

Jennifer A. Roberts

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FIELDS OF SPECIALIZATION

Microbial geochemistry and hydrochemistry bridging basic and applied science focusing on the role of microorganisms on mineral chemistry and weathering as it applies to carbon sequestration, petroleum reservoir diagenesis, paleoclimate, and water quality from the nano- to landscape scales.

EXPERIENCE

Associate Professor, Department of Geology, University of Kansas, Lawrence, KS, USA--2007 to present.
Promoted with tenure.

Associate Chairperson, Department of Geology, University of Kansas, Lawrence, KS, USA--2009 to 2010;
2013-present.

Assistant Professor, Department of Geology, University of Kansas, Lawrence, KS, USA--2001 to 2007.
Tenure track.

National Research Council (USA) Post-Doctoral Associate, U.S. Geological Survey, Boulder, CO, USA
2000-2001

Investigated the controls that mineral type, nutrient limitation, and DOC have on bacterial transport in porous media. Advisor: Ronald Harvey.

National Science Foundation (USA) Graduate Research Traineeship, University of Texas at Austin,
Austin, TX, USA 1995-2000

Investigated microbe mineral interactions, patterns of microbial colonization on silicates, nutrient-driven microbial dissolution of silicates, and mineralogic controls on biodegradation of BTEX. Advisor: Philip C. Bennett.

EDUCATION

Department of Geological Sciences, University of Texas at Austin, Austin, TX, USA Ph.D. 2000

Department of Geology, Trinity University, San Antonio, TX, USA B.S. *cum laude* 1995

AWARDS

Kathleen McCluskey-Fawcett Women Mentoring Women Award (2013)

KU Senior Administrative Fellow (2012-2013)

PUBLICATIONS

Peer-reviewed articles

(note that J.R. Rogers is J.A. Roberts; * signifies student or post-doctoral associate; § designates senior author)

*Marietta, M.L., Fowle, D.A., and §Roberts, J.A. Long-Term exposure of tropical soils to pressure treated lumber, Barro Colorado Island, Panama: Impacts on soil metal mobility and microbial community structure, in preparation.

§Roberts, J.A., *Wilson, A.D., and Macpherson, G.L. Heavy metal mobility in tropical rainforest and adjacent grassland soils, Central Panama, in preparation.

DeChoudens-Sanchez, V., Roberts, J.A., and González, L.A. Exploring the role of microbial processes on speleothem formation: A look into calcium carbonate speleogenesis, *Journal of Sedimentary Research*, in revision.

*Scheffer, A., Stotler, R., Watney, W.L., Fowle, D., Doveton, J., Rush, J., Newell, K.D., Fazelalavi, M., Whittemore, D., and §Roberts, J.A. (2012) Geochemical, microbiological and permeability characteristics indicating vertical zonation of the Arbuckle saline aquifer, a potential CO₂ storage reservoir, in preparation.

Gray, N.D., C.M. McCann, B. Christgen, J.A. Roberts, and D.W. Graham. Mineralogy constrains bacterial and methanotroph abundances in Arctic soils: implications for methane released to atmosphere. *Proceedings of the National Academy of Science (USA)*, in review.

§Roberts, J.A., Kenward, P.A., Fowle, D.A., Goldstein, R.H., González, L.A., and Moore, D.S. Surface chemistry allows for precipitation of dolomite at low temperature, *Proceedings of the National Academy of Science (USA)*, v.110(36):14540-5. doi: 10.1073.

*Lander, C.M.P., Fowle, D., Taunton, A., Hernandez, W., Mora, M., Moore, D., Shinogle, H. and §Roberts, J.A. (2013) Silicate dissolution in Las Pailas Thermal Field: Implications for microbial weathering in acidic volcanic hydrothermal spring systems, *Geomicrobiology Journal*, doi: 0.1080/01490451.2013.802395.

*Kenward, P., Goldstein, R., González, L., Fowle, D., Ueshima, M. and §Roberts, J. (2013) Ordered, low-temperature dolomite mediated by carboxyl-group density of microbial cell walls, *AAPG Bulletin*, early online October 2013.

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., Paleoclimatic applications and modern process studies of pedogenic siderite, Driese, S., and Nordt, L., eds., *New Frontiers in Paleopedology and Terrestrial Paleoclimatology*, SEPM Special Publication, in press.

*Kenward, P.A., Goldstein, R.H., González, L.A., Brookfield, A.S., and §Roberts, J.A. (2012) Model for how Archaeal methanogenesis can preserve early porosity in dolomite and limestone reservoirs. *AAPG Bulletin*, v. 96, 399-413.

McGlashan, M.A., Tsoflias, G.P., Schillig, P.C., Devlin, J.F., and Roberts, J.A. (2011) Field GPR monitoring of biological activity in saturated porous media, *Journal of Applied Geophysics*, 10.1016/j.jappgeo.2011.08.006.

Devlin J. F, Schillig P. C., Bowen I., Rudolph D. L., Thomson N. R., Tsoflias G. P. and J. A. Roberts (2011)

Applications and implications of direct groundwater velocity measurement at the centimeter scale, *Journal of Contaminant Hydrology*, v. 127, 3-14.

*Kulczycki, E., Fowle, D.A., Graham, D.W., and Roberts, J.A. (2011) Methanotroph-promoted weathering of Cu-substituted borosilicate glass, *Geomicrobiology Journal*, v. 28, 1-10.

Crowe, S. A., S. Katsev, K. Leslie, A. Sturm, C. Magen, S. Nomosatryo, M.A. Pack, J.D. Kessler, W. Reeburgh, J. A. Roberts, L.A. González, G.D. Haffner, A. Mucci, B. Sundby, and D.A. Fowle (2011) The methane cycle in ferruginous Lake Matano, *Geobiology*, v.9, 61-78.

Schillig, P., Devlin, J.F., Roberts, J., Tsoflias, G., McGlashan, M. (2011) Transient heterogeneity in an aquifer undergoing bioremediation of hydrocarbons. *Ground Water*, v. 49, 184-196.

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, 943-954.

Schillig, P. C., G. P. Tsoflias, J. A. Roberts, E. M. Patterson, and J. F. Devlin (2010), Ground-penetrating radar observations of enhanced biological activity in a sandbox reactor, *Journal of Geophysical Research*, v. 115, G00G10, doi:10.1029/2009JG001151.

*Kenward, P.A., Goldstein, R.G., González, L.A., and Roberts, J.A. (2009) Precipitation of low-temperature dolomite from an anaerobic microbial consortium: the role of methanogenic Archaea, *Geobiology*, v. 7, 556-565.

Macpherson, G.L., J.A. Roberts, J. M. Blair, M. A. Townsend, D. A. Fowle and K. R. Beisner (2008) Increasing Shallow Groundwater CO₂ and Limestone Weathering, Konza Prairie, USA, *Geochimica Cosmochimica Acta*, v. 72, 5581-5595.

O'Brien, R. and Roberts, J.A. (2008) Teaching geomicrobiology and the process of experimental research to undergraduate and first-year graduate students, *Journal of College Science Teaching*, v. 38, 30-38.

Gerson A.R., Anastasio, C., Crowe, S., Fowle, D., Guo B., Kennedy, I., Lombi, E., Nico, P.S., Marcus, M.A., Martin R., Patunc, D., Roberts, J.A., Weisener, C. G., Werner, M.L., (2008) *Frontiers in Assessing the Role of Chemical Speciation and Natural Attenuation on the Bioavailability of Contaminants in The Terrestrial Environment in Geoderma*. (Eds. R. Naidu) Elsevier, Adelaide., v. 32, 99-136.

*Knapp, C., Fowle, D.A., *Kulczycki, E., Roberts, J.A., and Graham, D.W. (2007) Methane monooxygenase gene expression mediated by methanobactin in the presence of copper sources, *Proceedings of the National Academy of Sciences*, 104, 12040-12045.

Crowe, S.A., O'Neill, A.H., *Kulczycki, E., Weisener, C.G., Roberts, J.A., and Fowle, D.A. (2007) Reductive release of trace metals from sediments: the importance of manganese. *Geomicrobiology Journal*, 24, 157-165.

*Mauck, B.S. and Roberts, J.A. (2007) Mineralogic control on abundance and diversity of surface-adherent microbial communities in a petroleum-contaminated aquifer, *Geomicrobiology Journal*, 24, 167-177.

Fowle, D.A. Roberts, J.A., Fortin, D., and Konhauser, K.O. (2007) The evolution of geomicrobiology: perspectives from the mineral bacteria interface, *Geobiology*, 5, 207-210.

- *Kulczycki, E., Fowle, D.A., *Knapp, C., Graham, D.W. and §Roberts, J.A., (2007) Methanobactin-promoted dissolution kinetics of synthetic glass, *Geobiology*, 5, 251-263.
- Crowe, S.A., Roberts, J.A., Weisener, C.G. and Fowle, D.A. (2007) Alteration of iron-rich lacustrine sediments by dissimilatory iron-reducing bacteria (DIRB), *Geobiology*, 5, 63-73.
- §Roberts, J.A., Fowle, D.A., *Hughes, B.T., and*Kulczycki, E. (2006) Attachment behavior of *Shewanella putrefaciens* to magnetite under aerobic and anaerobic conditions. *Geomicrobiology Journal*, 23, 631-640.
- Bennett, P.C., Engel, A.S., and Roberts, J.A. (2006) Counting and imaging bacteria on mineral surfaces: In *Methods of Investigating Microbial-Mineral Interactions, CMS Workshop Lectures, Vol. 14*, J. P.A. Maurice and L.A. Warren eds., The Clay Mineral Society, Chantilly, VA, 37-78.
- * Adamski, J.C., §Roberts, J.A., and Goldstein, R.H. (2006) Entrapment of bacteria in fluid inclusions in laboratory-grown halite, *Astrobiology*, 4, 552-562.
- §Roberts, J.A. (2004) Inhibition and enhancement of microbial surface colonization: the role of silicate composition, *Chemical Geology*, 212, 313-327.
- §Rogers, J.R. and Bennett, P.C. (2004) Mineral stimulation of subsurface microorganisms: release of limiting nutrients from silicates. *Chemical Geology*, 203, 91-108. *Chemical Geology Top 25 Hottest Papers Jan-May 2004*.
- §Roberts, J.A., Bennett, P.C., Macpherson, G.L., González, L.A., and Milliken, K.L. (2004) Microbial precipitation of dolomite in groundwater: Field and laboratory experiments. *Geology*, 32 (4) 277-280.
- §Roberts, J.A., Hughes, B.T., and Fowle, D.A. (2004) Micro-scale mineralogic controls on microbial attachment to silicate surfaces: iron and phosphate mineral inclusions. Wanty, R.B. and Seal, R.R., eds. *Water-Rock Interaction. Proceedings of the Eleventh International Symposium on Water-Rock Interaction WRI-11, Saratoga Springs, NY, USA 27 June – 2 July*, Taylor and Francis, London. V. 2, p. 1149-1153.
- Buijs, G.J.A., Goldstein, R.H., Hasiotis, S.T., and Roberts, J.A. (2004) Preservation of microborings as fluid inclusions. *Canadian Mineralogist*, 42, 1563-1581.
- Fowle, D.A., Kulczycki, E., and Roberts, J.A. (2004) Linking bacteria-metal interactions to mineral attachment: A role for outer sphere complexation of cations? Wanty, R.B. and Seal, R.R., eds. *Water-Rock Interaction. Proceedings of the Eleventh International Symposium on Water-Rock Interaction WRI-11, Saratoga Springs, NY, USA 27 June – 2 July*, Taylor and Francis, London. V. 2, p. 1113-1117.
- §Rogers, J.R., Bennett, P.C., and Choi, W.J. (2001) Enhanced weathering of silicates by subsurface microorganisms: a strategy to release limiting inorganic nutrients? In Cidu, R., ed., *Water-Rock Interaction. Proceedings of the Tenth International Symposium on Water-Rock Interaction WRI-10, Villasimius, Italy, 10-15 July 2001*. A.A. Balkema, Lisse, the Netherlands, p. 1461-1464 pp .
- Bennett, P.C., Rogers, J.R., Hiebert, F.K. and Choi, W.J. (2001) Mineralogy, mineral weathering, and microbial ecology. *Geomicrobiology Journal*, 18, 3-19.
- Bennett, P.C., Hiebert, F.K., and Rogers, J.R. (2000) Microbial control of mineral-water equilibria macroscale to microscale. *Hydrogeology Journal*, 8, 47-62.

§Rogers, J.R., Bennett, P.C., and Choi, W.J. (1998) Feldspars as a source of nutrients for microorganisms. *American Mineralogist*, 83, 1532-1540.

Convention Papers and Encyclopedia Entries

§Roberts, J.A. (invited) Microbial influences on carbonate mineral formation in soil environments, In Parmar, N. and Singh, A., eds. *Geomicrobiology and Biochemistry, Soil Biology*, Springer-Verlag, in draft.

§Roberts, J.A., and Kenward, P.A. (2011) Microbial Dolomite, In Reitner, J. and Thiel, V., eds. *Encyclopaedia of Geobiology, Encyclopedia of Earth Sciences Series, 1st Edition.*, Springer, 927 p.

§Rogers, J.R. (2002) Why do bacteria colonize aquifer surfaces? Geochemical and nutrient controls of bacterial colonization of silicate surfaces. In Aiken, G., ed., *U.S. Geological Survey Artificial Recharge Workshop Proceedings, U.S. Geological Survey Water-Resources Investigations Open-File Report 02-89*, pp. 51-54.

Bennett, P.C. and Rogers, J.R. (2000) The Mineralogy of Microbial Ecology. IAH Water-2000: Cape Town, South Africa, XXXth International IAH Congress on Groundwater: Past Achievements and Future Challenges. In Sililo, O. T. N. et al. (eds), *Proceedings of the XXX IAH Congress on Groundwater: past achievements and future challenges*. Rotterdam: Balkema,

Rogers, J.R., Bennett, P.C., and Hiebert, F.K. (1999) Patterns of microbial colonization on silicates, in Morganwalp, D.W., and Buxton, H.T., Eds., *U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999 Volume 3 of 3--Contamination of Hydrologic Systems and Related Ecosystems: U.S. Geological Survey Water-Resources Investigations Report 99-4018B*, pp. 237-242.

Bennett, P.C., Rogers, J.R., Hiebert, F.K., and Choi, W.J. (1999) Mineralogy and mineral weathering: fundamental components of subsurface microbial ecology, in Morganwalp, D.W., and Buxton, H.T., Eds., *U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999 Volume 3 of 3--Contamination of Hydrologic Systems and Related Ecosystems: U.S. Geological Survey Water-Resources Investigations Report 99-4018B*, pp. 169-176.

Extended Abstracts

Enos, P., Franseen, E.K., Goldstein, R.H. González, L.A., and Roberts, J.A. (2004) Carbonate highlights, *Discoveries in Earth Sciences. Geotimes*, 49, pp. 26-27.

Bennett, P.C., Engel, A.S., and Rogers, J.R. (2002) Microbial ecology of mineral surfaces. *International Mineralogical Society, Edinburgh, Scotland, UK.*

Bennett, P.C. and Rogers, J.R. (2001) Microbial control of carbonate weathering in a contaminated aquifer. In 11th Annual V.M. Goldschmidt Conference, Hot Springs, VA, USA, Abstract # 3586. LPI Contribution No. 1088, Lunar and Planetary Institute, Houston (CD ROM).

Rogers, J.R., Bennett, P.C., and Choi, W.J. (2000) Ligand-promoted nutrient mobilization from silicates. 10th Annual V.M. Goldschmidt Conference, Oxford, England. *Journal of Conference Abstracts*, 5 (2), pp. 849.

Rogers, J.R., Bennett, P.C., and Ullman, W.J. (1998) Biochemical release of a limiting nutrient from feldspars. 9th Annual V.M. Goldschmidt Conference, Toulouse, France. *Mineralogical Magazine*, 62A, Part 1; pp 1283-1284.

Bennett, P.C., Rogers, J.R., and Choi, W.J. (1998) Microbial destruction of feldspars. 9th Annual V.M. Goldschmidt Conference, Toulouse, France. Mineralogical Magazine, 62A, Part 1; pp. 149-150.

Bennett, P.C., Choi, W.J., Roberts, J.A., and Hiebert, F.K. (1997) Microbial metabolism, iron reduction, and silicate dissolution; coupled processes in mineral weathering. 8th Annual V.M. Goldschmidt Conference, Tucson, AZ, USA. Lunar and Planetary Institute, LPI Contribution, 921; pp. 23-24.

Abstracts

Lander, C.M.P., Roberts, J.A., Mora, M., Hernandez, W., and Fowle, D.A. (2012) Economic metal mobility in an acid-sulfate hydrothermal system, AGU Fall Meeting, San Francisco, CA.

Scheffer, A., Stotler, R., Watney, W.L., Fowle, D., Doveton, J., Rush, J., Newell, K.D., Fazelalavi, M., Whittemore, D., and Roberts, J.A. (2012) Geochemical, microbiological and permeability characteristics indicating vertical zonation of the Arbuckle saline aquifer, a potential CO₂ storage reservoir, GSA Annual Meeting, Charlotte, NC.

Roberts, J.A., Kenward, P.A., Fowle, D., Goldstein, R., González, L.A., and Moore, D.S. (2012) Testing the microbial model for low-temperature dolomite precipitation, GSA Annual Meeting, Charlotte, NC. INVITED

Ludvigson, G., González, L.A., Fowle, D.A., Roberts, J.A., Driese, S.G., Villarreal, M.A., and Suarez, M. (2012) What's the lowdown on soil-formed siderite? Modern process studies and validation of a deep time terrestrial paleoclimate proxy. GSA Annual Meeting, Charlotte, NC.

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-CO₂ exposure, Arbuckle aquifer, SE Kansas. GSA Annual Meeting, Charlotte, NC.

Roberts, J.A., Kenward, P.A., Fowle, D.A., Goldstein, R.H., González, L.A., and Moore, D.S. (2012) Low-temperature dolomite formation: Microbes and other mechanisms. AAPG Hedberg Conference on Microbial Carbonate Reservoir Characterization, Houston, Texas, June 4-8.

Christgen, B., McCann, C., Gray, N., Roberts, J., and Graham, D.W. (2012) Role of geochemical conditions and microbial processes on methane release to the atmosphere from permafrost soils in the Arctic. Planet Under Pressure, London, UK, March 26-29.

Phillips-Lander, C.M., Fowle, D.A., Hernandez, W., Mora, M. and Roberts, J.A. (2011) A role for microorganisms in hydrothermal weathering? International Society for Environmental Biogeochemistry, Istanbul, Turkey.

Roberts, J.A., Kenward, P.A., Fowle, D.A., Goldstein, R.H., González, L.A., and Moore, D.S. (2011) The role of organic carbon character in facilitating low-temperature dolomite formation. International Society for Environmental Biogeochemistry, Istanbul, Turkey.

Tsoflias, G.P., Schillig, P.C., McGlashan, M.A., Roberts, J.A., and Devlin, J.F. (2011) Elucidating GPR responses to biological activity: field and laboratory experiments. AGU Fall Meeting, San Francisco.

Watney, W.L., Bhattacharya, S., Doveton, J., Gupta, A., Franseen, E., Adkins, Heljeson, D., Miller, R., Suchy, D., Newell, D., Rush, J., Raney, J., Stewart, D., Victorine, J., Xia, J., Wreath, D., Koudele, R., Lanb, W., Roberts, J., *Scheffer, A., Tsoflias, G., Sirazhiev, A., Goldstein, R., Huff, B., Hansen, T., Nicholson, L., Ger-

- lach, P., Smith, A., Barker, R., Datta, S., Raef, A., Cooper, K., Hedke, D., Nissen, S., Koger, D., Baker, R., Lorenz, J., Dubois, M., Sorenson, R., Stalder, K., Williams, E., Youle, E. and Cooper, S. (2011) Modeling CO₂ Sequestration in Saline Aquifer and Depleted Oil Reservoir to Evaluate Regional CO₂ Sequestration Potential of Ozark Plateau Aquifer System, South-Central Kansas” Carbon Storage Program Infrastructure Annual Review, Pittsburgh, PA.
- Scheffer, A., Barker, R., Watney, L., Datta, S., and Roberts, J. (2011) Geochemical and microbiological investigations of sediment cores and formation waters for CO₂ sequestration in the deep, saline Arbuckle Aquifer, South-central, Kansas. Carbon Storage Program Infrastructure Annual Review, Pittsburgh, PA.
- Macpherson, G.L., Tsy-pin, M.A., Roberts, J.A., and Ching, G.B. (2011) Natural groundwater acidification by increasing CO₂. GSA Annual Meeting, Minneapolis, MN.
- Villarreal, M.A., Ludvigson, G.A., Fowle, D.A., González, L.A., Roberts, J.A., Smith, J.J., Driese, S.G., McKay, L.D. (2011) Actualistic calibration of the pedogenic siderite paleoclimate proxy. GSA Annual Meeting, Minneapolis, MN.
- Watney, W.L., Bhattacharya, S., Doveton, J., Newell, D., Rush, J., Victorine, J., Xia, J., Wreath, D., Koudele, R., Lanb, W., Roberts, J., *Scheffer, A., Hansen, T., Nicholson, L., Gerlach, P., Smith, A., Barker, R., Datta, S., Raef, A., Hedke, D., Nissen, S., Koger, D., Baker, R., Lorenz, J., and Cooper, S. (2011) Wellington Field, Sumner County, Kansas as a calibration site for CO₂-EOR in Mississippian chert and dolomite reservoirs and deep saline aquifer CO₂ sequestration, AAPG Mid-continent Section Meeting, Wichita, KS.
- Roberts, J.A. (2011) Testing the microbial model for low-temperature dolomite precipitation. Annual Review Meeting of the Kansas Interdisciplinary Carbonate Consortium, Lawrence, Kansas, March 29-31, 2011.
- *Scheffer, A., Roberts, J.A., Fowle, D.A. Watney, W.L., and Gulliver, D. W. (2011) Microbial Influence on Seal Integrity and Reservoir Properties During CO₂ Injection into a Deep Saline Aquifer in Southern Kansas, Annual Review Meeting of the Kansas Interdisciplinary Carbonate Consortium, Lawrence, Kansas, March 29-31, 2011.
- *Scheffer, A., Roberts, J.A., Fowle, D.A. Watney, W.L., and Gulliver, D. W. (2011) Microbial Influence on petro physical properties and seal integrity during CO₂ injection into a deep saline aquifer in southern Kansas. Drilling, Observation and Sampling of the Earths Continental Crust (DOSECC)
- Roberts, J.A., *Kenward, P.K., Fowle, D.A., and *Kinnebrew, N. (2010) The role of Archaea in low-temperature dolomite formation. Goldschmidt Conference, Knoxville, TN.
- Devlin, J.F., Schillig, P.C., Bownen, I., Rudolph, D.L., Thomson, N.R., Tsoflias, G.P., Roberts, J.A. (2010) Applications and implications of direct groundwater velocity measurement at the centimetre scale Presented at the Groundwater Quality (GQ) 2010 Conference, Zurich, Switzerland, June 13-18.
- Tsoflias, G., Schillig, P.C., McGlashan, M., Roberts, J.A., Devlin, J.F. (2010) Field and laboratory GPR monitoring of biological activity in saturated porous media. Invited for presentation at European Geosciences Union (EGU) meeting in Vienna, May 2-7.
- 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. (2009) Formation of historical pedogenic siderite in PAH-contaminated alluvial clay soils, Tennessee, USA, Part I: Insights from field relationships and micromorphology. GSA Annual Meeting, Portland, OR.

- 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. (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. GSA Annual Meeting, Portland, OR.
- *Kenward, P.A., Goldstein, R.G., González, L.A., and Roberts, J.A. (2009) Precipitation of low-temperature dolomite from an anaerobic microbial consortium: the role of methanogenic Archaea, Goldschmidt Conference, Davos, Switzerland.
- *Marietta, M.L., Fowle, D.A., and Roberts, J.A. (2008) Long-Term exposure of tropical soils to pressure treated lumber, Barro Colorado Island, Panama: Impacts on soil metal mobility and microbial community Structure, AGU Fall Meeting.
- Roberts, J.A. and O'Brien, R. 2008. Teaching geomicrobiology and the process of experimental research to undergraduate and first-year graduate students, AGU Fall Meeting.
- Schillig, P.C., Devlin, J.F., Roberts, J.A., Tsoflias, G.P. 2008. The effects of microbial activity on the hydrogeology of a biostimulated aquifer. 7th International Symposium for Subsurface Microbiology, Shizuoka, Japan, Nov. 16-21.
- Schillig P. C., Tsoflias G. P., Roberts J.A., Devlin, J.F., Patterson, E. M. 2008. Time-lapse GPR Monitoring of Enhanced Biological Activity in a Sandbox Reactor, AGU Chapman Conference on Biogeophysics, Portland, Maine USA, October 13-16 (B8).
- Devlin, J.F., Schillig, P., Tsoflias, G., McGlashan, M., Roberts, J. 2008. A new tool for groundwater velocity measurement and its applications. Invited for presentation at the 2008 North American Environmental Field Conference and Exposition: Advances in Environmental Site Characterization Sampling and Monitoring Technology, Tampa, Florida, Jan. 14-16.
- *Kenward, P.K., Fowle, D.A., González, L.A., Goldstein, R.H., and Roberts, J.A., (2008) Nucleation and precipitation of dolomite by methanogens, AAPG.
- Schillig, P.C., Devlin, J.F., Tsoflias, G.P., Patterson, E., Roberts, J.A., McGlashan, M.A. 2007. Field and Laboratory Investigations of Enhanced Biological Activity Influencing Groundwater Velocity and Electromagnetic Wave Propagation. EOS Trans. AGU, 88(52) Fall Meeting. San Francisco, Abstract NS11B-0497.
- Patterson, E., Schillig, P., Tsoflias, G. P., Devlin, J., Roberts, J.A. 2007. A Laboratory Tank Experiment to Investigate the Effects of Microbial Growth on Water Flow and GPR Wave Propagation. EOS Trans. AGU, 88(52) Fall Meeting. San Francisco, Abstract NS11B-0496.
- Schillig, P., McGlashan, M., Devlin, J.F., Tsoflias, G., Roberts, J. 2007. Using Groundwater Point Velocity Probes and Ground Penetrating Radar to Investigate Microbially Mediated Changes in Flow Properties of a Contaminated Aquifer. EOS Trans. AGU, 88(23) Joint Assembly Meeting. Acapulco, Mexico, Abstract NS51A-02.
- Devlin, J.F., Schillig, P.C., McGlashan, M.A., Tsoflias, G.P., Roberts, J.A. 2007. Investigating transient heterogeneity in a bioactive hydrocarbon plume using GPR and PVPs. Invited for presentation. EOS Trans. AGU, 88(23) Joint Assembly Meeting. Acapulco, Mexico, Abstract NS44A-03.
- *Kulczykcki, E. Fowle, D.A., Knapp, C., Graham, D.W., and Roberts, J.A. (2007) Methanobactin-promoted dissolution of Cu-substituted borosilicate glass. GSA, Fall Meeting.

- *Kulczycki, E., Fowle, D.A., Knapp, C., Graham, D.W., and Roberts, J.A. (2007) Methanotroph-promoted dissolution of Cu-substituted borosilicate glass. South Central/North Central GSA
- Graham, D.W., D.A. Fowle, C. Knapp, and J.A. Roberts. What is methanobactin's role in nature? *Frontiers in Mineralogy* 2007. June, 26-28, 2007. Cambridge, UK.
- *Kenward, P.K., Gonzalez, L.A., Goldstein, R.H., and Roberts, J.A., (2007) Nucleation and precipitation of dolomite by methanogens, South Central/North Central GSA.
- DeChoudens, V., Roberts, J.A., and González, L.A. (2007) Do microbial processes control CaCO₃ crystal morphology? AAPG.
- *Kenward, P.K., González, L.A., Goldstein, R.H., and Roberts, J.A., (2007) Impact of biogenic methane generation on formation of dolomite reservoirs, AAPG.
- Tsoflias, G.P., Devlin J.F., Roberts, J.A., McGlashan, M.A., Schillig, P.C., Barker, J.F., Naas, C., Endres, A., and Piggott, S. 2006. Hydrogeophysical monitoring of a homogeneous aquifer response to a modern gasoline fuel contaminant plume: preliminary observations, Society of Exploration Geophysicists 2006 Hydrogeophysics Workshop, 31 July-2 August, Vancouver, BC, Canada
- Roberts, J.A., *Kulczycki, E., Knapp, C., Fowle, D.A., and Graham, D.W. (2006) Sequestration of Cu from mineral sources by type II methanotrophs. International Mineralogical Association, Kobe, Japan.
- Fowle, D.A., Roberts J.A., Knapp C., Kulczycki E. and Graham D.W. (2006) What is the role of methanobactin in nature? Gordon Research Conference, Environmental BioInorganic Chemistry.
- Kenward, P.K., Roberts, J.A., González, L.A and Goldstein, R.H. (2006) Nucleation and Precipitation of low-temperature dolomite by methanogens. American Geophysical Union, Fall Meeting.
- *Kulczycki, E., Fowle, D.A., Knapp, C., Graham, D.W., and Roberts, J.A. (2006) Methanobactin-promoted dissolution of Cu-substituted borosilicate glass. American Geophysical Union, Fall Meeting.
- *Kenward, P.K., Roberts, J.A., González, L.A and Goldstein, R.H. (2006) Mediation of dolomite precipitation by methanogenic microorganisms, AAPG.
- Macpherson, G. L., J. A. Roberts and D.A. Fowle, 2006, Increasing Groundwater CO₂ and Other Solutes Under Tallgrass Prairie, Northeastern Kansas, USA: *Eos Trans. AGU*, 87(52), Fall Meet. Suppl., Abstract V53D-1786.
- Weisener C.W., Crowe S.A., Fowle D.A. and Roberts J.A. (2006) Spectroscopic investigation of the microbial controls on trace element mobility in iron-rich equatorial lacustrine sediments. Annual V.M. Goldschmidt Conference. Melbourne, AU.
- Roberts, J.A. and *Mauck, B.S. (2005) Mineralogic control on abundance and diversity of surface-adherent microbial communities. Abstracts with Programs-Geological Society of America.
- DeChoudens-Sanchez, V., Roberts, J.A., and González, L.A. (2005) Exploring the role of microbial processes on speleothem formation: A look into calcium carbonate speleogenesis. Abstracts with Programs-Geological Society of America.
- *Mauck, B.S. and Roberts, J.A. (2005) Mineralogic control on abundance and diversity of surface-adherent microbial communities. ISEB/ISSM Joint Meeting, Jackson Hole, Wyoming.

- Roberts, J.A. and Bennett, P.C. (2004) Microbial influence on carbonate equilibria in a petroleum-contaminated aquifer. Abstracts with Programs-Geological Society of America.
- Rogers, J.R., González, L.A., and Macpherson, G.L. (2004) Microbial precipitation of dolomite in groundwater. AAPG.
- *Adamski, J., Roberts, J.A., and Goldstein, R.H. (2004) Entrapment of bacteria in fluid inclusions in laboratory-grown halite. Abstracts with Programs-Geological Society of America.
- Crowe, S.A., Roberts, J.A., and Fowle, D.A. (2004) Trace element and nutrient cycling in lateritic lake sediments via dissimilatory iron-reduction. Abstracts with Programs-Geological Society of America.
- *Hughes, B.T., Roberts, J.A., Fowle, D.A. (2004) Bridging the gap between laboratory microbial attachment investigations and field microcosm studies. Abstracts with Programs-Geological Society of America.
- *Wilson, A., Roberts, J.A., Macpherson, G.L. (2004) Weathering dynamics from selected soil sites on Barro Colorado Island, Panama. Abstracts with Programs-Geological Society of America.
- *Wilson, A., Roberts, J.A., Macpherson, G.L., and Stallard, R.F. (2004) Trace metal mobility and microbial community structure in tropical soils: examples from adjacent forest and grassland ecosystems. American Geophysical Union, Fall Meeting.
- Rogers, J.R. and Bennett, P.C. (2003) Intrinsic sources of inorganic nitrogen and phosphorus in an oligotrophic methanogenic groundwater. Abstracts with Programs-Geological Society of America.
- Walton, A.W. and Rogers, J.R. (2003) Endolithic Borings in Hyaloclastite shards from the Hawaii Scientific Drilling (HSDP) #2 Phase 1 core: Distribution, timing, and behavior. Abstracts with Programs-Geological Society of America.
- Brake, S.S., Hasiotis, S.T. and Rogers, J.R. (2003) Microstructures and microorganisms in the microfabric of iron stromatolites, Green Valley Mine, Indiana. Abstracts with Programs-Geological Society of America.
- Rogers, J.R. (2003) Passive and active controls on microbial colonization of mineral surfaces: Iron and aluminum., ISEB 16, Japan, September 2003.
- Rogers, J.R., Bennett, P.C., Macpherson, G.L. (2003) Microbial precipitation of dolomite in groundwater. 12th Annual Goldschmidt Conference, Japan, September 2003.
- Rogers, J.R. and Bennett, P.C. (2002) Mineralogic controls on the biodegradation of hydrocarbons. Abstracts with Programs-Geological Society of America.
- Hasiotis, S. T., Rogers, J. R., and Goldstein, R. H. (2002) Traces of Life: Macro- and Microscopic Evidence of Past and Present Biogenic Activity Potentially Preserved in Extraterrestrial Sediments and rocks. XXXIII Lunar and Planetary Science Conference, March 11-15, 2002, Houston, TX, 2 pp.
- Rogers, J.R. and Bennett, P.C. (2001) Ferroan dolomite mineralization by iron-reducing bacteria. EOS Transactions AGU, 82(47), Fall Meeting Supplement, Abstract B12C-0141.
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- Rogers, J.R. and Bennett, P.C. (2000) Biomass determination of silicate surfaces in groundwater systems. American Geophysical Union Fall Meeting, San Francisco, CA. EOS Transactions AGU, 82(48), Fall Meeting Supplement, Abstract B11E-12.
- Rogers, J.R. and Bennett, P.C. (2000) Mobilization of nutrients from silicates by wetland consortia. Geological Society of America, South-Central Section, 34th annual meeting. Abstracts with Programs-Geological Society of America. 32; 3, pp. 40.
- Bennett, P.C., Rogers, J.R., and Engel, A.S. (2000) Mineral Surfaces as Microbial Habitats. American Geophysical Union Fall Meeting, San Francisco, CA. EOS Transactions AGU, 82(48), Fall Meeting Supplement, Abstract B11E-05.
- Rogers, J.R., Bennett, P.C., Hiebert, F.K., and Ullman, W.J. (1999) Bacterial mobilization of phosphate from silicates. Abstracts with Programs-Geological Society of America. 31; 7, pp. 447
- Rogers, J.R., Bennett, P.C., Hiebert, F.K., and Choi, W.J. (1999) Nutrient-driven colonization and weathering of silicates. The 1999 International Symposium on Subsurface Microbiology, Vail, Colorado, August 22-27, Session TU2B, pp. 46-47.
- Rogers, J.R., Bennett, P.C., and Hiebert, F.K. (1998) Are feldspars a source of phosphorus for microorganisms? Abstracts with Programs-Geological Society of America. 30; 7, pp. 305.
- Bennett, P.C., Rogers, J.R., and Hiebert, F.K. (1998) Geochemical ecology of an oil contaminated aquifer. Abstracts with Programs--Geological Society of America. 30; 7, pp. 14-15.
- Roberts, J.A. (1995) Petrology and geochemistry of the Gouldsboro Granite, Gouldsboro Point and Dyer Neck, Maine. The Eighth Keck Research Symposium Abstracts Volume, Claremont, CA, pp. 175-178.

Reports

- Roberts, J.A., González, L.A., Goldstein, R.G., Kenward, P., and Welch, D., Olcott, A., and Fowle, D.A. (10/2008) Experimental Carbonate Precipitation and Dissolution: Novel approaches to understanding and quantifying carbonate mineral precipitation in natural systems. Report to Shell Exploration and Production.
- Roberts, J.A., González, L.A., Goldstein, R.G., Kenward, P., and Welch, D. (1/2008) Experimental Carbonate Precipitation and Dissolution: Novel approaches to understanding and quantifying carbonate mineral precipitation in natural systems. Annual report to Shell Exploration and Production.
- Roberts, J.A., González, L.A., Goldstein, R.G., DeChoudens-Sanchez, V., and Kenward, P. (2/2007) Experimental Carbonate Precipitation and Dissolution: Novel approaches to understanding and quantifying carbonate mineral precipitation in natural systems. Annual report to Shell Exploration and Production.

FUNDING

More than \$6 million of external funding since arriving at KU. All currency is U.S. Dollars.

TITLE	SOURCE	AMOUNT	DURATION	PRINCIPAL INVESTIGATOR
The interplay between methanotrophy, methanogenesis, and soil geochemistry and its impact on net methane flux to the atmosphere from Arctic soils	National Science Foundation-- EAGER	\$51,000	5/1/13-4/30/2014	Jennifer Roberts
Microbial influence on seal integrity during CO ₂ injection	American Chemical Society, Petroleum Research Fund Type ND	\$100,000	9/1/11-8/31/13	Jennifer Roberts
Synchrotron X-ray fluorescence micro-spectroscopy: A new approach to determine the origin of life on Earth	National Science Foundation	\$442,084	1/1/11-12/31/13	Craig Marshall, University of Kansas
Site Characterization of Ozark Plateau Aquifer and Petroleum System in the Greater Sedgwick Basin, South-Central Kansas for carbon dioxide sequestration.	U.S. Department of Energy	\$4,974,299	1/1/10-12/31/12	Lynn Watney, Kansas Geological Survey
Kansas Interdisciplinary Carbonates Consortium		\$650,000	Annually	Evan Franseen Bob Goldstein Gene Rankey
Actualistic Calibration of the Sphaerosiderite Paleoclimate Proxy	National Science Foundation	\$373,647	6/1/07-5/31/10	Greg Ludvigson, Kansas Geological Survey
Kansas Interdisciplinary Carbonate Consortium (KICC): A Fully Integrated Research and Training Program in Carbonate Systems	Numerous Energy Companies	\$500,000 annually	ongoing	Bob Goldstein
Experimental Carbonate Precipitation and Dissolution: Novel approaches to understanding and quantifying carbonate mineral precipitation in natural systems	Shell International Exploration and Production	\$416,000	5/1/06-12/31/09	Jennifer Roberts
Groundwater Ecosystems: Microbial Mineral Weathering and Population Diversity. National Science Foundation	National Science Foundation	\$393,476	11/1/04-10/31/09	Jennifer Roberts

TITLE	SOURCE	AMOUNT	DURATION	PRINCIPAL INVESTIGATOR
Impact of local geochemistry on the diversity and abundance of methane-oxidizing bacteria in Ny- Ålesund soils	ARCFAC (European Centre for Arctic Environmental Research)	\$5000	01/01/08-12/31/08	David Graham, Newcastle University, UK
Connecting Methane Oxidation Rates to Mineral Sources of Copper	National Science Foundation	\$40,000	01/01/08-12/31/09	David Fowle, University of Kansas
Field experiment to track biomass growth in a contaminated aquifer and its effect on groundwater flow, awarded as a supplement to: Heterogeneous Reactions and Groundwater Flow in Reactive Porous Media	National Science Foundation	\$78,088	07/30/2005-01/31/2007	J.F. Devlin, University of Kansas
Microscale Mineralogic Controls on Microbial Attachment to Rock Surfaces: Implications for mineral dissolution	National Science Foundation	\$84,745	6/1/03-5/31/05	Jennifer Roberts
Mineralogic controls on subsurface microbial ecology in a petroleum-contaminated aquifer.	American Chemical Society, Petroleum Research Fund	\$35,000	9/1/03-8/31/05	Jennifer Roberts
Geomicrobiology of volcanic features associated with Rincón de la Vieja volcano, Costa Rica: Linking Biodiversity and geochemistry	KU International Studies Program	\$7000	11/1/07-6/30/10	Jennifer Roberts
Impact of local geochemistry on the diversity and abundance of methane-oxidizing bacteria in Ny- Ålesund soils	KU General Research Fund	\$7000	1/1/08-12/31/09	Jennifer Roberts
Undergraduate Research Assistantship Fund	KU Office of the Vice Provost for Research	\$1000	2007	Jennifer Roberts
Responsible Conduct of Research, KU Graduate School, Funds to enhance PHCH 801, graduate seminar in scientific ethics	KU Graduate School	\$8500	2006	C. Russell Middaugh, University of Kansas
Soil microbial community structure and nutrient availability in tropical rainforest and adjacent anthropogenic grasslands, Central Panama	KU General Research Fund	\$9,992.8	2002	Jennifer Roberts

Supervision

Primary Supervisor

STUDENT	POSITION/DEGREE	DURATION	CURRENT POST
Masato Ueshima	Laboratory Manager	2009-present	Biogeochemistry and Geomicrobiology Labs
Brena Mauck	National Institutes of Health Postdoctoral Fellow	2003-2006	Assistant Professor and Math & Biology Program Director , Department of Biology, St. Mary's College, Omaha, NE, USA
Charles Knapp	Postdoctoral researcher	2005-2006	Senior Lecturer, Civil Engineering, University of Strathclyde, UK.
Ezra Kulczycki	Ph.D.	2010	Geochemist, AMEC Environment and Infrastructure, Burnaby, BC, Canada
Paul Kenward	Ph.D.	2010	Post-doctoral Researcher, University of British Columbia, Canada
Charity Phillips Lander	Ph.D.	2008-present	Research Assistant, Kansas Geological Survey
Brian Hughes	MS	2005	Environmental consultant, Army Corps of Engineers, Kansas City, MO, USA
Amanda Wilson	MS	2005	Geologist, Anadarko Petroleum Company, Houston, TX, USA
Melissa Marietta	MS	2006-present	Student
Neil Kinnebrew	MS	2012	Project Manager and Consultant, CH2M Hill, Environmental Engineering, Anchorage, AK, USA
Mason Burgess	MS	2009-2012	
Aimee Scheffer	MS	2012	Conoco Phillips
Breanna Huff	MS	2010-present	Research Assistant
Christa Jackson	MS	2012-present	Research Assistant
Ryan Vogerl	MS	2012-present	Teaching Assitant
Emily McWilliams	BS Geology	2006	Staff geologist, Kansas Department of Health and the Environment, Topeka, KS, USA
Melissa Marietta	BS Geology	2006	KU MS Program

STUDENT	POSITION/DEGREE	DURATION	CURRENT POST
Megan Jones	BS Biology	2008	KU Medical School
Aubrey Collie	BS Geology	2009	MS Student, New Mexico State University, Las Cruces, NM, USA
Rebecca Peters	BS Biology	2010	MS Student, Marine Biology

Committee Service

PhD

James Lamsdell	Adam Jackson	Wes Gapp	
Peter Schillig (2012)	Michelle Mary	Rubina Firdous	Arne Sturm
Nick Levens (Biology) (2008)	Julie Retrum (2010)	Karla Leslie (2012)	Michael Bruemmer (reader)
Liza Holeski (Biology) (2007)	Vionette de Choudens (2007-reader)	Jon Smith (2007)	Steve Sloan (2008)

MS

Erica Dalman	Britney Katz	Molly Long	Angela Thompson
Paula Richter	Luis Montalvo	Andrew Connolly	Sean Hammersburg
Ben Rickards (2011)	Derek Raisanen	Chris Perll	Tyler Schwenk
Peter Schillig (2008)	Shelby Walters (2008)	Kim Montague (2011)	Ian Bowen (2011)
Julie Retrum (2004)	Michelle Dambacher (2005)	Debra Jennings (2005)	Robert Eslick (2007)
Kristen Myshrall (2003)	Elizabeth Johnson (2003)	Jennifer Castle (2004)	Heather Ross (2004)

TEACHING

Average teaching load is 1.5 courses per semester.

COURSE TITLE	ENROLLMENT	LEVEL
Introduction to Geology	200-300	Introductory survey course--majors and non-majors
Introduction to Geology, Honors	20	Introductory survey course for students in the Honors Program--majors and non-majors

COURSE TITLE	ENROLLMENT	LEVEL
Earthquakes and Natural Disasters	750	Introductory survey course--non-majors only
Geosciences on the Silverscreen	10	KU Honors Program, Freshman Seminar
Introduction to Hydrogeology	15-20	Upper division required course for majors in Geology. Frequently taken by Environmental Engineering majors and graduate students.
Field Techniques in Geobiology	25	Upper division and graduate level elective course. Fieldtrip to microbially-active locales to learn proper techniques in collecting and preserving surface-dwelling microbial communities.
Applied Techniques in Geobiology	15	Upper division and graduate level seminar course. Special topics course tailored to a class experiment integrating laboratory and field techniques as well as data management and interpretation.
Geomicrobiology	20	Upper division and graduate level elective course.
Chemical and Microbial Hydrogeology	20	Cross-listed in Department of Civil, Environmental and Architectural Engineering. Required graduate level course for hydrogeology students. Taught at night and by distance learning to include working professionals.
Field and Lab Methods: Geobiology	10	Companion course to Chemical and Microbial Hydrogeology teaching field and lab aspects of microbial hydrogeology.
Responsible Conduct of Research	10	Co-taught with Pharmaceutical Chemistry professor. Required seminar for graduate students in Pharm Chem.
Ethics in Geoscience	10	Required seminar course for PhD students and MS students funded by NSF/NIH.

Teaching Development and Distinction

Course Redesign Workshop (2013)

KU Byron A. Alexander/John C. Wright Graduate Mentor Award, Nominee (2012)

KU Center for Teaching Excellence, Electronic Teaching Portfolio (2007) <http://www.cte.ku.edu/gallery/visibleknowledge/roberts/>

Nominated for Kemper Award for Teaching Excellence (2006)

KU Center for Teaching Excellence, Best Practices Institute (2005)

NSF "On the Cutting Edge" Workshop on Teaching Biocomplexity in the Geosciences (2003)

SERVICE

Professional Memberships

Geological Society of America, Member

American Geophysical Union, Member

International Society for Environmental Biogeochemistry, International committee

Invited Lectures

Chevron, Houston, Texas (2013)

Saudi Aramco; Dharan Geological Society, KOSA (2013)

University of Tennessee, Department of Earth and Planetary Sciences (2013)

University of Oklahoma, Department of Geology and Geophysics (2012)

University of Southern California, Department of Earth Sciences (2010)

University of Buffalo, SUNY, Department of Geology (2010)

University of Kansas, Department of Chemistry (2006)

University of Kansas, Department of Chemical and Petroleum Engineering, (2006)

Keynote Speaker, Bio-Geo Interface in Minerals, International Mineralogical Association, Kobe, Japan (2006)

Wichita State University, Department of Biological Sciences (2006)

Louisiana State University, Department of Geology and Geophysics (2005)

University of Oregon, Department of Geological Sciences (2005)

Oregon State University, NSF IGERT (2004)

University of Illinois, Department of Geology (2004)

University of Windsor, Department of Earth Sciences (2004)

Oklahoma State University, Department of Geology (2004)

University of Kansas, Department of Ecology and Evolutionary Biology (2004)

Iowa State University, Geology Department (2003)

V.M. Goldsmidt Conference, Japan (2003)

Department of Geology, Kansas State University (2002)

Department of Molecular Biosciences, University of Kansas (2002)

USGS Artificial Recharge Workshop, Sacramento, CA (2002)

Smithsonian Tropical Research Institute, Barro Colorado Island, Panama (2002)

University of Colorado, Environmental Microbiology Supergroup Series (2001)

University of Colorado, Dept. of Civil, Environmental and Architectural Engineering (2000)

Trinity University, Geology Department (2000)

University of Tennessee, Department of Earth and Planetary Sciences (2000)

Keynote Speaker

Bio-Geo Interface in Minerals, International Mineralogical Association, Kobe, Japan (2006)

Gordon Research Conference on Organic Geochemistry (2004)

Professional Service

Editorial Board, Geobiology

Manuscript Reviews

American Journal of Science

Environmental Science and Technology

Journal of Sedimentary Research

Precambrian Research

Biotechnology Progress

Geomicrobiology Journal

Journal of Geochemical Exploration

Sedimentology

Geology
Groundwater
Microbial Ecology
Geobiology
Earth and Planetary Science Letters

Journal of the Geological Society
Applied Geochemistry
Environmental Microbiology
Geochimica et Cosmochimica Acta
European Journal of Mineralogy

Proposal Reviews

NSF-Carbon Cycle
NSF-Ecology
NSF-Biogeosciences
NIH
NSF-Geobiology and Environmental Geochemistry
Research Grants Council (RGC) of Hong Kong
NASA Interdisciplinary Exploration Science
U.S. Department of Energy

NSF-Water Cycle
NSF-Hydrologic Science
NSF-Ocean Sciences
NSF-Hydrologic Observatories
NSF-Ocean Drilling Program
ACS-Petroleum Research Fund
Swiss National Science Foundation

Review Panels

National Science Foundation (USA), Geobiology and Low Temperature Geochemistry (2012, 2013)

National Science Foundation (USA), Hydrological Sciences (Spring/Fall 2011)

National Science Foundation (USA), Ecology of Infectious Disease Panel (2007, 2008, 2010)

U.S. Department of Energy, Environmental Remediation Sciences Program, Innovative Field-Scale Remediation and Long-Term Stewardship (2006)

NASA Exobiology and Evolutionary Biology (2004)

National Science Foundation (USA) Course, Curriculum, and Laboratory Improvement Program (2002)

Workshops Attended

NSF “On the Cutting Edge” Workshop for Early Career Faculty (2003)

Workshops Lead

NSF “On the Cutting Edge” Workshop for Early Career Faculty (2009-2010), facilitator.

Conference Sessions Organized

Goldschmidt 2010 Session, Effect of System Heterogeneity on Carbonation and Carbonate Mineralization
Convenor with Huifang Xu, Henry Teng, and Mónica Sánchez-Román (2010)

GSA Topical Session, Perspectives in Redox Geochemistry and Microbial Processes. Co-organizer with Annette Summers Engel (Louisiana State University) (2007)

South Central/North Central GSA Topical Session, Traces of Life: Micro- to Macroscopic Evidence of Past and Present Biogenic Activity and Their Implications for Marine and Continental Settings. Co-organizer with Steve Hasiotis and David Fowle (2007)

AAPG, Recent Advances in Carbonate Diagenesis. Co-organizer with Bob Goldstein (University of Kansas) (2006)

GSA Topical Session, Traces of Life: Micro- to Macroscopic Evidence of Past and Present Biogenic Activity and their Implications. Co-organizer with Steve Hasiotis (University of Kansas) (2005)

Eleventh International Symposium on Water Rock Interaction Special Symposium in Honor of Henry L. Ehrlich. Co-organizer with T.A. Abrajano (RPI) and Jeremy Fein (Notre Dame). Served as co-editor for session papers (2004)

GSA Topical Session, Denver The What, When, Why and How Much of Chemical (Nutrient) Supplements for Bioremediation. Co-organizer with J.F. Devlin (University of Kansas) (2002)

AGU, Fall Meeting, Special Session: The Role of Bedrock Geochemistry in Nutrient Cycling co-convended with JoAnn M. Holloway (U.S. Geological Survey) and Steven T. Petsch (Woods Hole Oceanographic Institution) (2001)

Edited Volumes or Special Issues

Special issue of Chemical Geology on Perspectives in Redox Geochemistry and Microbial Processes. Co-edited with Annette Summers Engel (LSU) (2007-08).

Special issue of Geobiology on the Bio-Geo Interface in Minerals. Co-editor with Danielle Fortin (U. of Ottawa) and David Fowle (KU) (2006-7).

Eleventh International Symposium on Water Rock Interaction Special Symposium in Honor of Henry L. Ehrlich. Served as co-editor for session papers (peer-reviewed) with T.A. Abrajano (RPI) and Jeremy Fein (Notre Dame) (2004)

University Service

Faculty Fellow, KU Honors Program

Task Force for Post Tenure Review (2013)

Review Panel for Undergraduate Research Assistantships, Natural Sciences (2013)

Mentor, KU Women's Rowing Team (2012-present)

College of Liberal Arts and Sciences Committee on Promotion and Tenure (2011-2013)

University Sabbatical and Leave Committee (2008-2011)

College of Liberal Arts and Sciences Undergraduate Studies and Advising Committee (2007-2010)

KU-University of Costa Rica Research Proposals, International Studies, Review committee (2009-10, 2012)

Committee for ART@MRB, selected original student art for display at the Multidisciplinary Research Building (2008)

Center for Teaching Excellence, Course Portfolio (2007-08)

University Microscopy Facility Steering Committee (2005-present)

Search Committees

Honors Program Director (2013)

Post Doctoral Teaching Fellow (2013)

Moderate Temperature Geochronologist, Faculty Search Committee (2012-2013)

Rock Prep Technician Search, Joint KU Department of Geology/KGS, co-chair (2007-08)

Carbonate Process Sedimentology Faculty Search Committee (2007-08)

Stratigrapher/Sedimentologist Search Committee, Kansas Geological Survey (2006)

Paleobiogeochemistry Faculty Search Committee (2006)

Assistant Scientist Search Committee, Stratigraphic Research Section, KGS (2005)

University Microscopy Facility Director Search Committee (2004)

Section Chief Search Committee, Kansas Geological Survey (2004)

Post-doctoral Associate Search Committee, Kansas Geological Survey (2003)

Microbial Ecology and Paleoecology Faculty Search Committee (2004)

Departmental Service

Associate Chairperson (2009-2010; 2013-present)

Graduate Admissions, Committee Chair (2011-2013)

Graduate Studies Committee (2004-2009)

Undergraduate Studies Committee (2001-2004)

Departmental Graphics Assistant Coordinator (2004-2009)

Multidisciplinary Research Building (awarded space in campus-wide call for proposals; 2004)

Tuition Enhancement Proposal for New Departmental Faculty Lines (2003; co-authored with L. González)