell, K. D. — Search Committee Chair – Energy Research Section (Geoscientist Position)

Newell, K. D. — Search Committee Chair – Energy Research Section (Petroleum Engineer Position)

Newell, K. D. — Committee Member – KGS Promotions and Review Committee

Newell, K. D. — Committee Member – Merriam International Travel Research Award

Platt, B. F. — Graduate student member, Ritchie Distinguished Professor in Sedimentary Geology search committee

Platt, B. F. — Taught GEOL 105 summer and fall 2011 through KU Center for Online and Distance Learning

Sawin, R. — KGS Stratigraphic Nomenclature Committee (Chair)

Sawin, R. — Search committee member for KGS Director

Smith, J. J. — Committee Chair, Outstanding Student Awards, Kansas Geological Survey

Smith, J. J. — Search Committee Member - High Plains Data Manager, Kansas Geological Survey

## External Service

Bohling, G. C. — Deputy Chair, Groundwater Technical Committee, Hydrology Section, American Geophysical Union, 2010-2012

Bohling, G. C. — Associate Editor, Ground Water, 2007-present

Bohling, G. C. — Editorial Board Member, Computers & Geosciences, 2004-present

Brookfield, A. E. — Newsletter Editor, Geological Society of America, Hydrogeology Division (2009 - )

Brookfield, A. E. — Associate Editor, Ground Water (2011 - )

Brookfield, A. E. — Hydrologist Mentor for Johnson County Student through K-12 Science Education for Kansas State University-Olathe (2011)

Ludvigson, G. A. — Mentoring Activities: Kansas Geological Survey & Department of Geology, University of Kansas; Department of Geoscience, The University of Iowa

Post-Doctoral Research Associates:  
Randy Stotler, Kansas Geological Survey (Ph.D. 2008 University of Waterloo; S. K. Frape, advisor) July 2010-August 2011; NSF-sponsored research on the isotopic hydrogeochemistry of the Neogene Ogallala Formation of western Kansas (accepted appointment as Assistant Professor at the University of Kansas)

Bradley D. Cramer, Kansas Geological Survey/University of Kansas, (Ph.D. 2009 Ohio State University, M. R. Saltzman, advisor) February 2010-January 2012; NSF Earth Sciences Postdoctoral Fellowship (EAR-PF: *Recalibrating the Silurian System using integrated high-resolution biochemostratigraphy and geochronology: A case study for the Paleozoic Era*). Leader for IGCP Project 591 – *The Early to Middle Paleozoic Revolution*. Co-PI for *The Digital Integrated Stratigraphy Project* funded by the German Research Council (DFG)

Ludvigson, G. A. — Service as Associate Editor of the Journal of Sedimentary Research

Ludvigson, G. A. — Coordinated peer review and made AE recommendation for paper submitted to Journal of Sedimentary Research (by Korbar et al.; recommended for publication with minor revisions); June 2011

Ludvigson, G. A. — Reviewed manuscript for GSA's Geology (by White et al., recommended for publication with major revisions); paper was returned to authors for major revisions; July 2011

- Ludvigson, G. A. — Reviewed manuscript for *Sedimentology* (by Myers et al.; recommended acceptance with minor revisions); July 2011
- Ludvigson, G. A. — Reviewed manuscript for SEPM Special Publication on *Frontiers in Paleopedology and Terrestrial Paleoclimatology* (by Mongrain et al.; recommended acceptance with minor revisions); August 2011
- Ludvigson, G. A. — Reviewed manuscript for GSA's Geosphere (by Sprinkel et al.; recommended acceptance with minor revisions); paper was rejected because of limited geographic scope; November 2011
- Ludvigson, G. A. — Reviewed manuscript for *Earth & Environmental Science Transactions of the Royal Society of Edinburgh* (by Bergström et al.; recommended acceptance with minor revisions); November 2011
- Ludvigson, G. A. — Coordinated peer review and made AE recommendation for paper submitted to *Journal of Sedimentary Research* (by Foreman et al.; recommended major revisions); December 2011
- Ludvigson, G. A. — Coordinated peer review and made AE recommendation for paper submitted to *Journal of Sedimentary Research* (by Bojanowski et al.; recommended major revisions); December 2011
- Mandel, R. D. — Chair, Awards Committee, Archaeological Geology Division, Geological Society of America, 2011
- Mandel, R. D. — Associate Editor, *Encyclopedia of Geoarchaeology*, Springer Press, 2011
- Mandel, R. D. — Associate Editor, *Geoarchaeology: An International Journal*, Wiley-Blackwell, 2011
- Mandel, R. D. — Associate Editor, *Current Research in the Pleistocene*, Center for the Study of the First Americans, 2011
- Mandel, R. D. — Organizer and leader of field trip, Soils and Quaternary Landscape Evolution in the Medina River Valley, South-Central Texas, Annual Meeting of the Soil Science Society of America, San Antonio, Texas, October 15, 2011
- Miller, R. — SEG Executive Committee, 2011-2012. Liaison to Committee on University & Student Programs, Continuing Education Committee, Online Committee, Mining and Geothermal Committee, Near-Surface Task Force, Inter-Society Collaboration Committee, and the AGI Environmental Geoscience Advisory Committee
- Miller, R. — Workshop Convener, Geophysics Applied to Geohazards, SEG Conference, San Antonio, Texas, September 23, 2011
- Miller, R. — KU Faculty Senate Research Committee, 2011-2012
- Miller, R. — DOE-EM30 Scientific Opportunities for Monitoring of Environmental Remediation Sites (SOMERS) Task Force, 2010-present
- Miller, R. — National Advisory Team for Geophysics in Hydrology, organized by the Consortium of Universities for the Advancement of Hydrologic Sciences Inc., 2006-present
- Miller, R. — ASTM Geophysics Subcommittee on Seismic Standards, 2006-present
- Miller, R. — Geophysical Society of Kansas, Editor, 2005-present
- Miller, R. — SEG Technical Session Chair, 2010, 2011
- Miller, R. — SEG, Special Issue Editor, *The Leading Edge*: February 2011 (v. 30, n. 2), Near-Surface Geophysics; August 2010 (v. 29, n. 8), Shallow Hazards
- Miller, R. — SEG Foundation, Projects of Special Merit Committee, 2009-2011
- Miller, R. — Referee for SEG Annual Meeting Abstracts
- Miller, R. — Referee for EAGE Annual Meeting Expanded Abstracts
- Newell, K. D. — Midcontinent Councilor for American Association of Petroleum Geologist Energy Minerals Division
- Platt, B. F. — Reviewer for PALAIOS — one manuscript
- Platt, B. F. — Topical Session Co-chair, *Lessons From the Living: Paleontological Investigations Using Modern Analogs*, Geological Society of America Annual Meeting, October 9–12, 2011
- Sawin, R. — Member, Kansas State University Geology Advisory Council (1995–present)
- Sawin, R. — Member, Reservoir Siting Technical Advisory Committee, Kansas Water Office
- Smith, J. J. — Session Co-Chair, *Lessons from the Living: Paleontological Investigations Using Modern Analogs*, Annual Meeting of the Geological Society of America
- Wilson, B. B. — Assisted the Kansas Water Office in updating the 2010 Kansas Water Plan's High Plains Aquifer High Priority Areas map
- Wilson, B. B. — Provided support to the State's Water Banking Review Committee but running sensitive water right computations as part of identifying priority areas within the South Central Kansas Water Ground-Water Banking service area

Wilson, B. B. — Worked with the National Geographic Magazine to develop a graphic showing water right development and water level declines in Haskell County, Kansas

### **KGS Web Site Additions**

28 KGS bulletins were added to the web site during 2011 with five older publications from other series.

28 KGS open-file reports were placed online.

Maps were scanned and added to the web site for all of the county bulletins and many of the other older publications placed online.

Around 13,000 water well completion forms were scanned in 2011. 27,000 wireline logs were scanned and added to the web site, and over 3,000 other documents for oil and gas wells were scanned.

### Refereed Publications

- Bohling, G. C., and Butler, J. J., Jr., 2010, Inherent limitations of hydraulic tomography: Ground Water.
- Buchanan, R. C., ed., 2010, Kansas geology — An introduction to landscapes, rocks, minerals, and fossils, 2nd ed., rev.: University Press of Kansas, 227 p.
- Buchanan, R. C., and McCauley, J. R., 2010, Roadside Kansas — A traveler's guide to its geology and landmarks, 2nd ed., rev.: University Press of Kansas, 376 p.
- Chen, B., Xia, J., Wang, Q., Chen, C., Miller, R. D., and Liang, Q., 2010, Estimating ground-water storage changes in the western Kansas using grace data: Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 11–15, 2010, Keystone, CO, p. 264–276.
- Chung, I. M., Kim, N. W., Lee, J., and Sophocleous, M. A., 2010, Assessing distributed groundwater recharge rate by using integrated surface-groundwater modeling — Application to Mihocheon watershed, Korea: Hydrogeology Journal, v. 18, no. 5, p. 1,253–1,264.
- Collins, J. M., and Mandel, R. D., 2010, Archaeological and geomorphological evaluation of the west lobe of the Allen Alluvial Fan Site – 13HA385: Journal of the Iowa Archeological Society, v. 57, p. 43–63.
- Cordova, C. E., Johnson, W. C., Mandel, R. D., and Palmer, M. W., in press, Late Quaternary environmental change inferred from phytoliths and other soil-related proxies — Case studies from the central and southern Great Plains, USA: Catena.
- Dorale, J. A., Wozniak, L. A., Bettis III, E. A., Carpenter, S. J., Mandel, R. D., Hajic, E. R., Lopinot, N. H., and Ray, J. H., 2010, Isotopic evidence for younger dryas aridity in the North American midcontinent: Geology, v. 38, p. 519–522.
- 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, v. 80, p. 943–954.
- Farlow, J. O., Richards, R. L., Garniewicz, R. C., Greenan, M., Wepler, W. R., Shunk, A. J., Ludvigson, G. A., Shaffer, N. R., and Wenning, A. L., 2010, Occurrence and features of fossiliferous sediments of the Pipe Creek Sinkhole (Late Neogene, Grant County, Indiana); *in*, Geology of the Late Neogene Pipe Creek Sinkhole (Grant County, Indiana), J. O. Farlow, J. C. Steinmetz, and D. A. DeChurch, eds.: Indiana Geological Survey, Special Report 69, Indiana University, Bloomington, p. 1–60.
- Franseen, E. K., Byrnes, A. P., Cansler, J., Steinhaff, D. M., Carr, T. R., and Dubois, M. K., in press, Geologic characteristics of Arbuckle reservoirs in Kansas: Proceedings of the Fifteenth Oil Conference, Tertiary Oil Recovery Project, University of Kansas, 28 p.
- Gleeson, T., VanderSteen, J., Sophocleous, M. A., Tanikuchi, M., Alley, W. M., Allen, D. M., and Zhou, Y., 2010, Groundwater sustainability strategies: Nature Geoscience, v. 3, no. 6, p. 378–379.
- Hunter, J. A., Motazedian, D., Crow, H. L., Brooks, G. R., Miller, R. D., Pugin, A. J-M., Pullan, S. E., and Xia, J., 2010, Near-surface shear wave velocity measurements for soft soil earthquake hazard assessment — Some Canadian mapping examples; *in*, Advances in Near-Surface Seismology and Ground-Penetrating Radar, R. D. Miller, J. D. Bradford, and K. Holliger, eds.: Tulsa, Society of Exploration Geophysicists.
- Ivanov, J., Miller, R. D., Peterie, S. L., and Dunbar, J. B., 2010, Practical focusing of surface-wave inversion to image levees in southern New Mexico: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2010), Keystone, Colorado, April 11–15, p. 97–102.
- Ivanov, J., Miller, R. D., Xia, J., Dunbar, J. B., and Peterie, S. L., 2010, Refraction nonuniqueness studies at levee sites using the refraction-tomography and JARS methods; *in*, Advances in Near-Surface Seismology and Ground-Penetrating Radar, R. D. Miller, J. D. Bradford, and K. Holliger, eds.: Tulsa, Society of Exploration Geophysicists SEG Geophysical Developments Series No. 15, p. 327–338.
- Ivanov, J., Miller, R. D., Xia, J., and Peterie, S. L., 2010, Multi-mode inversion of multi-channel analysis of surface waves (MASW) dispersion curves and high-resolution linear radon transform (HRLRT) [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Denver, Colorado, October 17–21, p. 1902–1907.

- Liu, G. Zheng, C., Tick, G. R., Butler, J. J., Jr., and Gorelick, S. M., 2010, Relative importance of dispersion and rate-limited mass transfer in highly heterogeneous porous media — Analysis of a new tracer test at the MADE site: *Water Resources Research*, v. 46, W03524.
- Ludvigson, G. A., Joeckel, R. M., González, L. A., Gulbranson, E. L., Rasbury, E. T., Hunt, G. J., Kirkland, J. I., and Madsen, S., 2010, Correlation of Aptian-Albian carbon isotope excursions in continental strata of the Cretaceous foreland basin, eastern Utah, USA: *Journal of Sedimentary Research*, v. 80, p. 955-974.
- Ludvigson, G. A., Witzke, B. J., Joeckel, R. M., Ravn, R. L., Phillips, P. L., González, L. A., and Brenner, R. L., 2010, New insights on the sequence stratigraphic architecture of the Dakota Formation in Kansas—Nebraska—Iowa from a decade of sponsored research activity; *in*, *Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 258, part 2*, 35 p.  
<http://www.kgs.ku.edu/Current/2010/Ludvigson/Bull258part2.pdf>
- Luo, Y., and Sophocleous, M. A., 2010, Seasonal ground-water contribution to crop-water use assessed with lysimeter observations and model simulations: *Journal of Hydrology*, v. 389, no. 3–4, p. 325–335.
- Luo, Y., Xia, J., Xu, Y., and Zeng, C., 2010, Group-velocity dispersion analysis of high-frequency Rayleigh waves: *Proceedings of the 4<sup>th</sup> International Conference on Environmental and Engineering Geophysics (ICEEG)*, June 14–19, 2010, Chengdu, China, p. 189–194.
- Luo, Y., Xia, J., Xu, Y., Zeng, C., and Liu, J., in press, Finite-difference modeling and dispersion analysis of high-frequency Love waves for near-surface applications: *Pure and Applied Geophysics*.
- Maili, E., Habib, K. H., and Rush, J., 2010, 4C seismic anisotropy integration for fracture characterization of carbonate reservoirs applied in Idd El Shargi fields, offshore Qatar; *in*, *Barremian–Aptian stratigraphy and hydrocarbon habitat of the eastern Arabian Plate*, F. S. P. van Buchem, M. I. Al-Husseini, F. Maurer, and H. J. Droste, eds.: *GeoArabia Special Publication 4*, p. 605–614.
- Miller, R. D., 2010, An introduction to this special section — Shallow hazards: *Leading Edge*, v. 29, no. 8, p. 928–929.
- Miller, R. D., Bradford, J. D., and Holliger, K., eds., 2010, *Advances in Near-Surface Seismology and Ground-Penetrating Radar*, SEG Geophysical Developments Series No. 15: Tulsa, Society of Exploration Geophysicists.
- Miller, R. D., Ivanov, J. Xia, J., Peterie, S. L., and Sloan, S. L., 2010, Seismic investigations of subsidence hazards [Exp. Abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Denver, Colorado, October 17–21, p. 3769-3773.
- Miller, R. D., and Xia, J., in press, High-resolution seismic reflection to image hydrogeologic sequences: *Near-Surface Geophysics*, EAGE.
- Newell, K. D., and Watney, W. L., 2010, Niobrara chalk gas fields play in northwestern Kansas; *in*, *New Plays and Ways*, D. F. Merriam, D.F., ed.: *Kansas Geological Society (Wichita, KS), Kansas Oil and Gas Fields*, v. VI, p. 85-104.
- Newell, K. D., and Yoakum, R. L., 2010, Kansas coalbed methane play; *in*, *New Plays and Ways*, D. F. Merriam, D.F., ed.: *Kansas Geological Society (Wichita, KS), Kansas Oil and Gas Fields*, v. VI, p. 105-128.
- Nippert, J. B., Butler, J. J., Jr., Kluitenberg, G. J., Whittemore, D. O., Arnold, D., Spal, S. E., and Ward, J. K., 2010, Patterns of Tamarix water use during a record drought: *Oecologia*, v. 162, no. 2, p. 283–292.
- Platt, B. F., Hasiotis, S. T., and Hirmas, D. R., 2010, Use of low-cost multistripe laser triangulation (MLT) scanning technology for three-dimensional, quantitative paleoichnological and neoichnological studies: *Journal of Sedimentary Research*, v. 80, p. 590–610 (journal cover).
- Sawin, R. S., and West, R. R., 2010, Surficial geology of Geary County, Kansas: *Kansas Geological Survey, Map M-122*, scale 1:50, 000. <http://www.kgs.ku.edu/General/Geology/County/ghj/gearyLarge.html>
- Sloan, S. D., Peterie, S. L., Ivanov, J., Miller, R. D., and McKenna, J. R., 2010, Void detection using near-surface seismic methods; *in*, *Advances in Near-Surface Seismology and Ground-Penetrating Radar*, R. D. Miller, J. D. Bradford, and K. Holliger, eds.: *Tulsa, Society of Exploration Geophysicists*.
- Sophocleous, M. A., 2010, Groundwater management practices, challenges, and innovations in the High Plains aquifer, USA — Lessons and recommended actions: *Hydrogeology Journal*, v. 18, no. 3, p. 559–575.
- Sophocleous, M. A., 2010, Understanding and explaining surface tension and capillarity — An introduction to fundamental physics for water professionals: *Hydrogeology Journal*, v. 18, no. 4, p. 811–821.
- Sophocleous, M. A., 2010, Ground-water legal framework and management practices in the High Plains aquifer, USA; *in*, *Practices in Groundwater Management*, A. N. Findikakis and K. Sato, eds.: *IAHR Monograph*, in press.
- Sophocleous, M. A., 2010, Relationships between ground water and surface water in the prairie wetlands of North America (text and powerpoint presentation); *in*, “El papel del agua subterranea en el funcionamiento de los



- humedales” La Alfranca–Pastriz (Zaragoza), L. J. Lamban, J. Heredia, and M. Valverde, eds.: Workshop Proceedings, International Association of Hydrogeologists–Spanish Chapter, Zaragoza, Spain, October 2009, p. 1–63.
- Sophocleous, M. A., Townsend, M. A., Vocasek, F., Ma, L., and KC, A., 2010, Treated wastewater and nitrate transport beneath irrigated fields near Dodge City, Kansas; *in*, Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 258, part 1, 31 p.  
<http://www.kgs.ku.edu/Current/2010/Sophocleous/index.html>
- Suarez, M. B., González, L. A., and Ludvigson, G. A., 2010, Estimating the oxygen isotopic composition of equatorial precipitation during the mid-Cretaceous: *Journal of Sedimentary Research*, v. 80, p. 480–491.
- Suarez, M. B., González, L. A., Ludvigson, G. A., Vega, F. J., and Alvarado–Ortega, J., 2009, Isotopic composition of low-latitude paleoprecipitation during the Early Cretaceous: *Geological Society of America, Bulletin*, v. 121, no. 11/12, p. 1,584–1,595.
- West, R. R., Miller, K. B., and Watney, W. L., 2010, The Permian System in Kansas: Kansas Geological Survey, Bulletin 257, 82 p.
- Xia, J., Ludvigson, G., Miller, R.D., Mayer, L., and Haj, A., 2010, Delineation of a volcanic ash body using electrical resistivity profiling: *Journal of Geophysics and Engineering*, v. 7, p. 267–276.
- Xia, J., Ludvigson, G., Miller, R. D., Mayer, L., and Haj, A., 2010, Feasibility of delineating a volcanic ash body using electrical resistivity profiling: *Journal of Geophysics and Engineering*, v. 7, p. 267–276.
- Xia, J., and Miller, R. D., 2010, Estimation of near-surface shear-wave velocity and quality factor by inversion of high-frequency Rayleigh waves; *in*, Advances in Near-Surface Seismology and Ground-Penetrating Radar, R. D. Miller, J. D. Bradford, and K. Holliger, eds.: Tulsa, Society of Exploration Geophysicists.
- Xia, J., Miller, R. D., Cakir, R., Luo, Y., Xu, Y., and Zeng, C., 2010, Revisiting SH-wave data using love-wave analysis: Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 11–15, 2010, Keystone, CO, p. 569–580.
- Xia, J., Miller, R. D., Cakir, R., Luo, Y., Xu, Y., and Zeng, C., 2010, Estimation of near-surface shear-wave velocity using multichannel analysis of Love waves (MALW): Proceedings of the 4<sup>th</sup> International Conference on Environmental and Engineering Geophysics (ICEEG), June 14–19, 2010, Chengdu, China, p. 13–24.
- Xia, J., Miller, R. D., Ivanov, J., and Peterie, S. L., 2010, Estimation of near-surface quality factors by inversion of Rayleigh-wave attenuation coefficients [Exp. Abs.]: Annual Meeting of the Society of Exploration Geophysicists, Denver, Colorado, October 17–21, p. 1908–1913.
- Xia, J., Xu, Y., Miller, R. D., and Zeng, C., 2010, A trade-off solution between model resolution and covariance in surface-wave inversion: *Pure and Applied Geophysics*.
- Zhang, K., Luo, Y., Xia, J., and Chen, C., 2010, Pseudospectral modeling and dispersion analysis of Rayleigh waves in viscoelastic media: Proceedings of the 4<sup>th</sup> International Conference on Environmental and Engineering Geophysics (ICEEG), June 14–19, 2010, Chengdu, China, p. 298–302.

### Nonrefereed/Unpublished Papers

- Brady, L. L., 2010, “Kansas” section — 2010 Keystone Coal Industry Manual: Mining Media International, Jacksonville, Florida, p. 480–483.
- Buddemeier, R. W., Stotler, R., Butler, J. J., Jr., Jin, W., Beeler, K., Reboulet, E., Macfarlane, P. A., Kreitzer, S., Whittemore, D. O., Bohling, G., and Wilson, B. B., 2010, High Plains aquifer calibration monitoring well program — Third year progress report: Kansas Geological Survey, Open-File Report 2010–3, 109 p.
- Dunham, John, 2010. The topography and major rivers of the Kansas Flint Hills (map). *Symphony in the Flint Hills – Field Journal 2010, Vol. II.*, p. 90. Strong City, Kansas: Symphony in the Flint Hills Press. 186 p.
- Dunham, J., West, R., Sawin, R., Brady, L., Ramirez, I., Bieker, C., and Haag, D., 2010, Surficial geology of Crawford County, Kansas; *in*, ESRI Map Book, v. 25, p. 84–85: ESRI Press, Redlands, CA  
[http://www.esri.com/mapmuseum/mapbook\\_gallery/volume25/mining-earth/mining-earth-2.html](http://www.esri.com/mapmuseum/mapbook_gallery/volume25/mining-earth/mining-earth-2.html)
- Evans, C. S., 2010, Playas in Kansas and the High Plains: Kansas Geological Survey, Public Information Circular 30, 6 p.
- Lyle, S. A., Evans, C. S., Sawin, R. S., and Buchanan, R. C., eds., 2010, Flint Hills, Cross Timbers, and Verdigris River Valley, 2010 Kansas Field Conference, field guide: Kansas Geological Survey, Open-File Report 2010–8, 73 p.
- Miller, R. D., 2010, Seismic reflection survey; Health and Safety Plan, Savannah River National Laboratory: Kansas Geological Survey, Open-File Report 2010–12.

- Miller, R. D., Peterie, S. L., Ivanov, J., Bennett, B. C., Wedel, A. R., Metheny, O. M., Kearns, J. D., and Rickards, B. T., 2010, Seismic detection of San Luis, Arizona, cross-border tunnel: Kansas Geological Survey, Open-File Report 2010-4.
- Newell, K. D., 2010, Fall may be imminent for Kansas Cherokee basin coalbed gas output: *Oil and Gas Journal*, v. 105, no. 5 (Feb. 8th), p. 33–40.
- Newell, K. D., 2010, Communications from individuals regarding their role in the history of the coalbed natural gas play in eastern Kansas, circa 1990 to 2010: Kansas Geological Survey, Open-File Report 2010-15, 15 p.
- Newell, K. D., and Carr, T. R., 2010, Investigation of integrated subsurface processing of landfill gas and carbon sequestration potential, Johnson County, Kansas: Kansas Geological Survey, Open-File Report 2010-17, 113 p.
- Sawin, R. S., and West, R. R., 2010, Data control points used to construct the surficial geology map (M-122) of Geary County, Kansas: Kansas Geological Survey, Open-File Report 2010-13, 218 p.  
[http://www.kgs.ku.edu/Publications/OFR/2010/OFR10\\_13/](http://www.kgs.ku.edu/Publications/OFR/2010/OFR10_13/)
- Sawin, R. S., and West, R. R., 2010, Field geology maps, Morris County, Kansas (1:24,000 quadrangles — Delavan, Herington, and Wilsey quadrangles): Kansas Geological Survey, Open-File Report 2010-5, 40 p., 1 map.
- Sophocleous, M.A., 2010, Relationships between ground water and surface water in the prairie wetlands of North America. (text and Powerpoint presentation); *in*, “El papel del agua subterránea en el funcionamiento de los humedales,” L. J. Lamban, J. Heredia, and M. Valverde, eds.: *La Alfranca-Pastriz (Zaragoza) Workshop Proceedings*, International Association of Hydrogeologists-Spanish Chapter, Zaragoza, Spain, October 2009, p. 1-63.
- Sophocleous, M.A., 2010. Ground-water sustainability and its pursuit in the flatlands of Kansas, USA; *in*, *Hacia la gestión integral de los recursos hídricos en zonas de llanura*, M. Varni, I. Entraigas, and L. Vives, eds.: *Tomo I, 1° Congreso Internacional de Hidrología de Llanuras*, Azul, Buenos Aires, Argentina, 21-24 Sept. 2010, p. 45-56.
- Suchy, D. R., 2010, The Mineral Industry of Kansas; *in*, U.S. Geological Survey, Area Reports — Domestic: U.S. Geological Survey Minerals Yearbook 2008, v. II, 398 p.  
<http://minerals.usgs.gov/minerals/pubs/state/ks.html#myb>

## Computer Software

- Killion, M. — Application development and maintenance, including improvement of the oil and gas map viewer through the addition of new tools and functions; converting existing internet map viewers to the new technology and format used by the oil and gas map viewer; developing a test application and tools for the next generation of map viewers; and maintaining data currency through regular updates of the oil and gas wells and fields datasets. Web applications for DOE CO<sub>2</sub> sequestration project map viewer, KCC abandoned wells map viewer, and KCC gas gathering lines map viewer. Ground-water level viewing application for Exploration Place museum.
- Wilson, B. — Assist with work on the Southwest Kansas Groundwater Management District #3 Numerical Model; provide extensive data analysis, creation, processing, and scripting.
- Wilson, B. — South-central Kansas bedrock enhancement; joined completed GIS data sets with previous Ogallala work to create seamless enhanced bedrock estimates across the entire aquifer

## Abstracts

- Gottsfeld, A., and Mandel, R. D., 2010, Modeling the geologic potential for buried cultural resources in the upper Neosho River basin, east-central Kansas: Society for American Archaeology, 75th Annual Meeting, St. Louis, Missouri, April.
- Hirmas, D. R., Hasiotis, S. T., and Platt, B. F., 2010, Field application of multistripe laser triangulation (MLT) scanning to enhance and quantify descriptions of soil and exogenic trace morphology: Geological Society of America Abstracts with Programs, v. 42, no. 5.
- Holliday, V. T., and Mandel, R. D., 2010, Alluvial and lacustrine stratigraphy across the Pleistocene–Holocene boundary in the Great Plains and Southwest: American Quaternary Association, 21st Biennial Meeting, University of Wyoming, Laramie, August.
- Kessler, N., and Mandel, R. D., 2010, Landscape evolution and late-Quaternary environmental change in upper Driftwood Creek basin, south-central Kansas: American Quaternary Association, 21st Biennial Meeting, University of Wyoming, Laramie, August, poster.

- Kessler, N., and Mandel, R. D., 2010, Late-Quaternary landscape evolution and environmental change in the Red Hills of south-central Kansas — Implications for archaeological research: Society for American Archaeology, 75th Annual Meeting, St. Louis, Missouri, April.
- Lollar, J. C., Ludvigson, G. A., and González, L. A., 2010, Probing a climate model-data misfit regarding the oxygen isotopic composition of Arctic precipitation in the Cretaceous greenhouse world: Geological Society of America, Abstracts with Programs, v. 42, no. 5, p. 130.
- Ludvigson, G. A., González, L. A., Gulbranson, E., Rasbury, T., Hunt, G., Joeckel, M., Murphy, L., and Kirkland, J., 2010, Marine-terrestrial linkages associated with Early Cretaceous (Aptian–Albian) global change: *Geochimica et Cosmochimica Acta*, v. 73, no. 13, Supplement 1, p. A640 (invited presentation at Goldschmidt 2010 Conference, Knoxville, TN.).
- Ludvigson, G. A., González, L. A., Lollar, J. C., and McCarthy, P. J., 2010, What was the oxygen isotopic composition of Arctic precipitation?: American Geophysical Union, Fall Meeting Program, PP11B-1445.
- Ludvigson, G. A., González, L. A., Roberts, J. A., Fowle, D. A., and Driese, S. G., 2010, The current status of the sphaerosiderite paleoclimate proxy: Program Volume for SEPM-NSF Workshop on Paleosols and Soil Surface Analog Systems, Petrified Forest National Park, Arizona, Sept. 21–25, p. 21 (invited presentation).
- Ludvigson, G. A., Joeckel, R. M., González, L. A., Kirkland, J. I., Murphy, L., Suarez, C. A., Gulbranson, E. L., Rasbury, T., and Hunt, G., 2010, The terrestrial paleoclimatic record of the Aptian–Albian C9-C11 carbon isotope excursion in the Cretaceous North American foreland basin of eastern Utah, USA: Geological Society of America, Abstracts with Programs, v. 42, no. 5, p. 540.
- Mandel, R. D., Hofman, J. L., and Holen, S. R., 2010, Geoarchaeology of stratified Early Paleoindian cultural deposits at the Kanorado Locality, northwestern Kansas: Society for American Archaeology, 75th Annual Meeting, St. Louis, Missouri, April.
- Miller, R. D., Ivanov, J. X., Peterie, S. L., and Sloan, S. L., 2010, Seismic investigations of subsidence hazards [Exp. Abs.]: Annual Meeting of the Soc. of Expl. Geophys., Denver, Colorado, October 17-21, p. 3769-3773.
- Mintz, J. S., Driese, S. G., Ludvigson, G. A., and Breecker, D. O., 2010, Influence of changing hydrology on pedogenic calcite precipitation in vertisols, Dance Bayou, Brazoria County, TX — Implications for estimating paleoatmospheric pCO<sub>2</sub>: American Geophysical Union, Fall Meeting Program, PP11B-1434.
- Newell, K. D., and Doveton, J. H., 2010, Gas production from the Chattanooga Shale in southern Kansas — First tries and initial data for possible future reconnaissance studies (abs.): Geological Society of America, Regional Meeting, Abstracts with Programs, v. 42, no. 2, p. 42.
- Platt, B. F., Hasiotis, S. T., and González, L. A., 2010, Correlation between climate change and biodiversity in the continental Upper Jurassic Morrison Formation: Geological Society of America Abstracts with Programs, v. 42, no. 5.
- Smith, J. J., Ludvigson, G. A., Doveton, J. H., and Petronis, M., 2010, Inauguration of a scientific drilling program investigating the lithology and stratigraphy of Neogene strata of the Central High Plains aquifer in western Kansas: Geological Society of America, Abstracts with Programs, v. 42, no. 5, p. 431.
- Smith, J. J., Platt, B. F., Ludvigson, G. A., and Thomasson, J. R., 2010, Paleoenvironmental implications of ant nest trace fossils in calcic paleosols of the Neogene Ogallala Formation, Scott County, Kansas: Association of American Geographers, Great Plains/Rocky Mountain Division Annual Meeting, Program and Abstracts, p. 62.
- Sophocleous, M. A., 2010, Groundwater Management Challenges and Innovations in the High Plains Aquifer: 2010 North-Central/South-Central GSA Joint Meeting, GSA Abstracts with Program, Paper No. 39-3, Branson, MO, April 11-13, 2010.
- Sophocleous, M. A., 2010, Groundwater Management Innovations in Kansas: 27<sup>th</sup> Annual Water and the Future of Kansas Conference “Sustainable Water Resources Management: Assuring the Future,” Topeka, KS, October 26, 2010.
- Sophocleous, M. A., 2010, Groundwater Management Innovations in the Kansas High Plains Aquifer: 2010 GSA Annual Meeting, GSA Abstracts with Programs, vol. 42, no. 5, p. 432, Denver, CO, Oct. 31-Nov. 3, 2010.
- Suarez, M. B., González, L. A., and Ludvigson, G. A., 2010, The global hydrologic cycle contribution to polar warmth during the mid-Cretaceous revealed by oxygen isotopic compositions of pedogenic carbonates: American Geophysical Union, Fall Meeting Program, PP14A-04.
- Suarez, M. B., Gonzalez, L. A., and Ludvigson, G. A., 2010, Utilization of stable oxygen isotopes for quantification of the mid-Cretaceous greenhouse in the Americas: American Association of Petroleum Geology, Annual Convention and Exhibition, New Orleans, Louisiana, Abstracts Volume, v. 19, p. 249.

- Suarez, C. A., González, L. A., Ludvigson, G. A., Kirkland, J. I., and Cifelli, R., 2010, Oxygen isotopic composition of vertebrate phosphate from the Cedar Mountain Formation, UT — A tool for deciphering both global and small-scale climate change and ecologic partitioning: *Journal of Vertebrate Paleontology*, v. 30, no. 3, p. 172A.
- Suarez, C. A., Ludvigson, G. A., González, L. A., Lollar, J. C., Fiorillo, A. R., and McCarthy, P. J., 2010, Constraining Late Cretaceous terrestrial high-latitude water using oxygen isotopic compositions of pedogenic siderite and dinosaur tooth enamel — A multi-proxy approach: American Geophysical Union, Fall Meeting Program, PP14A-08.

## **Presentations**

- Brookfield, A. E. — Fully integrated surface/subsurface flow and transport modeling to Kansas Water Office, Brownbag Seminar Series, Topeka, Kansas, May 4.
- Brookfield, A. E. — Simulating flow and thermal energy transport in a fully integrated surface/subsurface hydrologic framework to KU Department of Geology Colloquium, Lawrence, Kansas, January 28.
- Butler, J. J., Jr., Hydrogeological site investigations — Recent trends, Keynote presentation at the 2010 FH-DGG Biennial Conference and General Assembly, Tuebingen, Germany, May 13.
- Butler, J. J., Jr., High-resolution characterization of spatial variations in hydraulic conductivity with direct-push technology, Clemson Hydrogeology Symposium, Clemson, South Carolina, April 1.
- Doveton, J. — Taught (with G. Bohling) workshop W6: Geoscience Education — Introducing Students to Subsurface Characterization Using Fictional Small County, April 11 at GSA Regional Meeting, Branson, Missouri.
- Doveton, J., Bohling, G. C., and Victorine, J., Subsurface Java Day: Geological Visualization and Virtual Exploration, University of Kansas, October 15, 2010.
- Ludvigson — Stable Isotope Proxies for Arctic Paleoprecipitation in the Cretaceous Greenhouse World Revisited: New Data from the Colville Basin: Workshop on Reconstructing Cretaceous Arctic and Beringian Ecosystems and Environments as Proxies for Understanding Recent High-Latitude Climate Change, International Arctic Research Center, University of Alaska Fairbanks, May 4.
- Ludvigson — Kansas Participation in the National Cooperative Geologic Mapping Program: Kansas Department of Health & Environment, Topeka, Kansas, February 22.
- Ludvigson, G. A., Development of the STATEMAP Program in Kansas: Kansas Geological Survey Advisory Council, Lawrence, KS, December 2, 2010.
- Ludvigson, G. A., Glimpses of the Greenhouse World Through a Glass Darkly: Deep-Time Paleoclimatology & the Hindcasting-Forecasting Dilemma: University of Kansas NSF IGERT Program, C-Change Colloquium Series, The Commons, Spooner Hall, University of Kansas, November 15, 2010.
- Ludvigson, G. A., The Current Status of the Sphaerosiderite Paleoclimate Proxy: SEPM-NSF Workshop on Paleosols and Soil Surface Analog Systems, Petrified Forest National Park, Holbrook, Arizona, September 23, 2010.
- Mandel, R. — The Peopling of the Great Plains — A Geoarchaeological Perspective at the The Robert L. Harness Lecture Series, Hopewell Culture National Historical Park, Chillicothe, Ohio, July 22.
- Miller, R. D. — 6th Annual Border Summit, Arlington, Virginia, 2010.
- Miller, R. D. — AEG Kansas City Section Meeting, 2010.
- Miller, R. D., Anderson, J. M., Wedel, A. R., Metheny, O. M., and Schwarzer, J. C., 2010, Sonic sampling system at the Kansas Geological Survey: Geological Survey Advisory Council, Lawrence, Kansas, April 16.
- Miller, R. D., Xia, J., Peterie, S. L., and Ivanov, J., 2010, Seismic reflection characteristics of subsidence features resulting from dissolution: Kansas Geophysics in the 21st Century, Wichita, Kansas, October 28.
- Newell, K. D. — "Eastern Kansas Coalbed Methane," to Environmental Geology class, Emporia State University, November 23, 2010.
- Sophocleous, M. — Invited keynote speaker at the Workshop on Impacts of Climate Change on Water Cycling in the Arid Area of West China, Urumqi, Xinjiang, China, July 16.
- Sophocleous, M. — Invited presentation on Communicating in International Scientific Journals, Xinjiang Institute of Ecology and Geography, Chinese Academy of Science, Urumqi, July 20.
- Sophocleous, M. — Invited presentation on ground-water sustainability and management in Kansas, Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Science, Beijing, July 22.
- Sophocleous, M. — Invited keynote speaker at the 1<sup>st</sup> International Congress of Flandlands Hydrology, Azul, Buenos Aires, Argentina, September 21–24.

Suchy, D. R., Stewart, D. L., Adkins-Heljeson, D., Wilson, B., and Look, K., 2010, Ground-water information essential to sustainability (abs.): 27<sup>th</sup> Annual Water and the Future of Kansas Conference, Topeka, Kansas.

Watney, W. L. — Presentation on progress for DOE CO<sub>2</sub> contract to Kansas House Energy and Utilities Committee, January.

Watney, W. L. — Presentation on progress for DOE CO<sub>2</sub> contract to DOE National Energy Technology Lab, February.

Watney, W. L. — Presentation on progress for DOE CO<sub>2</sub> contract to Field Trip to Observe 3-D Seismic Acquisition, March.

Watney, W. L. — Presentation on progress for DOE CO<sub>2</sub> contract to Kansas Independent Oil and Gas Association & Southwest Kansas Royalty Owners Association, April.

Watney, W. L. — Presentation on progress for DOE CO<sub>2</sub> contract to Kansas Water Authority & EPA Region 7 UIC Meeting, May.

Watney, W. L. — Presentation on progress for DOE CO<sub>2</sub> contract to Kansas Next Step Conference, August.

Whittemore, D. O. — Advanced chemical characterization of Arkansas River water for TMDL development (uranium and selenium) to the U.S. Environmental Protection Agency, Impaired Waters and Watersheds Conference, Kansas City, Missouri, May 2010.

## Awards

Deputy, J. — KU Employee of the Month Award, June

Franseen, E. K. — Councilor of Sedimentology Journal (2009–2012)

Mandel — 2010 Geological Society of America's Kirk Bryant Award for Excellence, given in recognition of the following publication: Mandel, R. D., 2008, Buried Paleoindian-age landscapes in stream valleys of the Central Plains, USA: *Geomorphology*, v. 101, p. 342–361

Platt, B. F. — Travel grant, Geological Society of America, South Central Section

Xia, J. — Merriam Research Award, Kansas Geological Survey

## Internal Service

Brookfield, A. — Courtesy Faculty, KU Department of Geology

Brookfield, A. — Serving on dissertation committee at KU for Department of Geology (Ph.D.) — Rubina Firdous

Buchanan, R. — Member of editorial board of KGS online journal *Current Research in Earth Sciences*, 1992–present

Buchanan, R. — Member of University of Kansas Unclassified Academic Staff Task Force, Science Communication Training, Self Graduate Fellow program

Butler, J. — University of Kansas - Student Advising - Postdoctorate Fellows: Wei Jin (2007-)

Butler, J. — Member, KGS Evaluation System Review Committee (2003-)

Butler — Co-Chair, KGS Director Search Committee (2010-)

Butler — Member, University of Kansas Office of the Vice Provost for Research and Graduate Studies Promotion Committee (2009-)

Doveton, J. — Taught Geology 791, Carbonate Petrophysics, Spring; CPE 528, Well Logging, Spring; GEOL 536, Log Analysis of Subsurface Geology, Fall; and CPE 825, Saturation, Fall 2010 at University of Kansas

Doveton, J. — KGS Workshop “The Crash Course in Log Analysis: An Excel Spreadsheet Workshop,” March 20

Doveton, J. — Member of editorial board of KGS online journal *Current Research in Earth Sciences*, 1992–present

Dunham, J. — Adjunct professor, KU Department of Geography

Dunham, J. — Currently serving on thesis committee of Amber Reynolds, an advisee of Dr. Xingong Li, KU Department of Geography

Franseen, E. — Member of editorial board of KGS online journal *Current Research in Earth Sciences*, 1993–present

Franseen, E. — Instructor for KU course Geology 101

Franseen, E. — Supervised graduate student theses for KU students Zhaoqi Li, Anya Hess, Nicholas Welsh, Erin Young, Lindsay Walters Chris Lipinski, Justin Fairchild, and Rachel Dvoretzky

Ivanov, J. — Taught course on “Multi-channel Analysis of Surface Waves (MASW),” at KGS, February 25–26 and March 4–5

Killion, M. — Chair, KGS Student Awards Committee

Ludvigson, G. — Mentoring National Science Foundation Earth Sciences Postdoctoral Fellow — Bradley D. Cramer, Kansas Geological Survey/University of Kansas, (Ph.D. 2009 Ohio State University, M.R.

- Saltzman, advisor) February 2010-January 2012; NSF Earth Sciences Postdoctoral Fellowship (EAR-PF: Recalibrating the Silurian System using integrated high-resolution biochemostratigraphy and geochronology — A case study for the Paleozoic Era)
- Ludvigson, G.A. — Graduate Student Advisees (service on graduate committees):
- Julie Retrum, Ph.D. 2010, The University of Kansas, A Paleoclimatic and Paleohydrologic Reconstruction of Pleistocene Fossil Lake, Oregon (awarded an NSF Earth Sciences Postdoctoral Fellowship at the University of Minnesota)
- Ludvigson, G. A., Host and coordinator, KGS Stratigraphic Research Seminar on *Updating the Cretaceous Time Scale: New Results from the Western Interior* (by Brad Sageman, Northwestern University), Fall 2010
- Ludvigson, G. — Mentored/advised two May 2010 Ph.D. graduates at University of Kansas — Marina B. Suarez, Ph.D. 2009, The University of Kansas, Perspectives on Global Climate Change in the mid-Cretaceous (Barremian-Albian), (American Geological Institute Graduate Minority Scholar; accepted Blaustein Postdoctoral Fellowship at Johns Hopkins University in 2009; accepted appointment as Assistant Professor at University of Texas San Antonio in 2010); Celina Suarez, Ph.D. 2010, The University of Kansas, Geochemical Approaches to the Study of Life and Death of Dinosaurs of the Early Cretaceous Cedar Mountain Formation, Utah (American Geological Institute Graduate Minority Scholar)
- Ludvigson, G. — Co-Chairing Graduate Thesis Committees for three M.S. students at University of Kansas — Russell Hunter Harlow, pending, The University of Kansas, Paleoclimate Record of the Ogallala Formation in western Kansas; Mark A. Villareal, M.S. pending, The University of Kansas, Actualistic Calibration of the Sphaerosiderite Paleoclimate Proxy; J. Chad Lollar, M.S. pending, The University of Kansas, Probing a Paleoclimate Model-Data Misfit in Arctic Alaska from the Cretaceous Greenhouse World
- Ludvigson, G. — Supervised M.S. candidate Emily Tremain, M.S. pending, The University of Kansas, Multiproxy paleoenvironmental and paleohydrologic reconstructions of the Albian Mussentuchit Member of the Cedar Mountain Formation, Utah
- Ludvigson, G. — Sessions co-convener, Sessions PP11B & PP14A: Cretaceous Arctic Environments: Proxies for Understanding Climate Change from the “Other” Greenhouse Interval, Annual Meeting of the American Geophysical Union, San Francisco, CA. Dec. 13-17
- Ludvigson, G. — Associate editor, Journal of Sedimentary Research; published by Society for Sedimentary Geology, 2010-2011
- Mandel, R. — Member of faculty search committee, archaeology position, Department of Anthropology, 2009–2010
- Mandel, R. — Member of the Kansas Geological Survey’s Promotion and Review Committee, 2010
- Mandel, R. — Currently serving on thesis and dissertation committees at the University of Kansas for the following students: Committee Member for Brendon Asher, Department of Anthropology (M.A.); Kale Bruner, Department of Anthropology (M.A.); Janice McLean, Department of Anthropology (M.A.); Ryan Johnson, Department of Anthropology (M.A.); David Unruh, Department of Anthropology (M.A.); Shannon Ryan, Department of Anthropology (Ph.D.); Emily Williams, Department of Anthropology (Ph.D.); Justin Gramarye, Biological Sciences (Ph.D.); and Lillian Rebellato, Department of Geography (Ph.D.). Advisor/Thesis Chair for Andrew Gottsfield, Department of Anthropology (M.A.); Laura Murphy, Department of Anthropology (M.A.); Arlo McKee, Department of Anthropology (M.A.); Patrick Green, Department of Anthropology (M.A.); Kristopher West, Department of Anthropology (M.A.); Nicholas Kessler, Department of Anthropology (M.A.); Daniel Keating, Department of Anthropology (M.A.). Advisor/Dissertation Chair for Ashley Zung, Department of Geography (Ph.D.) and Tim Griffith, Department of Anthropology (Ph.D.)
- Miller, R. — Member of advisory board of KGS online journal Current Research in Earth Sciences, 1992–present.
- Miller, R. — KU thesis committees: Daniel Rice (M.S.) (chair); Lindsay Mayer (M.S.) (chair); Benjamin Rickards (co-chair); Craig Hendrix (chair); Tyler Schwenk (chair); and Zhen Li (chair)
- Platt, B. F. — Graduate student member, Ritchie distinguished professor in sedimentary geology search committee
- Sawin, R. — KGS Stratigraphic Nomenclature Committee (Chair)
- Sawin, R. — Search committee member for KGS Director
- Smith, J. J. — Outstanding Student Awards Committee Member, 2010, Kansas Geological Survey
- Sophocleous, M. — Member of advisory board of KGS online journal Current Research in Earth Sciences, September 1992–present
- Sophocleous, M. — Member of KGS Promotion and Review Committee

- Suchy, D. — Helped run KGS booth at Lawrence Water Festival, Earth Day, including a poster on water data on the internet
- Suchy, D. — Spearheaded KGS efforts with KDHE to develop and maintain online system for submitting water well completion forms (WWC-5 forms)
- Suchy, D. — Served as KGS member of international “LAS Committee,” which develops worldwide standards for LAS files (i.e., digital e-logs)

## External Service

- Brookfield, A. — Newsletter Editor, Geological Society of America, Hydrogeology Division (2009–)
- Buchanan, R. — Geological Society of America, Geology and Public Policy Committee, Chair 2009–10; Public Service Award Committee member, 2009–present; Congressional Science Fellowship Selection Committee, Chair
- Buchanan, R. — Member, Midwestern Governors Association Carbon Capture and Storage Task Force
- Butler, J. — Associate Editor, Hydrogeology Journal (2006–)
- Butler, J. — Advances in Aquifer Testing for Improved Site Characterization: New Concepts, Field Methods and Data Analysis Procedures (taught half of course), Melbourne, Australia, March 3–5
- Butler, J. — Aquifer Testing for Improved Hydrogeologic Site Characterization Featuring Aqtesolv and the In-Situ LevelTroll (taught half of course), Calgary, Alberta, June 1–2
- Butler, J. — Elected Member, Board of Directors, Scientists and Engineers Division, National Ground Water Association (2010–)
- Butler, J. — Appointed Member, Chair (2010), Darcy Task Force, National Ground Water Association (2008–2010)
- Butler, J. — Faculty Opponent for Doctoral Thesis, Lund University, Sweden (2010)
- Butler, J. — Promotion and Tenure Evaluator, College of Earth Sciences, National Central University, Taiwan (2010)
- Doveton, J. — PEICE “Introduction to Log Analysis,” London, February 25–27
- Franseen, E. — SEPM Council member
- Franseen, E. — Associate Editor, Palaios (Journal of the Society for Sedimentary Research, SEPM), 2002–present
- Franseen, E. — Session Chairman for session on Origin of Carbonate Breccia Systems — Multiphase Systems, Multitime Events and Reservoir Quality, AAPG/SEPM Meeting, Denver, CO
- Ivanov, J. — Taught course “Surface Waves are for Everyone” at SAGEEP (sponsored by EEGS), April 10
- Killion, M. — Member of Technical Advisory Committee of the Kansas GIS Policy Board
- Ludvigson, G. — Associate Editor, Journal of Sedimentary Research; published by Society for Sedimentary Geology
- Ludvigson, G. — Member of dissertation committee for Peter J. Rose, Ph.D. pending. Department of Geology and Geophysics, University of Minnesota, Minneapolis, MN
- Ludvigson, G. — Session Co-convenor, Sessions PP11B & PP14A: Cretaceous Arctic Environments: Proxies for Understanding Climate Change from the “Other” Greenhouse Interval, Annual Meeting of the American Geophysical Union, San Francisco, CA. Dec. 13–17, 2010
- Ludvigson, G. — Associate Editor, Journal of Sedimentary Research, published by Society for Sedimentary Geology, 2010–2011
- Ludvigson, G. — Host and coordinator, KU Geology Colloquium presentation on Volcanic Trigger for Cretaceous Ocean Anoxic Events? (by Brad Sageman, Northwestern University), Fall 2010
- Macfarlane, P. A. — Advisory Board member for the Museum of the Earth’s Teacher Friendly Guide to the Geology of the South-Central Region of the United States
- Mandel, R. — Member of the U.S. National Committee for the International Union for Quaternary Research (INQUA), National Academies of Science
- Mandel, R. — Served as an instructor at the Cutting Edge Workshop — Teaching Climate Change from the Geologic Record, co-sponsored by the U.S. National Committee for the International Union for Quaternary Research and the American Quaternary Association, University of Wyoming, Laramie, Wyoming, August 11
- Mandel, R. — Co-chair (with David Meltzer), Science Program Committee, 21st Biennial Meeting of the American Quaternary Association, University of Wyoming, Laramie, Wyoming, August 13–15
- Mandel, R. — President of the American Quaternary Association (AMQUA), a 900-member organization, 2009–2010
- Mandel, R. — Associate Editor, Encyclopedia of Geoarchaeology, Springer Press, 2009–2010

Mandel, R. — Liaison between the Geological Society of America and the Society for American Archaeology, 2009–2010

Mandel, R. — Chair, Awards Committee, Geological Society of America's Archaeological Geology Division, 2009–2010

Miller, R. — SEG, online technical content board, 2010

Miller, R. — SEG, special issue editor, *The Leading Edge*, October 2009, August

Miller, R. — SEG Foundation, Projects of Special Merit Committee, 2009–2011

Miller, R. — National Advisory Team for Geophysics in Hydrology, organized by the Consortium of Universities for the Advancement of Hydrologic Sciences Inc., 2006–present

Miller, R. — ASTM Geophysics Subcommittee on Seismic Standards, 2006–present

Miller, R. — Highway Geophysics Steering Committee, 2005–present

Miller, R. — Geophysical Society of Kansas, Editor, 2005–present

Miller, R. — DOE-EM30 Scientific Opportunities for Monitoring of Environmental Remediation Sites (SOMERS) Task Force, 2010–present

Miller, R. — SEG Near Surface Task Force, 2010–present

Miller, R. — SEG, Intersociety Task Force, 2010–present

Miller, R. — SEG/NSG EEGS Collaboration Committee, Chair, 2010–present

Miller, R. — SEG, Annual Meeting Technical Committee, 2010

Miller, R. — SEG, Online Technical Content Board, 2010–2011

Newell, K. D. — Member of KCC Oil and Gas Advisory Subcommittee

Sawin, R. — Member of Kansas State University Geology Advisory Council (1995–present)

Sawin, R. — Liaison between Kansas Earth Science Teachers Association and Kansas Geological Survey (1993–present)

Sophocleous, M. — Editorial Advisor, *Computers & Geosciences*, January 1993–present

Sophocleous, M. — Assistant Editor, *Natural Resources Research*, January 1999–present

Sophocleous, M. — Associate editor-in-chief of *Journal of Arid Land*, July 2010–present

Sophocleous, M. — Invited International Panel Reviewer of the Alberta Environment Groundwater Management Framework — Athabaska Oils Sands Region, 2009–2010

Sophocleous, M. — Invited reviewer of upcoming publication “Groundwater Resources in Canada,” a joint publication by GSA and GSC, edited by A. Rivera, August 2010

Sophocleous, M. — Member of the Blue Ribbon Central Kansas Water Bank Evaluation Committee, 2010

Sophocleous, M. — Member of the Kansas Watershed Restoration and Protection Strategy Work Group (WRAPS Work Group), 2010 to present

Suchy, D. — Created new WWC5 form for KDHE, and helped develop fillable PDF version for their website

Suchy, D. — Served as Exhibits and Sponsors Co-Chair and on organizing committee for joint meeting of South Central and North Central Sections of GSA held in Branson, Missouri, April 11–13

Suchy, D. — Served as Vice-Chairman on Board of Directors, Douglas County Rural Water District #5

Suchy, D. — Served as alternate member of Board of Directors, Public Wholesale Water District #25

Suchy, D. — Helped review Kansas Response Plan for Kansas Division of Emergency Management; served as first contact at KGS for state emergency management

Suchy, D. — Served as judge for 4-H geology exhibits, Douglas County Fair, August 3

Watney, W. L. — President, Kansas Geological Society and Library

Wilson, B. — Kansas Technical Advisory Committee and the DASC Sub-committee to the Kansas GIS Policy Board

Xia, J. — Reviewer for Geophysics, SEG publication—two manuscripts; *Journal of Applied Geophysics*—one manuscript; SEG Annual Meeting — three manuscripts; SEG/China Petroleum Society Meeting—four manuscripts

Xia, J. — Guest Editor, *Journal of Earth Science*, June Issue



## 2009

### Refereed Publications

- Baker, R. G., Bettis, E. A., III, Mandel, R. D., Dorale, J. A., and Fredlund, G. G., 2009, Mid-Wisconsinan environments on the eastern Great Plains: *Quaternary Science Reviews*, v. 28, p. 873–889.
- Bohling, G. C., 2009, Sensitivity and resolution of tomographic pumping tests in an alluvial aquifer: *Water Resources Research*, v. 45, no. 10.
- Bovolo, C. I., Parkin, G., and Sophocleous, M. A., 2009, Groundwater resources, climate and vulnerability: *Environmental Research Letters*, v. 4, no. 3, p. 1–4.
- Bowen, M. W., Johnson, W. C., Klopfenstein, S. T., and Dunham, J. W., 2009, Developing a geospatial database of playas within the High Plains of Kansas: *Current Research in the Pleistocene*, v. 26, p. 191–193.
- Butler, J. J., Jr., 2009, Pumping tests for aquifer evaluation — Time for a change?: *Ground Water*, v. 47, no. 5, p. 615–617.
- Doveton, J. H., and Bohling, G. C., 2009, Compositional data analysis of shaly sandstones from petrophysical logs in oil and gas reservoirs: *IAMG 09, Proceedings*, 8 p.
- Fils, D., Cervato, C., Reed, J., Diver, P., Tang, X., Bohling, G., and Greer, D., 2009, CHRONOS architecture, experiences with an open-source services-oriented architecture for geoinformatics: *Computers and Geosciences*, v. 35, no. 4, p. 774–782.
- Ivanov, J., Miller, R. D., Johnson, C. D., Lane, J. W., and Clemens, D., 2009, Near-surface evaluation of Ball Mountain Dam, Vermont, using multi-channel analysis of surface waves (MASW) and refraction tomography seismic methods on landstreamer data [exp. abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Houston, TX, October 25–30, p. 1,454–1,458.
- Ivanov, J., Tsofilas, G., Miller, R. D., and Xia, J., 2009, Practical aspects of MASW inversion using varying density: *Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009)*, Fort Worth, TX, March 29–April 2, 2009, p. 171–177.
- Liu, G., Butler, J. J., Jr., Bohling, G. C., Reboulet, E., Knobbe, S., and Hyndman, D. W., 2009, A new method for high-resolution characterization of hydraulic conductivity: *Water Resources Research*, v. 45, W08202.
- Liu, J., Zeng, X., Xia, J., and Charles, S., 2009, The separation of P-wave and S-wave from crosswell seismic data and application: *Technical Program with Biographies, SEG, 79th Annual Meeting*, Houston, TX, p. 1,320–1,324.
- 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: *Kansas Geological Survey, Bulletin 256, part 2*, 9 p.  
<http://www.kgs.ku.edu/Current/2009/Ludvigson/index.html>
- Luo, Y., Xia, J., Liu, J., Xu, Y., and Liu, Q., 2009, Research on the middle-of-receiver-spread assumption of the MASW method: *Soil Dynamics and Earthquake Engineering*, v. 29, no. 1, p. 71–79.
- Luo, Y., Xia, J., Miller, R. D., Xu, Y., Liu, J., and Liu, Q., 2009, Rayleigh-wave mode separation by high-resolution linear Radon transform: *Geophysical Journal International*, v. 179, p. 254–264.
- Luo, Y., Xia, J., Xu, Y., Zeng, C., Miller, R. D., and Liu, Q., 2009, Dipping interface mapping using mode-separated Rayleigh waves: *Pure and Applied Geophysics*, v. 166, p. 353–374.
- Macfarlane, P. A., 2009, New insights into the hydrostratigraphy of the High Plains aquifer from three-dimensional visualizations based on well records: *Geosphere*, v. 5, p. 51–58.
- Mayer, L. M., Miller, R. D., Ivanov, J., Weis, T., and Anderson, B., 2009, Angle-dependent tomostatics: *Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009)*, Fort Worth, TX, March 29–April 2, 2009, p. 596–602.
- Merriam, D. F., Xia, J., and Harbaugh, J. W., 2009, Meteorite impact structures in the U.S. midcontinent — Analysis of the Edgerton feature in Kansas: *International Journal of Geophysics*, v. 2009, Article ID 621528, 6 p.
- Miller, R. D., 2009, An introduction to this special section — Hydrogeophysics: *Leading Edge*, v. 28, no. 10, p. 1,210.
- Miller, R. D., Xia, J., Ivanov, J., and Walters, S., 2009, Shot gathers we have known: *Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP)*, Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), March 29–April 2, 2009, Fort Worth, TX, p. 571–578.

- Miller, R. D., Xia, J., Rice, E., Walters, S. L., and Rademacker, T. R., 2009, Near-surface utility of vibroseis [exp. abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, TX, October 25–30, p. 1,330–1,334.
- Miller, R. D., Xia, J., and Steeples, D. W., 2009, Seismic reflection characteristics of naturally induced subsidence affecting transportation: *Journal of Earth Science*, v. 20, no. 3, p. 496–512.
- Sawin, R. S., Franseen, E. K., Watney, W. L., West, R. R., and Ludvigson, G. A., 2009, New stratigraphic rank for the Carboniferous, Mississippian, and Pennsylvanian in Kansas: Kansas Geological Survey, Bulletin 256, part 1, 4 p. <http://www.kgs.ku.edu/Current/2009/Sawin/Bull256part1.pdf>
- Sloan, S. D., Miller, R. D., Ivanov, J., and Walters, S. L., 2009, Shear-wave velocity as an indicator of increased stress and failure potential associated with dissolution-mining voids: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009), Fort Worth, TX, March 29–April 2, p. 363–372.
- 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*, v. 6, p. 17,655–17,660.
- Sophocleous, M. A., 2009, Groundwater management practices and innovations in the High Plains aquifer, USA: *Hydrogeology Journal*. Submitted (under revision following “minor revision” recommendation).
- Sophocleous, M. A., Townsend, M. A., Vocasek, F., Ma, L., and KC, A., 2009, Soil nitrogen balance under wastewater management — Field measurements and simulation results: *Journal of Environmental Quality*, v. 38, no. 3, p. 1,286–1,301.
- Suarez, M. B., González, L. A., Ludvigson, G. A., Vega, F. J., and Alvarado–Ortega, J., 2009, Isotopic composition of low-latitude paleoprecipitation during the Early Cretaceous: *Geological Society of America, Bulletin*, v. 121, no. 11/12, p. 1,584–1,595. doi: 10.1130/B26453.1
- Walters, S., Miller, R. D., Steeples, D. W., Xia, J., and Zeng, C., 2009, Detecting tunnels and underground facilities using diffracted P-waves: Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), March 29–April 2, 2009, Fort Worth, TX, p. 937–942.
- Xia, J., 2009, Foreword to the special issue — Near-surface geophysics: *Journal of Earth Science*, v. 20, no. 3, p. 493–495.
- Xia, J., Cakir, R., Miller, R. D., Zeng, C., and Luo, Y., 2009, Estimation of near-surface shear-wave velocity by inversion of Love waves [exp. abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, TX, October 25–30, p. 1,390–1,395.
- Xia, J., Ludvigson, G., Miller, R. D., Mayer, L., and Haj, A., in press, Feasibility of delineating a volcanic ash body using electrical resistivity profiling: *The Leading Edge*. Publication delayed at request of industrial client.
- Xia, J., Miller, R. D., Xu, Y., Luo, Y., Chen, C., Liu, J., Ivanov, J., and Zeng, C., 2009, High-frequency Rayleigh-wave method: *Journal of Earth Science*, v. 20, no. 3, p. 563–579.
- Xia, J., Xu, Y., Miller, R. D., and Zeng, C., 2009, A trade-off of regularized geophysical inversion using model resolution and covariance matrices: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009), Fort Worth, TX, March 29–April 2, 2009, p. 30–40.
- Xu, Y., Xia, J., and Miller, R. D., 2009, Approximation to cutoffs of higher modes of Rayleigh waves for a layered earth model: *Pure and Applied Geophysics*, v. 166, no. 3, p. 339–351.
- Zeng, C., Xia, J., and Miller, R. D., 2009, Estimation of absorbing boundary parameters for near surface seismic modeling: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009), Fort Worth, TX, March 29–April 2, 2009, p. 603–608.
- Zeng, C., Xia, J., Miller, R. D., and Tsoflias, G. P., 2009, Modeling results on detectability of shallow tunnels using Rayleigh wave diffraction [exp. abs.]: Annual Meeting of the Society of Exploration Geophysicists, Houston, TX, October 25–30, p. 1,425–1,429.

### **Nonrefereed/Unpublished Papers**

- Bhattacharya, S., 2009, Evaluate infill drilling options in Hugoton field — nine section area around Flower A1 well: Kansas Geological Survey, Open-File Report 2009–8, 30 p.
- Bhattacharya, S., Newell, K. D., Watney, W. L., and Sigel, J., 2009, Field tests prove microscale NRU to upgrade low-BTU gas: *Oil and Gas Journal*, v. 107, no. 40 (Oct. 26th), p. 44–53.

- Bhattacharya, S., Newell, K. D., Watney, W. L., and Sigel, J., 2009, A cost-effective solution for upgrading low-pressure, low-BTU natural gas — An experiment with a micro-scale pressure-swing adsorption plant in central Kansas: AAPG Midcontinent Meeting, AAPG Search and Discover Article #90097, Tulsa Geological Society, Tulsa, Oklahoma.
- Bhattacharya, S., Watney, W. L., Newell, K. D., and Magnuson, M., 2009, Demonstration of a low-cost 2-tower micro scale N<sub>2</sub> rejection system to upgrade low-BTU gas from stripper wells, final report, August 1, 2007–December 31, 2008: Kansas Geological Survey, Open-File Report 2009-17, 128 p.
- Brady, L. L. (contributor), 2009, The mineral industry of Kansas; *in*, Area reports — Domestic: U.S. Geological Survey, Minerals Yearbook, 2006, v. II, p. 18-1 to 18-5.  
<http://minerals.usgs.gov/minerals/pubs/2006/myb2-2006-ks.pdf>
- Buddemeier, R. W., Butler, J. J., Jr., Jin, W., Beeler, K., Whittemore, D. O., Reboulet, E., Macfarlane, P. A., Kreitzer, S., and Wilson, B. B. contributions by J. Munson, J. and VoHigh, S., 2009, High Plains aquifer calibration monitoring well program — 2009 mid-year progress report: Kansas Geological Survey, report to Kansas Water Office, Sept. 2009, 47 p.
- Butler, J. J., Jr., Duffield, G., and Kelleher, D., 2009, Field guide for slug testing and data analysis: Midwest Geosciences Group, 4 p.
- Carlson, D. L., Clabaugh, P. A., Mandel, R. D., and Pevy, C. D., eds., 2009, Prehistoric Archaeological Investigations in the Applewhite Reservoir Project Area, Bexar County, Texas: Texas A&M University, College Station, Center for Ecological Archaeology, Reports of Investigations No. 7.
- Dealy, M. T., 2009, Reconnaissance of a subsidence feature in Butler County, Kansas: Kansas Geological Survey, Open-File Report 2009–2, 15 p. [http://www.kgs.ku.edu/Publications/OFR/2009/OFR09\\_02/index.html](http://www.kgs.ku.edu/Publications/OFR/2009/OFR09_02/index.html)
- Doveton, J. H., 2009, Review of “Well Logging for Earth Scientists,” by D. V. Ellis and J. M. Singer: American Association of Petroleum Geologists, Bulletin, v. 93, no. 2, p. 293–294.
- Dunham, J., Sawin, R., Haas, N., and Haag, D., 2009, Surficial geology of the Tallgrass Prairie National Preserve, Chase County, Kansas (map): ESRI Press, Redlands, CA, ESRI Map Book, v. 24, p. 84–85.  
[http://www.esri.com/mapmuseum/mapbook\\_gallery/volume25/mining-earth/mining-earth-2.html](http://www.esri.com/mapmuseum/mapbook_gallery/volume25/mining-earth/mining-earth-2.html)
- KC, A., and Sophocleous, M. A., 2009, Recent MODFLOW developments for ground-water modeling: Kansas Geological Survey, Open-File Report 2009–4, 139 p.
- Lyle, S. A., 2009, Glaciers in Kansas: Kansas Geological Survey, Public Information Circular 28, 6 p.
- Lyle, S. A., Evans, C. S., Sawin, R. S., and Buchanan, R. C., 2009, Field Guide, 2009 Field Conference, Southwest Kansas — Climate, Energy, and Water Consumption: Kansas Geological Survey, Open-File Report 2009–11.
- Lynott, M. J., and Mandel, R. D., 2009, Archeological and geoarcheological study of the rectangular enclosure at the Hopeton Earthworks; *in*, In the Footprints of Squier and Davis — Archeological Fieldwork in Ross County, Ohio, M. J. Lynott, ed.: National Park Service, Midwest Archeological Center, Lincoln, Nebraska, MWAC Special Report No. 5, p. 159–177.
- Mandel, R. D., Saunders, J. W., Hall, G. D., and McCulloch, S., 2009, Geomorphological and archaeological assessment; *in*, Prehistoric Archaeological Investigations in the Applewhite Reservoir Project Area, Bexar County, Texas, D. L. Carlson, P. A. Clabaugh, R. D. Mandel, and C. D. Pevy, eds.: Texas A&M University, College Station, Texas, Center for Ecological Archaeology, Reports of Investigations No. 7, p. 127–165.
- McCulloch, S., Saunders, J. W., Hall, G. D., Mandel, R. D., Miller, J., and Freuden, C., 2009, Testing; *in*, Prehistoric Archaeological Investigations in the Applewhite Reservoir Project Area, Bexar County, Texas, D. L. Carlson, P. A. Clabaugh, R. D. Mandel, and C. D. Pevy, eds.: Texas A&M University, College Station, Texas, Center for Ecological Archaeology, Reports of Investigations No. 7, p. 167–285.
- Miller, R. D., 2009, High-resolution seismic-reflection study of the anthropogenic Leesburg sinkhole in Stafford County, Kansas: Kansas Geological Survey, Open-File Report 2009–1.
- Miller, R. D., Ivanov, J., Sloan, S. D., Walters, S. L., Leitner, B., Rech, A., Wedel, B. A., Wedel, A. R., Anderson, J. M., Metheny, O. M., and Schwarzer, J. C., 2009, Shear-wave seismic study above Vigindustries, Inc. legacy salt jugs in Hutchinson, Kansas: Kansas Geological Survey, Open-File Report 2009–3, 42 p.
- Miller, R. D., Metheny, O. M., Anderson, J. M., and Wedel, A. R., 2009, Study of unconsolidated sediments at Joint Tunnel Test Range (JTTR) on Yuma Proving Grounds, Arizona: Kansas Geological Survey, Open-File Report 2010–1.
- Miller, R. D., Peterie, S. L., Bennett, B. C., Rickards, B. T., Kearns, J. D., Metheny, O. M., Wedel, A. R., Wedel, B. A., and Anderson, J. M., 2009, Baseline near-surface seismic characterization at the Joint Tunnel Test

- Range (JTTR) on the Joint Experimentation Range Complex (JERC) site of the Yuma Proving Grounds, Arizona: Kansas Geological Survey, Open-File Report 2010–2.
- Miller, R. D., Xia, J., Walters, S., Anderson, J., Wedel, B., and Wedel, T., 2009, Underwater full wavefield seismic investigation of a stilling basin at Hardin Dam #3 on the Arkansas River: Kansas Geological Survey, Open-File Report 2009–6.
- Newell, K. D., Bhattacharya, S., and Sears, M. S., 2009, Low-BTU gas in the US midcontinent — a challenge for geologists and engineers: *Oil and Gas Journal*, v. 107, no. 36 (Sept. 14th), p. 35–44.
- Newell, K. D., and Carr, T. R., 2009, Coalbed natural gas production and gas content of Pennsylvanian coal units in eastern Kansas; *in*, *Unconventional Energy Resources — Making the Unconventional Conventional*, T. Car, T. D’Angostino, W. Abrose, J. Pashin, and N. C. Rosen, eds.: *Proceedings of the 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference*, December 6–8, 2009, Houston, TX, p. 353–387.
- Newell, K. D., and Mandel, R., 2009, Preliminary field geology maps, McPherson County, Kansas — Galva, Gypsum SE, Langley, Lindsborg, Lindsborg SE, Marquette, McPherson NE, Roxbury, Windom, Windom NE, 1:24,000-scale quadrangles: Kansas Geological Survey, Open-File Report 2008–36.
- Newell, K. D., and Mandel, R. D., 2009, Preliminary geologic map of McPherson County, Kansas: Kansas Geological Survey, Open-File Report 2009–19, 1 p., 4 sheets, scale 1:24,000.
- Peterie, S. L., Miller, R. D., and Steeples, D. W., 2009, Diffraction imaging versus reflection processing for shallow void detection: 79<sup>th</sup> Annual International Meeting, Society of Exploration Geophysicists, in press.
- Raef, A. E., Watney, W. L., and Byrnes, A. P., 2009, Miscible carbon dioxide flood imaging — Analysis of 4D seismic wavelet transform spectral composites: 15th European Symposium on Improved Oil Recovery, 10 p.
- Sawin, R. S., and West, R. R., 2009, Field geology maps, Morris County, Kansas (1:24,000 quadrangles — Bushong, Council Grove, and Council Grove Lake quadrangles): Kansas Geological Survey, Open-File Report 2009–14, 44 p., 3 maps.
- Sinton, P., Sophocleous, M. A., and Bartlett, D., 2009, Preliminary comments on Equus Beds ASR Groundwater Model prepared by Burns & McDonnell: Memorandum Report to C. Brand of RW Beck, representing the City of Wichita, 35 p.
- Sinton, P., Sophocleous, M. A., and Bartlett, D., 2009, Response to Burns & McDonnell Memo dated October 13, 2009, regarding the “Equus Beds ASR Groundwater Model Prepared by Burns & McDonnell”: Memorandum report to C. Brand of RW Beck, representing the City of Wichita, 6 p.
- Smith, J., and Sleezer, R., 2009, Preliminary geologic field maps, Harvey County, Kansas: Kansas Geological Survey, Open-File Report 2009–15, 1 p., 4 sheets, scale 1:24,000.
- Sophocleous, M. A., 2009, Aquifer storage and recovery and the Lower Republican River valley, Kansas: Kansas Geological Survey, Open-File Report 2009–18, 63 slides.
- Sophocleous, M. A., 2009, Ground-water sustainability and its application in Kansas: Annual Kansas City Geotechnical Conference, Proceedings, April 17, 2009, Kansas City, MO, 17 p.
- Sophocleous, M. A., 2009, Relationships between ground water and surface water in the prairie wetlands of North America: Workshop “El papel del agua subterranea en el funcionamiento de los humedales” International Association of Hydrogeologists — Spanish Chapter, Zaragoza, Spain, Horario y Programa, October 2009.
- Sophocleous, M. A., Townsend, M. A., Vocasek, F., Ma, L., and KC, A., 2009, Impact of treated wastewater for irrigation on nitrate accumulation and transport — Field monitoring and numerical simulations: 26<sup>th</sup> Annual Water and the Future of Kansas Conference, March 26, 2009, Topeka, KS.
- Townsend, M. A., 2009, Responses to review for/by State and Federal agencies from the Kansas Geological Survey, including agency review transmittal forms, and environmental assessment comments for calendar year 2008: Kansas Geological Survey, Open-File Report 2009–7, Section E: Responses prepared by Margaret A. Townsend.
- Watney, W. L., Boardman, D. R., Doveton, J. H., Newell, K. D., Cruse, A., Thompson, T. L., Puckette, J. O., Victorine, J. R., Stalder, K., Walton, R., and Franseen, E., 2009, Preliminary high-resolution stratigraphic, biostratigraphic, petrophysical, and geochemical analysis of the Lower Carboniferous Caney and Late Devonian to Early Carboniferous Woodford and Chattanooga Shales in Oklahoma and Kansas: AAPG Abstracts, Annual Convention and Exhibition, Technical Program, p. 31; Kansas Geological Survey, Open-File Report 2009–05. [http://www.kgs.ku.edu/PRS/publication/2009/OFR09\\_5/index.html](http://www.kgs.ku.edu/PRS/publication/2009/OFR09_5/index.html)
- West, R. R., and Sawin, R. S., 2009, Field geology maps, Morris County, Kansas, preliminary field geology maps for Bushong, Council Grove, and Council Grove Lake, 1:24,000 scale quadrangles: Kansas Geological Survey, Open-File Report 2009–13, 44 p., 1 pl.

- Whittemore, D. O., 2009, Stormwater runoff into sand pits — Effects on ground-water quality: Kansas Geological Survey, Public Information Circular 29, 4 p.
- Wilson, B. B., Liu, G., Whittemore, D. O., and Butler, J. J., Jr., 2009, Smoky Hill River ground water model: Kansas Geological Survey, Open-File Report 2009–20, 103 p.  
[http://www.kgs.ku.edu/geohydro/ofr/ofr2008\\_20/index.htm](http://www.kgs.ku.edu/geohydro/ofr/ofr2008_20/index.htm)

#### Computer Software

- Killion, M. — Application development and maintenance, including improvement of the oil and gas map viewer through the addition of new tools and functions; converting existing internet map viewers to the new technology and format used by the oil and gas map viewer; developing a test application and tools for the next generation of map viewers; and maintaining data currency through regular updates of the oil and gas wells and fields datasets. Web applications for DOE CO<sub>2</sub> sequestration project map viewer, KCC abandoned wells map viewer, and KCC gas gathering lines map viewer. Ground-water level viewing application for Exploration Place museum.
- Wilson, B. — Assist with work on the Southwest Kansas Groundwater Management District #3 Numerical Model; provide extensive data analysis, creation, processing, and scripting.
- Wilson, B. — South-central Kansas bedrock enhancement; joined completed GIS data sets with previous Ogallala work to create seamless enhanced bedrock estimates across the entire aquifer

#### Abstracts

- Benson, G. S., Bova, J., Putney, K. L., Wong, P., Gorman–Johnson, I., Glover, C., Quevedo, H., Hinds, D., Stephens, N., Muratov, N., Franseen, E., and Goldstein, R., 2009, Methods and data for accurate digital putcrop model construction using from Upper Miocene carbonate complex, Las Negras, Spain: American Association of Petroleum Geologists, Annual Convention and Exhibition, Denver, CO, June 7–10, Article #90090©2009.
- Bhattacharya, S., Dubois, M. K., Britt, L. K., and Barba, R. E., 2009, Accessing residual reserves in the giant Hogoton–Panoma field, midcontinent United States: American Association of Petroleum Geologists, Annual Convention and Exhibition, Denver, Colorado.
- Bhattacharya, S., and Newell, K. D., 2009, CO<sub>2</sub> sequestration potential in thin and shallow coal beds — Eastern Kansas: American Association of Petroleum Geologists, Annual Convention and Exhibition, Denver, Colorado, p. 23.
- Bhattacharya, S., Newell, K. D., Watney, W. L., and Sigel, J., 2009, A cost-effective solution for upgrading low pressure, low-BTU natural gas; and experiment with a micro-scale pressure-swing adsorption plant in central Kansas (abs.): American Association of Petroleum Geologists, Mid-Continent Meeting, Tulsa, Oklahoma, Official Program, p. 23.
- Bohling, G. C., Liu, G., Butler, Jr., J. J., Reboulet, E., Vienken, T., and Schneidewind, U., 2009, Geostatistical analysis of high-resolution hydraulic conductivity estimates derived from direct-push injection logging at the MADE site; *in*, Program and Abstracts: Novel Methods for Subsurface Characterization and Monitoring — From Theory to Practice (NovCare 2009), Leipzig, Germany, May 13–16, p. 64.
- Bohling, G. C., Liu, G., Butler, J. J., Jr., Reboulet, E. C., Vienken, T., and Schneidewind, U., 2009, Geostatistical simulation of centimeter-scale hydraulic conductivity estimates from direct-push logging at the MADE site (abs.): *Eos*, v. 90, no. 52, Fall Meeting Supplement, Abstract H43C–1038.
- Brookfield, A. E., Sudicky, E. A. and Park, Y. – J., 2009, Investigating the importance of streambed properties on hydrologic and thermal conditions of a stream using an integrated surface/subsurface model (abs.): Geological Society of America, 2009 Portland Annual Meeting, Portland, Oregon, October 17–21.
- Butler, J. J., Jr., 2009, The development of field methods and tools for subsurface characterization (abs.): Proceedings of Workshop on Field Characterization and Modeling of Aquifer Heterogeneity, National Central University, Taiwan, p. 5.
- Butler, J. J., Jr., Dietrich, P., Knobbe, S., Liu, G., Bohling, G. C., and Reboulet, E. C., 2009, Direct-push methods for high-resolution characterization of hydraulic conductivity (abs.): *Eos*, v. 90, no. 52, Fall Meeting Supplement, Abstract H53J–08.
- Cruse, A. M., Boardman, D., Puckette, J., Watney, W. L., Doveton, J. H., and Newell, K. D., 2009, Eustatic sea level controls on organic carbon preservation in the Woodford Shale, southern Oklahoma (abs.): Geological Society of America, Abstracts with Programs, Annual Meeting, Portland, Oregon.

- Dogan, M., Hyndman, D. W., Van Dam, R. L., and Butler, J. J., Jr., 2009, Hydrostratigraphic analysis of the MADE site using full-resolution 3D GPR and direct-push K data (abs.): Eos, v. 90, no. 52, Fall Meeting Supplement, Abstract H43C–1051.
- Driese, S. G., Ludvigson, G. A., Roberts, J., Fowle, D., and González, L. A., 2009, Formation of historical pedogenic siderite in a US EPA Superfund site, Chattanooga, TN: 46th Annual Soil Survey & Land Resource Workshop, February 5, 2009, Rudder Conference Center, Texas A&M University, College Station, Texas.
- Driese, S. G., Ludvigson, G. A., Roberts, J., Fowle, D., González, L. A., McKay, L. D., and Vulava, V. M., 2009, Formation of historical pedogenic siderite in PAH-contaminated alluvial clay soils, Tennessee, USA — Part I, Insights from field relationships and micromorphology: Geological Society of America, Abstracts with Programs, v. 41, no. 7, p. 312.
- Dvoretzky, R. A., Franseen, E. K., Goldstein, R. H., and Byrnes, A. P., 2009, Reservoir characterization and 3-D static modeling of in situ shallow-water and resedimented deepwater carbonate deposits, Agua Amarga basin, SE Spain: American Association of Petroleum Geologists, Annual Convention and Exhibition, Denver, Colorado, June 7–10, Article #90090©2009.
- Gottsfeld, A. S., and Mandel, R. D., 2009, The geologic potential for cultural deposits in the upper Neosho River basin, eastern Kansas: Geological Society of America, Annual Meeting, Portland, Oregon, October.
- Haj, A. E., Mandel, R. D., and Bettis III, E. A., 2009, Landscape response to Holocene bioclimatic change recorded in the alluvial stratigraphy of the Little Osage River valley, southeastern Kansas: Geological Society of America, Annual Meeting, Portland, Oregon, October 2.
- Herrs, A. J., Taylor, M. H., Watney, W. L., and Miller, R. D., 2009, Quantifying surface subsidence along U.S. Hwy 50, Reno County, Kansas, using terrestrial LIDAR and seismic methods — Implications for sinkhole development and risk assessment along rapidly developing urban corridors (abs.): Geological Society of America, Abstracts with Programs, v. 41, no. 7, p. 677.
- Jin, W., and Butler, J. J., Jr., 2009, Water-level responses to barometric-pressure fluctuations in wells in semi-confined aquifers (abs.): Eos, v. 90, no. 52, Fall Meeting Supplement, Abstract H21C–0873.
- Kaczmarek, S. E., Whitaker, F. F., Bova, J., Franseen, E., Smart, P. L., Goldstein, R., and Leadbeater, T., 2009, From conceptual models to outcrop-based forward models using Carb3d+ — Preliminary findings from La Molata, Cabo de Gata, SE Spain: American Association of Petroleum Geologists, Annual Convention and Exhibition, Denver, Colorado, June 7–10, Article #90090©2009.
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- Liu, G., Butler, Jr., J. J., Bohling, G. C., Reboulet, E., and Knobbe, S., 2009, High-resolution characterization of vertical variations in hydraulic conductivity with direct-push technology — MADE site demonstration; *in*, Program and Abstracts: Novel Methods for Subsurface Characterization and Monitoring — From Theory to Practice (NovCare 2009), Leipzig, Germany, May 13–16, p. 61.
- Liu, G., Butler, J. J., Jr., Bohling, G. C., Reboulet, E. C., Knobbe, S., Hyndman, D. W., and Zheng, C., 2009, A new method for rapid, high-resolution characterization of hydraulic conductivity — Application to solute transport at the MADE site (abs.): Eos, v. 90, no. 52, Fall Meeting Supplement, Abstract H21b–0844.
- Liu, J., Zeng, X., Xia, J., and Charles, S., 2009, The separation of P-wave and S-wave from crosswell seismic data and application; *in*, Technical Program with Biographies: Society of Exploration Geophysicists, 79th Annual Meeting, Houston, TX.
- Ludvigson, G. A., Driese, S. G., Smith, J. J., Gonzalez, L. A., Roberts, J. A., Fowle, D., McKay, L. D., and Vulava, V., 2009, Formation of historical pedogenic siderite in PAH-contaminated alluvial clay soils, Tennessee, USA, Part II-Stable isotopic data on modern analogue for a deep-time paleoclimate proxy: Geological Society of America, Abstracts with Program, v. 41, no. 7, p. 68.
- Ludvigson, G. A., Gulbranson, E., Rasbury, T., Hunt, G., Stockli, D., Joeckel, M., González, L. A., Kirkland, J., and Madsen, S., 2009, Radiometric calibration of the stable isotope chemostratigraphy of the Early Cretaceous Cedar Mountain Formation: Geological Society of America, Abstracts with Programs, v. 41, no. 4, p. 7.
- Ludvigson, G. A., Gulbranson, E., Rasbury, T., Hunt, G., Stockli, D., Joeckel, M., González, L. A., Kirkland, J., and Madsen, S., 2009, The challenge of developing independent chronostratigraphic control for continental paleoclimatic investigations of semi-arid terrestrial strata — A case study of the Early Cretaceous Cedar Mountain Formation: American Association of Petroleum Geologists, Annual Convention & Exhibition, Denver, Colorado, June 7–10, Abstracts Volume, p. 131.

- Mandel, R. D., 2009, The paleoenvironmental context of Paleoindian occupation in the Central Great Plains of Kansas — A tale of two sites: Geological Society of America, Portland, Oregon, October.
- Mandel, R. D., 2009, The role of geoarchaeology in the search for pre-Clovis archaeological sites: Association of Earth Science Editors, Houston, Texas, October.
- Mayer, L. M., Miller, R. D., Ivanov, J., Weis, T., and Anderson, B., 2009, Angle-dependent tomostatics [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009), Fort Worth, Texas, March 29–April 2.
- Miller, R. D., Xia, J., Ivanov, J., and Walters, S., 2009, Shot gathers we have known [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009), Fort Worth, Texas, March 29–April 2.
- Mintz, J. S., Driese, S. G., and Ludvigson, G. A., 2009, Seasonal influence of changing hydrology on pedogenic carbonate formation in vertisols, Dance Bayou, Brazoria County, TX — Implications for the quantification of past atmospheric pCO<sub>2</sub>: Geological Society of America, Abstracts with Programs, v. 41, no. 7, p. 68.
- Mohammed, G. A., Jin, W., Butler, Jr., J. J., and Reboulet, E. C., 2009, Well responses to barometric-pressure fluctuations in confined and semi-confined aquifers (abs.): Geophysical Research Abstracts, v. 11, EGU2009–12812–1, EGU General Assembly.
- Newell, K. D., and Carr, T. R., 2009, Coalbed natural gas production and desorption characteristics of Pennsylvanian coals in eastern Kansas (abs.): American Association of Petroleum Geologists, Mid-Continent Meeting, Tulsa, OK, Official Program, p. 23.
- Newell, K. D., and Carr, T. R., 2009, Coalbed natural gas production and gas content of Pennsylvanian coal units in eastern Kansas (abs.): Program and Abstracts of 29th Annual GCSSEPM Foundation Bob F. Perkins Research Conference, December 6–8, Houston, Texas, p. 19.
- Ray, J. H., and Mandel, R. D., 2009, Late Paleoindian occupations at the Alley Mill site, Shannon County, Missouri: Missouri Archaeological Society, Fall Symposium, Thousand Hills State Park, Kirksville, Missouri, October.
- Rice, D., Miller, R. D., Xia, J., and Ivanov, J., 2009, Use of ultra quiet, high output accelerometers to process high frequency vibrator data [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009), Fort Worth, Texas, March 29–April 2.
- Smith, J. J., Ludvigson, G. A., Mandel, R., Macfarlane, P. A., Haj, A., Murphy, L., and McKee, A., 2009, A record of carbon- and oxygen-isotope excursions from pedogenic carbonates of the Neogene High Plains succession in western Kansas: Geological Society of America, Abstracts with Program, v. 41, no. 7, p. 125–126.
- Smith, J. J., Platt, B. F., Ludvigson, G. A., and Thomasson, J. R., 2009, Description and paleohydrological implications of exceptionally well preserved fossil ant nests in calcic paleosols of the Ogallala Formation (Miocene), Scott County, Kansas, USA: 9th North American Paleontological Convention Abstracts, Cincinnati Museum Center Scientific Contributions No. 3, p. 444.
- Smith, J. J., Platt, B. F., Ludvigson, G. A., and Thomasson, J. R., 2009, Exceptionally well-preserved ant nest fossils in calcic paleosols of the Ogallala Formation (Miocene), Scott County, Kansas, USA: Geological Society of America, Abstracts with Program, v. 41, no. 7, p. 161–162.
- Sophocleous, M. A., 2009, Groundwater management innovations in the High Plains aquifer, USA — A possible path towards sustainability?: Eos, v. 90, no. 52, 29 December 2009, Fall Meet. Suppl., Abstract 700516.
- Sophocleous, M. A., 2009, The impacts of ground-water over-abstraction on the environment: Eos, v. 90, no. 52, 29 December, Fall Meet. Supplement, Abstract 701736.
- Suarez, M. B., González, L. A., and Ludvigson, G. A., 2009, The mid-Cretaceous water-bearer revisited — Quantification of a greenhouse hydrologic cycle in the Americas: American Geophysical Union, Fall Meeting Program, PP31B-1312, Wednesday Session Program.
- Suarez, M. B., González, L. A., Ludvigson, G. A., and You, H., 2009, Depositional environment and stable carbon isotope chemostratigraphy of the Early Cretaceous Xiagou Formation in Changma Basin, Gansu Province, China: American Association of Petroleum Geologists, Annual Convention & Exhibition, Denver, Colorado, June 7–10, Abstracts Volume, p. 207.
- Suchy, D. R., 2009, Kansas Geological Survey Geoscience Information on the Internet: Geological Society of America, Abstracts with Programs, v. 41, no. 7, p. 98.
- Thoma, M., Malama, B., Barrash, W., Bohling, G. C., and Butler, J. J., Jr., 2009, Modeling slug tests in unconfined aquifers with both oscillatory and overdamped responses, and with low-K and high-K skin effects (abs.): Eos, v. 90, no. 52, Fall Meeting Supplement, Abstract H43C–1055.

- Walters, S. L., Miller, R. D., Steeples, D. W., Xia, J., and Zeng, C., 2009, Detecting tunnels and underground facilities using diffracted P-waves [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2009), Fort Worth, Texas, March 29–April 2.
- Watney, W. L., Boardman, D. R., Doveton, J. H., Newell, K. D., Cruse, A., Thompson, T. L., Puckette, J. O., Victorine, J. R., Stalder, K., Walton, R., and Franseen, E., 2009, High-resolution stratigraphic, biostratigraphic, petrophysical, and geochemical analysis of the Lower Carboniferous Caney and Late Devonian to Early Carboniferous Woodford and Chattanooga Shales in Oklahoma and Kansas: American Association of Petroleum Geologists, Annual Convention and Exhibition, Denver, Colorado, June 7–10, Article #90090©2009.
- Whittemore, D. O., 2009, Selenium loss in the Arkansas River across the High Plains, USA: Geological Society of America, Abstracts with Program, v. 41, no. 7, p. 201.
- Whittemore, D. O., Liu, G., Wilson, B. B., and Butler, J. J., Jr., 2009, Enhanced estimation of recharge, tributary inflow, and pumping for a stream-aquifer interaction model: Program with Abstracts, 54<sup>th</sup> Annual Midwest Ground Water Conference, St. Louis.
- Xia, J., Cakir, R., Miller, R. D., Zeng, C., and Luo, Y., 2009, Estimation of near-surface shear-wave velocity by inversion of Love waves; *in*, Technical Program with Biographies: Society of Exploration Geophysicists, 79th Annual Meeting, Houston, Texas.
- Xia, J., Xu, Y., Miller, R. D., and Zeng, C., 2009, A trade-off solution of regularized geophysical inversion using model resolution and covariance matrices: Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), March 29–April 2, Fort Worth, Texas, p. 30–40.
- Zeng, C., Xia, J., and Miller, R. D., 2009, Estimation of absorbing boundary parameters for near surface seismic modeling: Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), March 29–April 2, Fort Worth, Texas, p. 603–608.
- Zeng, C., Xia, J., Miller, R. D., and George, P. T., 2009, Modeling results on detectability of shallow tunnels using Rayleigh-wave diffraction: Society of Exploration Geophysicists, Technical Program with Biographies, 79th Annual Meeting, Houston, Texas.

## Presentations

- Bhattacharya, S., Nissen, S., and Watney, W. L. — Presented invited talk to SIPES Denver Chapter, Volumetric curvature analysis — A technique to visualize reservoir compartments, September 9.
- Buchanan, R. C. — Mapping the Kansas Economy — Natural Environment, at Kansas Economic Policy Conference, Institute for Policy and Social Research, University of Kansas, Lawrence, October.
- Butler, J. J. — Subsurface characterization — Past, present, and future, Pioneers in Groundwater Award Lecture, World Environmental and Water Resources Congress 2009, American Society of Civil Engineers — Environmental and Water Resources Institute, May 19.
- Butler, J. J. — The development of field methods and tools for subsurface characterization, invited presentation to the Institute of Applied Geology, National Central University, Taiwan, April 10.
- Butler, J. J., Jr., New approaches for exploiting water-level responses to fluctuations in barometric pressure, Solinst 2009 Symposium on Recent Advances in Watershed and High Resolution Monitoring, Georgetown, Ontario, Canada, October 23.
- Butler, J. J., Jr. — Invited presentation - “Field methods and tools for ground water hydrologists: Recent developments at the KGS”, Brownbag Professional Development Lecture of the Kansas Water Office, January 7.
- Butler, J. J., Jr. — Presentations to Geohydrology Seminar Series, February and April.
- Butler, J. J., Jr. — Co-presenter of presentation on Index Well Program at the Kansas Water Office, March 3.
- Butler, J. J., Jr. — Panel moderator for session entitled “Impacts of Biofuels Production on Water” at the 26th Annual Water and the Future of Kansas Conference, Topeka, March 26.
- Butler, J. J., Jr. — Invited presentation on phreatophytes for the 2009 KGS Field Conference, June 3.
- Butler, J. J., Jr. — Direct-push demonstration, along with Ed Reboulet and Steve Knobbe, for students in KU Department of Geology introductory hydrogeology class, September 16.
- Butler, J. J., Jr. — Invited presentation on Tamarisk Water Use to the Cimarron Basin and Upper Arkansas Sub-Basin Committees, Garden City, September 30.



- Butler, J. J., Jr. — Invited presentation on phreatophyte research to the DWR Fall Conference in Topeka, October 27.
- Butler, J. J., Jr., P. Dietrich, S. Knobbe, G. Liu, G. C. Bohling, and E. C. Reboulet, Direct-push methods for high-resolution characterization of hydraulic conductivity, Fall Meeting of the American Geophysical Union, December 18.
- Butler, J. J., Jr., Jin, W., Mohammed, G. A., Kluitenberg, G. J., D.O. Whittemore, and E.C. Reboulet, Site characterization using well responses to natural stimuli, invited presentation at the Workshop on Field Characterization and Modeling of Aquifer Heterogeneity, National Central University, Taiwan, April 6.
- Dealy, M. — Presentation on “Preserving oil and gas well samples at the Wichita Well Sample Library,” to the Kansas Geological Society.
- Dunham, J. — Surficial Geology of Crawford County, Kansas. Map Gallery (poster) presentation, ESRI International User Conference, San Diego, CA, July 13. (NOTE: I was unable to attend the conference, but the map was still displayed in the Map Gallery Exhibit).
- Killion, M. — Spoke to Mid America GIS Consortium conference on "ArcGIS Server Solutions for the Kansas Oil and Gas Database."
- Kluitenberg, G. J., Butler, J. J., Jr., Whittemore, D. O., Jin, W., Arnold, D., and Reboulet, E. C., 2009, Quantifying ground-water savings achieved by salt cedar control — A demonstration project in the riparian zone of the Cimarron River, Kansas: Proceedings 26<sup>th</sup> Annual Water and Future of Kansas Conference, Topeka.
- Franseen, E. K. — Invited session chair, Origin of Carbonate Breccia Systems - Multiphase Systems, Multi-time Events & Reservoir Quality, 2009 AAPG/SEPM Meeting, Denver, Colorado.
- Look, K. — SOLAR Project – Using the Internet for KCC Filing and KDOR Severance Tax Reporting, at 17<sup>th</sup> Annual Mid-Year Meeting, Pratt Community College, Pratt, Kansas, April 23.
- Ludvigson, G. — Glimpses of the greenhouse world through a glass darkly — Deep-time paleoclimatology and the hindcasting-forecasting dilemma: University of Kansas, NSF IGERT Program, C-Change Colloquium Series, Kansas Union, April 20.
- Mandel, R. — Soils and landscape evolution in the Great Plains during the past 12,000 years — An environmental perspective: Dyck Arboretum Lecture Series, Dyck Arboretum of the Plains, Hesston, Kansas, February 28.
- Mandel, R. — The peopling of the central Great Plains — A geoarchaeological perspective: Missouri Archaeological Society 2009 Koch Lecture, Lake of the Ozarks Conference Center, April 4.
- Newell, K. D. — Kansas coalbed methane comes of age: Talk given at luncheon meeting of the Society of Independent Professional Earth Scientists, Oklahoma City.
- Smith, J. J. — Soil biota — Their role in pedogenesis and use in paleoenvironmental interpretation at the University of Kansas, Department of Geography, Guest Lecturer, November 2.
- Sophocleous, M. — Invited presentation on the Lower Republican River valley and its prospects for aquifer storage and recovery: Lower Republican River Stakeholder Advisory Committee Meeting, Clay Center, Kansas, May 12.
- Sophocleous, M. — Invited keynote speaker at the Workshop “El papel del agua subterranea en el funcionamiento de los humedales” International Association of Hydrogeologists — Spanish Chapter, Zaragoza, Spain, October 22–23.
- Sophocleous, M. A., Townsend, M. A., Vocasek, F., Ma, L., and KC, A., 2009, Impact of treated wastewater for irrigation on nitrate accumulation and transport — Field monitoring and numerical simulations: 26<sup>th</sup> Annual Water and the Future of Kansas Conference, March 26, Topeka, Kansas.
- Suchy, D. R. — Presented poster at national GSA meeting, October.
- Suchy, D. R., Stewart, D. L., Adkins-Heljeson, D., and Wilson, B., 2009, Water well information as an impact assessment and management tool (abs.): 26<sup>th</sup> Annual Water and the Future of Kansas Conference, Topeka.
- Watney, W. L. — Recent geological modeling at Hall–Gurney field, Russell, Kansas: TORP Enhanced Oil Recovery Conference, Wichita, April 1–2.
- Watney, W. L. — Presented invited talk “Evaluating Structural Controls on Phanerozoic Strata in the Central U.S.” to West Texas Geological Society, June 16.
- Watney, W. L. — Presented invited talk “Evaluating Structural Controls on Phanerozoic Strata in the Central U.S.,” at NextStep Oil and Gas Seminar, August 5–6, Hays, Kansas.
- Watney, W. L. — Presented invited talk on “Geologic Carbon Sequestration Criteria and Potential in Kansas” in seminar for annual KIOGA meeting, August 17, Wichita.
- Watney, W. L. — Presented invited talk on “Salt Deposit Dissolution in Kansas and Implications” to KDHE Annual Environmental Symposium, Proceedings, September 2, Wichita.

- Watney, W. L. — Presented invited talk on "Evaluating Structural Controls on Phanerozoic Strata in the Central U.S.," to Tulsa Geological Society, October 27.
- Watney, W. L., and Bhattacharya, S. — Made invited presentation "Review of CO<sub>2</sub> Sequestration Issues — New Research in Kansas" to Joint Session Energy Environmental Policy Committees, Kansas Legislature, October 28. Presentation distributed to committee.
- Watney, W. L. — Made three invited presentations on "Structural geology of Kansas, Lansing-Kansas City, and the Mississippian," PTTC–Kansas Geological Society Seminar on the Petroleum Geology of Kansas, proceedings with full presentations, December 2–3.
- Whittemore, D. O. — Water-quality effects of storm runoff into sand pits in Sedgwick County, Kansas at University of Kansas 59<sup>th</sup> Annual Environmental Engineering Conference, Lawrence.
- Whittemore, D. O. — Ground-water models for water-resources planning and management in Kansas at Kansas State University, Department of Geology Seminar Series, November.
- Wilson, B. — Presentations at Kansas Geological Mapping Advisory Committee, Kansas City Civic Council, Southwest Kansas GMD #1 Annual Meeting, Southwest Kansas GMD #3 Annual Meeting, Kansas Water Authority, Southwest Kansas GMD #3 Board Meeting, Kansas Rural Water Association Conference, and Water and the Future of Kansas Conference.
- Wilson, B. B., Liu, G., Whittemore, D. O., and Butler, Jr., J. J., 2009, Ground-water model of the Smoky Hill River valley below Kanopolis Reservoir: Proceedings 26<sup>th</sup> Annual Water and Future of Kansas Conference, Topeka.
- Xia, J., 2009, 1. High-frequency Rayleigh-wave method and 2. New developments in image of Rayleigh-wave dispersion energy and mode separation: The National Taiwan University of Science and Technology Department of Civil Engineering and Taiwan Geotechnical Society.
- Xia, J., 2009, New developments in image of Rayleigh-wave dispersion energy and mode separation: Harbin Institute of Technology Shenzhen Graduate School.

## Awards

- Buchanan, R. C. — John K. Strickler Award for Excellence in Conservation and Environmental Education, Kansas Association for Conservation and Environmental Education, 2009
- Butler, J. J. — Pioneers in Groundwater Award, American Society of Civil Engineers - Environmental and Water Resources Institute, 2009
- Deputy, J. — KU Employee of the Month Award, June
- Franseen, E. K. — Councilor of Sedimentology journal (2009–2012)
- Mandel, R. — University of Kansas College of Liberal Arts and Sciences 2009 John C. Wright Graduate Mentor Award
- Walters, S. — Best Paper at SAGEEP 2009, one of four authors selected
- Xia, J. — Merriam Research Award, Kansas Geological Survey

## Internal Service

- Brookfield, A. — Courtesy Faculty, KU Department of Geology
- Brookfield, A. — Serving on dissertation committee at KU for Department of Geology (Ph.D.) — Rubina Firdous
- Buchanan, R. — Member of editorial board of KGS online journal Current Research in Earth Sciences, 1992–present
- Butler, J. — University of Kansas - Student Advising - Postdoctorate Fellows: Wei Jin (2007-)
- Butler, J. — Member, KGS Evaluation System Review Committee (2003-)
- Butler, J. — Co-Chair, KGS Geohydrology Scientist Search Committees (2009)
- Butler, J. — Member, University of Kansas Office of the Vice Provost for Research and Graduate Studies Promotion Committee (2009-)
- Butler, J. — Member, University of Kansas Internal Review Committee, National Science Foundation Major Research Instrumentation Program Competition (2009)
- Doveton, J. — KGS Workshop "The Crash Course in Log Analysis: An Excel Spreadsheet Workshop," March 20, Lawrence
- Doveton, J. — Taught CPE 940 Data Analysis in Engineering and the Natural Sciences (with Geoff Bohling), Fall, at University of Kansas
- Doveton, J. — Taught GEOL 536 Log Analysis of Subsurface Geology, Fall, at University of Kansas

Doveton, J. — Member of editorial board of KGS online journal *Current Research in Earth Sciences*, 1992–present

Dunham, J. — Adjunct professor, KU Department of Geography

Dunham, J. — Currently serving on thesis committee of Amber Reynolds, an advisee of Dr. Xingong Li, KU Department of Geography

Franseen, E. — Member of editorial board of KGS online journal *Current Research in Earth Sciences*, 1993–present

Franseen, E. — Instructor for KU course *Geology 101*

Franseen, E. — Supervised graduate student theses for KU students Zhaoqi Li, Anya Hess, Nicholas Welsh, Erin Young, Lindsay Walters Chris Lipinski, Justin Fairchild, and Rachel Dvoretzky

Killion, M. — Member of Student Awards Committee

Ludvigson, G. — Mentoring National Science Foundation Earth Sciences Postdoctoral Fellow — Bradley D. Cramer, Kansas Geological Survey/University of Kansas, (Ph.D. 2009 Ohio State University, M.R. Saltzman, advisor)

Ludvigson, G. — Mentored/advised two May 2010 Ph.D. graduates at University of Kansas — Marina B. Suarez, Ph.D. 2009, The University of Kansas, *Perspectives on Global Climate Change in the mid-Cretaceous (Barremian-Albian)*, (American Geological Institute Graduate Minority Scholar; accepted Blaustein Postdoctoral Fellowship at Johns Hopkins University in 2009; accepted appointment as Assistant Professor at University of Texas San Antonio in 2010); Celina Suarez, Ph.D. 2010, The University of Kansas, *Geochemical Approaches to the Study of Life and Death of Dinosaurs of the Early Cretaceous Cedar Mountain Formation, Utah* (American Geological Institute Graduate Minority Scholar)

Ludvigson, G. — Co-Chairing Graduate Thesis Committees for three M.S. students at University of Kansas — Russell Hunter Harlow, pending, The University of Kansas, *Paleoclimate Record of the Ogallala Formation in western Kansas*; Mark A. Villareal, M.S. pending, The University of Kansas, *Actualistic Calibration of the Sphaerosiderite Paleoclimate Proxy*; J. Chad Lollar, M.S. pending, The University of Kansas, *Probing a Paleoclimate Model-Data Misfit in Arctic Alaska from the Cretaceous Greenhouse World*

Ludvigson, G. — Supervised M.S. candidate Emily Tremain, M.S. pending, The University of Kansas, *Multiproxy paleoenvironmental and paleohydrologic reconstructions of the Albian Mussentuchit Member of the Cedar Mountain Formation, Utah*

Mandel, R. — Member of faculty search committee, archaeology position, Department of Anthropology, 2009–2010

Mandel, R. — Currently serving on thesis and dissertation committees at the University of Kansas for the following students: Committee Member for Brendon Asher, Department of Anthropology (M.A.); Kale Bruner, Department of Anthropology (M.A.); Janice McLean, Department of Anthropology (M.A.); Ryan Johnson, Department of Anthropology (M.A.); David Unruh, Department of Anthropology (M.A.); Shannon Ryan, Department of Anthropology (Ph.D.); Emily Williams, Department of Anthropology (Ph.D.); Justin Gramarye, Biological Sciences (Ph.D.); and Lillian Rebellato, Department of Geography (Ph.D.). Advisor/Thesis Chair for Andrew Gottsfield, Department of Anthropology (M.A.); Laura Murphy, Department of Anthropology (M.A.); Arlo McKee, Department of Anthropology (M.A.); Patrick Green, Department of Anthropology (M.A.); Kristopher West, Department of Anthropology (M.A.); Nicholas Kessler, Department of Anthropology (M.A.); Daniel Keating, Department of Anthropology (M.A.). Advisor/Dissertation Chair for Ashley Zung, Department of Geography (Ph.D.) and Tim Griffith, Department of Anthropology (Ph.D.)

Miller, R. — Taught KU course: *Geology 775, Near-surface Seismology*

Miller, R. — Member of advisory board of KGS online journal *Current Research in Earth Sciences*, 1992–present

Miller, R. — KU thesis committees: Daniel Rice (M.S.) (chair); Lindsay Mayer (M.S.) (chair); Benjamin Rickards (co-chair); Craig Hendrix (chair); Tyler Schwenk (chair); and Zhen Li (chair)

Sawin, R. — KGS Stratigraphic Nomenclature Committee (Chair)

Smith, J. J. — Geologic Assistant Search Committee Member, 2009, Kansas Geological Survey

Sophocleous, M. — Member of advisory board of KGS online journal *Current Research in Earth Sciences*, September 1992–present

Sophocleous, M. — *Geology 754, Contaminant Transport*, Spring 2002–2009 (guest lecturer)

## External Service

Brookfield, A. — Newsletter Editor, Geological Society of America, Hydrogeology Division (2009–)

Buchanan, R. — Geological Society of America, Geology and Public Policy Committee, Chair 2009–10; Public Service Award Committee, 2009–present

Butler, J. — Associate Editor, *Hydrogeology Journal* (2006–)

- Butler, J. — Aquifer Testing for Improved Hydrogeologic Site Characterization Featuring Aqtesolv and the In-Situ LevelTroll (taught half of course), Fort Collins, CO, Sept. 22-23, 2009; Vancouver, British Columbia, March 10-11, 2009
- Butler, J. — Advanced Aquifer Testing Analysis Featuring AQTESOLV: New Concepts, Field Methods, and Data Analysis Procedures (taught half of course), Boston, MA, April 28–30
- Butler, J. — Novel Methods for Subsurface Characterization and Monitoring: From Theory to Practice - NovCare 2009, Leipzig, Germany, May, organizing committee member
- Butler, J. — Slug Testing: Practical Guidelines for Improving Efficiency and Accuracy (sole instructor – Internet seminar), Midwest Geosciences Group, Nov. 18, 2009
- Butler, J. — Appointed Member, Chair (2010), Darcy Task Force, National Ground Water Association (2008-2010)
- Doveton, J. — PEICE “Introduction to Log Analysis,” London, February 25–27
- Doveton, J. — AAPG Midcontinent Meeting Short Course “Basic Log Analysis”, October 11, Tulsa, Oklahoma
- Franseen, E. — SEPM Council member
- Franseen, E. — Associate Editor, *Palaios* (Journal of the Society for Sedimentary Research, SEPM), 2002–present
- Franseen, E. — Session Chairman for session on Origin of Carbonate Breccia Systems — Multiphase Systems, Multi-time Events and Reservoir Quality, AAPG/SEPM Meeting, Denver, CO
- Ivanov, J. — Taught course “Surface Waves are for Everyone” at SAGEEP (sponsored by EEGS), March 28, 2009
- Killion, M. — Member of Technical Advisory Committee of the Kansas GIS Policy Board
- Ludvigson, G. — Panelist for Fall Funding Cycle, U.S. National Science Foundation, EAR – Sedimentary Geology and Paleobiology Program, 2009
- Ludvigson, G. — Associate Editor, *Journal of Sedimentary Research*; published by Society for Sedimentary Geology
- Ludvigson, G. — Host & coordinator, KU Geology Colloquium presentation on Global Climate & Atmospheric Carbon Dioxide for the Past 65 Million Years (by Mark Pagani, Yale University), 2009
- Ludvigson, G. — Member of dissertation committee for Peter J. Rose, Ph.D. pending. Department of Geology and Geophysics, University of Minnesota, Minneapolis
- Macfarlane, P. A. — Advisory Board member for the Museum of the Earth’s Teacher Friendly Guide to the Geology of the South-Central Region of the United States
- Mandel, R. — Editorial board member for the *Encyclopedia of Geoarchaeology*. Springer Press, 2007–09
- Mandel, R. — Associate Editor, *Encyclopedia of Geoarchaeology*, Springer Press, 2009–2010
- Mandel, R. — Liaison between Geological Society of America and Society for American Archaeology, 1994–2009
- Mandel, R. — Member of the U.S. National Committee for the International Union for Quaternary Research (INQUA), National Academies of Science
- Mandel, R. — President of the American Quaternary Association (AMQUA), a 900-member organization, 2009–2010
- Mandel, R. — Chair, Awards Committee, Geological Society of America’s Archaeological Geology Division, 2009–2010
- Miller, R. — SEG, special issue editor, *The Leading Edge*, October 2009, August 2010
- Miller, R. — Co-convenor of workshop on Near-surface Seismology and GPR at SEG conference, Houston, TX, 2009
- Miller, R. — SEG Foundation, Projects of Special Merit Committee, 2009–2011
- Miller, R. — SEG Near-Surface Geophysics Section Publications Committee, Chairman, 2008-2009; Committee on Nominations, 2007-2009
- Miller, R. — National Advisory Team for Geophysics in Hydrology, organized by the Consortium of Universities for the Advancement of Hydrologic Sciences Inc., 2006-present
- Miller, R. — ASTM Geophysics Subcommittee on Seismic Standards, 2006-present
- Miller, R. — Highway Geophysics Steering Committee, 2005-present
- Miller, R. — Geophysical Society of Kansas, Editor, 2005-present
- Miller, R. — SAGEEP EEGS Technical Session Chair, 2009
- Miller, R. — SEG Editorial Board for *The Leading Edge*, 2004–2009; chairman, 2008–2009
- Newell, K. D. — Member of KCC Oil and Gas Advisory Subcommittee
- Sawin, R. — Member of Kansas State University Geology Advisory Council (1995–present)
- Sawin, R. — Liaison between Kansas Earth Science Teachers Association and Kansas Geological Survey (1993–present)
- Sophocleous, M. — Invited International Panel Reviewer of the Alberta Environment Groundwater Management Framework — Athabaska Oils Sands Region, 2009–2010

Sophocleous, M. — Editorial Advisor, Computers & Geosciences, January 1993–present  
 Sophocleous, M. — Assistant Editor, Natural Resources Research, January 1999–present  
 Suchy, D. — Created new WWC5 form for KDHE, and helped develop fillable PDF version for their website  
 Watney, W. L. — President, Kansas Geological Society and Library  
 Watney, W. L. — Member, Research Advisory Group for RPSEA (Research Partnership to Secure Energy for America)  
 Whittemore, D. O. — Geochemical identification of saltwater sources contaminating Kansas water resources for the Kansas Corporation Commission and the Kansas Department of Health and Environment for five sites in Barber, Dickinson, Harvey, McPherson, and Pawnee counties  
 Wilson, B. — Kansas Technical Advisory Committee and the DASC Sub-committee to the Kansas GIS Policy Board  
 Xia, J. — Reviewer for Geophysics, SEG publication—two manuscripts; Journal of Applied Geophysics—one manuscript; SEG Annual Meeting — three manuscripts; SEG/China Petroleum Society Meeting—four manuscripts  
 Xia, J. — Guest Editor, Journal of Earth Science, June Issue

### Refereed Publications

- Bhattacharya, S., Byrnes, A. P., Watney, W. L., and Doveton, J. H., 2008, Flow-unit modeling and fine-scale predicted permeability validation in Atokan sandstones — Norcan East field, Kansas: American Association of Petroleum Geologists, Bulletin, v. 92, no. 6, p. 725–748.
- Bhattacharya, S., Newell, K. D., Watney, W. L., and Sigel, M., 2008, A new micro-scale, low-cost nitrogen rejection plant can now upgrade low-BTU gas and improve marginal fields: E&P, v. 81, no. 8, p. 102–103.
- Bohling, G. C., 2008, Information fusion in regularized inversion of tomographic pumping tests; *in*, Quantitative Information Fusion for Hydrological Sciences, X. Cai and T.-C. J. Yeh, eds.: Springer-Verlag, Berlin, p. 137–162.
- Bohling, G. C., 2008, Review of "Petroleum Geostatistics" by Jef Caers: Computers & Geosciences, v. 34, no. 3, p. 299–300.
- Buddemeier, R. W., Jokiel, P. L., Zimmerman, K. M., Lane, D. R., Carey, J. M., Bohling, G. C., and Martinich, J. A., 2008, A modeling tool to evaluate regional coral reef responses to changes in climate and ocean chemistry: Limnology and Oceanography-Methods, v. 6, p. 395–411.
- Buddemeier, R. W., Smith, S. V., Swaney, D. P., Crossland, C. J., and Maxwell, B. A., 2008, Coastal typology: An integrative "neutral" technique for coastal zone characterization and analysis: Estuarine Coastal and Shelf Science, v. 77, issue 2, p. 197–205.
- Butler, J. J., Jr., Zhan, X., and Zlotnik, V. A., 2008, Reply to Comment on "Pumping-induced drawdown and stream depletion in a leaky aquifer system": Ground Water, v. 46, no. 4, p. 530–531.
- Cooper, M. R., and Miller, R. D., 2008, Introduction to this special section — Near-surface geophysics: The Leading Edge, v. 27, no. 11, p. 1,423.
- Cooper, M. R., and Miller, R. D., 2008, Introduction to this special section — Resolution: The Leading Edge, v. 27, no. 5, p. 635.
- Dietrich, P., Butler, J. J., Jr., and K. Faiss, D., 2008, A rapid method for hydraulic profiling in unconsolidated formations: Ground Water, v. 46, no. 2, p. 323–328.
- Doveton, J. H., 2008, Application of Markov mean first-passage time statistics to sedimentary successions — A Pennsylvanian case-study from the Illinois basin; *in*, Progress in Geomathematics, G. Bonham-Carter and Q. Cheng, eds.: Springer, p. 435–443.
- Doveton, J. H., 2008, Enhanced formation evaluation based on forward-modelling of resistivity and porosity logs from flow-unit architecture simulations of carbonate and clastic reservoirs: SPWLA 49<sup>th</sup> Annual Logging Symposium Transactions, Paper NNN, 5 p.
- Gochioco, L. M., and Miller, R. D., 2008, Introduction to this special section — Mining geophysics: The Leading Edge, v. 27, no. 1, p. 45.
- Goldberg, P., and Mandel, R. D., 2008, Caves and rockshelters; *in*, Encyclopedia of Archaeology, vol. 2, D. M. Pearsall, ed.: New York, Academic Press, p. 966–974.
- Guinotte J. M., and Buddemeier, R. W., 2008, Comment on "Modelling susceptibility of coral reefs to environmental stress-using remote sensing data and GIS models", authors Maina, Venus, McClanahan, and Ateweberhan: Ecological Modelling, v. 218, issue 3–4, p. 400–402.
- Ivanov, J., Miller, R. D., Markiewicz, R. D., and Xia, J., 2008, Refraction tomography mapping of near-surface dipping layers using landstreamer data at East Canyon Dam, Utah [exp. abs.]: Annual Meeting of the Society of Exploration Geophysicists, Las Vegas, NV, November 9–12, p. 3,229–3,233.
- Ivanov, J., Miller, R. D., and Tsoflis, G. P., 2008, Some practical aspects of MASW analysis and processing: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2008), Philadelphia, PA, April 6–10, p. 1,186–1,198.
- Kansas Geological Survey, 2008, Surficial geology of Kansas: Kansas Geological Survey, Map Series M-118, 1 sheet, scale 1:500,000.
- Lane, J. W., Jr., Ivanov, J., Day-Lewis, F. D., Clemens, D., Patev, R., and Miller, R. D., 2008, Levee evaluation using MASW — Preliminary findings from the Citrus Lakefront Levee, New Orleans, Louisiana: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2008), Philadelphia, PA, April 6–10, p. 703–712.
- Liu, G., Bohling, G. C., and Butler, Jr., J. J., 2008, Simulation assessment of the direct-push permeameter for characterizing vertical variations in hydraulic conductivity: Water Resources Research, v. 44, no. 2, p. 10.

- Liu, G., Chen, Y., and Zhang, D., 2008, Investigation of flow and transport processes at the MADE site using ensemble Kalman filter: *Advances in Water Resources*, v. 31, no. 7, p. 975–986.
- Luo, Y., He, C., Sophocleous, M., Yin, Z., Hongrui, R. and Ouyang, Z., 2008, Assessment of crop growth and soil water modules in SWAT2000 using extensive field experiment data in the irrigation district of the Yellow River basin: *Journal of Hydrology*, v. 352, no. 1–2, p. 139–156.
- Luo, Y., Xia, J., Liu, J., and Liu, Q., 2008, Joint inversion of fundamental and higher mode Rayleigh waves: *Chinese Journal of Geophysics—Chinese Edition*, v. 51, no. 1, p. 242–249.
- Luo, Y., Xia, J., Liu, J., Xu, Y., and Liu, Q., 2008, Generation of a pseudo-2D shear-wave velocity section by inversion of a series of 1D dispersion curves: *Journal of Applied Geophysics*, v. 64, no. 3–4, p. 115–124.
- Luo, Y., Xia, J., Miller, R. D., Liu, J., Xu, Y., and Liu, Q., 2008, Rayleigh-wave dispersive energy imaging and mode separating by high-resolution linear Radon transform: *Proceedings of the 2008 International Conference on Environmental and Engineering Geophysics (ICEEG)*, June 15–20, Wuhan, China, p. 81–86.
- Luo, Y., Xia, J., Miller, R. D., Liu, J., Xu, Y., and Liu, Q., 2008, Application of high-resolution linear Radon transform for Rayleigh-wave dispersive energy imaging and mode separating [exp. abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Las Vegas, NV, November 9–12, p. 1,233–1,237.
- Luo, Y., Xia, J., Miller, R. D., Liu, J., Xu, Y., and Liu, Q., 2008, Rayleigh-wave dispersive energy imaging by high-resolution linear radon transform: *Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP)*, Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 6–10, 2008, Philadelphia, PA, p. 1,267–1,275.
- Luo, Y., Xia, J., Miller, R. D., Xu, Y., Liu, J., and Liu, Q., 2008, Rayleigh-wave dispersive energy imaging by high-resolution linear Radon transform: *Pure and Applied Geophysics*, v. 165, no. 5, p. 903–922.
- Luo, Y., Xia, J., Xu, Y., and Liu, Q., 2008, Rayleigh-wave dispersive energy imaging and mode separating by high-resolution linear Radon transform: *The Leading Edge*, v. 27, no. 11, p. 1,536–1,542.
- Macpherson, G. L., Roberts, J. A., Blair, J. M., Townsend, M. A., Fowle, D. A., and Beisner, K. R., 2008, Increasing shallow groundwater CO<sub>2</sub> and limestone weathering, Konza Prairie, USA: *Geochimica et Cosmochimica Acta*, v. 72, issue 23, p. 5,581–5,599.
- Mandel, R. D., 2008, Buried Paleoindian-age landscapes in stream valleys of the Central Plains, USA: *Geomorphology*, v. 101, p. 342–361.
- Mandel, R. D., 2008, Buried Paleoindian-age landscapes in stream valleys of the Central Plains, USA; *in*, *Fluvial Deposits and Environmental History: Geoarchaeology, Paleohydrology, and Adjustments to Environmental Change*, P. F. Hudson, K. W. Butzer, and T. Beach, eds.: Elsevier, Amsterdam, p. 342–361.
- Mayer, L. M., Miller, R. D., Ivanov, J., Weis, T., and Anderson, B., 2008, Near-surface seismic methods to enhance reflection events in high desert region: *Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2008)*, Philadelphia, PA, April 6–10, p. 626–632.
- McClanahan, T. R., Buddemeier, R. W., Hoegh-Guldberg, O., and Sammarco, P., 2008, Projecting the current trajectory for coral reefs; *in*, *Aquatic Ecosystems — Trends and Global Prospects*, N. V. C. Polunin, ed.: Cambridge University Press, Cambridge, UK, p. 242–260.
- Miller, R. D., Walters, S. L., Xia, J., Ivanov, J., and McKenna, J. R., 2008, Seismic tunnel detection using the full wavefield: *Proceedings of the 2008 Meeting of the MSS Specialty Group on Battlefield Acoustic and Seismic Sensing*, August 19–21, Laurel, MD, 17 p. Published on CD.
- Miller, R. D., and Xia, J., 2008, High-resolution seismic reflection to image hydrogeologic sequences [exp. abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, Las Vegas, NV, November 9–12, p. 1,208–1,212.
- Miller, R. D., Xia, J., Henthorne, R., and Croxton, N., 2008, Seismic reflection characteristics of subsidence affecting transportation: *Proceedings of the Highway Geophysics NDE Conference*, Charlotte, NC, December 1–4, p. 351–357.
- Miller, R. D., Xia, J., Park, C. B., and Ivanov, J. M., 2008, Back Page — The history of MASW: *The Leading Edge*, v. 27, no. 4, p. 568.
- Newell, K. D., 2008, Trends in composition of Morrowan gases in southwestern Kansas; *in*, *Morrow and Springer in the southern midcontinent*, 2005 Symposium, R. D. Andrews, ed.: Oklahoma Geological Survey, Circular 111, p. 49–61.
- Park, C. B., and Miller, R. D., 2008, Roadside passive multichannel analysis of surface waves (MASW): *Journal of Environmental and Engineering Geophysics*, v. 13, no. 1, p. 1–11.
- Robinson, D. A., Binley, A., Crook, N., Day–Lewis, F. D., Ferré, T. P. A., Grauch, V. J. S., Knight, R., Knoll, M., Lakshmi, V., Miller, R., Nyquist, J., Pellerin, L., Singha, K., and Slater, L., 2008, Advancing process-based

- watershed hydrological research using near-surface geophysics — A vision for, and review of, electrical and magnetic geophysical methods: *Hydrological Processes*, v. 22, p. 3,604–3,635.
- Sarg, R., Franseen, E., and Rankey, G., 2008, NSF Workshop — Community sedimentary model for carbonate systems (white paper): *The Sedimentary Record (SEPM)*, v. 6, no. 3, p. 11.
- Sawin, R. S., 2008, Surficial geology of the Tallgrass Prairie National Preserve, Chase County, Kansas: Kansas Geological Survey, M-119A, scale 1:12,000, 1 sheet.
- Sawin, R. S., and Buchanan, R. C., 2008, Water-bearing units of the Tallgrass Prairie National Preserve, Chase County, Kansas: Kansas Geological Survey, M-119B, scale 1:12,000, 1 sheet.
- Sawin, R. S., Franseen, E. K., West, R. R., Ludvigson, G. A., and Watney, W. L., 2008, Clarification and changes in Permian stratigraphic nomenclature in Kansas: Kansas Geological Survey, Bulletin 254, part 2, 4 p.  
<http://www.kgs.ku.edu/Current/2008/Sawin/index.html>
- 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
- 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*, v. 23, p. 503–513.
- Smith, J. J., Hasiotis, S. T., Kraus, M. J., and Woody, D. T., 2008, *Naktodemasis boweni* — New ichnogenus and ichnospecies for adhesive meniscate burrows (AMB), and paleoenvironmental implications, Paleogene Willwood Formation, Bighorn Basin, Wyoming: *Journal of Paleontology*, v. 82, p. 267–278.
- 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*, v. 23, p. 683–699.
- 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*, v. 78, p. 323–334.
- Sophocleous, M. A., Townsend, M. A., Vocasek, F., and Liwang, M. A., 2008, Treated wastewater and nitrate transport beneath irrigated fields — A Kansas water reuse project: 2008 Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM, Paper No. 64–3. [http://gsa.confex.com/gsa/2008AM/finalprogram/abstract\\_144113.htm](http://gsa.confex.com/gsa/2008AM/finalprogram/abstract_144113.htm).
- Sophocleous, M. A., Townsend, M. A., Vocasek, F., Ma, L., KC, Ashok, 2009, Soil nitrogen balance under wastewater management — Field measurements and simulation results: *Journal of Environmental Quality* v.38, no. 3, p. 1,286–1,301.
- Townsend, M. A., Nelson, N. O., Goard, D., Presley, D., 2008, Reusing dredged sediment — Geochemical and ecological considerations; *in*, *Sedimentation in Our Reservoirs — Causes and Solutions*: Kansas State University, June 2008, Contribution No. 08–250–S from the Kansas Agricultural Experiment Station, p. 103–146. [http://www.oznet.ksu.edu/library/h20q12/KWRI\\_Book.pdf](http://www.oznet.ksu.edu/library/h20q12/KWRI_Book.pdf)
- Tsoflias, G. P., Ivanov, J., Anandakrishnan, S., and Miller, R. D., 2008, Use of active source seismic surface waves in glaciology: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2008), Philadelphia, PA, April 6–10, p. 1,240–1,243.
- Ufnar, D. F., Ludvigson, G. A., González, L. A., and Gröcke, D. R., 2008, Precipitation rates and atmospheric heat transport during the Cenomanian greenhouse warming in North America — Estimates from a stable isotope mass-balance model: *Palaogeography, Palaeoclimatology, Palaeoecology*, v. 266, p. 28–38.
- Watney, W. L., Bhattacharya, S., Byrnes, A., Doveton, J., and Victorine, J., 2008, Geo-engineering modeling of Morrow/Atoka incised-valley-fill deposits using web-based freeware; *in*, *Morrow and Springer in the southern midcontinent*, 2005 Symposium, R. D. Andrews, ed.: Oklahoma Geological Survey, Circular 111, p. 121–135.
- Watney, W. L., Franseen, E. K., Byrnes, A. P., and Nissen, S., 2008, Evaluating structural controls on the formation and properties of Carboniferous carbonate reservoirs in the northern midcontinent, U.S.A.; *in*, *Controls on Carbonate Platform and Reef Development*, J. Lukasik and J. A. Simo, eds.: SEPM Special Publication No. 89, p. 125–146.
- West, R. R., Sawin, R. S., and Brady, L. L., 2008, Surficial geology of Crawford County, Kansas: Kansas Geological Survey, Map M-120, scale 1:50,000.
- Xia, J., Miller, R. D., and Xu, Y., 2008, Data-resolution matrix and model-resolution matrix for Rayleigh-wave inversion using a damped least-square method: *Pure and Applied Geophysics*, v. 165, p. 1,227–1,248.



- Xia, J., Miller, R. D., and Xu, Y., 2008, A trade-off between model resolution and variance with selected Rayleigh-wave data [exp. abs.]: Annual Meeting of the Society of Exploration Geophysicists, Las Vegas, NV, November 9–12, p. 1,293–1,297.
- Xia, J., Miller, R. D., and Xu, Y., 2008, Data resolution matrix and model resolution matrix of Rayleigh-wave inversion using a damped least-square method: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2008), Philadelphia, PA, April 6–10, p. 1,251–1,266. [Selected best of SAGEEP 2008.]
- Xia, J., and Tian, G., 2008, Foreword to the special section — China near-surface geophysics: Near Surface Geophysics, v. 6, p. 147.
- Xia, J., Xu, Y., and Miller, R. D., 2008, Improvement and assessment of a damped least-square solution of Rayleigh-wave inversion (keynote presentation): Proceedings of the 2008 International Conference on Environmental and Engineering Geophysics (ICEEG), June 15–20, Wuhan, China, p. 20–28.
- Xu, Y., Xia, J., and Chen, C., eds., 2008, Near-surface geophysics and human activity: Proceedings of the 3<sup>rd</sup> International Conference on Environmental and Engineering Geophysics (ICEEG), June 15–20, 2008, Wuhan, China, Science Press USA Inc., 653 p.
- Xu, Y., Xia, J., Luo, Y., and Miller, R. D., 2008, Amplitude effects in phase velocity estimation from shot gather: Proceedings of the 2008 International Conference on Environmental and Engineering Geophysics (ICEEG), June 15–20, Wuhan, China, p. 75–80.

### **Nonrefereed/Unpublished Papers**

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- Bhattacharya, S., Newell, K. D., Watney, W. L., and Sigel, M., 2008, Low-cost plant upgrades marginal gas fields: E&P, v. 81, no. 8, p. 102–103.
- Bhattacharya, S., Newell, K. D., and Watney, W. L., 2008, Plant flow process and data analysis to optimize low-BTU gas upgradation using a PSA-based micro-scale plant at Elmdale field, Chase County, Kansas: Kansas Geological Survey, Open-File Report 2008–33, 23 p.
- Bhattacharya, S., Watney, W. L., and Newell, K. D., 2008, Kansas low-BTU gas compositions and production potential at Elmdale field, Chase County, Kansas: Kansas Geological Survey, Open-File Report 2008–34, 67 p.
- Bozell, J. R., and Mandel, R. D., 2008, Phase 2 Cultural resources investigation at the Big Village of the Omaha (25DK5) in response to the proposed Northern Natural Gas SSC A-Line Modification Project, Dakota County, Nebraska: Archeology Laboratory, Augustana College, Sioux Falls, SD, Archeological Contract Series No. 225.
- Bozell, J. R., Buhta, A. A., Mandel, R. D., Holen, S. R., and Lueck, E. J., 2008, An archeological and geomorphic survey of select lands in the Broadwater West and Blue Creek study areas, Morrill and Garden counties, Nebraska: Archeology Laboratory, Augustana College, Sioux Falls, SD, Archeological Contract Series No. 226.
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- Dillon, J. S., and Mandel, R. D., 2008, The Honey Creek Member — A new Holocene alluvial stratigraphic unit in the Midwest: Journal of the Iowa Academy of Science, v. 113, p. 57–68.
- Gagnon, G. F., 2008, LEO Version 7.0 user manual: Kansas Geological Survey, Open-File Report 2008–24, 20 p. [http://www.kgs.ku.edu/software/LEO/LEO\\_07\\_UserManual\\_OFR\\_2008-24.pdf](http://www.kgs.ku.edu/software/LEO/LEO_07_UserManual_OFR_2008-24.pdf)

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- Joeckel, R. M., Ludvigson, G. A., Macfarlane, P. A., and Grocke, D. R., 2008, Field Trip 2 — Fluvial-estuarine deposition in the mid-Cretaceous Dakota Formation, Kansas and Nebraska: Field Trip Guidebook for the 41st Annual Meetings of the South-Central and North-Central Sectional Meeting of the Geological Society of America, University of Kansas, Lawrence, KS; Kansas Geological Survey, Open file Report 2008–2, 30 p. [http://www.kgs.ku.edu/Publications/OFR/2008/OFR08\\_2/KGS\\_OF2008-2.pdf](http://www.kgs.ku.edu/Publications/OFR/2008/OFR08_2/KGS_OF2008-2.pdf)
- Johnson, D. L., Mandel, R. D., and Frederick, C. D., 2008, The origin of the sandy mantle and Mima Mounds of the East Texas Gulf coastal plain — Geomorphological, pedological, and geoarcheological perspectives: 2008 Joint Meeting of Geological Society of America, Soil Science Society of America, and Gulf Coast Association of Geological Societies, Houston, TX, Field Trip Guidebook.
- KC, A., and Sophocleous, M., 2008, Recent MODFLOW developments in groundwater modeling: Kansas Geological Survey, Open-File Report 2009–4, 139 p.
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### Computer Software

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- Gagnon, G. — A legal description to geographic coordinate conversion program for Kansas.  
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- Killion, M. — Research New Map Viewer Technologies; Kansas Oil and Gas Map Viewer; Oil and Gas Wells Layer; Kansas Historical Resources Inventory Project (KHRI — completed on the DASC grant)
- Wilson, B. — South-central Kansas Bedrock Enhancement (KAN44980)
- Wilson, B. — Assist with the High Plains Aquifer Calibration Monitoring Well Program
- Wilson, B. — Assist with work on the Southwest Kansas Groundwater Management District #3 Numerical Model
- Wilson, B. — Customized ArcGIS tool set for water-right prioritization, allocation reductions, and safe yield targets for GMD#3
- Wilson, B. — Matched and integrated data linkage between WIZARD and the KDA-DWR well network over the Ozark aquifer in south-east Kansas

### Abstracts

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- Macfarlane, P. A., 2008, Helping students make the transition from novice learner of ground-water concepts to expert using the expanded Plume Busters software: Geological Society of America, Abstracts with Programs, v. 40, no. 5, p. 10.
- Mandel, R. D., 2008, Alluvial paleosols and the Pleistocene-Holocene transition in the Central Great Plains, U.S.A.: Poster presented at the 20<sup>th</sup> Biennial Meeting of the American Quaternary Association, Penn State University, University Park, PA, June.
- Mandel, R. D., 2008, Buried Paleoindian-age landscapes in stream valleys of the Central Plains, USA: 39th Binghamton Geomorphology Symposium, University of Texas at Austin, October.
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- Tsoflias, G. P., Ivanov, J., Anandakrishnan, S., and Miller, R. D., 2007, Use of active source seismic surface waves in glaciology [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2008), Philadelphia, PA, April 6–10.
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- Whittemore, D. O., 2008, Effects of stormwater runoff into sand pits on ground-water quality in Sedgwick County, Kansas: Proceedings 17<sup>th</sup> Annual Kansas Hydrology Seminar, AIH & AEG, Topeka, KS.
- Whittemore, D. O., 2008, Trace contaminants in surface water in sand pits and impact on ground-water quality of a midwest U.S. city: Geological Society of America, Abstracts with Program, v. 40, no. 6, p. 32.
- Xia, J., Miller, R. D., and Xu, Y., 2008, Data resolution matrix and model resolution matrix of Rayleigh-wave inversion using a damped least-square method [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2008), Philadelphia, PA, April 6–10.

## Presentations

- Adkins–Heljeson, M. — Presentation on KGS open-file and publication program to students of Dr. A. Walton (KU).
- Battles, E. — Represented DASC at our public display booth and attended and made presentations at the following conferences: 2008 MAGIC Conference; Presentation: Importance of Administrative Boundaries; 2008 Kansas Association of Counties (KAC) Conference; Presentation: DASC Data Backup Initiative; 2008 Kansas Association of Mappers (KAM) Conference; Presentation: DASC Update; Presentation: Homeland Security.
- Bohling, G. C., and Wilson, B. B., 2008, Preliminary analysis of 2008 western Kansas High Plains aquifer water levels: Proceedings 25<sup>th</sup> Annual Water and the Future of Kansas Conference, March 25, Topeka.
- Brady, L. L., 2008, Industrial minerals — mines, quarries, and general resources in Kansas: 44<sup>th</sup> Forum on the Geology of Industrial Minerals, Midwest City, Oklahoma.
- Buddemeier, R. W., Young, D. P., Whittemore, D. O., Wilson, B. B., and Reboulet, E. C., 2008, Index well monitoring for the High Plains aquifer in Kansas: 53<sup>rd</sup> Annual Midwest Ground Water Conference, Program with Abstracts, Iowa Geological and Water Survey, p. 65.
- Buddemeier, R. W., Young, D. P., Wilson, B. B., Reboulet, E. C., and Whittemore, D. O., 2008, Enhanced water-level monitoring for enhanced Ogallala aquifer management: Proceedings 25<sup>th</sup> Annual Water and Future of Kansas Conference, Topeka.
- Butler, J. J., Jr., 2008, What the heck is a phreatophyte — A field investigation of ecohydrologic processes in stream-aquifer systems, an invited presentation to the Department of Geological Sciences, University of South Carolina, Columbia, South Carolina, April 17.
- Butler, J. J., Jr., Jin, W., Mohammed, G. A., Kluitenberg, G. J., Whittemore, D. O., and Reboulet, E. C., 2008, Site characterization using well responses to natural stimuli — Examples from the Larned Research Site: American Geophysical Union, December 17, invited presentation.
- Charlton, J. — Program presenter at Second Annual Smoky Hill Trail Association, Salina, October.

- Dealy, M. — Presentation on “Development of the Sumner Shallow Group Aquifer” to Division of Water Resources, Stafford Office.
- Dealy, M. — Presentation on “Development of the Sumner Shallow Group Aquifer” to Kansas Department of Health and Environment, Fall technical session.
- Dealy, M. — Presentation on “Kansas Groundwater Supplies and Groundwater Levels” to Regional Economic Area Partnership annual conference.
- Dealy, M. — Presentation on “Groundwater Monitoring Needs In the Arkansas Valley Alluvial Aquifer” to Regional Economic Area Partnership - Water Resources Committee.
- Dunham, J. — GIS conversion of Kansas historical county geology maps (co-author Darren J. Haag.), ESRI International User Conference, San Diego, California, August 7.
- Dunham, J. — A new surficial geology map of Kansas. Poster presentation, 11th Biennial MidAmerica GIS Symposium, MidAmerica GIS Consortium (MAGIC), Kansas City, Missouri, April 22.
- Dunham, J. — Surficial geology of the Tallgrass Prairie National Preserve, Chase County, Kansas. Map Gallery (poster) presentation, ESRI International User Conference, San Diego, California, August 4.
- Franseen, E. — Miocene–Pliocene Carbonate Complexes in SE Spain Research Program, Shell Oil Company, Houston, Texas, November 18.
- Franseen, E. — Invited session chair, Carbonate-dominated Deep-water Depositional Systems, 2008 AAPG/SEPM Meeting, San Antonio, Texas.
- Franseen, E. — Invited co-convenor, NSF Workshop — Community Sedimentary Model Science Plan for Carbonate Systems, February 2008, Golden, Colorado.
- Look, K. K., Watney, L., and Radford, R., 2008, The Kansas model — From the KCC to the Survey to the Society: 4<sup>th</sup> Annual Energy Resource Libraries Conference and Workshop in Wichita, Kansas.
- Ludvigson, G. A., Geologic studies in the High Plains of western Kansas: School Assembly at Rock Hills Middle School, Burr Oak, Kansas, February 20.
- Ludvigson, G. A., Kansas participation in the Statemap program: Kansas Geological Survey Advisory Council, Lawrence, Kansas, November 13.
- Ludvigson, G. A., Stratigraphic Research program on sediments of the High Plains aquifer in Kansas: Brownbag Professional Development Lecture, Kansas Water Office, Topeka, Kansas, July 22.
- Macfarlane, P. A., Assessment of seasonal, pumping-induced water quality changes in the Ozark Plateaus aquifer system: 53<sup>rd</sup> Annual Midwest Ground Water Conference, Program with Abstracts, p. 44.
- Mandel, R., Geoarchaeology of *Ais Yorkes*, a pre-Pottery Neolithic village in southern Cyprus: Explorations in Archaeology Lecture Series, University of Kansas, Lawrence, November 21.
- Mandel, R., Geology, geomorphology, and Late Quaternary paleoenvironments of the Kansas Flint Hills: U.S. Department of Agriculture, Natural Resources Conservation Service, 2008 North Central Regional Work Planning Conference, Kansas State University, Manhattan, June 23.
- Mandel, R., Stratigraphy, paleoenvironments, and Paleoindian geoarchaeology of Late Quaternary valley fills in the Central Plains of North America: National Science Foundation, IGERT Lecture Series in Archaeological Sciences, University of Arizona, Tucson, April 25.
- Miller, R. D., 4th Annual Border Management Summit, Bethesda, Maryland, October.
- Miller, R. D., Military Sensing Symposium (MSS), Battlespace Acoustic & Seismic, Magnetic & Electric Fields, August.
- Miller, R. D., University of Oklahoma, College of Earth and Energy, GeoSeminar, September.
- Miller, R. D., University of Kansas, Department of Geology Seminar, September.
- Miller, R. D., Walters, S. L., Xia, J., Ivanov, J., and McKenna, J. R., 2008, Seismic tunnel detection using the full wavefield: Proceedings of the 2008 Meeting of the MSS Specialty Group on Battlefield Acoustic and Seismic Sensing, August 19–21, Laurel, Maryland, 17 p. Published on CD.
- Miller, R. D., Xia, J., Henthorne, R., and Croxton, N., 2008, Seismic reflection characteristics of subsidence affecting transportation: Fifth Highway Geophysics–NDE Conference, December 1–4, Program, p. 67.
- Newell, K. D., 2008, Case studies on feasibility of carbon sequestration in Kansas coal beds: talk presented at UIC State Representatives Meeting, Kansas City, Kansas, April 10.
- Newell, K. D., 2008, Kansas coalbed methane: talk given to legislature interim committee on energy production, Topeka, Kansas, August 20.
- Newell, K. D., 2008, Kansas coalbed methane comes of age: talk given at annual meeting of the Eastern Kansas Oil and Gas Association, Chanute, Kansas, September 11.
- Newell, K. D., 2008, Kansas coalbed methane: talk given to Kansas Geological Society, Wichita, Kansas, October 28.



- Newell, K. D., 2008, Coalbed gas in eastern Kansas: lecture presented at Emporia State University environmental geology class, Emporia, Kansas, November 10.
- Smith, J., Chemostratigraphic, paleopedologic, and paleobiologic response to climate change — Two case studies in terrestrial Cenozoic deposits, Kansas Geological Survey, November 4.
- Sophocleous, M. A., Invited keynote speaker at the Workshop on Quantifying Aquifer-River Fluxes — Modelling for Processes and Management, University of Sheffield, Sheffield, United Kingdom, March 12–13.
- Sophocleous, M. A., Invited keynote speaker at the “Capacity Building of a China Groundwater Information Center” Final Project Conference, China Institute for Geo-Environmental Monitoring, Beijing, China, October 27–29.
- Sophocleous, M. A., Invited keynote speaker at the XV Brazilian Groundwater Congress, Natal, Brazil, November 10–14.
- Sophocleous, M. A., Invited “California Water Colloquium” speaker, University of California–Berkeley, November 18.
- Sophocleous, M. A., Environmental flows — A call to action for hydrogeologists as well. NERC Hyporheic Network & Groundwater Modellers' Forum Workshop, March 12–13.  
[http://www.hyporheic.net/Sophocleous\\_Sheffield-EFs\\_2008slides.pdf](http://www.hyporheic.net/Sophocleous_Sheffield-EFs_2008slides.pdf)
- Sophocleous, M. A., 2008, Groundwater sustainability and its application in Kansas. California Colloquium on Water, University of California–Berkeley, November 18. Streaming video of this lecture as well as Powerpoint slides are available from the University of California–Berkeley Water Resources Center Archives at <http://www.lib.berkeley.edu/WRCA/ccow.html>
- Sophocleous, M. A., Townsend, M. A., and Vocasek, F., Minimizing the adverse effects of water reuse for crop irrigation near Dodge City, Kansas: 25<sup>th</sup> Annual Water and the Future of Kansas Conference, March 25, Topeka, Kansas, p. 14.
- Sophocleous, M. A., Townsend, M. A., Vocasek, F., Ma, L., and KC, A., Field testing and modeling the effects of treated wastewater for crop irrigation near Dodge City, KS — Minimizing the nitrogen adverse effects: North Central Regional Work Planning Conference, NRCS, Manhattan, KS, June 23–26. [ftp://ftp-fc.sc.egov.usda.gov/NSSC/NCSS/Conferences/regional/2008/North\\_Central/sophocleus.pdf](ftp://ftp-fc.sc.egov.usda.gov/NSSC/NCSS/Conferences/regional/2008/North_Central/sophocleus.pdf)
- Townsend, M. A., Sophocleous, M. A., Macko, S. A., Ghijssen, R., and Schuette, D., Effects of macropore flow and seasonal variability on water quality at a wastewater-recharge site: 25<sup>th</sup> Annual Water and the Future of Kansas Conference, March 25, Topeka, Kansas, p. 15.
- Townsend, M. A., Sophocleous, M. A., Macko, S. A., Ghijssen, R., and Schuette, D., 2008, Use of nitrogen-15 and boron, bromide, and chloride concentrations as tracers to identify mixing and seasonal variability of water quality at a wastewater-recharge site, Dodge City, Kansas: 53<sup>rd</sup> Annual Midwest Ground Water Conference, Dubuque, Iowa, September 29–October 2.
- Wilson, B. B., Presentations at Winfield Solutions Fall Conference, Kansas Water Congress Summer Conference, Governor's Natural Resources Subcabinet, Southwest Kansas GMD #1 Board Meeting, KU GEOG 558 Intermediate Geographic Information Systems Class, Kansas GMD Association Annual Meeting, Smoky Hill River Valley's Irrigators and Water Users Information Meeting, Smoky Hill–Saline Basin Advisory Committee, KGS Legislative Field Conference, Kansas Rural Water Association Conference, and Water and the Future of Kansas Conference.
- Xia, J. — High-frequency Rayleigh-wave method: Kansas State University Department of Geology, December 4.
- Xia, J. — EAGE Near Surface 2008, Krakow, Poland, September 15.

## Awards

- Bohling, G. — Editors' Citation for Excellence in Refereeing for Water Resources Research
- Buchanan, R. — Fellow, Geological Society of America
- Butler, J. — Appointed Member, Darcy Task Force, National Ground Water Association (2008–)
- Butler, J. — Editors' Citation for Excellence in Refereeing for Water Resources Research
- Miller, R. — Merriam Research Award, KGS
- Miller, R. — Project of Merit Award, SEG Foundation, 2008
- Miller, R. — Research Achievement Award, University of Kansas
- Walters, S. — Gerhard Field Excellence Award, KGS student award
- Wilson, B. — KU Unclassified Employee of the Month (July)
- Xia, J. — The Harold Mooney Award, Near-Surface Geophysics Section of the Society of Exploration Geophysicists, 2008

Xia, J. — Selected Best Paper at SAGEEP, the Environmental and Engineering Geophysical Society Annual Meeting, 2008

### **Internal Service**

- Adkins–Heljeson, M. — Member of KGS search committee for Exploration Services research assistant
- Battles, E. — Created a series of custom maps for week long annual tour sponsored by the University of Kansas Chancellor's office. The maps were titled “Wheat State Whirlwind: A Tour of the Heartland for KU Faculty”
- Buchanan, R. — University of Kansas, Strategic Planning Committee, 2008; Unclassified Academic Staff Representative, Task Force on the Handbook for Faculty and Other Unclassified Staff, 2008–
- Butler, J. — University of Kansas - Student Advising, Postdoctorate Fellow — Wei Jin (2007–)
- Butler, J. — Chair, KGS Geohydrology Scientist Search Committee
- Butler, J. — Chair, KGS Promotion and Review Committee
- Butler, J. — Member, KGS Stratigraphic Research Assistant Scientist Search Committee
- Butler, J. — Member, KGS Promotion and Review Committee
- Doveton, J. — KGS Workshop “The Crash Course in Log Analysis — An Excel Spreadsheet Workshop,” April 18, Lawrence
- Doveton, J. — C&PE 528 Well Logging workshop
- Franseen, E. — Member, Five-year Review Committee for Tertiary Oil Recovery Program, KU
- Franseen, E. — Instructor for KU course Geology 791; co-instructor of KU course Geology 761
- Franseen, E. — Co-leader of a 10-day field trip for University of Kansas and University of Puerto Rico–Mayaguez geology graduate and undergraduate students to Miocene–Pliocene carbonate complexes, Spain
- Killion, M. — Search committee member for an open position in Cartographic Services
- Ludvigson, G. — StateMap Program Coordinator
- Mandel, R. — Advisor and committee chair for the senior honors thesis for Kyle Gorynski, KU Department of Geology
- Mandel, R. — Advisor and committee chair for the Master's thesis for Laura R. Murphy, KU Department of Anthropology
- Mandel, R. — Served on dissertation committee for Mark Zlojutro, KU Department of Anthropology
- Mandel, R. — Member of KU faculty search committee, archaeology position
- Mandel, R. — Departmental Representative, KU's 2008 United Way Campaign
- Mandel, R. — Member of KU faculty committee for selecting speakers, Carroll Clark Lecture Series
- Mandel, R. — Member of search committee for hiring geologic sample Research Technician, a joint position shared by the Kansas Geological Survey and the KU Department of Geology
- Miller, R. — KU RGS Research Achievement Award Selection Committee
- Miller, R. — KU RGS TORP Five-year Review Committee
- Miller, R. — Taught KU course GEOL 775, Near-surface Seismology
- Miller, R. — Chair of KU thesis committee for M.S. student Shelby Walters
- Nelson, K. — University of Kansas Geography & Atmospheric Science Alumni Board, 2008–present
- Newell, K. D. — Merriam International Travel Awards Committee member
- Newell, K. D. — Member of search committee for Analytical Chemist, KGS
- Newell, K. D. — Member of search committee for Energy Research geoscientist
- Newell, K. D. — Chair of Students Awards Committee
- Sophocleous, M. — Co-chair of KGS search committee for Water Cycle Geohydrology position (2008–)
- Sophocleous, M. — Taught KU course Geology 754, Contaminant Transport, Spring 2004, 2005, 2006, 2007, 2008 (guest lecturer)
- Sophocleous, M. — Supervised M.S. thesis for Ashok, KC, Department of Civil, Environmental, and Architectural Engineering, KU
- Suchy, D. — Chaired committee to promote KGS proposal to KDHE to develop and maintain online process for submitting water well completion forms; chaired meeting between KDHE representatives and KGS staff; served as KGS contact with KDHE and as term negotiator
- Xia, J. — Member, KGS Research Advisory Group, 2008–09

## External Service

- Battles, E. — Created series of statewide Initiatives status maps for the KAC conference
- Battles, E. — *FGDC/USGS/MAGIC Metadata Creation and Updating Workshop Grant*
- Report Kansas (DASC) metadata status for regional analysis
- Helped design and present curriculum for full day metadata workshop presentations and materials
- Presentations: Metadata triage – Columbia, MO & Manhattan, KS
- Battles, E. — *Homeland Security/Local Government Data Coordinator/DASC Initiatives*
- DASC off-site GIS data backup & Kansas GIS Inventory Initiative
- Visit numerous local government offices to promote Homeland Security grants
- Presentation: Regional Homeland Security & DASC Data Backup
- Participate in MVP (Most Valuable Professional) sub-regional meetings
- Presentation: GAP Analysis
- Buchanan, R. — Association of American State Geologists, Governmental Affairs and Liaison Committee, 2008–09
- Buchanan, R. — Midwestern Governors Association, Renewable Electricity, Advanced Coal with Carbon Capture and Storage Advisory Group, 2008–present
- Butler, J. — Taught half of course ‘Advanced Aquifer Testing Analysis Featuring AQTESOLV: New Concepts, Field Methods, and Data Analysis Procedures’, St. Johns River Water Management District, FL, June 23–25; University of Texas at San Antonio, Texas, February 27–29
- Butler, J. — Analysis of Pumping Tests with AQTESOLV (sole instructor), Division of Water Resources, Kansas Department of Agriculture, Topeka, Kansas, June 20
- Butler, J. — Aquifer Testing for Improved Hydrogeologic Site Characterization Featuring AQTESOLV and the In-Situ LevelTroll (taught half of course), Fort Collins, Colorado, Oct. 21–22; Waterloo, Ontario, February 19–20.
- Butler, J. — Associate Editor–Hydrogeology Journal (2006–)
- Butler, J. — John Keller doctoral dissertation, Department of Geology, Southern Illinois University (2007–)
- Butler, J. — Promotion and Tenure Evaluator — Department of Earth Sciences, University of Memphis
- Doveton, J. — EREX Short Course on ‘Petrophysical Log Analysis,’ February 24–28; Cairo and Hurghada, Egypt
- Doveton, J. — PEICE ‘Introduction to Log Analysis,’ October 14–16, Calgary, Canada; October 29–31; Houston: November 10–12
- Doveton, J. — P.T. Geoservices ‘Reservoir Petrophysical Log Analysis,’ June 16–20, Bali, Indonesia
- Doveton, J. — Rocky Mountain PTTC Short Course ‘Crash Course in Log Analysis — An Excel Spreadsheet Workshop,’ April 4, Colorado School of Mines, Golden, Colorado
- Doveton, J. — Schlumberger Next ‘Applied Formation Evaluation,’ July 2–August 1, ELC, Melun, France
- Doveton, J. — Tulsa Geological Society E-Cubed Second Annual Education Week: ‘The Crash Course in Log Analysis — An Excel Spreadsheet Workshop,’ February 20, Tulsa, Oklahoma
- Dunham, J. — ‘New statewide geology map,’ Geological Survey Advisory Council semiannual meeting, Lawrence, KS, March 4
- Franseen, E. — Chair, SEPM Headquarters and Business Committee, 2008–present
- Franseen, E. — Session Chairman for Session on Carbonate-dominated Deep-water Depositional Systems, AAPG/SEPM Annual Meeting, San Antonio, Texas
- Franseen, E. — Instructor and field trip leader, ExxonMobil, Fundamental Controls on Flow in Carbonates Course, Almeria, Spain
- Franseen, E. — Co-instructor for AAPG Education Program: ‘Controls on Porosity Types and Distribution in Carbonate Reservoirs,’ Almeria, Spain
- Franseen, E. — Co-field trip leader, StatoilHydro, Miocene–Pliocene Carbonate Complexes of Southeastern Spain
- Franseen, E. — Co-field trip leader, SaudiAramco, Miocene–Pliocene Carbonate Complexes of Southeastern Spain
- Franseen, E. — Co-convenor and organizer, NSF Workshop–Community Sedimentary Model Science Plan for Carbonate Systems, Golden, Colorado
- Killion, M. — Served on the Technical Advisory Committee of the Kansas GIS Policy Board
- Ludvigson, G. — Associate Editor, Journal of Sedimentary Research; published by Society for Sedimentary Geology
- Macfarlane, A., Townsend, M. A., and Schulmeister, M., Inquiry-based ground-water science instructional materials for middle and high school science teachers, workshop (October 28).  
[http://kats.org/uploads/resources/SMARTT\\_2008\\_program\\_final\\_28\\_October.pdf](http://kats.org/uploads/resources/SMARTT_2008_program_final_28_October.pdf)
- Macfarlane, A. — Fun Hands-on Plate Tectonics Activities for Middle-school and Junior-high Science, at Kansas Association of Teachers of Science Camp, Rock Springs Ranch, April

- Macfarlane, A. — KU Environmental Science Academy, Schlagle Library, Wyandotte County Park, Kansas City, Kansas, 2008–09
- Macfarlane, A. — Vice President, Central Section, National Association of Geoscience Teachers, 2008–09
- Mandel, R. — Chair, Awards Committee, Geological Society of America's Archaeological Geology Division, 2008–2009
- Mandel, R. — Co-organizer and co-chair of a topical session, "Soils as Components of Archaeological Landscapes," Annual Meeting of the Geological Society of America, Houston, Texas, October 6
- Mandel, R. — Co-organizer and co-chair of a topical session, "The Application of Geologic and Pedologic Methods and Theories in Determining the Origin of Mima Mounds and Similar Anomalies," Annual Meeting of the Geological Society of America, Houston, Texas, October 5
- Mandel, R. — Elected President of the American Quaternary Association (AMQUA), a 900-member organization, 2008–2010
- Mandel, R. — Guest speaker, "Geology, Geomorphology, and Late-Quaternary Paleoenvironments of the Flint Hills." North Central Region Work Planning Conference, U.S. Department of Agriculture, Natural Resources Conservation Service, Kansas State University, Manhattan, Kansas, June 23
- Mandel, R. — Organizer and trip leader, "Geoarchaeology of the Claussen Site (14WB322)," 64th Annual Plains Anthropological Conference, November 8
- Mandel, R. — Organizer and co-leader of field trip, "The Origin of the Sandy Mantle and Mima Mounds of the East Texas Gulf Coastal Plain: Geomorphological, Pedological, and Geoarchaeological Perspectives," Annual Meeting of the Geological Society of America, Houston, Texas, October 4
- Mandel, R. — Reviewer for the National Science Foundation's Paleo Perspectives on Climate Change Program
- Mandel, R. — Taught a two-day geoarchaeology class for the Kansas Anthropological Association's Training Program, Pawnee Indian Village State Historic Site, Kansas, June 12–13
- Miller, R. — Highway Geophysics Session Moderator
- Miller, R. — SEG Near-Surface Geophysics Section Publications Committee, Chairman, 2008–09
- Miller, R. — SEG, Publications Policy Board
- Miller, R. — SEG, Special Issue Editor, *The Leading Edge*: January (v. 27, no. 1), mining geophysics; May (v. 27, no. 5), resolution limits; November (v. 27, no. 11), near surface
- Miller, R. — SEG, Kansas Representative at General Assembly
- Nelson, K. — Member of National States Geographic Information Council (NSGIC) Parcel Work Group, 2008–present
- Newell, K. — Energy Minerals Division Midcontinent Section Advisor, American Association of Petroleum Geologists, 2008–10
- Smith, J. — Co-chaired theme session on "Neontological Solutions to Paleontological Problems: Actualistic Studies of the Morphology, Behavior, and Ecology of Modern Analogs for Ancient Organisms" with Daniel Hembree and Brian Platt for the Annual Meeting of the Geological Society of America
- Sophocleous, M. — Invited Reviewer of Expert Panel Report on sustainable management of Canada's groundwater resources, Council of Canadian Academies
- Suchy, D. — Invited to advise KDHE on makeup of new WWC5 forms, especially in regard to the section on GPS coordinates; coordinated efforts between KGS and KDHE to further their utilization of and reliance on our online WWC5 water well database; coordinated improvements of specialized search pages for KDHE
- Suchy, D. — Accepted responsibility as KGS member of international "LAS Committee," which develops worldwide standards for LAS files (i.e., digital e-logs); negotiated acquisition of "LAS Certify" program source code from LAS Committee
- Suchy, D. — Helped review Kansas Response Plan for Kansas Division of Emergency Management; served as first contact at KGS for State emergency management
- Suchy, D. — Served at Osage County Multi-Hazard Mitigation Plan kick-off meeting and advised on final plan; also advised on Kiowa County Multi-Hazard Plan
- Watney, L. — President-elect, Kansas Geological Society and Library
- Walters, S. — Publications reviewer for the *Journal of the University of China Geosciences*, *Geophysical Prospecting*, and *Transactions on Geoscience and Remote Sensing*
- Wilson, B. — Member of Kansas Technical Advisory Committee and the DASC Sub-committee to the Kansas GIS Policy Board
- Xia, J. — Associate Editor, *Near Surface Geophysics* (an EAGE Journal), 2008–2009
- Xia, J. — Guest Editor, *Near Surface Geophysics* (EAGE), 2008

- Xia, J. — Co-Chair, The 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> International Conference on Environmental and Engineering Geophysics (ICEEG), Wuhan, China, 2004, 2006, and 2008
- Xia, J. — Session Chairman, Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 6-10, 2008, Philadelphia, Pennsylvania
- Xia, J. — Editor (Xu, Y., Xia, J., and Chen, C.), Near-Surface Geophysics and Human Activity: Proceedings of the 3<sup>rd</sup> International Conference on Environmental and Engineering Geophysics (ICEEG), June 15–20, Wuhan, China, Science Press USA Inc. 653 p.

**Refereed Publications**

- Bohling, G. C., 2007, Review of “Parameter Estimation and Inverse Problems” by Aster, Borchers, and Thurber: *Computers & Geosciences*, v. 33, no. 7, p. 987–988.
- Bohling, G. C., Butler, J. J., Jr., Zhan, X., and M. D. Knoll, M. D., 2007, A field assessment of the value of steady-shape hydraulic tomography for characterization of aquifer heterogeneities: *Water Resources Research*, v. 43, W05430, p. 1–23.
- Buchanan, R. C., *Geology; in*, *The American Midwest — An Interpretive Encyclopedia*, R. Sisson et al., eds.: Indiana University Press, 2007, p. 133–135.
- Butler, J. J., Jr., Dietrich, P., Wittig, V., and Christy, T., 2007, Characterizing hydraulic conductivity with the direct-push permeameter: *Ground Water*, v. 45, no. 4, p. 409–419.
- Butler, J. J., Jr., Kluitenberg, G. J., Whittemore, D. O., Loheide, S. P., II, Jin, W., Billinger, M. A., and Zhan, X., 2007, A field investigation of phreatophyte-induced fluctuations in the water table: *Water Resources Research*, v. 43.
- Butler, J. J., Jr., Zhan, X., and Zlotnik, V. A., 2007, Pumping-induced drawdown and stream depletion in a leaky aquifer system: *Ground Water*, v. 45, no. 2, p. 178–186.
- Butler, J. J., Jr., Zlotnik, V. A., and M-S. Tsou, M-S., 2007, Reply to Comment on “Drawdown and stream depletion produced by pumping in the vicinity of a partially penetrating stream”: *Ground Water*, v. 44, no. 2, p. 143.
- Carr, T. R., Rich, P. M., and Bartley, J. D., 2007, The NatCarb Geoportal — Linking distributed data from the carbon sequestration regional partnerships: *Journal of Map and Geography Libraries (Geoscapes)*, Special Issue on Department of Energy (DOE) Geospatial Science Innovations.
- Doveton, J. H., 2007, Borehole petrophysical geology in a university curriculum: SPWLA 48<sup>th</sup> Annual Logging Symposium Transactions, Paper NN, 5 p. Reprinted in *CWLS Insight Magazine*, v. 26, no. 3, p. 10–15.
- Dubois, M. K., Bohling, G. C., and Chakrabarti, S., 2007, Comparison of four approaches to a rock facies classification problem: *Computers & Geosciences*, v. 33, no. 5, p. 599–617.
- Franseen, E. K., Byrnes, A. P., Xia, J., and Miller, R. D., 2007, Improving resolution and understanding controls on GPR response in carbonate strata — Implications for attribute analysis: *The Leading Edge*, v. 26, no. 8, p. 984–993.
- Hajic, E. R., Mandel, R. D., Ray, J. H., and Lopinot, N. H., 2007, Geoarchaeology of stratified Paleoindian deposits at the Big Eddy site, southwestern Missouri: *Geoarchaeology: An International Journal*, v. 22, p. 891–934.
- Harbaugh, J. W., Merriam, D. F., and Howard, H. H., 2007, Reconstructing Late Cenozoic stream gradients from high-level chert gravels in central eastern Kansas; in, *Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 253*, pt. 2. <http://www.kgs.ku.edu/Current/2007/Harbaugh/index.html>
- Hock, S., Ivanov, J., and Miller, R. D., 2007, Test for detecting an impermeable water barrier in an earth-fill dam in Austria using MASW method: *Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2007)*, Denver, Colorado, April 1–5, p. 621–628.
- Hoth, P., Carr, T. R., Wilke, N. A., and Bau, M., 2007, Geochemical signatures of exposure surfaces and paleowater tables in a shallow marine Paleozoic carbonate sequence; midcontinent region, USA: *Sedimentology*.
- Ivanov, J., and Corwin, R. F., 2007, Condition assessment of levees, U.S. Section of the International Boundary and Water Commission, Report 5, Flood simulation study of Retamal Levee, lower Rio Grande valley, Texas, using seismic and electrical geophysical methods: *U.S. Army Corps of Engineers, Engineer Research and Development Center Report ERDC TR-03-4*, 100 p. + 7 appendices.
- Ivanov, J., Miller, R. D., Dunbar, J. B., Lane, J. W., and Ballard, R. F., 2007, Interrogating levees in Texas, New Mexico, and New Orleans using various seismic methods: *Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2007)*, Denver, Colorado, April 1–5, p. 69–81.
- Ivanov, J., Miller, R. D., Xia, J., and Dunbar, J. B., 2007, Applications of the JARS method to study levee sites in southern Texas and southern New Mexico [exp. abs.]: *Annual Meeting of the Society of Exploration Geophysicists*, San Francisco, California, September 23–28, p. 1,725–1,729.
- Liu, G., Lu, Z., and Zhang, D., 2007, Stochastic uncertainty analysis for solute transport in randomly heterogeneous media using a Karhuen-Loeve-based moment equation approach: *Water Resources Research*, v. 43, no. 7.
- Liu, G., Zheng, C. M., and Gorelick, S. M., 2007, Evaluation of the applicability of the dual-domain mass transfer model in porous media containing connected high-conductivity channels: *Water Resources Research*, v. 43, no. 12, p. 10.

- Liu, J., Xia, J., Luo, Y., Chen, C., Li, X., and Huang, Y., 2007, Wave field features of shallow vertical discontinuity and their application in non-destructive detection: *Journal of Applied Geophysics*, v. 62, no. 3, p. 270–280.
- Luo, Y., Xia, J., Liu, J., Liu, Q., and Xu, S., 2007, Joint inversion of high-frequency surface waves with fundamental and higher modes: *Journal of Applied Geophysics*, v. 62, no. 4, p. 375–384.
- Macfarlane, P. A., and Wilson, B. B., 2006, Enhancement of the bedrock-surface-elevation map beneath the High Plains aquifer, western Kansas: Kansas Geological Survey, Technical Series 20, 28 p.
- Mandel, R. D., 2007, Review of ‘Geoarchaeology: The Earth Science Approach to Archaeological Interpretation,’ by George (Rip) Rapp and C. L. Hill, 2006, Yale University Press, New Haven: *Plains Anthropologist*, v. 52, no. 202, p. 248–249.
- Mandel, R. D., 2007, Review of ‘Soils in Archaeological Research,’ by V. T. Holliday, 2004, Oxford University Press, New York: *Great Plains Research*, v. 17, p. 119.
- Mandel, R. D., Jacob, J. S., and Nordt, L. C., 2007, Geoarchaeology of the Richard Beene site; *in*, *Archaeological and Paleoecological Investigations at the Richard Beene Site (41BX831)*, South Central Texas, A. V. Thoms and R. D. Mandel, eds.: Center for Ecological Archaeology, Texas A&M University, College Station, Texas, p. 27–60.
- McCauley, J. R., 2007, Geologic map of Barber County, Kansas: Kansas Geological Survey, Map M–106, 1:50,000.
- Merriam, D. F., Newell, K. D., Doveton, J. H., Magnuson, L. M., Lollar, B. S., and Waggoner, W. M., 2007, Northeast Kansas well tests oil, gas possibilities in Precambrian rocks: *Oil & Gas Journal*, September 17, p. 54–58.
- Miller, R. D., and Hill, S., 2007, Introduction to this special section — The lower 48: The Leading Edge, v. 26, no. 2, p. 159.
- Miller, R. D., and Liner, C., 2007, Introduction to this special section — Near surface/seismic to radar: The Leading Edge, v. 26, no. 8, p. 983.
- Miller, R. D., Markiewicz, R. D., Rademacker, T. R., Hopkins, R., Rawcliffe, R. J., and Paquin, J., 2007, Advantages of wet work for near-surface seismic reflection [exp. abs.]: Annual Meeting of the Society of Exploration Geophysicists, San Francisco, California, September 23–28, p. 1,147–1,151.
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- Ivanov, J., Miller, R. D., Dunbar, J. B., Jr., Lane, J. W., Jr., and Ballard, R. F., 2007, Interrogating levees in Texas, New Mexico, and New Orleans using various seismic methods [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2007), Denver, Colorado, April 1–5.
- Jin, W., Kluitenberg, G. J., and Butler, J. J., Jr., 2007, Analytical solutions for examining spatial variations in evapotranspiration-driven fluctuations in the water table in vegetated riparian zones (abs.): American Geophysical Union, Eos, Transactions, v. 88, no. 52, Fall Meeting Supplement, Abstract H13B–1246.
- Joeckel, R. M., Ludvigson, G. A., Wally, K. D., and Doveton, J. H., 2007, Preliminary analysis of the Upper Jurassic Morrison Formation in the Rebecca Bounds core, western Kansas (abs): Geological Society of America, Abstracts with Programs, v. 39, no. 6, p. 338.
- Liu, G., Bohling, G. C., Butler, J. J., Jr., and Dietrich, P., 2007, Theoretical investigation of the direct-push permeameter for characterizing vertical variations in hydraulic conductivity: Ninth International In Situ and On-Site Bioremediation Symposium, Baltimore, Maryland, May 7–10.
- Ludvigson, G. A., González, L. A., Joeckel, R. M., Al-Suwaidi, A., and Kirkland, J. I., 2007, Terrestrial paleoclimatologic impacts during carbon isotope excursions associated with mid-Cretaceous oceanic anoxic events: Geological Society of America, Abstracts with Program, v. 39, no. 3, p. 75.
- Ludvigson, G. A., González, L. A., Joeckel, R. M., Al-Suwaidi, A., Kirkland, J. I., and Madsen, S. K., 2007, Carbonate carbon isotope excursions in the Ruby Ranch Member of the Cedar Mountain Formation and their terrestrial paleoclimatologic impacts: Geological Society of America, Abstracts with Program, v. 39, no. 5, p. 33–34.
- Ludvigson, G. A., Haj, A., Fox, D. L., Mandel, R. and Macfarlane, P. A., 2007, Developing a carbon isotope chemostratigraphic approach to understanding Neogene stratigraphic architecture of the High Plains succession in western Kansas: Geological Society of America, Abstracts with Program, v. 39, no. 3, p. 65.
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- Ludvigson, G. A., Haj, A., Fox, D. L., Mandel, R. D., and Macfarlane, P. A., 2007, A new approach to understanding Neogene stratigraphic architecture of the High Plains succession in western Kansas using carbon isotope chemostratigraphy: American Association of Petroleum Geologists, Annual Midcontinent Section Meeting, Wichita, Kansas, September.
- Ludvigson, G. A., Haj, A., Macfarlane, P. A., Mandel, R., and Murphy, L., 2007, Testing a carbon isotopic age model for the Neogene High Plains succession in western Kansas: Geological Society of America, Abstracts with Program, v. 39, no. 6, p. 336.
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- Macfarlane, P. A., 2007, Practical saturated thickness — A more realistic measure of groundwater availability in heterogeneous aquifers: Geological Society of America, Abstracts with Program, v. 39, no. 6, p. 474.
- Macfarlane, P. A., Bohling, G. C., and Townsend, M. A., 2007, Helping students make the transition from novice learners of ground-water concepts to expert using the expanded Plume Busters software: Geological Society of America Abstracts with Program, v. 39, no. 6, p. 620.

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- Macfarlane, P. A., and Schneider, N., 2007, The distribution of permeable zones within the Ogallala in the Southwest Kansas Groundwater Management District 3: American Association of Petroleum Geologists, Midcontinent Section Meeting Program, p. 40–41.
- Mandel, R. D., 2007, Geoarchaeology of the Richard Beene site (41BX831), south-central Texas: 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas, April.
- Mandel, R. D., 2007, Stratigraphy, geochronology, and geoarchaeology of late Quaternary alluvial fills in draws on the High Plains of western Kansas: 41<sup>st</sup> Annual Meeting of the South-Central Section/North-Central Section of the Geological Society of America, Lawrence, Kansas, April, v. 39, no. 3, p. 72.
- Mandel, R. D., 2007, Stratigraphy, paleoenvironments, and archaeological records of late Quaternary valley fills in draws on the central High Plains of North America: XVII INQUA Congress, Cairns, Australia, July.
- Miller, R. D., 2007, Seismic to characterize the near surface [abs.]: Proceedings of the Geological Society of London, Bicentenary Conference, September 10–12.
- Miller, R. D., Ivanov, J., Hock, S., Markiewicz, R., Dunbar, J., and Lane, J., 2007, Seismic investigations for dam safety [abs.]: Kansas Dam Safety Conference, Topeka, Kansas, March 12–14.
- Miller, R. D., Markiewicz, R. D., Block, L. A., Hartung, S., Hancock, W. E., Ivanov, J., and Xia, J., 2007, Seismic reflection — Upstream, downstream, and on earthen dams and dikes: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2007), Denver, Colorado, April 1–5, p. 861–870. [Selected Top 10 paper at SAGEEP 2007.]
- Murphy, L. R., and Mandel, R. D., 2007, Geoarchaeology of the Burntwood Creek rockshelter (14RW418), northwest Kansas: Geological Society of America, Annual Meeting, Denver, Colorado, October.
- Newell, K. D., 2007, Geochemical trends in gas quality in Kansas (abs.): American Association of Petroleum Geologists, Annual Convention & Exhibition, Long Beach, CA, Abstracts Volume, p. 101; available as Kansas Geological Survey, Open-File Report 2007–8.  
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- Newell, K. D., 2007, Sorbed gas content of coal and gas shales utilizing well cuttings (abs.): American Association of Petroleum Geologists, Midcontinent Section Meeting Abstracts, Wichita, Kansas, p. 29.
- Newell, K. D., and Carr, T. R., 2007, Biogenic and mixed biogenic-thermogenic origin of coalbed and shale gas in eastern Kansas (abs.): Geological Society of America, Abstracts with Program, v. 39, no. 3, p. 4.
- Nippert, J. B., Butler, J. J., Jr., and Kluitenberg, G. J., Whittemore, D. O., Arnold, D., and Ward, J. K., 2007, *Tamarix ramosissima* physiology and groundwater use during a record drought: Geological Society of America, Abstracts with Program, v. 39, no. 6, p. 265.
- Nordt, L., Boutton, T., Jacob, T. J., and Mandel, R. D., 2007, Relative C<sub>4</sub> plant productivity and temperatures of south-central Texas inferred from the isotopic composition of buried soil organic matter: 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas, April.
- Phillips, P. L., Ufnar, D. F., Ludvigson, G. A., and González, L. A., 2007, Siderite spherules and cements as proxies for paleogroundwater evolution and paleoclimatic changes — A comparison of apples and oranges?: Geological Society of America, Abstracts with Program, v. 39, no. 6, p. 302.
- Poteet, J., Franseen, E. K., and Goldstein, R. H., 2007, Late diagenesis — The key to Pennsylvanian regressive oomoldic reservoirs (central Kansas): American Association of Petroleum Geologists, Abstracts, p. 112.
- Rademacker, T. R., Miller, R. D., and Walters, S. L., 2007, Optimizing high frequency Vibroseis data [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2007), Denver, Colorado, April 1–5.
- Raef, A. E., Miller, R. D., Byrnes, A. P., Watney, W. L., and Franseen, E. K., 2007, 3D seismic imaging of structural and lithofacies properties and time lapse monitoring of an EOR-CO<sub>2</sub>-flood — Hall–Gurney field, Kansas, USA: 14<sup>th</sup> European Symposium on Improved Oil Recovery, Cairo, Egypt, April 22–24.
- Rose, P. J., Fox, D. L., and Ludvigson, G. A., 2007, Mammalian enamel and floodplain carbonate oxygen isotope records of Middle Paleocene paleoclimate, Crazy Mountains basin, Montana: Geological Society of America, Abstracts with Program, v. 39, no. 3, p. 76.
- Rule, A., and Townsend, M. A., 2007, Use of the nitrogen cycle to assist teachers with environmental and geohealth topics: Joint South-Central and North-Central Sections, 41st Annual Meeting, Geological Society of America, Abstracts with Programs, v. 39, no. 3, p. 13, April 11–13,  
[http://gsa.confex.com/gsa/2007SC/finalprogram/abstract\\_120125.htm](http://gsa.confex.com/gsa/2007SC/finalprogram/abstract_120125.htm).

- Sawin, R. S., Buchanan, R. C., and Lyle, S. A., 2007, Using a field experience to communicate natural resource issues to policy makers — The Kansas Field Conference (abs.): American Association of Petroleum Geologists, Eastern Section, Annual Meeting, September 16–18, Lexington Kentucky, Program with Abstracts, p. 52.
- 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, v. 39, no. 3, p. 54.
- Smith, J. J., Hasiotis, S. T., Kraus, M. J., and Woody, D. T., 2007, Ichnofossils of ancient soil biota show changes in abundance, stratigraphic distribution, and size during a rapid global-warming event — Paleocene–Eocene thermal maximum interval, Paleogene Willwood Formation, Bighorn basin, Wyoming: Geological Society of America, Annual Meeting Program, v. 39, no. 6, p. 206.
- Sophocleous, M. A., 2007, Ecological impacts of conjunctive use: NGWA 2007 Theis Conference — Conjunctive Management of Ground Water and Surface Water–Application of Science to Policy, Park City, Utah, September 8–October 1.
- Sophocleous, M. A., 2007, Restoring instream flows in the U.S. and the world: 41<sup>st</sup> Annual Meeting of the South-Central & North-Central Sections of the Geological Society of America, April 12, Lawrence, Kansas.
- Sophocleous, M. A., 2007, The tale of groundwater leading to the future, with the state of Kansas, USA, as an example: Proceedings of the 2007 Pre-Forum of the 36<sup>th</sup> Congress of IAH (International Association of Hydrogeologists) in Toyama, Japan, August 10–11, p. 24–33.
- Steeple, D. W., and Miller, R. D., 2007, Two decades of near-surface seismology progress [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2007), Denver, Colorado, April 1–5.
- Suarez, M., González, L. A., Ludvigson, G. A., and Davis, J., 2007, Pedogenic sphaerosiderites from the Caballos Formation (Aptian–Albian) of Colombia — A stable isotope proxy for Cretaceous paleoequatorial precipitation: Geological Society of America, Abstracts with Program, v. 39, no. 3, p. 75.
- Suarez, M., González, L. A., Ludvigson, G. A., and Ufnar, D., 2007, Oxygen isotopic study of carbonate minerals from the mid-Cretaceous low latitudes — Insights into the Cretaceous global hydrologic cycle: Society for the Advancement of Chicanos and Native Americans in Science, National Conference Abstracts, v. 4, p. 28.
- Townsend, M. A., Macko, S. A., Ghijssen, R., Thompson, J., Schneider, N., and Schuette, D., 2007, Variations in nitrogen water chemistry, soil content, and plant uptake at a wastewater irrigation site: Geological Society of America, Joint South-Central and North-Central Sections, 41<sup>st</sup> Annual Meeting, April 11–13, Abstracts with Program, v. 39, no. 3, p. 5. [http://gsa.confex.com/gsa/2007SC/finalprogram/abstract\\_120051.htm](http://gsa.confex.com/gsa/2007SC/finalprogram/abstract_120051.htm)
- Townsend, M. A., Sophocleous, M. A., Macko, S. A., Ghijssen, R., and Schuette, D., 2007, Effects of macropore flow and seasonal variability on water quality at a wastewater-recharge site: Geological Society of America, Abstracts with Programs, v. 39, no. 6, p. 190. [http://gsa.confex.com/gsa/2007AM/finalprogram/abstract\\_128890.htm](http://gsa.confex.com/gsa/2007AM/finalprogram/abstract_128890.htm)
- Walters, S. L., and Miller, R. D., 2007, Repeatability observations from a 2D time-lapse seismic survey [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2007), Denver, CO, April 1–5.
- Watney, W. L., Doveton, J. H., Dubois, M. K., Victorine, J. R., and Rasbury, E. T., 2007, Modeling midcontinent Permo–Carboniferous stratigraphy (abs.): Geological Society of America, Midwest Regional Conference, Lawrence, KS.
- Watney, W. L., and Miller, R. D., 2007, Characterization and geologic significance of evaporite karst in Kansas: American Association of Petroleum Geologists, Midcontinent Section Meeting, Wichita, Kansas.
- Whittemore, D. O., Butler, J. J., Jr., and Kluitenberg, G. J., 2007, Impact of channel entrenchment on stream-aquifer interactions and the riparian zone in the Arkansas River valley of south-central Kansas (abs.): Geological Society of America, Abstracts with Program v. 39, no. 3, p. 63.
- Whittemore, D. O., Butler, J. J., Jr., Kluitenberg, G. J., and Loheide, S. P., II, 2007, Climatic and water-use variability impacts on riparian phreatophytes in the Great Plains: Geological Society of America, Abstracts with Program, v. 39, no. 6, p. 266.
- Whittemore, D. O., Butler, J. J., Jr., Kluitenberg, G. J., and Loheide, S. P., II, 2007, Climatic and water-use variability impacts on riparian phreatophytes in the Great Plains (abs.): Geological Society of America, Abstracts with Program v. 39, no. 6, p. 266.
- Whittemore, D. O., Young, D. P., and Buddemeier, R. W., 2007, Calibration monitoring well program for the High Plains aquifer: Proceedings 16<sup>th</sup> Annual Kansas Hydrology Seminar, AIH & AEG, Topeka, Kansas.

- Woodburn, T. L., Johnson, W. C., Dunham, J. W., and Bieker, C. R., 2007, Kansas geologic mapping — more than just paper maps (poster): Geological Society of America, Annual Meeting, Denver, Colorado, October 28.
- Woody, D. T., Kraus, M. J., Smith, J. J., and Hasiotis, S. T., 2007, Abrupt paleoenvironmental change during the Paleocene–Eocene thermal maximum in the Bighorn basin, Wyoming: Geological Society of America, Annual Meeting Program, v. 39, no. 6, p. 192.
- Xia, J., Miller, R. D., and Xu, Y., 2007, Data resolution matrix of high-frequency Rayleigh-wave phase velocities [abs.]: Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP), Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 1–5, Denver, Colorado, 1 p.

## Presentations

- Battles, E. — Made two presentations at the 2007 Kansas Association of Mappers (KAM) Conference. The presentations were titled “The Kansas GIS Inventory” and “DASC Initiatives.”
- Battles, E. — Presented session on DASC history and current projects/initiatives at the 2007 Kansas Rural Water Association (KRWA) Conference.
- Battles, E. — Presented session on DASC initiatives focusing on the DASC Off Site Data Backup initiative at the 2007 Kansas Emergency Management Association (KEMA) Conference.
- Battles, E. — Gave the DASC presentation and demonstrated the DASC web site to a beginning GIS class for Kansas counties.
- Bohling, G. C., Butler, J. J., Jr., and Liu, G., 2007, High resolution aquifer characterization with hydraulic tomography and the direct-push permeameter, invited presentation to the Annual Meeting of the Association of Environmental and Engineering Geologists, Los Angeles, California, September 27.
- Butler, J. J., Jr., 2007 Henry Darcy Distinguished Lectureship Invited Presentations (in temporal order)— Univ. of Kansas, Emporia State Univ., Univ. of Missouri Kansas City, Kansas State Univ., San Diego State Univ., Univ. of Northern Arizona, Univ. of Arizona, Texas A&M Univ., Southwest Research Institute, Oklahoma State Univ., Univ. of Hawaii, Peking Univ., Chinese University of Geosciences, National Central Univ. (Taiwan), National Ground Water Assoc. Ground Water Summit, Los Alamos National Lab., Free Univ. of Brussels, Delft Univ. of Technology (The Netherlands), Univ. of Neuchatel (Switzerland), Univ. of Tübingen (Germany), Univ. of Göttingen (Germany), Univ. of Graz (Austria), Technical Univ. of Dresden, Helmholtz Centre for Environmental Research-UFZ (Leipzig, Germany), Polytechnic Univ. of Valencia, Polytechnic Univ. of Barcelona, Geological Society of London, Boise State Univ., Montana Tech, Univ. of Montana, Michigan State Univ., Western Michigan Univ., Univ. of Maryland Baltimore County, Penn State Univ., Univ. of Memphis, Univ. of Mississippi, Univ. of Alabama, Univ. of Illinois, Wright State Univ., Univ. of Colorado, Furman Univ., College of William and Mary, Colorado School of Mines, Canadian Geotechnical Soc. Conference, Geological Society of America Conf., Univ. at Buffalo, Univ. of Toronto, Stanford Univ., USGS-Menlo Park, Beloit College, Univ. of Wisconsin-Madison, New Mexico Inst. of Mining and Technology, Univ. of New Mexico, National Ground Water Assoc. Ground Water Exposition, and International Assoc. of Hydrogeologists XXXVI Congress (Toyama, Japan – given in 2008).
- Butler, J. J., Jr., 2007, Slug tests for hydrogeologic site characterization — Some practical guidelines: Invited teleconference presentation to the Earth Tech Site Investigation Technical Practice Group, July 31.
- Dealy, M. — Presentation on “Equus Beds Aquifer” at Wichita Gem and Mineral Society.
- Dealy, M. — Presentation on “Earthquakes” at Butler County History Center.
- Dealy, M. — Presentation on “Kansas Aquifers and Groundwater Basics” at Kansas Department of Health and Environment, Fall technical session.
- Dealy, M. — Presentation on “Wind Energy in Kansas” at Society of Manufacturing Engineers.
- Franseen, E. K., Invited presentation, “Miocene–Pliocene carbonate complexes in SE Spain research program,” at ExxonMobil Research Lab, Houston, Texas, September 27.
- Franseen, E. K., Invited presentation, “Update on Construction Aggregate Projects at the KGS,” Kansas Aggregate Producers Association 40<sup>th</sup> Annual Joint Convention, January 10–12, Kansas City.
- Kluitenberg, G. J., Butler, J. J., Jr., Nippert, J. B., Whittemore, D. O., Arnold, D., and Jin, W., 2007, Salt-cedar water use in the presence of a falling water table: Proceedings 24<sup>th</sup> Annual Water and Future of Kansas Conference, Topeka, Kansas, p. 17.



- Liu, G., Bohling, G., Butler, J. J., Jr., and Dietrich, P., Theoretical investigation of the direct-push permeameter for characterizing vertical variations in hydraulic conductivity: invited presentation at the Ninth International In Situ and On-Site Bioremediation Symposium, Baltimore, Maryland, May 7.
- Ludvigson, G. A., Developing approaches for understanding the hydrostratigraphic architecture of the Dakota Formation in Kansas: Kansas Geological Survey, Advisory Council, Lawrence, Kansas, May 17.
- Ludvigson, G. A., Investigation of soil-formed siderite and its contribution to global change research: Kansas Geological Survey, Advisory Council, Lawrence, Kansas, May 17.
- Ludvigson, G. A., Metrics of subtropical evaporation rates encoded in Mesozoic terrestrial carbonates — Some examples: Colorado Plateau Coring Project Workshop, co-sponsored by Drilling Observation & Sampling of the Earth's Continental Crust, Inc. (DOSECC), and National Science Foundation, St. George, Utah, November 14.
- Macfarlane, P. A., and Ghijssen, R., 2007, Assessment of seasonal, pumping-induced water-quality changes in the Ozark Plateaus aquifer system: Water and the Future of Kansas Conference Program, p. 19.
- Mandel, R. D., "Buried Paleo-Indian landscapes in draws on the High Plains," Technical Session, Geofest, Kansas Geological Survey, Lawrence, November 15.
- Mandel, R. D., "Holocene alluvial stratigraphy and soils," U.S. Soil Geomorphology Institute Training Program, National Soil Survey Center, Lincoln, Nebraska, March 5.
- Mandel, R. D., "The peopling of the Great Plains — A geoarchaeological perspective," Annual Kansas Earth Science Teachers Association (KESTA) Conference, Kansas Geological Survey, Lawrence, September 28.
- Mandel, R. D., "Soil geomorphology and archaeology," U.S. Soil Geomorphology Institute Training Program, National Soil Survey Center, Lincoln, Nebraska, March 5.
- Miller, R. D. — Presentation at Geological Society of London Bicentenary Conference, September.
- Miller, R. D., 2007, Seismic search for caverns, caves, and voids: Kansas Department of Health and Environment, Geology Section Fall Seminar, Wichita, Kansas, October 23 (invited).
- Miller, R. D., 2007, Seismic to characterize the near surface: Proceedings of the Geological Society of London Bicentenary Conference, September 10 (invited).
- Miller, R. D., 2007, High-resolution seismic investigation of subsidence from dissolution: University of Leoben, Austria, November 13.
- Miller, R. D., 2007, Progress report on time-lapse high-resolution 3-D seismic imaging to monitor a CO<sub>2</sub> flood in a thin carbonate reservoir in the Hall–Gurney field, Kansas: Department of Energy, Tulsa, Oklahoma, February 21.
- Miller, R. D., Ivanov, J., Hock, S., Markiewicz, R., Dunbar, J., and Lane, J., 2007, Seismic investigations for dam safety: Kansas Dam Safety Conference, Topeka, Kansas, March 13 (invited).
- Miller, R. D., Markiewicz, R. D., Rademacker, T. R., Hopkins, R., Rawcliffe, R. J., and Paquin, J., 2007, Advantages of wet work for near-surface seismic reflection [exp. abs.]: Society of Exploration Geophysicists, p. 1,147–1,151.
- Newell, K. D., 2007, Techniques for determining gas content of well cuttings: Kansas Geological Society, Wichita Kansas, February 26.
- Newell, K. D., 2007, Coalbed gas resources in eastern Kansas: Emporia State University, Emporia, Kansas, October 25.
- Newell, K. D., 2007, What are the geologic and geochemical controls on eastern Kansas coal bed gas production?: University of Missouri–Kansas City, Kansas City, Missouri, November 1.
- Smith, J., 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, September 13.
- Smith, J., 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, May 9.
- Sophocleous, M. A., Invited keynote speaker at the 2007 Pre-Forum of the 36<sup>th</sup> Congress of IAH in Toyama, Japan, August 10–11.
- Sophocleous, M. A., Invited presentation on the ecological impacts of conjunctive use, Theis Conference on Conjunctive Management of Ground Water and Surface Water — Application of Science to Policy, Park City, Utah, September 28–October 1.
- Sophocleous, M. A., Invited presentation at the Kansas Geological Society annual meeting on ground water sustainability and its application in Kansas, Kansas Geological Survey, Lawrence, Kansas, November 15.

- Sophocleous, M. A., Townsend, M., and Vocasek, F., 2007, Treated wastewater and nitrate transport beneath irrigated fields near Dodge City, Kansas: Water & the Future of Kansas Conference, March 15, Topeka, Kansas.
- Suchy, D. R., Gave talk on Kansas Geological Survey website resources at KDHE Geology Seminar, Wichita, KS.
- Suchy, D. R., Adkins–Heljeson, D., and Stewart, D. L., 2007, Seeking a source of ground water or managing a ground-water resource? Get the information you need (abs.): 24<sup>th</sup> Annual Water and the Future of Kansas Conference, Topeka, Kansas.
- Townsend, M. A., Macko, S. A., Sophocleous, M. A., Vocasek, F., Schutte, D., and Ghijsen, R., 2007, Variations in water chemistry and plant uptake of nitrogen at a wastewater irrigation site: Water & the Future of Kansas Conference, March 15, Topeka, Kansas.
- Whittemore, D. O., Sophocleous, M. A., Butler, J. J., Jr., Wilson, B. B., and Tsou, M-S., 2007, Ground-water flow model of the Middle Arkansas subbasin: 24<sup>th</sup> Annual Water and Future of Kansas Conference, Topeka, Kansas, p. 10.
- Wilson, B. B., Presentations to Ogallala Water Issue and Strategic Plan (WISP) Meeting Group, Kansas Geological Survey's Geofest, Kansas House Agriculture and Natural Resources Committee, Winfield Solutions Fall Conference, Kansas Water Congress Summer Conference, Kansas Water Authority, Poster at Kansas Rural Water Association Conference, and poster at Water and the Future of Kansas Conference.
- Xia, J. — High-frequency Rayleigh-wave method: Iowa State University Department of Geological and Atmospheric Sciences, August 31, 2007.
- Xia, J. — Surface-wave diffraction, slant stacking, and data resolution: Chengdu University of Technology, China, April 24, 2007.
- Xia, J. — Surface-wave diffraction, slant stacking, and data resolution: Southwest Jiaotong University, China, April 23, 2007.

## Awards

- Brady, L. L. — Honorary Member–Energy Minerals Division, American Association of Petroleum Geologists
- Buchanan, R. C. — Kansas Association of Broadcasters, Editorial/Commentary for Non-Commercial Radio (third place), 2007
- Butler, J. J., Jr. — Henry Darcy Distinguished Lecturer, National Ground Water Association (2007)
- Franseen, E. K. — Nominated for Best Paper Award in The Leading Edge
- Miller, R. D. — Project of Merit Award, SEG Foundation
- Miller, R. D. — Selected Top 10 paper at SAGEEP EEGS annual meeting, 2007
- Smith, J. — Erasmus S. Haworth Distinguished Graduate Award, Ph.D., University of Kansas Department of Geology (2007)
- Sophocleous, M. A. — Elected Fellow, Geological Society of America
- Walters, S. L. — William W. Hambleton Student Research Award, KGS
- Xia, J. — Merriam Research Award, KGS

## Internal Service

- Adkins–Heljeson, M. — Chaired search committee for KGS publications assistant
- Adkins–Heljeson, M. — Produced maps and pdf's for KU School of Pharmacy and administration to present to the Kansas Board of Regents proposing expansion of KU School of Pharmacy
- Battles, E. — Created a series of custom maps for week long annual tour sponsored by the University of Kansas Chancellor's office. The maps were titled “Wheat State Whirlwind: A Tour of the Heartland for KU Faculty”
- Battles, E. — Began development of Kansas base maps to be used in ArcServer map cache environment
- Butler, J. J. — University of Kansas–Student Advising–Postdoctorate Fellows: Wei Jin (2007–), Jesse Nippert (2007)
- Carr, T. R. — University of Kansas, taught Graduate Seminar in Applied Subsurface Petroleum Geology, Geology 791, Chemical and Petroleum Engineering 628 (2001–2007)
- Carr, T. R. — Supervised KU students Benjamin Rocke (M.S., 2007); Galo Sacedo (Ph.D., expected spring 2007) [Poster based on dissertation research received 2<sup>nd</sup> best student poster award at 2004 AAPG Annual Meeting in Dallas, Texas]; Nathan Winters (M.S., expected 2007); and Benjamin Ramaker (M.S., expected 2008)

Doveton, J. — KU courses taught: GEOL 536, Log Analysis of Subsurface Geology

Franseen, E. K. — Supervised KU graduate student thesis for Jessica Poteet

Killion, M. — Served on the search committee for the Web Developer position at the Data Access and Support Center

Ludvigson, G. — Jon J. Smith, Kansas Geological Survey, (Ph.D. 2007 University of Kansas, S.T. Hasiotis, advisor) September 2007–May 2009; KGS-sponsored research on Holocene and Neogene stratigraphy and paleoclimatology of the High Plains in western Kansas; NSF-sponsored research on neoformation of pedogenic siderite in water-saturated soils

Ludvigson, G. — Adel Haj, Kansas Geological Survey, (Ph.D. 2007 University of Iowa, E. A. Bettis, advisor) October 2006–August 2007; KGS-sponsored research on Holocene and Neogene stratigraphy and paleoclimatology of the High Plains in western Kansas (accepted appointment as Assistant Professor at Central Missouri State University)

Ludvigson, G. — Aisha Al-Suwaidi, M.S. 2007, The University of Kansas, A Ped's Story: Weathering Out Climatic Change During the Mid-Cretaceous (Distinguished Graduate Scholar, United Arab Emirates; currently working on doctorate at Oxford University, United Kingdom)

Macfarlane, A. — Search Committee member for the KGS Analytical Services Lab Manager Position, 2007

Mandel, R. — Advisor and committee chair for the dissertation at the University of Kansas, Jared Beeton, Department of Geography

Mandel, R. — Member of KGS search committee for hiring a Post-Doctoral Research Associate specializing in Neogene stratigraphy and modern pedogenic processes in the Stratigraphic Research Section

Mandel, R. — Committee member, KU Social Sciences General Research Fund

Newell, K. D. — Merriam International Travel Awards Committee (Member, 2007)

Newell, K. D. — Search Committee for Analytical Chemist (Member, 2007–08)

Newell, K. D. — Search Committee for student petrophysical assistant (Member, 2007)

Newell, K. D. — Search Committee for Energy Research Section Chief, and geoscientist (Member, 2007–08)

Sorensen, J. — Member, Search Committee, Publication Sales, 2007

Sorensen, J. — Member, Search Committee, Exploration Services, 2007

Sorensen, J. — Member, Promotion & Review Committee, 2007 to present

Suchy, D. — Helped run KGS booth at Lawrence Water Festival, Earth Day, April 21, including a poster on water data on the internet prepared for the event

Xia, J. — Member, KGS Promotion and Review Committee, 2007-2009

## External Service

Battles, E. — Updated Kansas Legislative Districts maps

Battles, E. — Created county tax unit boundary reference maps for Administrative Boundaries/Tax Units data project

Battles, E. — Created series of statewide Initiatives status maps for the KAC conference

Battles, E. — Served as Chairperson for the Technical Advisory Committee (TAC) Land Use/Geology/Soils data committee

Battles, E. — Served on the Kansas GIS Strike Force – this group visited several counties and made presentations to promote the Kansas GIS Inventory

Buchanan, R. — Geological Society of America, Geology and Public Policy Committee, Geology and Society Division Representative, 2007–present; Nominations Committee, History of Geology Division, 2007–09

Buchanan, R. — Kansas Energy Council, State Geologist's Designee, 2007–08

Buchanan, R. — Association of American State Geologists, Associates' Representative to the Executive Committee, 2007–08; Outreach Committee, 2007–present

Butler, J. — Associate Editor–Hydrogeology Journal (2006–)

Butler, J. — John Keller doctoral dissertation, Department of Geology, Southern Illinois University (2007–)

Butler, J. — Promotion and Tenure Evaluator–Department of Geological Sciences, University of Hawaii (2007); Department of Environmental Engineering and Earth Science, Clemson University (2007)

Butler, J. — Aquifer Testing for Improved Hydrogeologic Site Characterization Featuring AQTESOLV and the In-Situ LevelTroll (taught half of course), Fort Collins, Colorado, October 16–17; Calgary, Alberta, August 16–17

Butler, J. — Advanced Aquifer Testing Analysis Featuring AQTESOLV: New Concepts, Field Methods, and Data Analysis Procedures (taught half of course), University of San Diego, California, February 27–March 1

Carr, T. — Testimony before the Kansas House Energy and Utilities Committee on Energy, January 18; testimony before the Kansas Senate Energy Committee on Heavy Oil, January 30

Doveton, J. — PTTC Workshop “The PFEFFER Workshop,” October 12, Lawrence, Kansas

Doveton, J. — PEMEX “Prediction of permeability from logs,” August 20–25, Villahermosa, Mexico

Doveton, J. — ONGC Short Course on “Advances in Well Log Applications,” January 15–19, Dehradun, India

Doveton, J. — PTTC Short Course on “Reading the Rocks from Wireline Logs,” March 9, Lawrence, Kansas

Doveton, J. — PDVSA “Prediction of permeability from logs,” February 5–9, Maracaibo, Venezuela

Doveton, J. — SMU Geology Department “Crash Course on Log Analysis,” February 24, Dallas, Texas

Doveton, J. — QGSI “Geological Log Analysis,” March 14, Houston, Texas

Doveton, J. — QGSI “Permeability Predictors from Logs,” March 15, Houston, Texas

Doveton, J. — P. T. Geoservices “Reservoir Petrophysical Log Analysis,” April 23–27, Bandung, Indonesia

Doveton, J. — American Association of Petroleum Geologists, Midcontinent Meeting Short Course “Introduction to Well Logging in Kansas,” Wichita, Kansas, September 9

Doveton, J. — CSPG Education Week “Petroleum Log Analysis and Petrophysical Geology,” October 30–31, Calgary, Canada

Dunham, J. — “Geologic mapping at the Kansas Geological Survey,” Kansas GIS Policy Board bimonthly meeting, Topeka, KS, September 22; Kansas Geological Survey Advisory Council semiannual meeting, Lawrence, Kansas, February 9

Dunham, J. — A/V and Computer Chair, Geological Society of America South-Central Section and North-Central Section Meeting, University of Kansas, Lawrence, Kansas, April 11–13

Franseen, E. — Field trip leader for University of Kentucky geologists to Lansing–Kansas City Group (Pennsylvanian) cyclothemic strata in NE Kansas

Franseen, E. — Instructor and field trip leader, ExxonMobil Carbonate Intern Training Course, Almeria, Spain

Franseen, E. — Co-instructor for American Association of Petroleum Geologists Education Program, “Controls on porosity types and distribution in carbonate reservoirs,” Almeria, Spain

Killion, M. — Served on the Technical Advisory Committee of the Kansas GIS Policy Board

Ludvigson, G. — StateMap Program Coordinator

Ludvigson, G. — General Chair, Combined Geological Society of America SC–NC Section Meeting, Lawrence, Kansas, April 11–13

Macfarlane, A. — Second Vice President, Central Section, National Association of Geoscience Teachers, 2007–08

Mandel, R. — Served as an external member of a dissertation or master’s committee for DeAnn Presley, Department of Agronomy, Kansas State University, Ph.D.

Mandel, R. — Associate Editor, *Geoarchaeology: An International Journal*, John Wiley & Sons, January, May 2007–present

Mandel, R. — Guest speaker, “The peopling of the Great Plains: A geoarchaeological perspective,” annual Kansas Earth Science Teachers Association (KESTA) Conference, Kansas Geological Survey, Lawrence, September 28

Mandel, R. — Field trip leader to the Claussen site in northeastern Kansas, for the Kansas Earth Science Teachers Association (KESTA) Conference, Kansas Geological Survey, September 29

Mandel, R. — Co-organizer and co-chair of a symposium, “Geoarchaeological and geomorphological explorations in the midcontinent: In honor of Wakefield Dort, Jr.,” 41st Annual Meeting of the South-Central Section/North-Central Section of the Geological Society of America, Lawrence, Kansas, April

Mandel, R. — Co-organizer and co-chair of a symposium, “Late Pleistocene and Holocene paleoecology and archaeology at the Richard Beene site, coastal plain, south-central North America,” 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas, April

Mandel, R. — Reviewer for the National Science Foundation’s Paleo Perspectives on Climate Change Program

Mandel, R. — Reviewer for the National Geographic Society’s Funded Research Program

Miller, R. — Society of Exploration Geophysicists, Committee on Nominations, 2007–09

Miller, R. — Society of Exploration Geophysicists, Special Issue Editor, *The Leading Edge*: February (v. 26, no. 2), lower 48; August (v. 26, no. 8), near-surface/seismic to radar

Newell, D. — Session co-chair for Oil and Gas Resources of the Midcontinent, American Association of Petroleum Geologists 2007 Midcontinent Section Meeting, Wichita, Kansas, September 10

Smith, J. — Co-chaired theme session (Fossils and modern analogs: Using modern organisms to improve paleontological interpretations with Daniel Hembree and Brian Platt) for Geological Society of America, South- and North-Central Joint Section Meeting

Sophocleous, M. — Editor in Chief, *Journal of Hydrology*, April 1999–December 2007

Sophocleous, M. — Technical Program co-chair for 2007 Joint South-Central and North-Central Sections Annual Meeting to be held in Lawrence, Kansas, April 11–13 April

Sophocleous, M. — Member of the O. E. Meinzer award selection committee for the Geological Society of America, Hydrogeology Division (2007–09)

Sophocleous, M. — Co-convenor of the 2007 Theis Conference “Conjunctive Management of Ground Water and Surface Water: Application of Science to Policy,” Park City, Utah, September 28–October 1

Sophocleous, M. — Invited reviewer for the Legislative–Citizen Commission on Minnesota Resources

Sophocleous, M. — Invited reviewer for the Canada Research Chairs Program

Sophocleous, M. — Member of the Advising Committee for the Department of Environmental Management of the Cyprus University of Technology (2007–Present)

Suchy, D. — Served as Exhibits and Sponsors Chair and on organizing committee for joint meeting of South-Central and North Central Sections of Geological Society of America held at KU

Suchy, D. — Helped review Kansas Response Plan for Kansas Division of Emergency Management

Suchy, D. — Helped run Kansas Geological Survey booth at Lawrence Water Festival, Earth Day, including a poster on water data on the internet prepared for the event

Suchy, D. — Helped run rock and fossil identification booth at KU Natural History Museum event, entitled “What on Earth? Fossils, Rocks, and Meteorites”

Watney, L. — Co-chair, Technical Program, Midcontinent American Association of Petroleum Geologists meeting, Wichita, Kansas, September

Watney, L. — PffEFFER Log Analysis and Web Tools Workshop, Wichita, Kansas, November

Wilson, B. — Kansas Technical Advisory Committee and the DASC Sub-committee to the Kansas GIS Policy Board

Xia, J. — Session Chairman, The Society of Exploration Geophysicists, 77th Annual Meeting, September 23–28, 2007, San Antonio, Texas

### Refereed Publications

- Arabi, M., Govindaraju, R. S., Sophocleous, M., and Koelliker, J. K., 2006, Use of distributed models for watershed management — Case studies; *in*, *Watershed Models*, V. P. Singh and D. K. Frevert, eds.: CRC Press, Taylor & Francis Books, Inc., New York, p. 503–526.
- Baker, R. G., Fredlund, G. G., Towne, G., Mandel, R. D., and Johnson, W. C., 2006, Late Quaternary biogeography and paleoecology along the prairie-forest border, USA; *in*, *Guidebook of the 18<sup>th</sup> Biennial Meeting of the American Quaternary Association*, R. D. Mandel, ed.: Kansas Geological Survey, Technical Series 21, p. 2-1–2-27.
- Bohling, G. C., and Doveton, J. H., 2006, The Oz machine — A Java applet for interactive instruction in geological log interpretation: *Geosphere*, v. 2, no. 5, p. 269–274.
- Brosius, L., 2006, Windows to the past — A guidebook to common invertebrate fossils of Kansas: Kansas Geological Survey, Educational Series 16, 56 p.
- Butler, J. J., Jr., Zlotnik, V. A., and Tsou, M. S., 2006, Drawdown and stream depletion produced by pumping in the vicinity of a partially penetrating stream, by James J. Butler, Jr., Vitaly A. Zlotnik, and Min-Shu Tsou, September–October 2001 issue, v. 39, no. 5, p. 651–659; authors' reply: *Ground Water*, v. 44, no. 2, p. 143.
- Byrnes, A. P., and Bhattacharya, S., 2006, Influence of initial and residual oil saturation and relative permeability on recovery from transition zone reservoirs in shallow shelf carbonates: SPE/DOE Symposium on Improved Oil Recovery, Tulsa, April 22–26, SPE 99736, 11 p.
- Chen, C., Liu, J., Xia, J., and Li, Z., 2006, Integrated geophysical techniques in detecting hidden dangers in river embankments: *Journal of Environmental and Engineering Geophysics*, v. 11, no. 2, p. 83–94.
- Chen, C., Xia, J., Liu, J., and Feng, G., 2006, Nonlinear inversion of potential-field data using a hybrid-encoding genetic algorithm: *Computers & Geosciences*, v. 32, no. 2, p. 230–239.
- Cruz, F. E., Eberli, G. P., and Byrnes, A. P., 2006, Petrophysical heterogeneity of a Pleistocene oolitic shoal — Lessons for ancient reservoirs; *in*, *Reservoir Characterization — Integrating Technology and Business Practices*, R. M. Slatt et al., eds: Bob F. Perkins Research Conference, 26<sup>th</sup> Annual Gulf Coast Section SEPM Foundation.
- Davis, J. C., Chung, C.-J., and Ohlmacher, G. C., 2006, Two models for evaluating landslide hazards: *Computers and Geoscience*, v. 32, p. 1,120–1,127.
- Devlin, J. F. and Sophocleous, M. A., 2006, Reply to comment on “The persistence of the water budget myth and its relationship to sustainability” by J. F. Devlin and M. Sophocleous, *Hydrogeology Journal*, v. 13, no. 4, p. 549–554; *Hydrogeology Journal*, v. 14, no. 7, p. 1,386.
- Doveton, J. H., 2006, Markov chain petrophysical simulation of flow-unit architecture in carbonate and clastic subsurface formations: *Proceedings, IAMG-06, S12 — Stochastic Modeling of Subsurface Formations*, 4 p.
- Doveton, J. H., 2006, Methods and applications of hierarchical zonation of petrophysical logs using polynomial filters: *Proceedings, IAMG-06, S11 — Innovative Techniques in Geomathematics*, 4 p.
- Dubois, M. K., Bohling, G. C., and Chakrabarti, S., 2006, Comparison of four approaches to a rock facies classification problem: *Computers and Geosciences*, v. 33, no. 3, p. 599–617.
- Dubois, M. K., Byrnes, A. P., Carr, T. R., Bohling, G. C., and Doveton, J. H., 2006, Multiscale geologic and petrophysical modeling of the giant Hugoton gas field (Permian), Kansas and Oklahoma; *in*, *Giant Hydrocarbon Reservoirs of the World — From Rocks to Reservoir Characterization and Modeling*, P. M. Harris and L. J. Webber, eds.: American Association of Petroleum Geologists, Memoir 88, p. 309–355.
- Franseen, E. K., 2006, Mississippian (Osagean) shallow-water, mid-latitude siliceous sponge spicule and heterozoan carbonate facies — An example from Kansas with implications for regional controls and distribution of potential reservoir facies; *in*, *Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 252*, part 1, 23 p. <http://www.kgs.ku.edu/Current/2006/franseen/index.html>
- Gröcke, D. R., Ludvigson, G. A., Witzke, B. J., Robinson, S. R., Joeckel, R. M., Ufnar, D. F., and Ravn, R. L., 2006, Recognizing the Albian–Cenomanian (OAE1d) sequence boundary using plant carbon isotopes — Dakota Formation, Western Interior basin, USA: *Geology*, v. 34, no. 3, p. 193–196.
- Guinotte, J. M., Bartley, J. D., Iqbal, A., Fautin, D. G., and Buddemeier, R. W., 2006, Modeling habitat distribution from organism occurrences and environmental data: case study using anemonefishes and their sea anemone hosts: *Marine Ecology, Progress Series*, v. 316, p. 269–283.

- Holliday, V. T., and Mandel, R. D., 2006, Paleoindian geoarchaeology of the Southwest, Great Plains, and Central Lowlands; in, *Handbook of North American Indians — Origins of Native Americans*, Dennis Stanford, ed.: Washington, D.C., Smithsonian Institution Press, p. 23–46.
- Ivanov, J., Miller, R. D., Lacombe, P., Johnson, C. D., and Lane, J. W., Jr., 2006, Delineating a shallow fault zone and dipping bedrock strata using multichannel analysis of surface waves with a land streamer: *Geophysics*, v. 71, no. 5, p. A39–A42.
- Ivanov, J., Miller, R. D., Stimac, N., Ballard, R. F., Dunbar, J. B., and Smullen, S., 2006, Time-lapse study of levees in southern New Mexico [exp. abs.]: Society of Exploration Geophysicists, Annual Meeting, New Orleans, Louisiana, October 1–6, p. 3,255–3,258.
- Ivanov, J., Miller, R. D., Xia, J., Steeples, D., and Park, C. B., 2006, Joint analysis of refractions with surface waves — An inverse solution to the refraction-traveltime problem: *Geophysics*, v. 71, no. 6., p. R131–R138.
- Ivanov, J., Xia, J., and Miller, R. D., 2006, Optimizing horizontal-resolution improvement of the MASW method: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2006), Seattle, Washington, April 2–6, Paper 115, p. 1,128–1,134.
- Lambrecht, J. L., and Miller, R. D., 2006, Catastrophic sinkhole formation in Kansas — A case study: *The Leading Edge*, v. 25, no. 3, p. 342–347.
- Liu, G., Zhang, D., and Lu, Z., 2006, Stochastic uncertainty analysis for unconfined flow systems: *Water Resources Research*, v. 42, no. 9, 10.
- Luo, Y., Liu, J., Xia, J., Xu, Y., and Liu, Q., 2006, Estimation of pseudo-2D shear-velocity section by inversion of high frequency surface waves: Society of Explorations Geophysicists, 76th Annual Meeting, New Orleans, Louisiana, Technical Program with Biographies, p. 1,510–1,513.
- Luo, Y., Liu, J., Xu, Y., Xia, J., and Liu, Q., 2006, Influence of body waves on surface wave dispersion curves: Proceedings of the 2006 International Conference on Environmental and Engineering Geophysics (ICEEG), June 4–9, Wuhan, China, p. 114–118.
- Luo, Y., Xia, J., Liu, J., Liu, Q., and Xu, S., 2006, Joint inversion of high frequency surface waves with fundamental and higher modes: Proceedings of the 2006 International Conference on Environmental and Engineering Geophysics (ICEEG), June 4–9, Wuhan, China, p. 79–84.
- Macfarlane, P. A., Bohling, G., Thompson, K. W., Townsend, M. A., 2006, Helping students make the transition from novice learner of ground-water concepts to expert using the Plume Busters software: *Journal of Geoscience Education*, v. 54, no. 5, p. 610–619.
- Macfarlane, P. A., and Wilson, B. B., 2006, Enhancement of the bedrock-surface-elevation map beneath the Ogallala portion of the High Plains aquifer, western Kansas: Kansas Geological Survey, Technical Series 20, 28 p., 2 pls.
- Machavaram, M. V., Whittemore, D. O., Conrad, M. E., and Miller, N. L., 2006, Precipitation induced stream flow — An event based chemical and isotopic study of a small stream in the Great Plains region of the USA: *Journal of Hydrology*, v. 330, p. 470–480.
- Mandel, R. D., 2006, The effects of late Quaternary landscape evolution on the archaeology of Kansas; *in*, Kansas Archaeology, R. J. Hoard and W. E. Banks, eds.: University of Kansas Press, Lawrence, Kansas, p. 46–75.
- Mandel, R. D., ed., 2006, Guidebook of the 18<sup>th</sup> biennial meeting of the American Quaternary Association: Kansas Geological Survey, Technical Series 21, 146 p.
- Mandel, R. D., 2006, Late Quaternary and modern environments in Kansas: *in*, Kansas Archaeology, R. J. Hoard and W. E. Banks, eds.: University of Kansas Press, Lawrence, Kansas, p. 28–45.
- Mandel, R. D., and Hofman, J. L., 2006, Trip 4, stop 2, Simshauser site (15KY102) and Mattox Draw; *in*, Guidebook of the 18<sup>th</sup> Biennial Meeting of the American Quaternary Association, R. D. Mandel, ed.: Kansas Geological Survey, Technical Series 21, p. 4-9–4-16.
- Mandel, R. D., and Hofman, J. L., 2006, Trip 4, stop 3, the Winger site (14ST401) and Mattox Draw; *in*, Guidebook of the 18<sup>th</sup> Biennial Meeting of the American Quaternary Association, R. D. Mandel, ed.: Kansas Geological Survey, Technical Series 21, p. 4-17–40-25.
- Mandel, R. F., Hofman, J., Bement, L., and Carter, B., leaders, 2006, Introduction, AMQUA post-meeting field trip 4, Late Quaternary alluvial stratigraphy and geoarcheology in the central Great Plains, p. 4–1; *in*, Guidebook of the 18<sup>th</sup> Biennial Meeting of the American Quaternary Association, R. D. Mandel, ed.: Kansas Geological Survey, Technical Series 21, var. pag.
- Mandel, R. D., Widga, C., Hofman, J. L., Ryan, S., and Bruner, K., 2006, Trip 4, stop 1, the Claussen site (14WB322); *in*, Guidebook of the 18<sup>th</sup> Biennial Meeting of the American Quaternary Association, R. D. Mandel, ed.: Kansas Geological Survey, Technical Series 21, p. 4-2–4-8.

- Marple, R., and Miller, R. D., 2006, Association of the 1886 Charleston, South Carolina, earthquake and seismicity near Summerville with a 12° bend in the East Coast fault system and triple-fault junctions: *Southeastern Geology*, v. 44, no. 3, p. 101–128.
- Miller, R. D., 2006, High-resolution seismic reflection to identify areas with subsidence potential beneath U.S. 50 Highway in eastern Reno County, Kansas: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2006), Seattle, Washington, April 2–6, Paper 28, 13 p.
- Miller, R. D., 2006, High-resolution seismic reflection to identify areas with subsidence potential beneath U.S. 50 Highway in eastern Reno County, Kansas: Symposium on the Application of Geophysics to Engineering and Environmental Problems [ext. abs.]; selected as a best paper from SAGEEP06, presented at Near Surface 2006, Helsinki, Finland, September 4–6, 5 p. Published on CD.
- Miller, R. D., 2006, Introduction to this special section — Geophysics and public safety: *The Leading Edge*, v. 25, no. 3, p. 305.
- Miller, R. D., 2006, Introduction to this special section — Hydrogeophysics: *The Leading Edge*, v. 25, no. 6, p. 713.
- Miller, R. D., and Millahn, K., 2006, High-resolution seismic reflection investigations of dissolution sinkholes [ext. abs.]: European Association of Geoscientists and Engineers (EAGE), 68th Conference and Exhibition, Vienna, Austria, June 12–15, 4 p. Published on CD.
- Miller, R. D., Steeples, D. W., Lambrecht, J. L., and Croxton, N., 2006, High-resolution seismic-reflection imaging 25 years of change in I–70 sinkhole, Russell, County, Kansas [exp. abs.]: Annual Meeting of the Society of Exploration Geophysicists, New Orleans, LA, October 1–6, p. 1,411–1,414.
- Miller, R. D., Steeples, D. W., Xia, J., Rademacker, T. R., and Lambrecht, J. L., 2006, Seismic reflection characteristics of subsidence affecting transportation: Keynote Presentation, Proceedings of the International Conference on Environmental and Engineering Geophysics, Wuhan, China, June 4–9, p. 2–9.
- Neuhauser, K. R., 2006, Geologic map of Osborne County, Kansas: Kansas Geological Survey, Map Series M–102, 1 sheet, scale 1:50,000.
- Park, C. B., and Miller, R. D., 2006, Roadside passive MASW: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2006), Seattle, Washington, April 2–6, 12 p.
- Qi, L., and Carr, T. R., 2006, Neural network prediction of carbonate lithofacies from well logs, Big Bow and Sand Arroyo Creek fields, southwest Kansas: *Computers and Geosciences*, v. 32, no. 7, p. 947–964.
- Qi, L., Carr, T. R., and Goldstein, R. H., 2006, Geostatistical three-dimensional modeling of oolite shoals, St. Louis Limestone, southwest Kansas: *American Association of Petroleum Geologists, Bulletin*, v. 91, p. 69–96; (Student Publication).  
<http://search.datapages.com/data/bulletns/2007/01jan/BLTN05167/IMAGES/BLTN05167.PDF>
- Sawin, R. S., West, R. R., Franseen, E. K., Watney, W. L., and McCauley, J. R., 2006, Carboniferous Permian boundary in Kansas, midcontinent, U.S.A.; *in*, Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 252, part 2. <http://www.kgs.ku.edu/Current/2006/sawin/index.html>
- Smith, J. J., Hasiotis, S. T., and Fritz, W. J., 2006, Stratigraphy and sedimentology of the Upper Jurassic Morrison Formation, Dillon, Montana; *in*, Paleontology and Geology of the Upper Jurassic Morrison Formation, J. R. Foster and S. G. Lucas, eds.: New Mexico Museum of Natural History and Science, Bulletin, v. 36, p. 1–7.
- Sophocleous, M. A., Bardsley, W. E., and Healey, J., 2006, A rainfall loading response recorded at 300 meters depth — Implications for geological weighing lysimeters: *Journal of Hydrology*, v. 319, no. 1–4, p. 237–244.
- Tsou, M.-S., Perkins, S. P., Zhan, X., Whittemore, D. O., and Zheng, Z., 2006, Inverse approaches with lithologic information for a regional groundwater system in southwest Kansas: *Journal of Hydrology*, v. 318, no. 1–4, p. 292–300.
- Walters, S. L., Miller, R. D. and Raef, A. E., 2006, Repeatability observations from a time-lapse seismic survey [exp. abs.]: Society of Exploration Geophysicists, New Orleans, Louisiana, October 1–6, p. 3,185–3,188.
- White, S. W., 2006, Net energy payback and CO<sub>2</sub> emissions from three Midwestern wind farms — An update: *Natural Resources Research*, v. 15, no. 4, p. 271–281.
- Wilson, T., and Miller, R. D., 2006, Introduction to this special section — Carbon sequestration/EOR: *The Leading Edge*, v. 25, no. 10, p. 1,262–1,263.
- Xia, J., and Doll, B. W., 2006, Introduction to Special Issue — Geophysics in China: *Journal of Environmental and Engineering Geophysics*, v. 11, no. 2.
- Xia, J., and Miller, R. D., 2006, Applications of integrated geophysical survey in defining subsidence features on a golf course: Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP) Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 2–6, Seattle, Washington, p. 162–173.



- Xia, J., Nyquist, J. E., Xu, Y., and Roth, M. J. S., 2006, Feasibility of detecting voids with Rayleigh-wave diffraction: Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP) Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 2–6, Seattle, Washington, p. 1,168–1,180.
- Xia, J., Xu, Y., Chen, C., Kaufmann, R. D., and Luo, Y., 2006, Simple equations guide high-frequency surface-wave investigation techniques: *Soil Dynamics and Earthquake Engineering*, v. 26, no. 5, p. 395–403.
- Xia, J., Xu, Y., Miller, R. D., and Chen, C., 2006, Estimation of elastic moduli in a compressible Gibson half-space by inverting Rayleigh wave phase velocity: *Survey of Geophysics*, v. 27, no. 1, p. 1–17.
- Xia, J., Xu, Y., Miller, R. D., and Chen, C., 2006, New developments in analysis of high-frequency Rayleigh waves (keynote presentation): Proceedings of the 2006 International Conference on Environmental and Engineering Geophysics (ICEEG), June 4–9, Wuhan, China, p. 10-18.
- Xia, J., Xu, Y., Miller, R. D., and Nyquist, J. E., 2006, Rayleigh-wave diffractions due to a void in the layered half space [exp. abs.]: Society of Exploration Geophysicists, New Orleans, Louisiana, October 1–6, p. 1,406–1,409.
- Xu, Y., Xia, J., and Chen, C., eds., 2006, Geophysical solutions for environment and engineering: Proceedings of the 2<sup>nd</sup> International Conference on Environmental and Engineering Geophysics (ICEEG), June 4–9, Wuhan, China; Science Press USA Inc. (two volumes), 1,166 p.
- Xu, Y., Xia, J., and Miller, R. D., 2006, Quantitative estimation of minimum offset for multichannel surface-wave survey with actively exciting source: *Journal of Applied Geophysics*, v. 59, no. 2, p. 117–125.
- Zhan, X. Y., and Butler, J. J., Jr., 2006, KGS-HighK, a Fortran 90 program for simulation of hydraulic tests in highly permeable aquifers: *Computers and Geosciences*, v. 32, no. 5, p. 704–707.

## Patent

- Goldstein, R. H., Franseen, E. K., and Emry, J., co-inventors, 2006, Spectral scintillometry as a first-cut method for evaluating aggregate durability: University of Kansas, patent pending.

## Nonrefereed/Unpublished Papers

- Bhattacharya, S., Dubois, M., and Byrnes, A. P., 2006, Reservoir simulation of 12-section Graskell area — Chase/Council Grove reservoir systems: Kansas Geological Survey, Open-File Report 2006–26, 62 p.
- Bhattacharya, S., Dubois, M., and Byrnes, A. P., 2006, Reservoir simulation of Hoobler study area — Chase/Council Grove reservoir systems: Kansas Geological Survey, Open-File Report 2006–27, 70 p.
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- Wilson, B. — Assisted with development of water budget for local township irrigation coalition and GMD #4.
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- Raef, A. E., and Miller, R. D., 2006, A non-differencing approach to seismic monitoring — Implications for difficult carbonate reservoirs [exp. abs.]: Society of Exploration Geophysicists, New Orleans, Louisiana, October 1–6, p. 3,110–3,113.
- Raef, A. E., Miller, R. D., Byrnes, A. P., and Harrison, W. E., 2006, Impact of improved seismic resolution and signal-to-noise ratio on monitoring pore-fluid composition changes — CO<sub>2</sub>-injection, Hall–Gurney field, Kansas, USA: American Association of Petroleum Geologists, April 9–12, Houston, Texas.
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- Saunders, J. W., and Mandel, R. D., 2006, Geoarchaeology of Watson Brake — Middle Archaic earthworks in northeast Louisiana: Geological Society of America, Annual Meeting, Philadelphia, Pennsylvania, October.
- Sawin, R. S., and Buchanan, R. C., 2006, Taking legislators to the field — Communicating with policy makers about natural resource issues: American Geophysical Union, Eos, Transactions, Fall Meeting Supplement, v. 87, no. 52, Abstract ED31A–1357.
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- Smith, J. J., and Hasiotis, S. T., 2006, Morphologic and paleoenvironmental implications of adhesive meniscate burrows (AMB), Paleogene Willwood Formation and other continental deposits: Kansas Academy of Science, Transactions, 138th Annual Meeting, v. 109, no. 3–4, p. 247–267.

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- Smith, S. A., Carr, T. R., Fischer, D. W., Bartley, J. D., Peck, W. D., and Sorensen, J. A., 2006, Estimates of the carbon dioxide sequestration capacity for lower Paleozoic aquifer systems in the midcontinent region of North America: U.S. Department of Energy, 5<sup>th</sup> Annual Conference on Carbon Sequestration, Alexandria, Virginia, May 8-10, Program with Abstracts, CD proceedings.
- Sophocleous, M. A., 2006, Combining field characterization, statistical analysis, and GIS to regionalize localized recharge estimates in the subhumid plains of central Kansas: Geological Society of America, Philadelphia, Pennsylvania, Abstracts with Program, v. 38, no. 7, p. 468.
- Sophocleous, M. A., Townsend, M. A., Willson, T., and Vocasek, F., 2006, Preferential flow and transport of nitrate beneath fields irrigated with treated wastewater in Ford County, Kansas (abs.): Philadelphia Geological Society of American, Philadelphia, Pennsylvania, Abstracts with Program, v. 38, no. 7, p. 40.
- Suarez, M., González, L. A., Vega-Vera, F., and Ludvigson, G. A., 2006, Petrographic and isotopic investigation of depositional environments in the Early Cretaceous (Aptian-Albian) Tlayúa quarry, Mexico: Geological Society of America, Abstracts with Programs, v. 38, no. 7, p. 394.
- Townsend, M. A., Macko, S. A., Sophocleous, M. A., Vocasek, F., Schuette, D., and Ghijsen, R., 2006, Documenting seasonal variation at a wastewater irrigation site through stable isotopes (abs.): Geological Society of America, Abstracts with Program, v. 38, no. 7, p. 40.
- Ufnar, D. F., and Ludvigson, G. A., 2006, Drier in the subtropics and wetter in the mid- to high latitudes — Modeling the Albian greenhouse warming in North America: Journal of the Mississippi Academy of Sciences, v. 51, no. 1, Annual Meeting, p. 57–58.
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- Watney, W. L., Franseen, E. K., Byrnes, A. P., Miller, R. D., Raef, A., Reeder, S. L., and Rankey, E. C., 2006, Characterization of seismically imaged Pennsylvanian ooid shoal geometries and comparison with modern: American Association of Petroleum Geologists, Annual Convention Abstracts Volume, Houston, Texas, p. 113; selected for AAPG website online Search and Discovery highlights of meeting. <http://www.searchanddiscovery.net/documents/2006/06093watney/index.htm> and pdf
- Watney, W. L., West, R. R., Franseen, E. K., and Sawin, R. S., 2006, Nature of Depositional Sequences associated with the Carboniferous-Permian Boundary and Adjacent Units in the Midcontinent (abst.): Geological Society of America, South-central Section Meeting, March 6-7, 2006, Abstracts with Programs, v. 38, no. 1, p. 4–5.
- Whittemore, D. O., Sophocleous, M. A., Butler, J. J., Jr., Wilson, B. B., and Tsou, M-S., 2006, A modeling assessment of the long-term sustainability of ground-water pumping in the Middle Arkansas River subbasin of south-central Kansas: Geological Society of America, Abstracts with Program, v. 38, no. 7, p. 192.
- Woody, D. T., Smith, J. J., and Kraus, M. J., 2006, Preservation of a vegetated landscape in the earliest Eocene, Polecat Bench, Bighorn basin, Wyoming: Geological Society of America, Annual Meeting Program, v. 38, no. 7, p. 144.
- Xia, J., and Miller, R. D., 2006, Applications of integrated geophysical survey in defining subsidence features on a golf course [abs.]: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2006), Seattle, Washington, April 2–6.
- Xia, J., Nyquist, J. E., Xu, Y., Miller, R. D., and Roth, M. J. S., 2006, Rayleigh-wave diffractions due to near-surface features (invited presentation): Geological Society of America, Annual Meeting, Philadelphia, Pennsylvania, Abstracts with Programs, v. 38, no. 7, p. 525.
- Xia, J., Nyquist, J. E., Xu, Y., and Roth, M. J., 2005, Feasibility of detecting voids with Rayleigh-wave diffraction: Symposium on the Application of Geophysics to Environmental and Engineering Problems (SAGEEP) Annual Meeting of the Environmental and Engineering Geophysical Society (EEGS), April 2–6, Seattle, Washington, 1 p.
- Zheng, C., Butler, J. J., Jr., Hyndman, D. W., and Tick, G. R., 2006, Characterizing small-scale heterogeneities at the MADE site using sedimentological, hydraulic, and tracer data (abs.): Geological Society of America, Philadelphia, Pennsylvania, Abstracts with Program, v. 38, no. 7, p. 110.



## **Presentations**

- Battles, E. — Presented session about Kansas Geospatial Community Commons (KGCC) at the 2006 KAM Conference.
- Battles, E. — Presented session explaining the DASC web site at the 2006 Infinites Conference.
- Brady, L. L., Coal and coalbed methane in Kansas and its place in the nation: Energy Series, East Wichita Shepherd's Center, Wichita, Kansas, February 14.
- Butler, J. J., Jr., An ecohydrologic investigation of groundwater consumption by phreatophytes, an invited presentation to the Environmental Resources and Policies Program, Southern Illinois University, Carbondale, Illinois, March 8.
- Butler, J. J., Jr., Hydrogeological methods for estimation of spatial variations in hydraulic conductivity, an invited presentation at the High Resolution Site Characterization and Monitoring Symposium of the Groundwater Resources Association of California, Long Beach, California, November 14.
- Butler, J. J., Jr., New methods and scales for estimation of spatial variations in hydraulic conductivity, an invited presentation to the Department of Geology, Southern Illinois University, Carbondale, Illinois, March 9.
- Butler, J. J., Jr., New methods and scales for estimation of spatial variations in hydraulic conductivity, an invited presentation to the Department of Geosciences, University of Missouri at Kansas City, Kansas City, Missouri, February 16.
- Butler, J. J., Jr., Kluitenberg, G. J., Whittemore, D. O., and Arnold, D., 2006, An investigation of ground-water savings achieved through salt-cedar control activities (abs.): Proceedings 23<sup>rd</sup> Annual Water and Future of Kansas Conference, Topeka, Kansas.
- Butler, J. J., Jr., Whittemore, D. O., Shea, J., Bauer, J., Kluitenberg, G. J., Loheide, S. P., II, and Jin, W., 2006, The vulnerability of native phreatophytes to ground-water level declines in the middle Arkansas River valley, Kansas (abs.): Kansas Academy Science, Transactions, v. 109, no. 3/4, p. 249.
- Carr, T. — Presentation on “Energy and the Future — Models for Environmentally Sound and Economically Viable Opportunities” at Energy and Environmental Impact Related to Sustainability, Kansas State University Intersession Course, Manhattan, Kansas, January 4.
- Carr, T. — Testimony to Senate Utility Committee of Kansas Legislature on coalbed methane (with Dave Newell), January 5.
- Carr, T. — Presentation on “Coalbed Methane and Gas Shale in the Southern Midcontinent,” Oklahoma City, OK, March 21.
- Carr, T. — Presentation to Eastern Kansas Royalty Owners Association Meeting, Chanute, Kansas, October 19.
- Dealy, M. — Presentation on “What’s so important about the Equus Beds” to Kansas Geological Society.
- Franseen, E. K., Introduction to the Stratigraphic Research Section, Kansas Geological Survey Advisory Committee Meeting, invited presentation, March 31.
- Franseen, E. K., Contrasting styles and common controls on Middle Mississippian and Upper Pennsylvanian carbonate platforms in the upper midcontinent, U.S.A., to Denver chapter of SIPES, January 26.
- Franseen, E. K., Evaluating structural controls and their role in forecasting properties of Phanerozoic rocks in the northern midcontinent, USA — Ancient examples and modern analogs, to Kansas Geological Society Technical Meeting, Wichita, May, 4.
- Franseen, E. K., Construction aggregate research and materials inventory projects, to Kansas Geological Society Geofest Meeting, October 30.
- Franseen, E. K., Update on aggregate-related research, to Kansas Aggregate Producers Association 39<sup>th</sup> Annual Joint Convention, January 12–14, Kansas City.
- Jokiel, P. L., vanBeukering, P., and Buddemeier, R. W., 2006, Effects of climate change on ecosystem services provided by Hawaiian coral reefs: U.S. EPA, STAR workshop, Washington, D.C.
- Kluitenberg, G. J., Butler, J. J., Jr., Whittemore, D. O., Jin, W., Zhan, X., Loheide, S. P., II, and Arnold, D., 2006, A field investigation of major controls on phreatophyte-induced fluctuations in the water table (abs.): 23<sup>rd</sup> Annual Water and Future of Kansas Conference.
- Ludvigson, G. A., Exploring the role of the hydrologic cycle in climate model simulations of past greenhouse worlds: Department of Geology, University of Kansas, Lawrence, Kansas, February 16.
- Ludvigson, G. A., Exploring the role of the hydrologic cycle in climate model simulations of past greenhouse worlds: Department of Geology, University of Nebraska, Lincoln, Nebraska, January 27.
- Ludvigson, G. A., Isotopic analysis of carbonates in paleosols: Kansas Association of Professional Soil Classifiers, Kansas Geological Survey, April 27.

- Macfarlane, P. A., 2006, Resources and management issues associated with bedrock aquifers in Kansas: Proceedings of the 15th Annual Kansas Hydrology Seminar, Topeka, Kansas.
- Mandel, R. D., The effects of temporal and spatial patterns of landscape evolution on the archaeological record of the central Great Plains, Department of Anthropology Lecture Series, University of Oklahoma, Norman, Oklahoma, October 13.
- Mandel, R. D., Geoarchaeology of early Paleoindian and possible pre-Clovis cultural deposits at the Kanorado locality, northwestern Kansas, Sam Noble Oklahoma Museum of Natural History Lecture Series, University of Oklahoma, Norman, Oklahoma, October 13.
- Mandel, R. D., Kanorado revisited — Paleoindian geoarchaeology in northwestern Kansas, Kansas Geological Society Lecture Series, Wichita, Kansas, December 13.
- Mandel, R. D., Stratigraphy and paleopedology of the Kanorado locality, northwestern Kansas, to Kansas Association of Professional Soil Classifiers Annual Meeting, Banquet Lecture, University of Kansas, Lawrence, April 27.
- Miller, R. D., Two papers presented at American Geophysical Union Joint Assembly, Baltimore, Maryland, May.
- Miller, R. D., Presentation on EAGE–Near Surface 2006 Helsinki, September.
- Miller, R. D., Keynote, International Conference on Environmental and Engineering Miller — Geophysics, Wuhan, China, June.
- Miller, R. D., PTTC CO<sub>2</sub> EOR/IOR, Houston, Texas, February.
- Miller, R. D., Presentation at CEA Dam Safety Conference, Toronto, Canada, January.
- Miller, R. D., Presentation on “Dams and levees,” to Kansas Geological Survey Advisory Committee meeting, Lawrence, March 31.
- Miller, R. D., Seismic detection of CO<sub>2</sub> flood, at KGS/KGS Geofest meeting, Lawrence, October 30.
- Miller, R. D., Subsidence in Sedgwick County, to KGS Advisory Committee, Wichita, October 6.
- Miller, R. D., Seismic detection of CO<sub>2</sub> flood, to Kansas Geological Survey Advisory Committee, Lawrence, July 14.
- Miller, R. D., 2006, Guest lecturer, Zhejiang University, Hongzhou, China, June 4, invited presentation.
- Miller, R. D., 2006, Seismic investigation of dams, dikes, and levees — Clearwater Dam, south central Missouri, to Dam Safety Interest Group, CEA Technologies, Inc., Toronto, Ontario, Canada, January 26–27.
- Miller, R. D., 2006, Subsidence and salt, to Sedgwick County Commissioners, Wichita, January 24, invited presentation.
- Miller, R. D., 2006, Lake geophysics, at Sediment Workshop, Kansas Water Research Institute, Topeka, March 15.
- Miller, R. D., U.S. Department of Defense, Geophysical Detection of Clandestine Tunnels, University of Mississippi, Oxford, Mississippi, February.
- Miller, R. D., Park, C. B., Xia, J., Ivanov, J., Steeples, D., Ryden, N., Ballard, R. F., Llopis, J. L., Anderson, T. S., and Moran, M. L. 2006, Experiences searching for voids using seismic: Workshop on the Real-Time Detection of Clandestine Shallow Tunnels, National Center for Physical Acoustics, University of Mississippi, February 14.
- Miller, R. D., Raef, A. E., and Byrnes, A. P., 2006, Time-lapse high-resolution 3-D seismic imaging to monitor a miscible CO<sub>2</sub> flood in a thin carbonate reservoir — Hall–Gurney field, Russell County, Kansas: Meeting with Los Alamos on Drilling Microholes for Seismic Monitoring of Enhanced Oil Recovering Using CO<sub>2</sub> Injection, Lawrence, Kansas, January 10.
- Miller, R. D., Raef, A. E., Byrnes, A. P., and Harrison, W. E., 2006, Time-lapse 3-D seismic imaging to monitor miscible CO<sub>2</sub> floods — Case study in a thin carbonate reservoir, Hall–Gurney field, Russell County, Kansas: Department of Energy, CO<sub>2</sub> Enhanced Oil Recovery Pre-proposal Workshop, Houston, Texas, February 22.
- Newell, K. D., Coalbed gas in Kansas, talk presented at Eastern Kansas Royalty Owners Association Meeting, Chanute, Kansas, October 19.
- Newell, K. D., and Carr, T. R., 2006, Geologic controls on coalbed natural gas production in eastern Kansas coals: Symposium on Coalbed Methane and Gas Shales in the Southern Midcontinent, Oklahoma Geological Survey, Oklahoma City, Oklahoma, March 21.
- Sophocleous, M. A., Townsend, M. A., Willson, T., and Vocasek, F., 2006, Fate of nitrate beneath fields irrigated with treated wastewater in Ford County, Kansas: 23<sup>rd</sup> Annual Water and the Future of Kansas Conference, Topeka, Kansas, March 16.
- Sophocleous, M. A., Invited presentation on Preferential flow and transport of nitrate beneath treated wastewater-irrigated fields near Dodge City, Kansas, at Kansas Geological Survey Advisory Council, Lawrence, Kansas, March 31.

- Sophocleous, M. A., Invited presentation on spatial and temporal variability of recharge, at 2006 GSA Annual Meeting, Philadelphia, Pennsylvania, October 25.
- Sophocleous, M. A., Invited presentation on water resources sustainability and its application in Kansas to a group of visiting Asian scientists; visit sponsored by IWMI and KU International Studies Program, University of Kansas, Lawrence, November 27.
- Suchy, D. R., Adkins–Heljeson, D., and Stewart, D. L., 2006, KGS geohydrologic data on the internet (abs.): 23<sup>rd</sup> Annual Water and the Future of Kansas Conference, Topeka, Kansas.
- Watney, W. L., 1.5-hr. videotaped interview/story on alternative energy and KU Energy Research Center: <https://tv.ku.edu/news/2006/12/07/university-looks-wind/>.
- Watney, W. L. organizer/compiler, Bohling, G., Bhattacharya, S., Doveton, J., Guy, B., 2006, PffEFFER Pro overview and web tools, PTTC/ERC sponsored day-long workshop held on March 30 in Wichita and on Nov. 17 in Lawrence (workbook and coordinated CD).
- Watney, W. L., and Byrnes, A. P., 2006, Geological overview of the Niobrara Chalk natural gas play–Microhole drilling with coiled tubing — It’s here and growing: Denver Section Society of Petroleum Engineers, Continuing Education Short Course (half-day) in association with PTTC, May 19, Denver Athletic Club, Denver, Colorado.
- Watney, W. L. Callaghan, N., Bartley, J., and Xu, S., 2006, Applying visual techniques on geological formations using modeling techniques and 3-D visualization: 2006 ESRI Petroleum User Group Conference, April 3–5, Houston, Texas.
- Watney, W. L., Franseen, E. K., Byrnes, A. P., Nissen, S. E., and Sihuang, X., 2006, Evaluating structural controls and their role in forecasting properties of Phanerozoic rocks in the northern midcontinent, U.S.A. — Ancient examples and modern analogs: Presented to Denver chapter of SIPES, Denver, Colorado, January 26; Kansas Geological Society, Wichita, Kansas, May 4; and KGS, Lawrence, Kansas, July 18, 25.
- Whittemore, D. O., Sophocleous, M. A., and Butler, J. J., Jr., 2006, Downstream extension of dry river bed conditions for the Arkansas River, Kansas: 51<sup>st</sup> Annual Midwest Ground Water Conference, Program with Abstracts, School of Natural Resources, University of Nebraska, Lincoln, Nebraska, p. 15.
- Wilson, B. B., Talk to Kansas Rural Water Association Conference.
- Wilson, B. B., Talk to Water and the Future of Kansas Conference.
- Xia, J. — Feasibility of detecting near-surface feature with Rayleigh-wave diffraction: The Geological Society of America Annual Meeting, Philadelphia, Pennsylvania, October 22–25, 2006.
- Xia, J. — New developments in analysis of high-frequency Rayleigh waves: Southwest Jiaotong University, China, June 26, 2006.
- Xia, J. — New developments in analysis of high-frequency Rayleigh waves: Zhejiang University, China, June 4, 2006.

## Awards

- Carr, T. — Best Poster, American Association of Petroleum Geologists, Annual Meeting, Energy Minerals Division, Houston, Texas, April
- Miller, R. — Selected best paper at SAGEEP EEGS annual meeting, 2006
- Newell, D. — Energy Minerals Division Award for Best Poster Presentation (co-author); 2006 American Association of Petroleum Geologists National Convention, Houston, Texas
- Smith, J. — Raymond and Lillian Moore Graduate Scholarship, Geology Department, University of Kansas, 2006
- Smith, J. — Eugene Dehner Award, Kansas Academy of Science (2006), 2<sup>nd</sup> place Ph.D. oral presentation
- Watney, L. — John V. Atanasoff Research and Discovery Award, 2006, Iowa State University
- Whittemore, D. — Elected Fellow of the Geological Society of America
- Xia, J. — The Golden Bridge Award, The 2<sup>nd</sup> International Conference on Environmental and Engineering Geophysics, 2006

## Internal Service

- Battles, E. — Created a series of custom maps for week-long annual tour sponsored by the University of Kansas Chancellor's office. The maps were titled “Wheat State Whirlwind: A Tour of the Heartland for KU Faculty”
- Butler, J. — University of Kansas, Student Advising, Postdoctorate Fellow: Xiaoyong Zhan (2002–06)
- Butler, J. — Member, KGS Stratigraphic Research Assistant Scientist Search Committee

Butler, J. — Member, KGS Exploration Services Research Assistant Search Committee  
 Butler, J. — Member, KGS Geohydrology Field Hydrogeologist Search Committee  
 Butler, J. — Member, KGS Promotion and Review Committee  
 Butler, J. — Member, KGS Deputy Director Search Committees  
 Carr, T. — Taught course at University of Kansas, Geology 536, Log Analysis of Subsurface Geology, assisted John Doveton  
 Carr, T. — Supervised KU graduate students — Stephen Schurger (M.S., 2006); Alan P. Byrnes (Ph.D., expected 2006); and Martin K. Dubois (Ph.D. expected 2006)  
 Doveton, J. — KU courses taught: GEOL 536, Log Analysis of Subsurface Geology; C&PE 528, Well Logging  
 Franseen, E. — Co-chair, KGS search committee for Deputy Director, 2006–07  
 Franseen, E. — Co-leader of a 10-day field trip for University of Kansas and University of Puerto Rico–Mayaguez geology graduate and undergraduate students to Paleozoic strata in the Sacramento and Guadalupe Mountains, New Mexico and Texas, March 17–March 26  
 Franseen, E. — Co-instructor for Geology 761, Regional Field Geology, Spring Semester, Geology Department, University of Kansas  
 Ludvigson, G. — July–August 2006 — Co-instructor, Advanced Topics in Geology: Mid-Cretaceous Geology of China, with Luis A. González, The University of Kansas  
 Ludvigson, G. — July 2006–present: Courtesy Associate Professor, Department of Geology, University of Kansas  
 Mandel, R. — Served on dissertation committees at the University of Kansas for Virginia Hatfield, Department of Anthropology, and Chris Widga, Department of Anthropology  
 Mandel, R. — Chair of KGS search committee for hiring a Post-Doctoral Research Associate specializing in Neogene stratigraphy and modern pedogenic processes, Stratigraphic Research Section  
 Mandel, R. — Committee member, KU Social Sciences General Research Fund  
 Miller, R. — Chair of KU thesis committees: Theresa Rademacker (Masters); Jamie Lambrecht (Masters)  
 Newell, D. — Merriam International Travel Awards Committee (member)  
 Newell, D. — Search Committee for technical field assistant (member)  
 Suchy, D. — Helped to judge student research paper presentations for Sigma Xi Student Research Competition  
 Suchy, D. — Served as peer reviewer of paper on chaetetid bioconstructions in Sonora, Mexico, for the Geological Society of London Special Publication, Palaeozoic Reefs and Bioaccumulations — Climatic and Evolutionary Controls

## External Service

Battles, E. — Served as Chairperson for the Technical Advisory Committee (TAC) Land Use/Geology/Soils data committee  
 Battles, E. — Created a map titled “Know Your Watershed” for the Kansas Water Office  
 Battles, E. — Created a map for the “Teacher of the Year” award for the Kansas Water Office  
 Brady, L. — Co-Leader, Field trip — “Overview of coal and coalbed methane in the Cherokee basin, northeast Oklahoma” for the Midcontinent Coalbed Methane and Gas Shale Symposium II, October, 24  
 Buchanan, R. — Association of Earth Science Editors, Chair, Long-range Planning Committee, 2002–06  
 Butler, J. — Chair (7/04–6/06), Groundwater Technical Committee, American Geophysical Union  
 Butler, J. — Associate Editor—Hydrogeology Journal (2006–)  
 Butler, J. — Panelist, AAAS Research Competitiveness Service, Panel for Review of New Mexico NSF EPSCoR Program, April  
 Butler, J. — Promotion and Tenure Evaluator for Department of Geological Sciences, University of Colorado, and Department of Geology and Geophysics, Texas A&M University.  
 Butler, J. — Aquifer Testing for Improved Hydrogeologic Site Characterization Featuring AQTESOLV and the In-Situ LevelTroll (taught half of course), Fort Collins, Colorado, October 17–18  
 Butler, J. — Advanced Aquifer Testing Analysis Featuring AQTESOLV: New Concepts, Field Methods, and Data Analysis Procedures (taught half of course), GES Inc., Exton, Pennsylvania, May 2–3; University of Miami, February 28–March 2  
 Butler, J. — Design and Analysis of Pumping Tests with AQTESOLV (sole instructor), Division of Water Resources, Kansas Department of Agriculture, Topeka, Kansas, October 11  
 Butler, J. — Linked Hydrologic Processes Across Surface Water, Vadose Zone Water, and Groundwater, Fall Meeting of the American Geophysical Union, San Francisco, California, December

- Carr, T. — Session chair, “Oil sands/shales — Thermal/non-thermal methods leading us to new giants?” American Association of Petroleum Geologists, Annual Meeting, Houston, Texas, April 9–12
- Carr, T. — Second Midcontinent Coalbed Methane Symposium, Petroleum Technology Transfer Council, Midcontinent CBM Forum and the OIPA, Tulsa, Oklahoma, October 22–24
- Doveton, J. — QGSI “Log Analysis for Reservoir Characterization,” February 6–7, Houston, Texas
- Doveton, J. — PTTC Workshop “The Pfeiffer Workshop,” March 30, Wichita, KS, November 16, Lawrence, Kansas
- Doveton, J. — PEMEX “Prediction of permeability from logs,” August 21–25, Villahermosa, Mexico
- Doveton, J. — KCC “Basic Log Course,” October 5, Wichita, Kansas
- Doveton, J. — EREX Short Course on “Petrophysical Log Analysis,” November 5–9, Cairo and Hurghada, Egypt
- Franseen, E. — SEPM Foundation Board, 2006–present
- Franseen, E. — SEPM Student Assistance Grants Committee, 2006–present
- Franseen, E. — Co-instructor for AAPG Education Program “Controls on Porosity Types and Distribution in Carbonate Reservoirs,” Almeria, Spain, May–June
- Ludvigson, G. — StateMap Program Coordinator
- Mandel, R. — Elected to the Council of the American Quaternary Association (AMQUA), 2002–06 (representing archaeology and geoarchaeology)
- Mandel, R. — Served as an external member of a dissertation or master’s committee for Elizabeth Robertson, Department of Archaeology, University of Calgary, M.S.; Adel E. Haj, Jr., Department of Geology, University of Iowa, Ph.D.; Cynthia Wambsgans, Department of Geosciences, University of Iowa, M.S.
- Mandel, R. — Organizer and chair of a theme session “Geoarchaeology of Prehistoric Earthworks,” Annual Meeting of the Geological Society of America, Philadelphia, Pennsylvania, October 24
- Mandel, R. — Chair, Committee for the Douglas C. Kellogg Fund for Geoarchaeological Research, Society for American Archaeology, 2002–06
- Mandel, R. — Representative, Geological Society of America Joint Technical Program Committee, 2005–06
- Miller, R. — Michigan Department of Transportation, Ontario Ministry of Transportation, Geotechnical Oversight Panel; Detroit River International Crossing, 2006–08
- Miller, R. — SEG, Special Issue Editor, *The Leading Edge*, March (v. 25, no. 3), geophysics and public safety; June (v. 25, no. 6), hydrogeophysics; October (v. 25, no. 10), carbon sequestration/EOR
- Miller, R. — National Advisory Team for Geophysics in Hydrology, organized by the Consortium of Universities for the Advancement of Hydrologic Sciences Inc., 2006–present
- Miller, R. — ASTM Geophysics Subcommittee on Seismic Standards, 2006–present
- Sophocleous, M. — Associate Editor, *Hydrogeology Journal*, January 2002–December 2006
- Sophocleous, M. — Examiner for dissertation: S. A. Pierce, 2006, Jackson School of Geosciences, University of Texas@Austin, Austin, Texas
- Suchy, D. — Manned a booth and poster at City of Lawrence Water Festival, Earth Day, in South Park
- Suchy, D. — Coordinated efforts between KGS and KDHE to further their utilization of and reliance on our online WWC5 water well database
- Suchy, D. — Began duties as Exhibits and Sponsors Chair for joint meeting of South-Central and North Central Sections of GSA to be held at KU in April 2007
- Watney, L. — Chair, Headquarters and Business Committee, Society of Sedimentary Geology (SEPM), 2006
- White, S. — Board member, Kansas Natural Resource Council, Lawrence, Kansas, August 2006–07
- White, S. — Task Force Member, Senator Pat Roberts energy task force, 2006
- Wilson, B. — Kansas Technical Advisory Committee and the DASC Sub-committee to the Kansas GIS Policy Board
- Wilson, B. — Sandia National Laboratory, Invited participant for the Energy and Water Roadmap — GAPs Analysis Workshop

### Refereed Publications

- Bhattacharya, S., Doveton, J. H., Carr, T. R., Guy, W. R., and Gerlach, P. M., 2005, Integrated core-log petrofacies in the construction of a reservoir geomodel — A case study of a mature Mississippian carbonate reservoir using limited data: *American Association of Petroleum Geologists, Bulletin*, v. 89, no. 10, p. 1,257–1,274.
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- Burbridge, P., Buddemeier, R. W., Le Tissier, M. D. A., and Costanza, R., 2005, Synthesis of main findings and conclusions; *in*, *Coastal Fluxes in the Anthropocene*, C. J. Crossland, H. H. Kremer, H. J. Lindeobom, J. I. Marshall Crossland, and M. D. A. Le Tissier, eds.: Springer, Berlin Heidelberg New York, p. 201–217.
- Butler, J. J., Jr., 2005, Hydrogeological methods for estimation of hydraulic conductivity; *in*, *Hydrogeophysics*, Y. Rubin and S. Hubbard, eds.: Springer, The Netherlands, Water Science and Technology Library, v. 50, p. 23–58.
- Carr, T. R., Merriam, D. F., and Bartley, J. D., 2005, Use of relational databases to evaluate regional petroleum accumulation, groundwater flow, and CO<sub>2</sub> sequestration in Kansas: *American Association of Petroleum Geologists, Bulletin*, v. 89, p. 1,607–1627. <http://membernet.petris.com/data/2005/12dec/1607/1607.HTM>
- Carr, T. R., Newell, K. D., Johnson, T. A., Brown, W. M., and Lange, J. P., 2005, Coalbed-methane development in Kansas; *in*, *Unconventional Energy Resources in the Southern Midcontinent, 2004 Symposium*, B. J. Cardott, ed.: Oklahoma Geological Survey, Circular 110, p. 63–65.
- Castle, J. W., and Byrnes, A. P., 2005, Petrophysics of Lower Silurian sandstones and integration with the tectonic-stratigraphic framework, Appalachian basin, United States: *American Association of Petroleum Geologists, Bulletin*, v. 89, no. 1, p. 41–60.
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- Devlin, J. F., and Sophocleous, M. A., 2005, The persistence of the water budget myth and its relationship to sustainability: *Hydrogeology Journal*, v. 13, no. 4, p. 549–554.
- Doveton, J. H., 2005, Latent class analysis — An algebra of probability for binary data: *Proceedings, IAMG 05 — GIS and Spatial Analysis*, v. 2, p. 1,278–1,283.
- Doveton, J. H., 2005, Polynomial stratigraphy — Moment mapping of subsurface lithofacies in three dimensions: *Proceedings, IAMG 05 — GIS and Spatial Analysis*, v. 2, p. 1,296–1,301.
- Feldman, H. R., Franseen, E. K., Joeckle, R. M., and Heckel, P. H., 2005, Impact of longer-term modest climate shifts on architecture of high-frequency sequences (cyclothems), Pennsylvanian of midcontinent, USA: *Journal of Sedimentary Research*, v. 75, p. 350–368.
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- Ivanov, J., Miller, R. D., Ballard, R. F., Dunbar, J. B., and Smullen, S., 2005, Time-lapse seismic study of levees in southern Texas [exp. abs.]: *Society of Exploration Geophysicists*, Houston, Texas, November 6–11, p. 1,121–1,124.
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- Ivanov, J., Park, C. B., Miller, R. D., and Xia, J., 2005, Analyzing and filtering surface-wave energy by muting shot gathers: *Journal of Environmental & Engineering Geophysics*, v. 10, no. 3, p. 307–322.
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## Nonrefereed/Unpublished Papers

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- Carr, T. R., 2005, Fiscal 2005 Kansas oil and gas production by operator: Kansas Geological Survey, Open-File Report 2005–52, 20 p. <http://www.kgs.ku.edu/PRS/publication/2005/2005-52/index.html>
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## Computer Software

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- Bartley, J. — Building an index of geospatial web mapping services to help in the discovery and integration of geospatial data with national spatial data infrastructures. A search engine for online map services. <http://www.mapdex.org> (prototype), [http://hercules.kgs.ku.edu/jdb/Geodiscovery\\_outline.ppt](http://hercules.kgs.ku.edu/jdb/Geodiscovery_outline.ppt) (project description)
- Bartley, J. — Developing an XML based web-mapping tool for mapping distributed international geochemistry databases (NAVDAT, PETDB, GEOROCK).
- Bartley, J. — Developing robust online project management tools to manage enterprise level database (Oracle) and GIS software (SDE). Remote and dynamic management of ArcIMS, ArcSDE, & web services.
- Bartley, J. — Creating applications and datasets that help to integrate and visualize Kansas energy production.
- Bartley, J. — Spatially enabling tabular oil and gas databases for use in GIS analysis, cleanup, and visualization.
- Bartley, J. — Developing and coordinating projects that communicate GIS and tabular data within an open standards framework (Web Services, XML, GML, OGC, WMS, WFS).
- Bartley, J. — Developing Enterprise level web based GIS and RDBMS applications that enable users to visualize and analyze spatial-temporal and subsurface multi-dimensional datasets (Flash interface + backend database)
- Bartley, J. — Providing dynamic online mapping tools for distributed biogeographic databases; [www.iobis.org](http://www.iobis.org) & [www.fishbase.org](http://www.fishbase.org) & [www.cephbase.org](http://www.cephbase.org)
- Bartley, J. — GIS Data in Google Earth. Built an application that allows us to deliver image based data layers to Google Earth. [http://www.mapdex.org/blog/index.cfm?mode=cat&category\\_id=0974E29F-CB79-1B91-496009E394525A70](http://www.mapdex.org/blog/index.cfm?mode=cat&category_id=0974E29F-CB79-1B91-496009E394525A70).
- Bartley, J. — GIS Data in Google Maps (2005). Developed several tools that allow users to add ArcIMS data to Google Maps. <http://geoportal.kgs.ku.edu/googlemaps/>.

- Bartley, J. — LEOWeb. Directed student in building the web-based version of the Township-Section-Range conversion tool. <http://geoportal.kgs.ku.edu/leoweb/>.
- Bartley, J. — DASC Mapserver. Developed the DASC Mapserver. Mapserver allows easy access to DASC spatial data for developers and analysts. DASC was able to use Mapserver for the new catalog data viewer. <http://geoportal.kgs.ku.edu/mapserver/>.
- Bartley, J. — KGS Web Services. A web-based application interface that allows programmatic access to geospatial data via XML based requests.
- Bartley, J. — Database Explorer. A web-based tool written in Coldfusion that allows any survey member, who has an account in Oracle, to log and view all of the oracle tables and views and ESRI SDE layers stored in Oracle for that particular user. <http://hercules.kgs.ku.edu/website/sdemanager/manage.cfm>.
- Bartley, J. — ArcIMS Manager. A web-based tool written in ColdFusion that allows Survey Arcims developers to manage mapservices on six different mapservers
- Bartley, J. — ArcIMS Server Stability Check. A tool that every 10 minutes checks each ArcIMS server to see if it is responding. If it does not respond then an email is sent to me giving the name of the server, time, and error reported.
- Bartley, J. — Server Management Tool. A web based tool that allows certain survey staff to remotely start and stop services and to reboot the server (if needed). The web page is accessible on a secure site and every action is monitored and logged into an Oracle table.
- Bartley, J. — Current ArcIMS Server Status. A web-based tool that allows us to monitor current ArcIMS usage. ArcIMS MapServer Refresh. Assisted in developing an automated procedure to refresh ArcIMS connections to Oracle. ArcIMS Cold Fusion Web Services Connector. Working to develop replacement ColdFusion tags that submit request and process responses to ArcIMS written in XML through a CFMX webservice.
- Wilson, B. — Assisted with development of water budget for local township irrigation coalition and GMD #4.
- Wilson, B. — Developed prototype web page for direct volunteer/public entry of water-level measurements into WIZARD.
- Wilson, B. — Worked with the KDA–DWR to automate water-level data sharing and seamless data integration between Oracle RDBMS's.
- Wilson, B. — Worked with the GMD #3 Board in developing protocol for aquifer-subunit delineation.

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## Presentations

- Allison, M. L. — Presentation on “Kansas Energy” to Wichita Lions Club, Wichita, Kansas, January 12.
- Allison, M. L. — Presentation on “2005 Kansas Energy Report” to Joint hearing, Senate & House Utilities Committees, January 13, Topeka, Kansas.
- Allison, M. L. — Presentation on “Wind & Prairie Policy” to Kansas Energy Council, January 19, Topeka, Kansas.
- Allison, M. L. — Presentation on “Governor’s Wind & Prairie Policy” to House Utilities Committee, January 21, Topeka, Kansas.
- Allison, M. L. — Presentation on “Kansas Energy” to 55th Annual Environmental Engineering Conference, February 2, University of Kansas, Lawrence, Kansas.
- Allison, M. L. — Presentation on “Wind & Prairie Policy” to Kansas Association of Counties, Day at the Capitol, Topeka, Kansas, February 15.
- Allison, M. L. — Presentation on “Kansas Energy Developments” to Kansas Geological Society, Wichita, Kansas, February 16.
- Allison, M. L. — Presentation on “Kansas Energy Opportunities and Challenges for Rural Kansas” to Rural Life Task Force, Salina, Kansas, February 17 (presentation and discussion).
- Allison, M. L. — Presentation on “Wind Energy in Kansas” to League of Women Voters, Johnson County, Kansas, April 2.
- Arnold D., and Butler, J. J., Jr., Salt-cedar control activities and water-table monitoring on the Arnold Ranch, Clark County, Kansas, an invited presentation to the CPR for Wetlands and Streams II Conference, Wichita, Kansas, September 28.
- Bartley, J. D., and Iqbal, A., Two guest lectures for Geography 758 at University of Kansas, Lawrence, Kansas, [http://hercules.kgs.ku.edu/jdb/GEOG\\_758\\_XML\\_ARCIMS.ppt](http://hercules.kgs.ku.edu/jdb/GEOG_758_XML_ARCIMS.ppt).
- Bartley, J. D., Carr, T., and Iqbal, A., NatCarb — Publishing spatial data within a geoportal framework, at Regional Carbon Sequestration 2005 Meeting, Pittsburgh, Pennsylvania. [http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/natcarb\\_regcarbSEQ\\_2005.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/natcarb_regcarbSEQ_2005.ppt).
- Bartley, J. D., MAPDEX + Google Earth — GIS data discovery and visualization, at KU GIS Day Symposium. [http://hercules.kgs.ku.edu/jdb/Mapdex\\_GE\\_GISDAY\\_2005\\_public.ppt](http://hercules.kgs.ku.edu/jdb/Mapdex_GE_GISDAY_2005_public.ppt).
- Bartley, J. D., MAPDEX — A global index of distributed web map services, at ESRI Users Conference, Kansas City ArcInfo Users Group. [http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/kcaieg\\_mapdex.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/kcaieg_mapdex.ppt).
- Bartley, J. D., MAPDEX — A global index of distributed web map services, at ESRI Users Conference, San Diego, California.
- Bartley, J. D., 3D visualization of Kansas oil and gas fields, at KGS GSAC meeting, June.
- Bartley, J. D., MAPDEX — A global index of distributed web map services, at FGDC Interagency Coordination Meeting, National Archives, Washington D.C. [http://www.fgdc.gov/fgdc/coorwg/2005/may/fgdc\\_mapdex.ppt](http://www.fgdc.gov/fgdc/coorwg/2005/may/fgdc_mapdex.ppt).

- Bartley, J. D., NATCARB — Publishing spatial data within a geoportal framework, at FGDC Interagency Coordination Meeting, National Archives, Washington D.C.  
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- Bartley, J. D., and Carr, T. R., NATCARB — Publishing spatial data within a geoportal framework, at ESRI Petroleum Users Group Conference, Houston, Texas.  
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- Butler, J. J., Jr., Diurnal water-table fluctuations — An underutilized indicator of groundwater consumption by plants, an invited presentation given as part of the Environmental Seminar Series at the Desert Research Institute, Reno, Nevada, November 4.
- Butler, J. J., Jr., Whittemore, D. O., and Kluitenberg, G. J., Studies of ground-water consumption by phreatophytes in river valleys of Kansas: Transactions, Kansas Academy of Science, v. 108, no. 3/4, p. 165–166.
- Butler, J. J., Jr., Whittemore, D. O., and Kluitenberg, G. J., 2005, A field investigation of ground-water consumption by phreatophytes in river valleys of Kansas: 50th Annual Midwest Ground Water Conference, Program with Abstracts, Illinois State Geological Survey, Open-File Series 2005–13, p. 18.
- Carr, T. R., with S. E. Nissen and R. Brownrigg, 3D visualization of geology, geophysics and petroleum engineering, keynote presentation for the 16<sup>th</sup> Oil Recovery Conference, Wichita, Kansas, April 6.
- Carr, T. R. — Kansas coalbed and shale gas, at Bundesanstalt fuer Geowissenschaften und Rohstoffe, Berlin, Germany, June 13.
- Carr, T. R. — Kansas coalbed and shale gas, at Brandenburg Landesamt fur Bergbau Geologie und Rohstoffe, Kleinmachnow, Germany, June 14.
- Carr, T. R. — Kansas coalbed and shale gas, at Institut fur Bohrtechnik und Fluidbergbau, Technische Universitat Bergakademie, Freiberg, Germany, June 15.
- Carr, T. R. — Enhanced oil recovery — A green market for CO<sub>2</sub> from ethanol production, with Martin Dubois and Alan Byrnes, at International Fuel Ethanol Workshop and Expo, Kansas City, Missouri, June 29.
- Carr, T. R. — Simplified Online Automated Reporting (SOLAR) for the Kansas oil and gas industry, at the Kansas Independent Oil and Gas Association (KIOGA) Annual Meeting, Wichita, Kansas, August 22.
- Carr, T. R. — Online oil and gas information for Kansas, at the Eastern Kansas Oil and Gas Association (EKOGA) Annual Meeting, Chanute, Kansas, September 16.
- Carr, T. R. — CO<sub>2</sub> sequestration, at Kansas Renewable Energy and Energy Efficiency 2005 Conference, Topeka, Kansas, September 21.
- Carr, T. R. — Energy and the Future, at West Virginia University, Department of Geology and Geography, Morgantown, West Virginia, October 6.
- Carr, T. R. — Linking carbon capture and storage to enhanced oil recovery, invited presentation at Weathering Climate Change — How Evolving Markets will Affect Your Business, an invitation-only corporate seminar for the clients of Ecology and Environment, Inc., [www.ene.com](http://www.ene.com), October 21.
- Carr, T. R. — Mississippian reservoirs in Kansas — New techniques—old targets, with S. Nissen and L. Qi, Kansas Geological Society Technical Meeting, Wichita, Kansas, November 3.
- Carr, T. R. — Ongoing and future carbon sequestration demonstration projects in the United States — A Kansas perspective, at 2nd Carbon Management Workshop and 11<sup>th</sup> Annual CO<sub>2</sub> Flooding Conference, Midland, Texas, December 3.
- Carr, T. R., Bartley, J. D., and Look, K., NatCarb carbon cyberinfrastructure — A federation of distributed resources and distributed multidisciplinary expertise, at NETL Invited Meeting.  
[http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/Netl\\_2005mtg.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/Netl_2005mtg.ppt).
- Franseen, E. K. — “Spectral gamma ray scintillometer as a 1<sup>st</sup> cut tool for aggregate quality,” at Transportation Research Board Symposium and 56<sup>th</sup> Annual Highway Symposium, May 3–6, Wilmington, North Carolina.
- Franseen, E. K. — “Spectral gamma ray scintillometer as a 1<sup>st</sup> cut tool for aggregate quality,” at Kansas Aggregate Producers Association 38<sup>th</sup> Annual Joint Convention, January 13–15, Kansas City.
- Keller, J., Shea, J., Bauer, J., Butler, J. J., Jr., Kluitenberg, G. J., and Whittemore, D. O., 2005, A field investigation of ground-water consumption by phreatophytes in river valleys of Kansas: 50th Annual Midwest Ground Water Conference, Program with Abstracts, Illinois State Geological Survey, Open-File Series 2005–13, p. 19.
- Ludvigson, G. A., Tracking the footprints of ancient groundwater’s — Dinosaurian track beds as paleorecords of the critical zone, at Department of Geology, University of Kansas, Lawrence, Kansas, November 10.
- Ludvigson, G. A., Tracking the footprints of ancient groundwater’s — Dinosaurian track beds as paleorecords of the critical zone, at Indiana University–Purdue University Fort Wayne, Fort Wayne, Indiana, March 15.
- Ludvigson, G. A., What will global warming mean for Iowa? at Cornell College, Mount Vernon, Iowa, February 15.

- Macfarlane, P. A., Townsend, M. A., and Wilson, B. B., 2005, Kansas karst map and the Kansas karst on-line database (abs.): Water and the Future of Kansas Conference, Program with Abstracts, no. 22, p. 9.
- Macfarlane, P. A., Wilson, B. B., and Bohling, G. C., 2005, Practical saturated thickness of the Ogallala in two small areas of Southwest Kansas Groundwater Management District 3: Proceedings of the 14<sup>th</sup> Annual Kansas Hydrology Seminar, Topeka, Kansas.
- Mandel, R. D. — “Temporal and spatial patterns of Late Quaternary landscape evolution in the central Great Plains of North America,” at Baylor University Geoscience Lecture Series, Waco, Texas, April 29.
- Mandel, R. D. — “The search for pre-Clovis archaeological sites in the midcontinent — A geoarchaeological approach,” at Kansas Geological Society Lecture Series, Wichita, Kansas, May 4.
- Mandel, R. D. — Presentation at Department of Geosciences Lecture Series, University of Iowa, Iowa City, Iowa, September 2.
- Mandel, R. D. — “The peopling of the new world — A geoarchaeological perspective,” at University of Kansas Evolutionists, Lawrence, Kansas, December 13.
- Miller, R. D. — Presentation at Sixteenth Oil Recovery Conference, TORP-PTTC, April.
- Miller, R. D. — Presentation at Iowa State University Geology Seminar, Ames, Iowa, April.
- Miller, R. D. — Presentation at American Geophysical Union Joint Assembly, April.
- Miller, R. D., 2005, High-resolution seismic reflection for investigating unconventional energy resources in the Arctic: Iowa State University Geology Seminar, September 28.
- Miller, R. D., 2005, Progress report on time-lapse high-resolution 3-D seismic imaging to monitor a CO<sub>2</sub> flood in a thin carbonate reservoir in the Hall–Gurney field, Kansas: Department of Energy Offices, Tulsa, Oklahoma, September 21.
- Miller, R. D., 2005, Time-lapse high-resolution 3-D seismic imaging to monitor a CO<sub>2</sub> flood in a thin carbonate reservoir, Hall–Gurney field, Kansas: Sixteenth Oil Recovery Conference, Wichita, Kansas, April 6.
- Newell, K. D., General overview of low-BTU gas resources in Kansas, presented at the Petroleum Technology Transfer Conference on Unconventional Gas Resources, Wichita, Kansas, January 20.
- Newell, K. D., Carr, T. R., and Brown, W. M., 2005, Kansas coalbed and shale gas; what was, what is, and what may be, talk presented at the Tertiary Oil Recovery Conference, Wichita, Kansas, April 7.
- Newell, K. D., 2005, Coalbed methane in eastern Kansas, presented to Environmental Geology class, Emporia State University, Department of Earth Sciences, Emporia, Kansas, November 7.
- Sophocleous, M. A. — Invited keynote speaker at the combined Minnesota Ground Water Association and North-Central GSA-sponsored Symposium on Groundwater Sustainability presenting “Groundwater sustainability and its application in Kansas,” Minneapolis, Minnesota, May 19.
- Sophocleous, M. A. — Invited presentation on “Global water availability and demand,” Brownbag Lecture Series, Kansas Water Office, Topeka, Kansas, January 12.
- Sophocleous, M. A. — Invited presentation on “Water resources sustainability, groundwater recharge, and surface water/groundwater interactions,” Kansas Geological Survey, Advisory Council, Lawrence, Kansas, June 24.
- Suchy, D. R., Adkins-Heljeson, D., and Stewart, D. L., 2005, KGS geohydrologic data on the internet (abs.): 22<sup>nd</sup> Annual Water and the Future of Kansas Conference, Topeka, Kansas.
- Suchy, D. R. — Presentation on “KGS website, databases, and public well records,” at Kansas Department of Health and Environment geologic workshop on hydrocarbon storage and underground injection wells.
- Townsend, M. A., 2005, Geology and human health — a new partnership in the making: 22<sup>nd</sup> Annual Water and the Future of Kansas Conference, Political Science of Water: Integrating Science into Policy, March.
- White, S. W., Poster “Energy payback and lifecycle CO<sub>2</sub> emissions from three Midwestern utility-scale wind systems,” at WINDPOWER 2005 conference, Denver, Colorado, May 15–18.
- Whittemore, D. O., Butler, J. J., Jr., Healey, J. M., McKay, S. E., Aufman, M. S., and Brauchler, R., 2005, The impact of stream-aquifer interactions on ground-water quality in the alluvial aquifer of the middle Arkansas River: Proceedings 22<sup>nd</sup> Annual Water and Future of Kansas Conference, Topeka, Kansas, p. 37.
- Wilson, B. B. — Presented poster at Kansas Rural Water Association Conference.
- Wilson, B. B. — Presented poster at Water and the Future of Kansas Conference.
- Wilson, B. B. — Presentation at Agriculture and Rural Leadership Program.
- Wilson, B. B. — Presentation at Kansas Environmental Leadership Program.
- Wilson, B. B. — Presentation at Kansas GIS Policy Board.
- Wilson, B. B. — Presentation at South Central Kansas Water Conference.
- Wilson, B. B. — Presentation at Southwest Kansas GMD #3 Board Meeting.

- Wilson, B. B. — Developed map series of current saturated thickness, change in water levels and estimated usable lifetimes for the KWO display booth at the Garden City 3i Show.
- Young, D. P., Briggeman, S., and Townsend, M. A., 2005, The new and improved High Plains Aquifer Information Network (HIPLAIN) website (abs.): Water and the Future of Kansas Conference, Program With Abstracts, no. 22, p. 37.
- Xia, J. — High-frequency Rayleigh wave and its applications in near-surface geology: North China Institute of Water Conservancy and Hydroelectric Power, Zhengzhou, China, April 29, 2005.

## Awards

- Brady, L. L. — Distinguished Service Award, Energy Minerals Division, American Association of Petroleum Geologists, June
- Buddemeier, R. W. — G. K. Gilbert Award, presented for excellence in geomorphological research by the Geomorphology Specialty Group of the Association of American Geographers (for Renwick paper)
- Carr, T. R. — Best Paper, International Freiberg Conference on IGCC & XtL Technologies, Freiberg, Germany
- Franseen, E. K. — Finalist for Best Paper Award in Journal of Sedimentary Research
- Park, C. B. — Merriam International Research Award, Kansas Geological Survey

## Internal Service

- Adkins-Heljeson, M. — Member of KU search committee for KGS Director, 2005–06
- Adkins-Heljeson, M. — Member of KGS search committee for Public Outreach geology extension coordinator, 2005–06
- Bartley, J. — Continuing to develop a grassroots GIS working group and an informatics working group with other Survey members
- Bartley, J. — Sat on four search committees: Cartographic Services Manager — Dunham (co-chair); GIS Specialist — Saving (co-chair); Information Specialist — Hunsinger (member); and Information Specialist — Ash (member)
- Battles, E. — Created a series of custom maps for week long annual tour sponsored by the University of Kansas Chancellor's office. The maps were titled “Wheat State Whirlwind — A Tour of the Heartland for KU Faculty”
- Butler, J. — Chair, KGS Geohydrology Scientist Search Committees
- Butler, J. — Co-Chair, KGS Strategic Planning Committee (2004–05)
- Butler, J. — Member, KGS Evaluation System Review Committee (2003–)
- Carr, T. — Supervised Qi Lianshuang (Ph.D., 2005) — Poster based on dissertation research received 3rd best student poster award at 2004 AAPG Annual Meeting in Dallas, Texas; W. Mathew Brown (M.S., 2005) — Thesis contributed to 2004 poster that received President's Certificate for Excellence in Presentation for Best Poster AAPG Energy Mineral Division
- Doveton, J. — KU courses taught: C&PE 940, Data Analysis in Engineering and Natural Sciences; GEOL 536, Log Analysis of Subsurface Geology; GEOL 391, TORIS database analysis (Special Studies Geology); C&PE 825, Wireline petrofacies analysis (Graduate Problem); GEOL791, Petroleum Log Analysis (Advanced Topics)
- Franseen, E. — Member of Management Team, KGS, 2005–present
- Franseen, E. — Member of KGS Promotion and Review Committee
- Franseen, E. — KGS representative to Kansas Geologic Mapping Advisory Committee, 2005–present
- Franseen, E. — Member of KGS Research Advisory Group, 2005–2008
- Franseen, E. — Member of KU search committee for KGS Director, 2005–2006
- Franseen, E. — Supervised KU graduate student thesis for Juli Emry
- Mandel, R. — Member of KGS search committee for hiring Field Research Assistant in Exploration Services
- Newell, D. — Merriam International Travel Awards Committee (Member)
- Newell, D. — Search Committee for Analytical Chemist (Member)
- Newell, D. — Search Committee for student petrophysical assistant (Member)
- Park, C. — Taught Symposium on the Application of Geophysics to Engineering and Environmental Problems at KGS, January 13–14
- Sorensen, J. — Member, Search Committee, Hydrogeologist, Geohydrology Section, 2005–2006

## External Service

- Adkins-Heljeson, M. — Member of finance committee, Association of Earth Science Editors
- Allison, M. L. — American Association of Petroleum Geologists, Annual Meeting Convenor, “Sedimentation on Mars,” June 20, Calgary, Alberta
- Bartley, J. — Started the Geoinformatics Network, a partnership of geoinformatics activities with KGS staff Nelson, Walker, and Buddemeier
- Battles, E. — Served on Kansas Association of Mappers (KAM) Executive Board
- Battles, E. — Moderated several sessions at the KAM 2005 conference
- Battles, E. — Served as Secretary for the Kansas Association of Mappers (KAM) Executive Board
- Battles, E. — Created several custom 1:10,000-scale tile maps of the Kansas River for the Kansas Water Office
- Brady, L. — Co-Leader, field trip for the 29<sup>th</sup> Forum of Coal Geologists of the Western Interior Coal Basin. Trip to the Phoenix Coal Company Garland mine in southeast Bourbon County, and to the coalbed methane operations of Dart Cherokee Basin Operating Co. LLC. in Montgomery County, Kansas, May 25
- Butler, J. — Chair (2004–06), Groundwater Technical Committee, American Geophysical Union
- Butler, J. — Associate Editor, *Journal of Hydrology* (2000–05)
- Butler, J. — Panelist, AAAS Research Competitiveness Service, Panel for review of New Mexico NSF EPSCoR Program (2004, 2006)
- Butler, J. — National Science Foundation, Water Cycle Proposal Panel, November
- Butler, J. — Promotion and Tenure Evaluator, Department of Geology and Geological Engineering, University of Mississippi
- Butler, J. — Presentation on “Beyond Theis and Hantush — New Advances in Aquifer and Aquitard Characterization,” Fall Meeting of the American Geophysical Union, San Francisco, California, December
- Carr, T. — Member and co-chair task force formed by Kansas Statute HR 6024 to evaluate improvements to the existing oil and gas royalty payment check stub law (2005–2007)
- Carr, T. — Member, Kansas Energy Council (2005–07)
- Carr, T. — Testimony before the Kansas Senate Utilities and House Environment committees (March 11)
- Doveton, J. — NExT Short Course on Basic Statistics for Petrophysicists, November 28–29; NExT Short Course on “Basic Log Analysis of Fluid Volumetrics and Productivity,” NExT Short Course on “Permeability Estimation from Logs,” November 30–December 2, Tulsa, Oklahoma
- Doveton, J. — PTTC Workshop “The Crash Course on Log Analysis — An Excel Spreadsheet Workshop,” October 6
- Doveton, J. — PTTC Short Course on “Reading the Rocks from Wireline Logs,” April 27
- Doveton, J. — Midland College, “The Crash Course in Log Analysis — An Excel Spreadsheet Workshop,” February 24
- Doveton, J. — Tulsa Geological Society, “Reading the Rocks from Wireline Logs,” March 10, Tulsa, Oklahoma
- Doveton, J. — EREX Short Course on “Geological/ Petrophysical Log Analysis,” April 17–21, Cairo and El Sokhna, Egypt
- Doveton, J. — Indonesian Petroleum Association, “Reservoir Petrophysical Log Analysis,” May 30–June 3, Yogyakarta, Indonesia
- Doveton, J. — Southern Midcontinent PTTC Workshop, “The Crash Course in Log Analysis — An Excel Spreadsheet Workshop,” September 21, Norman, Oklahoma
- Franseen, E. — Co-instructor for AAPG Education Program “Controls on Porosity Types and Distribution in Carbonate Reservoirs,” Almeria, Spain
- Franseen, E. — External reviewer for promotion consideration of Dr. Roger Young to Full Professor, University of Oklahoma, Norman, Oklahoma
- Ludvigson, G. — Session Chair, Paleoclimatology/Paleoceanography I; Annual meeting of the Geological Society of America, Salt Lake City, Utah
- Ludvigson, G. — Theme Session on “Developing Approaches to Terrestrial Paleoclimatology,” North-Central Section meeting, Geological Society of America, Minneapolis, Minnesota, May 19–20
- Macfarlane, A. — Inquiry-based Ground-water Science Instructional Materials and Curricula, 2005 Annual Meeting of the Geological Society of America, Salt Lake City, Utah
- Miller, R. — SEG, Special Issue Editor, *The Leading Edge*, May 2005 (v. 24, no. 5), carbonates
- Miller, R. — Highway Geophysics Steering Committee, 2005–present
- Miller, R. — U.S./Canada CEA Dam Safety Advisory Board, 2005–07
- Miller, R. — DOT Geophysics Executive/Technical Committee, 2005–2006
- Miller, R. — Geophysical Society of Kansas, Editor, 2005–present



Nelson, K. — Member of TAC Transportation Data Committee, 2005–present  
 Nelson, K. — Member of TAC Imagery & Elevation Data Committee, 2005–present  
 Newell, D. — Energy Minerals Division Treasurer, American Association of Petroleum Geologists, 2005–07  
 Park, C. — Taught Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), Atlanta, Georgia, April 3–7  
 Sorensen, J. — Member, Geoscience Information Society, Distinguished Service Award Committee, 2005–2008  
 Suchy, D. — Helped to man the KGS booth at the Kansas State Historical Society’s Kansas Day in Topeka, Kansas  
 Townsend, M. — Led workshop on “Inquiry-Based Ground-water Science Instructional Materials and Curricula”, 2005 Annual Meeting of the Geological Society of America, Salt Lake City, Utah  
 Watney, L. — PffEFFER Log Analysis and Web Tools Workshop, Wichita, KS, March 30  
 Wilson, B. — Worked with the GMD #3 Board in developing protocol for aquifer subunit delineation  
 Wilson, B. — Assisted with development of water budget for local township irrigation coalition and GMD #4

### Refereed Publications

- Buddemeier, R. W., 2004, Uncertain science, uncertain world: *PALAIOS*, v. 19, no. 2, p. 188–189.
- Buddemeier, R. W., Baker, A. C., Fautin, D. G., and Jacobs, J. R., 2004, The adaptive hypothesis of bleaching; *in*, Coral Health and Disease, E. Rosenberg and Y. Loya, eds.: Berlin, Springer, p. 427–444.
- Buddemeier, R. W., and Gattuso, J.-P., 2004, Les coraux hissent le drapeau blanc: *Les Dossiers de la Recherche*, no. 17, p. 62–67.
- Buddemeier, R. W., Kleypas, J. A., and Aronson, R. B., 2004, Coral reefs & global climate change — Potential contributions of climate change to the stresses on coral reef ecosystems: Pew Center on Global Climate Change, Arlington, Virginia, 42 p.
- Butler, J. J., Jr., and Zhan, X., 2004, Hydraulic tests in highly permeable aquifers: *Water Resources Research*, v. 40, W12402.
- Cain, S., III, Davis, G. A., Loheide, S. P., II, and Butler, J. J., Jr., 2004, Noise in pressure transducer readings produced by variations in solar radiation: *Ground Water*, v. 42, no. 6, p. 939–944.
- Carr, T. R., Newell, K. D., Johnson, T. A., Brown, W. M., and Lange, J. P., 2004, Coalbed-methane development in Kansas; *in*, Unconventional Energy Resources in the Southern Midcontinent, 2004 Symposium, Brian J. Cardott, ed.: Oklahoma Geological Survey, Circular 110, p. 63–65.
- Cha, H. R., Buddemeier, R. W., Fautin, D. G., and Sandhei, P., 2004, Distribution of sea anemones (Cnidaria, Actiniaria) in Korea analyzed by environmental clustering: *Hydrobiologia*, v. 530, special issue, p. 497–502.
- Chen, C., Liu, J., Xia, J., Chen, J., and Lin, W., 2004, Detection of potential leak sites in embankments using surface-wave method and electrical method: Technical Program with Biographies, Society of Exploration Geophysicists, 74th Annual Meeting, Denver, Colorado, p. 1,377–1,380.
- Chen, C., Liu, J., Xu, S., and Xia, J., 2004, Geophysical techniques in detection to river embankments, a case study — To locate sites of potential leaks using surface-wave and electrical methods; *in*, Progress in Environmental and Engineering Geophysics, C. Chen and J. Xia, eds.: Proceedings of the 2004 International Conference on Environmental and Engineering Geophysics (ICEEG), June 6–9, Wuhan, China; Science Press USA Inc., p. 465–469.
- Chen, C., and Xia, J., eds., 2004, Progress in environmental and engineering geophysics: Proceedings of the 2004 International Conference on Environmental and Engineering Geophysics (ICEEG), June 6–9, Wuhan, China; Science Press USA Inc., 614 p.
- Chen, C., Xia, J., Xia, S., Lafien, D., and William, S., 2004, Applications of high-resolution magnetic method and gradient method in locating abandoned brine wells in Hutchinson, Kansas, USA: *Chinese Journal of Engineering Geophysics*, v. 1, no. 1, p. 17–25.
- Cheng, S., Tian, G., Xia, J., He, H., and Shi, Z., 2004, Investigation of the low-depression velocity layer in desert area by multichannel analysis of surface-wave method; *in*, Progress in Environmental and Engineering Geophysics, C. Chen and J. Xia, eds.: Proceedings of the 2004 International Conference on Environmental and Engineering Geophysics (ICEEG), June 6–9, Wuhan, China; Science Press USA Inc., p. 166–171.
- Dillett, P., Goldstein, R. H., and Franseen, E. K., 2004, Paleotopographic and sea-level controls on the sequence stratigraphic character of a heterozoan carbonate succession — Pliocene Carboneras basin, southeast Spain: SEPM Carbonate Research Meeting, AAPG Annual Convention, Dallas, Texas.
- Doveton, J. H., 2004, Geological log interpretation: SEPM Short Course 29, 2nd Edition, CD.
- Doveton, J. H., and Merriam, D. F., 2004, Borehole petrophysical chemostratigraphy of Pennsylvanian black shales in the Kansas subsurface: *Chemical Geology*, v. 206, issues 3–4, p. 249–258.
- Enos, P., Franseen, E. K., Goldstein, R. H., Gonzalez, L., and Rogers, J., 2004, Carbonates — Highlights in the earth sciences: *Geotimes*, v. 49, p. 27. [http://www.agiweb.org/geotimes/current/high\\_carbonates.html](http://www.agiweb.org/geotimes/current/high_carbonates.html)
- Fautin, D. G., and Buddemeier, R. W., 2004, Adaptive bleaching — a general phenomenon: *Hydrobiologia*, v. 530, Special Issue, p. 459–467.
- Feazel, C. T., Byrnes, A. P., Honefinger, J. W., Leibrecht, R. J., Loucks, R. G., McCants, S., and Saller, A. H., 2004, Carbonate reservoir characterization and simulation — From facies to flow units; report from the March Hedberg Research Symposium: American Association of Petroleum Geologists, Bulletin, v. 88, no. 11, p. 1,467–1470.

- Franseen, E. K., Byrnes, A. P., Cansler, J., Steinhauft, D. M., and Carr, T. R., 2004, The geology of Kansas — Arbuckle Group; *in*, Current Research in Earth Sciences: Kansas Geological Survey, Bulletin 250, part 2, 43 p. <http://www.kgs.ku.edu/Current/2004/franseen/franseen1.html>
- Gerhard, L. C., 2004, Climate change, conflict of observational science, theory, and politics: American Association of Petroleum Geologists, Bulletin, v. 88, no. 9, p. 1,211–1,220.
- Gerhard, L. C., 2004, A new look at an old petroleum province; *in*, Current Research in Earth Sciences: Kansas Geological Survey, Bulletin, no. 250, pt. 1. <http://www.kgs.ku.edu/Current/2004/Gerhard/index.html>
- Gosselin, D. C., Harvey, F. E., Frost, C., Stotler, R., and Macfarlane, P. A., 2004, Strontium isotope geochemistry of groundwater in the central part of the Dakota (Great Plains) aquifer, USA: Applied Geochemistry, v. 19, no. 3, p. 359–377.
- Gochioco, L. M., and Miller, R. D., 2004, Introduction to this special section — Near-surface problems and solutions: The Leading Edge, v. 23, no. 7, p. 656–657.
- Hoard, R. J., Banks, W. E., Mandel, R. D., Finnegan, M., and Epperson, J. E., 2004, A Middle Archaic burial from east-central Kansas: American Antiquity, v. 69, p. 717–739.
- Ivanov, J., and Durrant, S., 2004, High-resolution seismic imaging of catastrophic salt dissolution sinkhole in central Kansas: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2004), Colorado Springs, Colorado, February 22–26, Paper KAR02, p. 1,099–1,106.
- Ivanov, J., and Miller, R. D., 2004, Semi-automatic picking of first arrivals through cross correlation using spline interpolation applied to near-surface seismic surveys: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2004), Colorado Springs, Colorado, February 22–26, Paper SEIS01, p. 1,420–1,425.
- Ivanov, J., Miller, R. D., Ballard, R. F., Dunbar, J. B., and Stefanov, J., 2004, Interrogating levees using seismic methods in southern Texas [exp. abs.]: Society of Exploration Geophysicists, Denver, Colorado, October 10–15, p. 1,413–1,416.
- Lambrecht, J. L., Miller, R. D., and Rademacker, T. R., 2004, Advantages and disadvantages of pre-correlation, pre-vertical stack processing on near-surface, high resolution vibroseis data [exp. abs.]: Society of Exploration Geophysicists, Denver, Colorado, October 10–15, p. 1,425–1,428.
- Liu, J., Xia, J., Lou, Y., Li, X., and Xu, S., 2004, Extracting transient Rayleigh wave and its application in detecting quality of high-grade road; *in*, Progress in Environmental and Engineering Geophysics, C. Chen and J. Xia, eds.: Proceedings of the 2004 International Conference on Environmental and Engineering Geophysics (ICEEG), June 6–9, Wuhan, China; Science Press USA Inc., p. 122–130.
- Macpherson, G. L., and Sophocleous, M. A., 2004, Fast groundwater mixing in an unconfined alluvial aquifer — The Konza Prairie LTER site, northeastern Kansas: Journal of Hydrology, v. 286, no. 1–4, p. 271–299.
- Mandel, R. D., Hofman, J. L., Holen, S., and Blackmar, J. M., 2004, Buried paleoindian landscapes and sites on the High Plains of northwestern Kansas; *in*, Field Trips in the Southern Rocky Mountains, USA, E. P. Nelson, ed.: Geological Society of America, Field Guide 5, p. 69–88.
- Miller, R. D., Ivanov, J., Hartung, S., and Block, L., 2004, Seismic investigation of a sinkhole on Clearwater Dam: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2004), Colorado Springs, Colorado, February 22–26, Paper KAR01, p. 1,082–1,098.
- Miller, R. D., Rademacker, T. R., and Lambrecht, J. L., 2004, Field test of two high frequency vibrators with two high frequency servovalves at two sites in Kansas with near-surface emphasis [exp. abs.]: Society of Exploration Geophysicists, Denver, Colorado, October 10–15, p. 1,421–1,424.
- Miller, R. D., Raef, A. E., Byrnes, A. P., and Harrison, W. E., 2004, Project facts — 4-D high-resolution seismic reflection monitoring of miscible CO<sub>2</sub> injection into a carbonate reservoir; *in*, DOE Fact Sheet CO<sub>2</sub> EOR technology — Technologies for tomorrow's E&P paradigms: U.S. Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, Strategic Center for Natural Gas and Oil, 2 p.
- Miller, R. D., Raef, A. E., Byrnes, A. P., Lambrecht, J. L., and Harrison, W. E., 2004, 4-D high-resolution seismic reflection monitoring of miscible CO<sub>2</sub> injected into a carbonate reservoir in the Hall–Gurney field, Russell County, Kansas [exp. abs.]: Society of Exploration Geophysicists, Denver, Colorado, October 10–15, p. 2,259–2,262.
- Nissen, S. E., Watney, W. L., and Xia, J., 2004, High-resolution seismic detection of shallow natural gas beneath Hutchinson, Kansas: Environmental Geosciences, v. 11, no. 3, 129–142.
- Ohlmacher, G. C., 2004, Landslide-inventory map of the Potter and Oak Mills 7.5-minute quadrangles Jefferson, Leavenworth, and Atchison counties, Kansas: Kansas Geological Survey, Map M–113A, 1:36,000 scale.
- Ohlmacher, G. C., 2004, Landslide-inventory map of the Easton SW and Easton 7.5-minute quadrangles Jefferson and Leavenworth counties, Kansas: Kansas Geological Survey, Map M–115A, 1:36,000 scale.

- Ohlmacher, G. C., and Davis, J. C., 2004, Landslide-hazard map of the Potter and Oak Mills 7.5-minute quadrangles Jefferson, Leavenworth, and Atchison counties, Kansas: Kansas Geological Survey, Map M-113B, 1:36,000 scale.
- Ohlmacher, G. C., and Davis, J. C., 2004, Landslide-hazard map of the Easton SW and Easton 7.5-minute quadrangles Jefferson and Leavenworth counties, Kansas: Kansas Geological Survey, Map M-115B, 1:36,000 scale.
- Olmacher, G. C., McCauley, J. R., and Davis, J. C., 2004, Geologic map delineates landslide hazards; *in*, Meeting Challenges with Geologic Maps, W. A. Thomas, ed.: American Geological Institute, Environmental Awareness Series, v. 7, p. 34–35.
- Olea, R. A., 2004, CORRELATOR 5.2, a program for interactive lithostratigraphic correlation of wireline logs: Computers and Geosciences, v. 30, no. 6, p. 561–567.
- Park, C. B., 2004, Multichannel analysis of surface waves (MASW) — an overview: Journal of Korean Geophysical Society (KGS), Seoul, Korea.
- Park, C. B., and Miller, R. D., 2004, MASW for quantifying change in shear wave velocity after deep dynamic compaction at a soil site: Journal of Korean Geophysical Society, Seoul, Korea.
- Park, C. B., and Miller, R. D., 2004, Multichannel analysis of passive surface waves— modeling and processing schemes: Proceedings of the GeoFrontiers Conference, Austin, Texas, January 23–26.
- Park, C., Miller, R., Laffen, D., Cabrillo, N., Ivanov, J., Bennett, B., and Huggins, R., 2004, Imaging dispersion curves of passive surface waves [exp. abs.]: Society of Exploration Geophysicists, Denver, Colorado, October 10–15, p. 1,357–1,360.
- Park, C. B., Miller, R. D., Xia, J., and Ivanov, J., 2004, MASW — An easy seismic method to map shear-velocity ( $V_s$ ) of the ground (invited presentation): Korean Society of Engineering Geology (KSEG), Kangwon National University, Chuncheon, Korea, April 30–May 1, p. 1–9.
- Park, C. B., Ulriksen, P., and Miller, R. D., 2004, Multimodal approach to seismic pavement testing: Journal of Geotechnical and Geoenvironmental Engineering, v. 130, p. 636–645.
- Rademacker, T. R., Miller, R. D., Lambrecht, J. L., Nichols, C., and Beech, J., 2004, Using high resolution seismic reflection to study the convergence of the Humboldt Fault Zone and the Nemaha Ridge near Bellevue, Nebraska: Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP 2004), Colorado Springs, Colorado, February 22–26, Paper REF03, p. 1,397–1,402.
- Raef, A. E., Miller, R. D., Byrnes, A. P., and Harrison, W. E., 2004, 4D seismic monitoring of the miscible CO<sub>2</sub> flood of Hall–Gurney field, Kansas: The Leading Edge, v. 23, no. 11, p. 1,171–1,176.
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### **Computer Software and Database Development**

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## Abstracts

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- Sophocleous, M. A., 2004, Hydro-ecological principles for sustainable water resources management: NGWA's 2004 Ground Water Expo, December 12–15, Las Vegas, Nevada, Interest Group Sessions, Program and Abstract Book, p. 19.
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- Townsend, M. A., 2004, Geology and human health — revisiting an old topic: American Institute Hydrology and Association of Engineering Geology, 13th Annual Kansas Hydrology Seminar, November 19, Topeka, Kansas, p. 5.
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- Townsend, M. A., Macfarlane, P. A., Bohling, G. C., and Case, S. B., 2004, The ground water tutor — an interactive method to develop understanding of hydrogeology and environmental issues: Geological Society of America, North Central Section meeting, Abstracts with Programs, v. 36, no. 3, p. 48.  
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- Whittemore, D. O., Butler, J. J., Jr., Healey, J. M., McKay, S. E., Aufman, M. S., and Brauchler, R., 2004, Decadal to diurnal variations in water quality in the alluvial aquifer of the middle Arkansas River, Kansas: Geological Society of America, Abstracts with Program, v. 36, no. 5, p. 451.
- Whittemore, D. O., Butler, J. J., Jr., Healey, J. M., McKay, S. E., Aufman, M. S., and Brauchler, R., 2004, Seasonal and long-term groundwater quality changes in alluvial aquifer systems (abs.): Geological Society of America, Annual Meeting Abstracts with Program, v. 26, no. 5, p. 451.
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- Whittemore, D. O., Koelliker, J. K., Hoagland, K. D., Sanford, W. D., and Butler, J. J., Jr., 2004, Hydrologic observatory for the Republican River Basin/High Plains aquifer — A barometer for global climate change:

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- Wilson, B. B., Bennett, B., and Bohling, G. C., 2004, The Kansas paperless ground-water level measurement program: Geological Society of America, Annual Meeting, Denver, Colorado, November 7–10, Paper No. 61–7, Paper No. 243–1.
- Wozniak, L. A., Bettis, E. A., III, Mandel, R. D., Hajic, E. R., Ray, J. H., and Lopinot, N. H., 2004, A younger Dryas carbon isotope record from soil organic matter on the southern margin of the prairie peninsula (poster): 18<sup>th</sup> Biennial Meeting of the American Quaternary Association, University of Kansas, Lawrence, Kansas, June.
- Wozniak, L. A., Bettis, E. A., III, Mandel, R. D., Hajic, E. R., Ray, J. H., and Lopinot, N. H., 2004, A younger Dryas carbon isotope record from soil organic matter on the southern margin of the prairie peninsula: Geological Society of America, Denver, Colorado, November.

## **Presentations**

- Adkins–Heljeson, M. — Presentation on “Review process of open-file reports at KGS,” at Association of Earth Science Editors, Estes Park, Colorado.
- Allison, M. L. — Presentation on “The 2004 Kansas Energy Plan” to the Kansas House Utilities Committee, January 15 (invited testimony).
- Allison, M. L. — Presentation on “Economic opportunities for Kansas energy” to the Kansas Inc. Board Meeting, Topeka, Kansas, January 15.
- Allison, M. L. — Presentation on “The 2004 State Energy Plan” to the Kansas Senate Utilities Committee, January 21, (invited testimony).
- Allison, M. L. — Presentation on “High Plains aquifer — The challenge of sustainable yield” to the Audubon Society, Flint Hills chapter, Manhattan, Kansas, January 21.
- Allison, M. L. — Presentation on “Wind and the Kansas Energy Plan” to Wind & Prairie Task Force, Topeka, Kansas, January 23.
- Allison, M. L. — Presentation on “Hutchinson gas explosions — Unraveling a geologic mystery” to American Society of Civil Engineers/Association of Engineering Geologists, Kansas City, Missouri, February 4.
- Allison, M. L. — Presentation on “Kansas Energy Plan” to Desk & Derrick Club, Great Bend, Kansas, February 5.
- Allison, M. L. — Presentation on “Natural gas in Kansas” to 18th Annual Corrosion Control Seminar, National Association of Corrosion Engineers, Great Bend, Kansas, February 6.
- Allison, M. L. — Presentation on “Hutchinson gas explosions — Unraveling a geologic mystery” to University of Utah Dept of Geology and Geophysics, Distinguished Lecture Series, Salt Lake City, Utah, March 25.
- Allison, M. L. — Presentation on “Geoinformatics — Cyberinfrastructure for the earth sciences” University of Utah, Department of Geology and Geophysics, Salt Lake City, Utah, March 26.
- Allison, M. L. — Presentation on “The Hutchinson incident” to Solution Mining Research Institute, Mid-year meeting, Wichita, Kansas, April 20.
- Allison, M. L. — Presentation on “The Kansas State Energy Plan — Wind energy, transmission, FutureGen, and more,” to Kansas Municipal Utilities Annual Meeting, Wichita, Kansas, May 13.
- Allison, M. L. — Presentation on “Hitchhikers guide to geoinformatics — Life, the universe, and everything” to Marine and Terrestrial Sedimentary Data Workshop (NSF sponsored), Joint Oceanographic Institutions, Washington, D.C., June 3.
- Allison, M. L. — Presentation on “Kansas Energy” to Rotary Club, Lawrence, Kansas, June 7.
- Allison, M. L. — Presentation on “Coalbed methane in the US” to National Association of Gas Consumers, Branson, Missouri, October 21.
- Allison, M. L. — Presentation on “Kansas energy” to Kansas Renewable Energy and Efficiency Conference, Topeka, Kansas, October 26, keynote address.
- Allison, M. L. — Presentation on “Geoinformatics and the role of cyberinfrastructure in geosciences research,” to Geological Society of America, Pardee Symposium, Co-convenor, Denver, Colorado, November 9.
- Allison, M. L. — Presentation on “50 years of Quaternary geology studies at the KGS” to American Quaternary Association annual meeting, June 26, Lawrence, Kansas, welcoming address.
- Allison, M. L. — Presentation on “Variations of in situ stresses as indicators of active fractures and faults” (with published abs) to American Association of Petroleum Geologists, Annual Meeting, 2004.
- Allison, M. L. — Presentation on “Current challenges in Kansas energy” to KSU Geology Alumni Annual Meeting, Manhattan, Kansas, October 14.

- Allison, M. L. — Presentation on “Coalbed methane in the U.S.” to National Association of Gas Consumers, Branson, Missouri, October 21.
- Allison, M. L. — Presentation on “Kansas energy developments” to Kansas Renewable Energy and Efficiency Conference, Topeka, Kansas, October 26, keynote speech.
- Bartley, J. D., and Carr, T. R., 2004, Creating a distributed national database for carbon sequestration: ESRI Users Conference, San Diego, California.  
[http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/UC2004\\_BARTLEY\\_NATCARB.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/UC2004_BARTLEY_NATCARB.ppt).
- Bartley, J. D., and Look, K., 2004, Taking advantage of your enterprise GIS system: ESRI Users Conference, San Diego, CA. [http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/UC2004\\_BARTLEY\\_ENTERPRISE.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/UC2004_BARTLEY_ENTERPRISE.ppt).
- Bartley, J. D., 2004, Taking control of your enterprise ArcIMS system: MidAmerica GIS Consortium, Kansas City, Missouri. [http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/magic/arcims\\_manage\\_new.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/magic/arcims_manage_new.ppt).
- Bartley, J. D., and Allison, M. L., 2004, Geoinformatics at the Kansas Geological Survey: Conference on Higher Education Computing in Kansas (CHECK 2004), Lawrence, Kansas.  
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- Bartley, J. D., and Carr, T. R., 2004, Creating a distributed national database for carbon sequestration: MidAmerica GIS Consortium, Kansas City, Missouri.  
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- Bartley, J. D., and Look, K., 2004, Taking advantage of your enterprise GIS system: MidAmerica GIS Consortium, Kansas City, Missouri. [http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/magic/magic\\_database.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/magic/magic_database.ppt).
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[http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/pugtalk\\_update.ppt](http://hercules.kgs.ku.edu/kgs/oilgas/powerpoints/pugtalk_update.ppt).
- Battles, E. — Gave a presentation about Federal Geographic Data Committee (FGDC) metadata and available tools at KAM conference.
- Bohling, G. C., and Wilson, B. B., 2004, Statistical and geostatistical analyses of year 2004 water levels in the Kansas High Plains aquifer: 49<sup>th</sup> Annual Midwest Ground Water Conference, Bloomington, Indiana, October 27–29, Program with Abstracts.
- Brady, L. — Presentation on “Coalbed methane in eastern Kansas,” to annual meeting of the Geology Section of the Kansas Department of Transportation, Chanute, Kansas, January 21.
- Brady, L. — Presentation on “Kansas coal and coalbed methane in northeast Kansas,” to a citizen audience from Jackson County and surrounding areas, sponsored by the Jackson County Farm Bureau, Holton, Kansas, March 16.
- Brady, L. — Presentation on “Kansas coal and coalbed methane in southeast Kansas,” to a citizen audience from Montgomery County and surrounding areas, sponsored by the Montgomery County Farm Bureau, Independence, Kansas, January 27.
- Brady, L. — Presentation on “Kansas coal and coalbed methane in eastern Kansas,” to a citizen audience from Franklin County and surrounding areas, sponsored by the Franklin County Farm Bureau, Ottawa, Kansas, January 27.
- Buddemeier, R. W., Sleezer, R. O., Young, D. P., Egbert, S., deNoyelles, F. J., Zhan, X., Renwick, W. H., and Smith, S. V., 2004, Small artificial water bodies — A neglected but important factor in water supply and environmental quality: 21st Annual Water and the Future of Kansas Conference, no. 33, March.
- Butler, J. J., Jr., 2004, New methods for high-resolution characterization of spatial variations in hydraulic conductivity, an invited presentation at the International Symposium on Hydrogeological Investigation and Remedial Technology, National Central University, Jhongli, Taiwan, November 15.
- Butler, J. J., Jr., 2004, Direct-push methods for characterization of spatial variations in hydraulic conductivity, an invited presentation at the Fall 2004 Conference of the Association of Engineering Geologists, Kansas City/Omaha Section, Kansas City, Missouri, October 23.
- Butler, J. J., Jr., 2004, Groundwater flow in interconnected stream-aquifer systems — From models to the field, an invited presentation to the Department of Geological and Atmospheric Sciences, Iowa State University, Ames, Iowa, March 12.
- Butler, J. J., Jr., Kluitenberg, G. J., and Whittemore, D. O., 2004, A field method for estimation of ground-water consumption by phreatophytes — year one (abs.): Proceedings of the 21<sup>st</sup> Annual Water and the Future of Kansas Conference, p. 27.
- Carr, T. R. — Invited lecture, “Linked Energy Systems,” University of Arkansas, Fayetteville, Arkansas, February 20.

- Carr, T. R. — Invited testimony before the Kansas Senate Utilities Committee, “Coalbed methane in Kansas, March 4; also Kansas Geological Survey, Open-File Report 2004–9.  
<http://www.kgs.ku.edu/PRS/publication/ofr2004-9/Testimony.pdf>
- Carr, T. R. — Invited testimony before the House Environment Committee, “Geologic CO<sub>2</sub> sequestration in Kansas,” March 9; also Kansas Geological Survey Open-File Report 2004–10.  
<http://www.kgs.ku.edu/PRS/publication/ofr2004-10/Testimony.pdf> and [http://www.kgs.ku.edu/PRS/publication/ofr2004-10/House\\_Environment\\_Testimony.pdf](http://www.kgs.ku.edu/PRS/publication/ofr2004-10/House_Environment_Testimony.pdf)
- Carr, T. R. — Invited Lecture, “Linked energy systems,” at Michigan Technological University, Houghton, Michigan, March 22.
- Carr, T. R. — Invited facilitator and speaker, “Role of GIS in Carbon Sequestration,” at U.S. Department of Energy Conference on Developing Carbon Sequestration Partnerships, Alexandria, Virginia, April 6.
- Carr, T. R. — Invited field conference presenter for Kansas Field Conference, “The Kansas Flint Hills — Energy, Prairie, and Preservation,” at Emporia, Kansas, June 9.
- Carr, T. R. — Invited talk, “Energy and the Future,” to Lawrence Kansas Rotary, Lawrence, Kansas, June 14.
- Carr, T. R. — Invited talk, “Coalbed Methane in Kansas,” to Wichita Section of the Society of Petroleum Engineers, Wichita, Kansas, October 13. [http://www.kgs.ku.edu/CBM/reports/SPE\\_CBM.pdf](http://www.kgs.ku.edu/CBM/reports/SPE_CBM.pdf)
- Carr, T. R. — Invited talk, “Creating a distributed national carbon sequestration database and geographic information system (NatCarb),” to U.S. Department of Energy, Annual Program Review for Regional Carbon Sequestration Partnerships, Pittsburgh, Pennsylvania, November 16.
- Carr, T. R. — Invited talk, “State CO<sub>2</sub> driven EOR and sequestration initiatives in Kansas,” EOR Carbon Management Workshop, December 7–8, Midland, Texas.  
<http://www.spepb.org/images/pdf/EORCarbonMgtWorkshop/WednesdayPDFFiles/8-Carr.pdf>
- Charlton, J. C. — Computer-simulated panorama of the Flint Hills in the traveling exhibit, “Homage to the Flint Hills — A Gathering of Art Inspired by the Tallgrass Prairie of Kansas, 2004–2006”. After traveling in Kansas the exhibit was shown at the Senate Office Building in Washington, D.C. in June 2006. The exhibit traveled with a full color catalogue.
- Dunham, J. — Presentation on “Metadata toolbox,” at the MidAmerica GIS Symposium (MAGIC) Biennial Conference, Kansas City, Missouri, April 21.
- Franseen, E. K. — Invited paper for Geotimes, “2004 Highlights in Carbonate Research”, Highlights in the Earth Sciences Issue.
- Franseen E. K. — Invited presentation, “Build-and-fill — A stratigraphic pattern induced in cyclic sequences by sea level and paleotopography, at the Geological Society of America Annual Meeting.
- Franseen, E. K. — Invited presentation, “Build-and-fill sequences — Predictable patterns of creation and destruction of paleotopography in small-scale sequences,” at American Association of Petroleum Geologists Annual Convention.
- Franseen, E. K. — Invited presentation, “Evaluation of some geologic factors affecting the quality of limestone construction aggregate” at the 55<sup>th</sup> Highway Geology Symposium, September 7–10, Kansas City, Missouri.
- Guinotte, J. M., Bartley, J. D., Iqbal, A., Fautin, D. G., and Buddemeier, R. W., 2004, Predicting and understanding biogeographic ranges from occurrence records and correlated environmental data — A method-development study using clownfishes and their sea anemone hosts: OBI Conference, Hamburg, Germany.  
<http://www.vliz.be/obi/presentations/Bartley&Fautin.pps>.
- Houts, M., deNoyelles, J., Sleezer, R. O., and Young, D. P., 2004, Using multispectral airborne imagery to inventory and assess rural water bodies (abs.): Water and the Future of Kansas Conference, Proceedings, no. 21, p. 60.
- Ludvigson, G. A., 2004, Facets of the Ordovician geology of the Upper Mississippi Valley region, presented at Kansas Geological Survey, Lawrence, Kansas, November 30.
- Macfarlane, P. A., and Wilson, B. B., 2004, Enhancement of the bedrock surface elevation map beneath the Ogallala aquifer in western Kansas: Proceedings of the 13th Annual Kansas Hydrology Seminar, Topeka, p. 11–12.
- Macfarlane, P. A., and Wilson, B. B., 2004, A preliminary updated bedrock surface elevation map of the Ogallala region, western Kansas; *in*, Competing priorities — Resolving conflicts, P. A. Macfarlane and M. A. Townsend: 21st Water and the Future of Kansas Program and Abstracts, March 11, Lawrence, Kansas, p. 46.
- Macfarlane, P. A., Townsend, M. A., and Wilson, B. B., 2004, Kansas karst map and the Kansas on-line database: Proceedings of the 22nd Annual Water and the Future of Kansas Conference, March 17.
- Mandel, R. D. — Presentation on “Geoarchaeology of Archaic earthworks in northeastern Louisiana,” at Washington University, Department of Anthropology Lecture Series, St. Louis, Missouri, March 5.



- Mandel, R. D. — Presentation on “Late Quaternary landscape evolution in the Central Great Plains of North America,” at Washington University, Department of Earth and Planetary Sciences Lecture Series, March 4.
- Mandel, R. D. — Presentation on “Paleoindian and pre-Clovis sites in Kansas — A geoarchaeological perspective,” at Washburn University, Department of Sociology and Anthropology Lecture Series, Topeka, Kansas, October 14.
- Miller, R. D., 2004, Identifying areas with subsidence potential beneath US 50 in Reno County: Operations meeting of the Kansas Department of Transportation, Great Bend, Kansas, October 5.
- Miller, R. D., 2004, High-resolution seismic reflection investigation of a subsidence feature on U.S. highway 50 near Hutchinson, Kansas: Solution Mining Research Institute, April 21.
- Miller, R. D., 2004, High-resolution seismic reflection to delineate structures at the northern extreme of the Nemaha Ridge/Humboldt fault in east-central Nebraska: Seminar at Ash Grove Cement Company, April 20.
- Miller, R. D., 2004, Seismic survey of U.S. 50 at Hutchinson, Kansas: Shallow Exploration Drillers Clinic, Topeka, Kansas, March 30.
- Miller, R. D., and Henthorne, R., 2004, High-resolution seismic reflection to identify areas with subsidence potential beneath U.S. 50 highway in eastern Reno County, Kansas: Proceedings of the 55th Highway Geology Symposium, September 8–10, Kansas City, Missouri, p. 29–48.
- G. Misgna, Zhan, X., and Tsou, M., 2004, Integrated GIS-AnnAGNPS modelling system for nonpoint source watershed analyses: ESRI International User Conference, Paper 2046, San Diego, California, August.
- Newell, K. D., 2004, Coalbed gas and water issues in Kansas, presented at the Kansas Water Board, Topeka, Kansas, January 21.
- Newell, K. D., 2004, Coalbed gas in Kansas, presented to the Lawrence Cosmopolitan Club, Lawrence, Kansas, March 19.
- Park, C. B. — Conference co-chair and session chair, Society of Exploration Geophysicists Japan (SEG–J), 7<sup>th</sup> International Symposium, November, Sendai, Japan.
- Park, C. B. — Invited presentation, Korea Institute of Geology, Mining, and Materials (KIGAM), August, Daejeon, Korea.
- Park, C. B. — Invited speaker, Korean Society of Engineering Geology (KSEG) Annual Meeting, April, Kangwon National University, Chuncheon, Korea.
- Park, C. B. — Presentation at Society of Exploration Geophysicists (SEG) 14<sup>th</sup> Annual Meeting, Denver, Colorado, October 10–15.
- Sleezer, R. O., Young, D. P., Vopata, J., Wilson, E., and Andereck, Z., 2004, Assessing temporal changes in ponds and pond numbers using historical air photos, a comparison between the Midland and Allen SE quadrangles (abs.): Water and the Future of Kansas Conference, Proceedings, no. 21, p. 57.
- 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 — Preliminary results: G-Hawk Student Symposium, Geology Department, University of Kansas, Program and Abstract Volume.
- Sophocleous, M., 2004, Environmental consequences of ground-water overexploitation (abs.): Water and the Future of Kansas Conference, Proceedings, no. 21, p. 11.
- Sophocleous, M. — Invited lecturer at the University of California–Davis Distinguished Speaker Series 2003–04, “The role of the subsurface environment in water resource management” February 5.
- Sophocleous, M. — Invited keynote speaker at the Canadian Society of Petroleum Geologists’ W.C. Gussow Geoscience Conference on Water and Energy Development, March 19, Canmore, Alberta.
- Sophocleous, M. — Invited keynote speaker at 2004 GeoQuebec joint Conference of the Canadian National Chapter of IAHR and Canadian Geotechnical Conference on water resources sustainability and its application in Kansas, Quebec City, Canada, October 25.
- Suchy, D. R., and Adkins–Heljeson, D., 2004, KGS geohydrologic data on the internet (abs.): 21<sup>st</sup> Annual Water and the Future of Kansas Conference, Lawrence, Kansas.
- Suchy, D. — Gave presentation to local boyscout leaders on educational resources of KGS and information about projects and geologic field trips suitable for boy scouts; gave presentation on geology, careers in geology, rocks, minerals, and fossils to Mrs. Montgomery’s 3<sup>rd</sup> Grade science class at Wakarusa Valley Elementary School, Lawrence, Kansas.
- Suchy, D. — Kansas Ground Water Association Convention, Great Bend, KS; presented paper on “KGS website, databases, and water well forms.”
- Townsend, M. — The 2004 ground-water workshop for secondary teachers of earth and environmental science, at Kansas Geological Survey, July.

- Townsend, M. A., Clark, G. A., Young, D. P., and Briggeman, S., 2004, HIPLAIN — The High Plains Aquifer Information Network, [www.hiplain.org](http://www.hiplain.org) (abs.): Water and the Future of Kansas Conference, Proceedings, no. 21, p. 18.
- Watney, W. L., Bhattacharya, S., Byrnes, A., Doveton, J., Victorine, J., and Brownrigg, R., 2004, PTTC workshop — Practical petroleum reservoir characterization and modeling using free web-based software tools and data, Lawrence, KS, November 16. <http://www.kgs.ku.edu/Gemini/gemini-reports.html>
- Whittemore, D. O., 2004, Spatial and temporal changes in flow and water quality in the Cimarron River, southwestern Kansas: Proceedings 21<sup>st</sup> Annual Water and Future of Kansas Conference, Lawrence, Kansas, p. 35.
- Wilson, B. — Poster display at Kansas Rural Water Association Conference
- Wilson, B. B., 2004, Water-right development in Kansas (abs.): Water and the Future of Kansas Conference, Proceedings, no. 21, p. 64.
- Wilson, B. — Presentation at Kansas High Plains Ag-Expo and Farm Show.
- Wilson, B. — Presentation at KWO Brown Bag Seminars.
- Wilson, B. — Presentation at International ESRI User Conference.
- Wilson, B. — KSNT Topeka TV interview (water levels and droughts).
- Wilson, B. — Presentation at KDA-DWR Fall Conference.
- Wilson, B. — Presentation at MidAmerica GIS Symposium.
- Wilson, B. — Presentation at Kansas Geological Survey Advisory Council.
- Wilson, B. — Presentation at Kansas Agriculture and Rural Leadership Program.
- Wilson, B. — Presentation at Kansas Environmental Leadership Program.
- Young, D. P., Briggeman, S., Townsend, M. A. and Clark, G., 2004, High Plains aquifer information network (HIPLAIN) — year 2: 21<sup>st</sup> Annual Water and the Future of Kansas Conference, March, Lawrence, Kansas, Program and Abstracts, no. 21, p. 45.
- Young, D. P., Sleezer, R. D., Zhan, X., and Buddemeier, R. W., 2004, Watershed parameterization using geospatial modeling and preliminary assessment of the effects of small impoundments (ponds) (abs.): Water and the Future of Kansas Conference, Proceedings, no. 21, p. 58.
- Xia, J. — High-frequency Rayleigh wave and its applications in near-surface geophysics: Jilin University, China, June 2004.
- Xia, J. — High-resolution magnetic method and magnetic gradient method in locating abandoned brine wells in Hutchinson, Kansas: Kansas State University Department of Geology, February 10, 2004.

## Awards

- Allison, M. L. — Elected Honorary Member, Association of American State Geologists
- Byrnes, A. — Canadian Well Logging Society President's Award
- Carr, T. R. — Best Poster, Energy Mineral Division, Annual American Association of Petroleum Geologists, National Convention, Dallas, Texas
- Newell, K. D. — Energy Minerals Division President's Award for Excellence in Presentation (poster); American Association of Petroleum Geologists National Convention, Dallas, Texas
- Sawin, R. S. — KU Unclassified Non-teaching Employee of the Month, November

## Internal Service

- Adkins-Heljeson, M. — Member, University of Kansas Review Panel of KGS Director
- Adkins-Heljeson, M. — Compiled booklet about KGS art collection
- Adkins-Heljeson, M. — Chair of subcommittee on unclassified evaluation and promotion for KGS strategic planning, 2004–06
- Allison, M. L. — Chaired annual gathering of chairs of Regents universities geology departments
- Allison, M. L. — Facilitated KU–KSU–WSU Auger Observatory proposal with State officials
- Battles, E. — Created series of custom maps for the University of Kansas Chancellor's office, titled “Wheat State Whirlwind: A Tour of the Heartland for KU Faculty”
- Brady, L. L. — Member, The Geology Associates Advisory Board, Department of Geology, University of Kansas, 2004–; Co-Chair, Alumni Relations Committee
- Buchanan, R. C. — Advisory Board, Osher Lifelong Learning Institute, University of Kansas Office of Continuing Education, 2004–07

Buchanan, R. C. — University of Kansas, Integrated Marketing Committee, 2004  
 Butler, J. J. — Co-Chair, KGS Strategic Planning Committee (2004–05)  
 Butler, J. J. — Member, University of Kansas Review Panel of KGS Director (2004)  
 Butler, J. J. — Member, KGS Evaluation System Review Committee (2003–)  
 Carr, T. R. — Supervised Troy A. Johnson (M.S., 2004); Thesis contributed to 2004 poster that received President's Certificate for Excellence in Presentation for Best Poster AAPG Energy Mineral Division  
 Doveton, J. — Taught KU course GEOL 536, Log Analysis of Subsurface Geology; C&PE 528, Well Logging; C&PE 825, Wireline petrofacies analysis (Graduate Problem)  
 Franseen, E. K. — Chair, KGS Promotion and Review Committee, 2004–05  
 Franseen, E. K. — Member of KGS Strategic Planning Committee  
 Franseen, E. K. — Supervised KU graduate student thesis research for Edward Washburn and Peter Dillet  
 Mandel, R. — Member of KU faculty search committee, biological anthropology position  
 Newell, K. D. — Member of KGS Stratigraphic Nomenclature Committee  
 Park, C. B. — Taught symposium on the Application of Geophysics to Engineering and Environmental Problems at KGS, September 28–29, October 7–8  
 Sophocleous, M. — Member of the KGS Promotion and Review Committee, 2004, 2005, 2006  
 Sorensen, J. — Member, Search Committee, Energy Research Section, Geologist, Hugoton Project  
 Sorensen, J. — Member, Search Committee, Public Outreach, Sr. Administrative Assistant, 2004  
 Watney, W. L. — Chair, KU Research Sector Promotion and Tenure Committee (2003–05)  
 Xia, J. — Taught short course on Inversion Theory and Applications of High-frequency Surface-wave Techniques, KGS (2004, 2005, 2006, 2007, and 2008)

## External Service

Allison, M. L. — Director, Governor's Office of Science and Energy Policy  
 Allison, M. L. — State Board on Earth Sciences and Resources  
 Allison, M. L. — Assumed chair of national earth science cyberinfrastructure forum for NSF  
 Allison, M. L. — Led State's Wind & Prairie initiative; serving as Governor's spokesperson  
 Allison, M. L. — Member, Governor's Senior Policy Council  
 Allison, M. L. — Member, Governor's Natural Resources Sub-cabinet  
 Allison, M. L. — Convenor, NSF workshop "Planning and coordinating environmental cyberinfrastructure activities in the earth sciences," Los Angeles, California, February 9–10  
 Allison, M. L. — Co-convenor, Geological Society of America Pardee Symposium, "Geoinformatics and the role of cyberinfrastructure in geosciences research," Denver, Colorado, November  
 Allison, M. L. — Member of National Research Council, Board on Earth Sciences and Resources, April 2004–December 31, 2006  
 Allison, M. L. — Chair, Kansas Energy Council (appointed by the Governor, June 2004)  
 Allison, M. L. — Kansas Citizens for Science, 1999–present; Board of Directors, 2004–  
 Battles, E. — Served on Kansas Association of Mappers (KAM) Executive Board  
 Battles, E. — Nominated, elected, and began serving as Secretary for the Kansas Association of Mappers (KAM) Executive Board  
 Battles, E. — Moderated several sessions at the Mid-America GIS Symposium (MAGIC) Conference  
 Battles, E. — Taught half-day short course at MAGIC on preparing and maintaining Federal Geographic Data Committee (FGDC) metadata  
 Battles, E. — Gave a presentation to the Kansas State University Geology Club about DASC and IMS services  
 Brady, L. L. — American Association of Petroleum Geologists, Energy Minerals Division, Honors and Awards Committee  
 Brady, L. L. — Co-Leader, Field trip "Overview of coal and coalbed methane in the Cherokee basin, northeast Oklahoma" as part of the First Midcontinent Coalbed Methane Symposium, November 9  
 Buchanan, R. C. — Groundwater Quality Task Force, Wichita Home Builders Assn./Equus Beds Groundwater Management District #2, 2003–  
 Buchanan, R. C. — Leadership Lawrence, Curriculum Committee, 2004  
 Buchanan, R. C. — Kansas Association for Conservation and Environmental Education, Secretary, 2000–08  
 Butler, J. J. — Deputy Chair (5/02–7/04), Chair (7/04–6/06), Groundwater Technical Committee, American Geophysical Union

- Butler, J. J. — Panelist—AAAS Research Competitiveness Service, Panel for Review of New Mexico NSF EPSCoR Program, April
- Butler, J. J. — National Science Foundation — Water Cycle Proposal Panel, November
- Butler, J. J. — Taught workshop on “Advances in pumping and slug testing for improved site characterization — New concepts, field methods, and data analysis techniques,” sole instructor, Hudson–Mohawk Valley Professional Geologists Association, Albany, New York, April 19
- Carr, T. R. — Member and Kansas Representative to Interstate Oil and Gas Commission Committee on Regulation of Geologic Sequestration (2003–07)
- Carr, T. R. — Testimony before the Kansas Senate Utilities and House Environment committees
- Carr, T. R. — First Midcontinent Coalbed Methane Symposium, Petroleum Technology Transfer Council, Midcontinent CBM Forum and the OIPA, Tulsa, Oklahoma, November 7–9
- Doveton, J. — Associate Editor, AAPG Bulletin, 2001–present
- Doveton, J. — Assistant Editor, Mathematical Geology, 1995–2007
- Doveton, J. — IAMG Councilor 2000–2004
- Doveton, J. — Assistant Editor, Natural Resources Research, 2000–present
- Doveton, J. — NExT Short Course on Basic Statistics for Petrophysicists, June 14–15; NExT Short Course on “Basic Log Analysis of Fluid Volumetrics and Productivity,” June 16–17; NExT Short Course on “Rock Composition Log Analysis,” June 18, Tulsa, Oklahoma
- Doveton, J. — PTTC Workshop “The Crash Course on Log Analysis: An Excel Spreadsheet Workshop,” October 14
- Doveton, J. — HOT Short Course on “Geological Log Analysis,” Vienna, Austria, October 4–8
- Doveton, J. — PTTC Short Course on “Reading the Rocks from Wireline Logs,” March 12
- Doveton, J. — Tulsa Geological Society, Geophysical Society of Tulsa “Crash Course in Log Analysis — An Excel Spreadsheet Workshop,” April 14
- Doveton, J. — Indonesian Petroleum Association “Geological and Petrophysical Log Analysis,” September 6–10, Bali, Indonesia
- Doveton, J. — SPE Chapter workshop “The Crash Course in Log Analysis — An Excel Spreadsheet Workshop,” October 27, Oklahoma City, Oklahoma
- Doveton, J. — Midwest PTTC Workshop “The Crash Course in Log Analysis — An Excel Spreadsheet Workshop,” December 9, Grayville, Illinois
- Dunham, J. — “Flint Hills mapping,” given as part of Kansas Energy Council’s public discussion of Gov. Sebelius’ Flint Hills wind-energy proposals. This presentation illustrated DASC’s support role in disseminating information necessary in the wind energy debate, including hard-copy and internet map creation, Nichols Hall, University of Kansas, Lawrence, Kansas, November 16
- Dunham, J. — KGS representative at USGS EROS Data Center AASG remote sensing workshop for state geological surveys in which NASA representatives provided an introduction to remote sensing concepts and applications. The workshop introduced material relevant to an RFP later sent to state surveys regarding pilot projects involving the use of remotely sensed data, Sioux Falls, South Dakota, May 15–16
- Dunham, J. — Session moderator, “Data warehousing — Legal issues and liabilities,” MidAmerica GIS Symposium (MAGIC) Biennial Conference, Kansas City, Missouri, April 20
- Franseen, E. K. — Member, SEPM Headquarters and Business Committee, 2004–08
- Franseen, E. K. — Member of SEPM Ad-hoc Committee on E-publishing, 2004–06
- Franseen, E. K. — Editorial Board, *Geology* (Journal of the Geological Society of America), 2004–07
- Franseen, E. K. — Co-instructor for AAPG Education Program “Controls on Porosity Types and Distribution in Carbonate Reservoirs,” Almeria, Spain
- Macfarlane, P. A. — The Interactive Ground-water Tutor Experience, Kansas Association of Teachers of Science Camp, Rock Springs Ranch, April
- Macfarlane, P. A. — 2004 Ground-water Workshop for Secondary Teachers of Earth and Environmental Science, Kansas Geological Survey, July
- Mandel, R. — Editor-in-Chief, *Geoarchaeology: An International Journal*, John Wiley & Sons, July 1999–January 2004
- Mandel, R. — Co-Editor-in-Chief, *Geoarchaeology: An International Journal*, John Wiley & Sons, January 2004–May 2007
- Mandel, R. — Chair, Geological Society of America’s Archaeological Geology Division’s Awards Committee, 2004

- Mandel, R. — Chair, 18<sup>th</sup> Biennial Meeting of the American Quaternary Association, University of Kansas, June 26–28
- Mandel, R. — Organizer and trip leader, “Late Quaternary Alluvial Stratigraphy and Geoarchaeology in the Central Great Plains,” 18<sup>th</sup> Biennial Meeting of the American Quaternary Association, Lawrence, Kansas, June 28–30
- Mandel, R. — Organizer and trip leader, “Buried Paleo-Indian Landscapes and Sites on the High Plains of Northwestern Kansas,” Annual Meeting of the Geological Society of America, Denver, Colorado, November 6
- Mandel, R. — Reviewer for the Grants Program of the Social Sciences and Humanities Research Council of Canada
- Nelson, K. — Member of MidAmerica GIS Consortium (MAGIC), 1998–present
- Nelson, K. — Member of Kansas GIS Technical Advisory Committee (TAC), 1997–present
- Park, C. B. — Taught Symposium on the Application of Geophysics to Engineering and Environmental Problems at Symposium on the Application of Geophysics to Engineering and Environmental Problems (SAGEEP), Colorado Springs, Colorado, February 22–26; and at Korean Society of Engineering Geology (KSEG) Annual Meeting, April, Kangwon National University, Chuncheon, Korea
- Sophocleous, M. — Invited co-organizer of GSA Topical Session “Sustainable Management of Water Resources” Denver, Colorado, November 9, sponsored by IAH/US National Chapter and GSA Geology and Public Policy Committee
- Sophocleous, M. — Invited NGWA Groundwater Availability Interest Group Session Moderator on “Water Management Principles” and Panel Open-Forum Discussion invited panelist, 2004 Ground Water Expo, December 12–13, Las Vegas, Nevada
- Sophocleous, M. — Member, Instream Flow Inter-Agency Team, 2003–06
- Sophocleous, M. — Consulting Member, Groundwater Marketing Technical Advisory Committee, 2003–06
- Sorensen, J. — Member, Geoscience Information Society, Best Website Award Committee, 2002–2006
- Watney, W. L. — Member, Advisory Council, College of Liberal Arts and Sciences, Iowa State University, 2004–08
- Watney, W. L. — Member, Kansas State University Geology Advisory Council, 2003–
- Watney, W. L. — Treasurer, Society of Sedimentary Geology (SEPM) Foundation, 2003–07
- Watney, W. L. — NSF (National Science Foundation — Sedimentary Geology and Paleobiology Division) review panel member (term 2003–05)
- Wilson, B. B. — Worked extensively with the GMD #1 Board in developing aquifer subunits
- Wilson, B. B. — Developed a water quality monitoring network map for GMD#3
- Wilson, B. B. — Provided on-site technical support, data and computer consulting for GMD#4
- Wilson, B. B. — Updated an interim priority/targeting map for the KWO and NRCS EQUIP program; consulted and processed data for the KDA-DWR in aquifer subunit delineation
- Wilson, B. B. — Kansas Technical Advisory Committee and the DASC Sub-committee to the Kansas GIS Policy Board (2004–present)
- Xia, J. — Editor (Chen, C., and Xia, J.), Progress in Environmental and Engineering Geophysics: Proceedings of the 1st International Conference on Environmental and Engineering Geophysics (ICEEG), June 6–9, 2004, Wuhan, China, Science Press USA Inc., 614 p.

#### **2004–2010 KGS Web Site — [www.kgs.ku.edu](http://www.kgs.ku.edu)**

- During the period 2004–09, 43 KGS county bulletins (extensive studies of geology and ground-water resources of a county) and 122 other KGS bulletins were added to the KGS web site.
- During 2004–09, the KGS has scanned 124,000 water well forms out of the 208,000 available (146,000 scanned since beginning of program) and added them to the web site.
- During 2004–09, the KGS scanned 39,000 oil and gas completion forms and 29,000 wireline logs and added them to the web site.
- During the period mid-2009 to mid-2010, 27 additional publications have been placed online; 17 additional open-file reports have been placed online; an additional 11,000 water well forms have been scanned; and an additional 8,600 wireline logs and 5,000 other oil and gas forms have been scanned.

## Service

KGS staff members have served on editorial boards of various professional journals, taught short courses, reviewed proposals for national and international agencies, and reviewed manuscripts for various book publishers and the following journals, professional societies, and grant-funding agencies:

Computers and Geosciences	Journal of Archaeological Science
The Leading Edge	Journal of Human Evolution
KGS Current Research in Earth Sciences	American Antiquity
Journal of Geophysical Research	Bulletin of the Geological Society of America
NSF–Division of Earth Sciences	Journal of Field Archaeology
–Geotechnical and Geohazard Program	Plains Anthropologist
–Career Program	Soil Science Society of America Journal
DOE, BES Fundamental Research	Catena
Bulletin of Seismological Society of America	Geoderma
Geological Survey of Canada Bulletin	National Geographic Society
Proposals, NSF Division of Earth Science — Earth Scope	Social Sciences and Humanities Research Council of Canada
ASTM Standard for Shallow Seismic Reflection	American Chemical Society - Petroleum Research Fund
EAGE Annual Meeting Expanded Abstracts	Journal of Sedimentary Petrology
Journal of Applied Geophysics	Journal of Sedimentary Research
Journal of Environmental and Engineering Geophysics	SEPM Concepts in Sedimentology and Paleontology
AAPG/SEG 3-D Seismic Interpretation Atlas	SEPM Special Publication
Geophysics, SEG publication	AAPG Bulletin
Canadian Journal of Earth Sciences	AAPG Memoir
Computer Applications in Geosciences	Proceedings of the Ocean Drilling Program
Kansas Seismic Atlas	Journal of Paleontology
Expanded Abstracts, SEG Annual Meeting	Palaos
Symposium on Geophysics in Kansas	Marine Geology
SEG's Environmental Geophysics volumes	Oklahoma Geological Survey Special Publication
U.S. Geological Survey	SEPM Rocky Mountain Section Special Publication
Geoscience Journal	The Journal of Geology
Geology	Géologie Méditerranéenne
SAGEEP EEGS National Meeting	Comptes Rendus de l'Académie des Sciences
EAGE Geophysical Prospecting	Geological Society of London
Geoarchaeology: An International Journal	Natural Resources Research
Quaternary Research	
Quaternary Science Reviews	
Quaternary International	