

JENNIFER A. ROBERTS

Personal contact information:



Senior Vice Provost for
Academic Affairs

Professor, Department of
Geology



EDUCATION

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

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

ACADEMIC EXPERIENCE

University of Kansas, Lawrence, KS

College of Liberal Arts and Sciences, Department of Geology

Professor, 2016-present

Associate Professor, 2007-2016

Assistant Professor, 2001-2007

U.S. Geological Survey, Water Resources Division, Boulder, CO

National Research Council (USA)

Postdoctoral Associate, 2000-2001

ADMINISTRATIVE EXPERIENCE

University of Kansas, Lawrence, KS: Member of Association of American Universities, R1 Carnegie Classification, with 21,559 undergraduate and 5,328 graduate students, and 1185 faculty as of Spring 2025

Senior Vice Provost for Academic Affairs, October 2023—present

Duties: Oversee ~300 full-time staff, 12 direct reports, and manage \$24 million budget, including Academic Affairs [includes all accreditation, assessment, and program approval functions (online program instructional designers will move into unit imminent)], and collaboration with Kansas Board of Regents], Undergraduate Education [includes KU Core 34 (general education curriculum), undergraduate research and fellowships, center for service learning, concurrent enrollment, and first year seminar], Graduate Affairs [includes oversight of all graduate policy, professional development, and funds to support graduate student research, Self Graduate Programs (recently added Post-doctoral Affairs)], Academic Success [includes all student access functions (tutoring, supplemental instruction, student accommodations, testing center, writing center), academic advising for undergraduate and all online programs, orientation and transition programs, EAB Navigate function, career center, and Hawklink (serves first generation and native students)], International Affairs [includes international support services for all students, strategic partnerships for academic, industry, and research collaborations, and the institute for international and global engagement (houses four Title VI-funded national resource centers; funding was terminated for all Title VI programs nationally in September 2025)], and National Security Initiatives [includes graduate military programs with Ft Leavenworth and Command General and Staff College, research development for military funding initiatives, and ROTC (Air Force, Army, and Navy)]. Serve as Accreditation Liaison Officer to the Higher Learning Commission. Portfolio grew sequentially beginning 2020 with institution-wide responsibility to:

- Partner with KU Medical Center leadership, KU Lawrence Vice Provosts, Deans, Chairs and faculty to: (i) build and implement efficient and sustainable academic infrastructure, (ii) utilize enterprise systems, and (iii) connect units to facilitate interdisciplinary innovation and continuous improvement.
- Provide data-informed strategic leadership and vision to advance student success for students at all levels and in all modalities aligned with (i) KU's strategic plan, *Jayhawks Rising*, (ii) Kansas Board of Regents initiatives and (iii) best practices in higher education.
- Support, enhance, and promote faculty development and support in academic program innovation, continuous improvement, and undergraduate and graduate student mentorship.

Accomplishments:

Student Access, Support and Success

- Work with Deans to implement *Jayhawk Academic Advising* (embedded, centralized reporting, undergraduate advising) resulting in:
 - 100% undergraduate students meeting with academic advisor
 - Average of 2.7 advising appointments per student
 - Highest first- to second-year retention rate (2024=86.5%) with associated measured reductions in gaps between Pell/non-Pell recipients (-4%), First generation/non-first generation students (-2%), and white/non-white students (-4%)
- Work with College of Liberal Arts & Sciences, University Core Curriculum Committee, faculty governance and Kansas Board of Regents Academic Affairs staff to:
 - Implement statewide general education
 - Revise general education curriculum (KU Core 34), and
 - Implement *Math Pathways* resulting in increased student access, system-wide transfer, and persistence
- Work with donors to provide *free individual tutoring* with 74% increase in appointments from AY 23 to AY24
- Work with faculty and students to deliver *supplemental instruction*, resulting in 76% of students who participating earning a B or higher
- Work with KU Libraries and Graduate Studies to *expand writing support*, resulting in 11% increased usage between AY 23 and AY 24
- Work with Enrollment Management to conduct “*Plan to Pay*” event each semester, *resulting in 60% of students paying outstanding bills in full before the deadline*
- Work with Student Affairs to conduct *Jayhawk Jumpstart, early arrival program for first generation students and Pell recipients*, resulting in 98% first-second semester retention
- As Managing Trustee of the Self Graduate Program (\$120 million endowed account, serving high achieving STEM PhD students), work with 22 programs in four Schools and on two campuses to achieve *largest number of students in program history*
- Working with deans and faculty governance, create a graduate student mentoring policy and align it with levels of graduate student support in professional and research programs

Institutional Infrastructure and Continuous Quality Improvement

- Collaborate with deans, chairs and faculty governance to complete HLC Quality Initiative (approved July 2024):
 - Established institutional learning goals
 - Completed degree maps for all undergraduate programs (~150)
 - Established annual assessment of student learning in general education curriculum
 - Increased department participation in annual degree-level assessment from 63% to 97%
 - Created and piloted streamlined academic program review

- As co-chair of HLC Reaffirmation of Accreditation planning committee, facilitated ~four cross-campus improvement projects including academic catalog revision, syllabus repository and collection, credential check, and revision of test experience policy, in addition to leading efforts to write the assurance argument and conduct the on-campus visit (March 3-5, 2025), resulting in reaffirmation of accreditation (July 3, 2025)
- Work with Enrollment Management, faculty governance, and academic units to create sustainable workflows for academic lifecycle, including approval by Kansas Board of Regents and HLC, resulting in expedited timeline for program approval, marketing and delivery
- Work with Jayhawk Global, Center for Certification and Competency Based Education, Enrollment Management created new infrastructure (workflow and academic policies) for direct assessment, competency-based education program (*Jayhawk Flex*) resulting in HLC approval for inaugural programs to launch in 2025.
- Work with colleagues at the General Command and Staff College (Leavenworth, KS) to *deliver seven on-base graduate programs*.
- Serve as member of Provost leadership cabinet, *shaping content and implementation* of strategic initiatives, strategic enrollment management, and budgetary allocations

Faculty Development and Support

- Collaborate with Office of Research, faculty and federal agencies to engage faculty and strengthen ties to national defense sector through research, *resulting in ~\$750K in external grants annually*
- Work with Center for Teaching Excellence to *promote assessment activities to promote curricular innovation*
- Collaborate with Faculty Affairs to *develop and deliver chairperson training programs*
- Partner with faculty governance to *implement and support University Senate academic policies and processes*
- Work with faculty governance, Office of Research, and Faculty Affairs to create a *mentorship policy and implement faculty mentor training*
- Work with Faculty Affairs, Human Resources, General Council, and Finance as member of negotiation team, to establish contract with newly formed faculty union, UAKU and *establish a comprehensive and competitive compensation model for faculty and academic staff*

Vice Provost for Academic Affairs and Graduate Studies, June 2021—October 2023

Duties: Oversee 50 full-time staff, 11 direct reports, and manage \$5 million budget, including Academic Affairs (included all accreditation, assessment, and program approval functions and collaboration with Kansas Board of Regents), Graduate Studies (included oversight of all graduate policy, professional development, funds to support graduate student research and travel, Self Graduate Programs, and Graduate Military Programs), International Affairs (included international support services and recruitment for all students and strategic partnerships for both academic, industry, and research collaborations), Institute for International and Global Engagement (included four Title VI-funded national resource centers), ROTC Programs (included Air Force, Army, and Navy)

Accomplishments:

Student Access, Support and Success

- Collaborate with faculty in Indigenous Studies Program, Office of Sovereign Partnerships and Indigenous Initiatives to facilitate student exchange program with Haskell Indian Nations University, including the Sloan Indigenous Partnership Program
- Work with Human Resources, General Council, and graduate teaching assistants' union (GTAC) to *negotiate a multi-year contract and provide guidance and training to all academic units on new memorandum of agreement*
- Work with faculty governance, Provost, Human Resources and Finance to align all graduate worker policies to *ensure equitable benefits between worker types, including the addition of tuition benefits for graduate assistants*
- Work with Enrollment Management, Diversity, Equity, Inclusion and Belonging and units to *align holistic graduate admissions practices with US Supreme Court ruling ending affirmative action*

- Serve ~2000 military-affiliated students with *VA Certification Processing*
- Support Army, Navy, and Airforce ROTC, with *cadets received >\$1million annually* in Department of Defense scholarships

University Internationalization Efforts

- Work with College of Liberal Arts and Sciences and Office of Research to coordinate *KU's five areas studies centers under the Institute for International and Global Engagement*, resulting in continued Title VI funding for four centers and >\$1 million in Foreign Language and Area Studies Fellowships per year
- Work with deans and Office of Research to *enhance international partnerships* resulting in academic partnership with Zhejiang Normal University, Costa Rica, preparation for projects with Panasonic and *Horizon Europe*, and partnership with National Security Initiatives for a NATO Allied Command Transformation Project
- Work with deans and partners in 117 countries to support >1100 *study abroad experiences* per AY and generate >\$500K/year in revenue from *international short programs*
- Work with Enrollment Management, Academic Success, Graduate Studies, and academic units to support >2000 international students through *International Support Services*

Vice Provost for Graduate Studies, February 2020—June 2021

Duties: Oversee 14 full time staff, 5 direct reports, and manage a \$4.8 million budget, including Graduate Military Programs and Self Graduate Programs. Coordinate support for 12 academic units and ~5,000 graduate and professional students.

Accomplishments:

Graduate Student Access, Support and Success

- Partner with Office of Research to *incentivize faculty and students who write and are awarded fellowships and traineeships*
- Collaborate with Human Resources Management, Student Affairs, Kansas Board of Regents, and International Affairs to advocate for compensation, benefits, and access for graduate student employees resulting in *expanded health insurance access* to students with prestigious fellowships and efforts that have resulted in decreased cost while maintaining coverage.
- Implement *Grad Paths* bi-weekly newsletter to communicate graduate student programming, deadlines, and funding opportunities with ~55% *open rate*
- Partner with International Affairs to disperse Covid funding to *retain and support international graduate students* impacted by travel and visa issues

Operational Excellence

- Collaborate with IT and Analytics and Institutional Research to collect and disseminate graduate student data, and work with university leadership to identify and *set metrics for graduate student success and satisfaction*
- Work with Analytics and Institutional Research and the College of Liberal Arts and Sciences to implement their Council of Graduate Schools *PhD Career Pathways Program* university-wide
- Work with faculty governance to align residency, Masters and Doctoral policies with standards for professional degrees, resulting in *expansion of degrees* such as Doctor of Social Welfare and competency-based professional programs aligned with strategic enrollment management plan

Faculty Development and Support

- Partner with Office of Research to *incentivize faculty and students who write and are awarded fellowships and traineeships*
- Partner with Office of Research, provost, deans, chairs and individual PIs to *achieve increases in graduate worker compensation and benefits*, resulting in a reduction in partial appointments without benefits, and nationally benchmarked and competitive salaries for graduate research assistants and graduate teaching assistants

Chairperson, Department of Geology, January 2017—January 2020

Duties: Oversee 80 graduate students and 80 undergraduate students, with 29 direct reports (23 faculty and six staff), a budget of \$4.8 million in state funds, with an additional \$500,000 in expendable endowment funds (\$20 million invested).

- Provide strategic leadership for continuing academic program quality, faculty productivity, and student support & success aligned with disciplinary norms and trends.
- Collaborate with dean and institutional leaders to efficiently steward and leverage funding streams to support and expand departmental resources
- Lead efforts to cultivate long-lasting relationships with alumni and industry partners to support student, faculty, and departmental needs to enhance stature and success metrics

Accomplishments:

Student Support and Success

- Work with Center for Teaching Excellence and geology faculty to *conduct student-centered redesign of introductory Geology courses and labs* resulting in decreased rates of Ds, Fs, and withdrawals
- Work with geology faculty to *develop and deploy new undergraduate curricula* in quantitative skills, and ethics, resulting in 15% increase in student credit hour production.
- Work with geology faculty to *develop course and degree competencies for degree-level assessment* of Bachelor of Science degrees in Geology, allowing department to track student learning through the degree
- Work with multi-national companies, geology faculty, students, and alumni to deliver Energy Week, an *on-campus recruiting event hosting seven energy companies* resulting in >10 students/year receiving paid internships

Curricular Innovation

- Work with Center for Teaching Excellence and geology faculty to secure funding to participate in AAU STEM Analytics Project, resulting in *curricular revision to support student progression*
- Collaborate with geology and environmental studies faculty and KU Edwards Campus to *design and launch an online-only Professional Science Masters*, providing credentialing pathway for working environmental professionals
- Collaborate with Office of Research and geology faculty develop and implement Professional Skills for Graduate Students geology course covering *ethics, communication skills, bystander intervention, and implicit bias training to meet training requirements for federal grants*

Faculty Development and Research Activity

- Work with dean to conduct *three successful faculty searches* as chairperson
- Work with dean, Provost Office to *retain three faculty members* in Geology by leveraging KU Endowment Funds
- Work with geology faculty by adjusting workload and providing seed funding to *increase research expenditures* to \$6 million per year in external funding (~250k/year/faculty; increase of ~20%)
- Work with geology faculty and students, Environmental Health and Safety, and Facilities and Operations to *relocate 15 faculty offices, seven research labs, 60 graduate students, and four staff into the new geology facility* over 5 months (Spring 2018)

Fundraising and Alumni Outreach

- Collaborate with *Geology Associates Advisory Board* and host 3-4 geology alumni events per year as well as conducted 2-3 *fundraising trips* per year to individual donors and corporate partners, resulting in:
 - 600 acres around existing Geology Field Camp (\$400k)
 - Five new scholarship funds (\$100k/year)
 - Contributions to equipment and unrestricted funds (increase of \$50K/year)
 - Chevron contributions to support field instruction (increase of \$15k/year)
- Participate in the design, completion and opening events of the 140,000 ft², \$78.5 million *Earth, Energy, and Environment Center*

PROFESSIONAL DEVELOPMENT TRAINING

- Designing the APLU Student Success Framework (2025; upcoming)
- Matrix Management Workshop (2024)
- Positive Intelligence Cohort Program (2024)
- American Council for Education: Agile Administrators Program (2023)
- Association of Title IX Administrators, Title IX Hearing Officer and Decision Maker Training (2022)
- National Science Foundation Workshop: *Graduate Schools Respond to COVID-19: Promising Pathways to Innovation and Sustainability in STEM Education* (Virtual 2020)
- New Deans Institute, Council of Graduate Schools (Virtual 2020)
- Chairs and Directors Leadership Series (University of Kansas, 2020)
- AAU STEM Department Chairs Workshop (Laguna Beach, CA 2018)
- Promoting Diversity, Equity, and Inclusion in the Geosciences (Washington, DC 2018)
- The Future of Undergraduate Education in Geoscience (Austin, TX 2016)
- Fundraising in Academia (University of Kansas 2015)
- Senior Administrative Fellows (University of Kansas 2012–2013)

AWARDS

- Professional Excellence Award, Association for Women Geoscientists (2019)
- Docking Young Faculty Scholar Award, University of Kansas (2014–2015)
- Kathleen McCluskey-Fawcett Women Mentoring Women Award, KU Emily Taylor Center for Women & Gender Equity (2013)
- Jan F. and Mary van Sant Geology Excellence Award, KU Department of Geology (2007 and 2020)

PROFESSIONAL MEMBERSHIPS

- Council of Graduate Schools, Member (2020-present)
- Association of American Universities, Association of Graduate Deans, member (2020-present)
- Association for Women Geoscientists, Member (2001-2019)
- National Association of Geoscience Teachers, Member (2015-2020)
- International Society for Environmental Biogeochemistry, International committee (2007-2019)
- American Geophysical Union, Member (2001-2019)
- Geological Society of America, Member (2001-2019)

PROFESSIONAL SERVICE

Editorial Board, *Geobiology* (2010-2017)

Review Panels

Natural Sciences and Engineering Council of Canada, Alliance Missions Critical Minerals (2024)

National Science Foundation (USA), *Geobiology and Low-Temperature Geochemistry* (2019, 2012, 2013), *Earth's Integrated Systems* (2017), *Hydrological Sciences* (2011), *Ecology of Infectious Disease* (2007, 2008, 2011), *Course, Curriculum, and Laboratory Improvement Program* (2002)

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

NASA Exobiology and Evolutionary Biology (2004; 2015)

Select Committee Service

Systemwide General Education Council, Kansas Board of Regents, member (2024-present)

Campus Steering Committee, member (2024-present)

Command and General Staff College Foundation, Trustee (2023–present)

Reaffirmation of Accreditation Planning Committee, Chair (2022-present)

Internationalization Steering Committee (2022-present)

Masters Education Committee, member, Council of Graduate Schools (2021-2024)

Academic Program Coordinating Committee, Chair (2021-present)
 Executive Council of Graduate Faculty, Chair (2020-2024)
 KU Academic Operations Team (2020-present)
 KU Research Design Team (2020-present)
 KU Pandemic Project Management Team (2020-2022)
 Honors Program, Faculty Fellow (2013–2017)
 Task Force for Post Tenure Review (2013)
 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)

PUBLICATIONS

Peer-reviewed articles

*Note: J.R. Rogers is J.A. Roberts; *signifies student or post-doctoral associate; §designates senior author.*
Roberts, J.A. (2024) All Minerals Considered: The Problem with Dolomite, *Nature Geoscience*, v. 17, 716.

McCann, C., Christgen, B., **Roberts, J.A.**, Su, J.Q., Arnold, K.E., Gray, N., Zhu, Y.G., and Graham, D. W. (2019) Understanding drivers of antibiotic resistance genes in High Arctic soil ecosystems. *Environment International*, v. 125, 497-504.

§**Roberts, J. A.**, Olcott Marshall, A., Baker, G. S., McLean, N., & Moeller, A. (2018). Impact of Class-room Transformation on Inequality in DFW Rates (“D” or “F” grade or Withdraw) for Women and Underrepresented Minorities in Introductory Geology Courses. *Journal of Geoscience Education*. v.66(4), 304-318.

*Bitting, K., McCartney, M., Roccaforte, K., and **Roberts, J. A.** (2018). Conceptual Learning Outcomes of Google Earth Inquiry in In-Person and Online Introductory Physical Geology Courses. *Studies in Science Education*. (Refereed) doi: 10.1007/s11165-016-9577-z

Petrash, D.A., Bialik, O.M., Tomaso R.R. Bontognali, Vasconcelos, C. **Roberts, J.A.**, McKenzie, J.A. and Konhauser, K.O. (2017) Microbially catalyzed dolomite formation: From near-surface to burial. *Earth Science Reviews*, v.171, 558-582.

McCann, C., Wade, M., Gray, N., **Roberts, J. A.**, Hubert, C. R., and Graham, D. W. (2016). Microbial Communities in a High Arctic Polar Desert Landscape. *Frontiers in Microbiology*, 7(419). doi:http://dx.doi.org/10.3389/fmicb.2016.00419

Gray, N. D., McCann, C. M., Christgen, B., **Roberts, J. A.**, and Graham, D. W. (2014). Soil geochemistry confines microbial abundances across an arctic landscape; implications for net carbon exchange with the atmosphere. *Biogeochemistry*, v. 120, 307-317. doi:10.1007/S10533-014-9997-7

*Lander, C. P., Fowle, D. A., Taunton, A. E., Hernandez, W., Mora, M., Moore, D., Shinogle, H., and §**Roberts, J. A.** (2014). Silicate dissolution in Las Pailas Thermal Field: Implications for microbial weathering in acidic volcanic hydrothermal spring systems. *Geomicrobiology Journal*, v.3, 23-41.

*Kenward, P. A., Goldstein, R. G., González, L. A., Fowle, D. A., * Ueshima, M., and §**Roberts, J. A.** (2013). Ordered, low-temperature dolomite mediated by carboxyl-group density of microbial cell walls. *AAPG Bulletin*, v.97, 2113-2125. (Invited)

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.), *SEPM Special Publication. New Frontiers in Paleopedology and Terrestrial Paleoclimatology*, v.104, 79-87. Society for Sedimentary Geology.

- §**Roberts**, J. A., * Kenward, P. A., Fowle, D. A., González, L. A., Goldstein, R. H., and Moore, D. S. (2013). Surface chemistry allows for precipitation of dolomite at low temperature. *Proceedings of the National Academy of Sciences*, v.110, 14540-14545.
- *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., Katsev, S., Leslie, K., Sturm, A., Magen, C., Nomosatryo, C., Pack, M.A., Kessler, J.D., Reeburgh, W., **Roberts**, J.A., González, L.A., Haffner, G.D., Mucci, A., Sundby, B., and Fowle, D.A. (2011) The methane cycle in ferruginous Lake Matano, *Geobiology*, v.9, 61-78.
- Schillig, P., Devlin, J.F., **Roberts**, J., Tsoflias, G., and 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*, v.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*, v.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*, v.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*, v.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*, v.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*, v.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*, v.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*, v.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*, v.4, 552-562.
- §**Roberts**, J.A. (2004) Inhibition and enhancement of microbial surface colonization: the role of silicate composition, *Chemical Geology*, v.212, 313-327.
- §**Rogers**, J.R. and Bennett, P.C. (2004) Mineral stimulation of subsurface microorganisms: release of limiting nutrients from silicates. *Chemical Geology*, v.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*, v.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, 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*, v.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, 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*, Villasimuso, Italy, 10-15 July 2001. A.A. Balkema, Lisse, the Netherlands, 1461-1464.

Bennett, P.C., **Rogers**, J.R., Hiebert, F.K., and Choi, W.J. (2001) Mineralogy, mineral weathering, and microbial ecology. *Geomicrobiology Journal*, v.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*, v.8, 47-62.

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

Works Submitted or Ready Submission

Jackson, C., Scheffer, A., Watney, W. L., Strazisar, B., & **Roberts**, J. A. (in progress). Geochemical and microbiological influences on seal integrity during SC-CO₂ exposure, Arbuckle aquifer, SE Kansas. *Applied Geochemistry*

Rodriguez-Colon, B.J., Matos-Llavona, P.I., Ramirez-Martinez, W., Padilla-Montalvo, J., Fernandez-Vazquez, I. Baker, G.S. & **Roberts**, J.A. (in progress) Bridging Present-Day Microbialite Deposits with Sedimentary Records in a Coastal Lagoon of Southwest Puerto Rico. *Sedimentology*

Rodriguez-Colon, B.J., Hiripitiyage, Y., Ramirez-Martinez, W., Chapier-Alpi, A.M., Martinez-Rivera, N., Baker, G.S., Ríos-Velázquez, C., Rosa-Molinar, E., Sturm, B.S. & **Roberts**, J.A. (in progress) Documenting the Occurrence of Microbial Carbonate Deposits in Southwestern Puerto Rico. *Scientific Reports*

Phillips-Lander, C., Omelon, C., Mora, M., Hernandez, W. & **Roberts**, J. (in progress) Exopolymeric substances influence trace metal biosignature formation in acid-sulfate hot springs. *ACS Earth and Space Chemistry*

INVITED TALKS, WORKSHOPS, & FIELDTRIPS (since 2015)

- Council of Graduate Schools, Concurrent Session, Election 2024 and What it Means for Graduate Education (2024)
- Chronicle of Higher Education, virtual panel discussion, Building Successful Graduate Programs (2024)
- Council of Graduate Schools, Concurrent Session, Career Mentoring for Masters Students (2023)
- Council of Graduate Schools, Concurrent Session, Contemporary Approaches to Masters Admissions (2022)
- Council of Graduate Schools, Concurrent Session, Mentoring Masters Students (2021)
- Council of Graduate Schools, Concurrent Session, Post-Pandemic Pedagogies (2021)
- Council of Graduate Schools/National Science Foundation, Panel Discussion on Investigating Challenges to Matriculation and Completion for Underrepresented STEM Graduate Students during the COVID-19 Pandemic (2021)
- Roberts, J.A. (2018) Testing the microbial model for low temperature dolomite formation, Division of Geological and Planetary Sciences Seminar, Caltech (Invited)
- Roberts, J.A. (2018) Mechanistic insights into mediation of carbonate mineral formation by microbial surfaces, Gordon Research Conference on Geobiology (Keynote; Invited)
- Roberts, J.A. (2018) Mechanistic insights into mediation of carbonate mineral formation by microbial Surfaces, Southwest Petroleum University, Chengdu, China (International, Invited)
- Rankey, E.C. and Roberts, J.A. (2018) Carbonate Geology of Crooked Island, Bahamas, Fieldtrip for PetroChina.
- Roberts, J. A., Yoerg, A., Edwards, M., Gonzalez, L. A., Goldstein, R. H., and Fowle, D. A. (2016) The role of surface-bound carboxyl groups of organic matter in low temperature dolomite formation. Carbonate Diagenesis Symposium, PetroChina, Huangzhou, China. (International, Invited)
- Roberts, J. A., McLean, N., Baker, G. S., and Moeller, A. (2016) Impact of classroom transformation on gender inequality in DFW rates ("D" or "F" grade or Withdraw). Earth Educator's Rendezvous, Madison, WI.
- Roberts, J. A. (2016) Flipping Your Class: What to Take Out, What to Leave In. Youngstown State University Teaching Workshop (Invited)
- Roberts, J. A., Yoerg, A., Edwards, M., Gonzalez, L. A., Goldstein, R. H., and Fowle, D. A. (2016) The role of surface-bound carboxyl groups of organic matter in low temperature dolomite formation. Dolomieu Conference, Selva di Val Gardena, Italy. (International, Invited Keynote)
- Edwards, M., Voegerl, R., Kenward, P., Kinnebrew, N., Fowle, D. A., and Roberts, J. A. (2015). *Salinity Controls on Microbial Surface Functional Groups: Impacts on Precipitation of Mg-Carbonates*. Goldschmidt Conference, Prague, CZ.
<http://goldschmidt.info/2015/uploads/abstracts/finalPDFs/AZ.pdf>. (International)

FUNDING

- More than \$7 million of external funding since arriving at KU in 2001
- All currency is U.S. Dollars

TITLE	SOURCE	AMOUNT	DURATION	PRINCIPAL INVESTIGATOR
Sloan Indigenous Partnership	Alfred P. Sloan Foundation	\$500,000	7/1/22-6/30/23	Joseph Brewer
Graduate Research Fellowship Program	National Science Foundation	\$1.7 million	9/1/19-8/31/24	Jennifer Roberts
Investigating microbial and geo-chemical influences on microbialite formation	Kansas Interdiscip. Carbonates Industry Consortium	\$53,935	4/1/19-3/31/20	Jennifer Roberts
Elucidating the Conditions of Microbial Dolomite Formation in Neoproterozoic Dolomites, Central Sichuan Basin	PetroChina	\$167,737	8/1/17-3/31/19	Jennifer Roberts
Experimental Approaches to Low-Temperature Dolomite Precipitation and Dolomitization	Kansas Interdisciplinary Carbonates Industry Consortium	\$38,588	5/15/16-5/14/18	Jennifer Roberts
Quantifying Carbonate and Clay Mineral Precipitation Kinetics in Alkaline Lacustrine Environments Incorporation Into Porewater Evolution Models	Kansas Interdisciplinary Carbonates Industry Consortium	\$56,155	1/1/16-12/31/17	David Fowle, University of Kansas
Controls on Diagenesis and Silicate and Carbonate Formation In and Beneath Groundwater-fed Alkaline Lakes	Kansas Interdisciplinary Carbonates Industry Consortium	\$45,147	1/1/16-12/31/17	Jennifer Roberts
Salinity Controls on Microbial Cell Wall Character and Impacts on Microbially-Mediated Precipitation of Carbonates	Kansas Interdisciplinary Carbonates Industry Consortium	\$58,455	7/1/15-6/30/16	Jennifer Roberts

TITLE	SOURCE	AMOUNT	DURATION	PRINCIPAL INVESTIGATOR
Revisiting Beachrock Cementation Processes: Phase I High Energy Open Ocean Normal Salinity Coastline	Kansas Interdisc. Carbonates Industry Consortium	\$34,480	5/1/15-4/30/16	Luis Gonzalez, University of Kansas
Microcosm/Bench-scale study for Ft Riley Kansas: Assessing biological impacts on chlorinated solvents	Army Corps of Engineers	\$75,000	10/1/14-9/30/15	Belinda Sturm, University of Kansas
The interplay between methanotrophy, methanogenesis and its impact on net methane flux from Arctic permafrost soils	EAGER—National Science Foundation	\$51,000	5/1/13-4/30/14	Jennifer Roberts
Creating a Center for Metagenomic Microbial Community Analysis	KU Provost's Initiative Grant	\$295,295	1/1/12-12/31/14	Belinda Sturm, University of Kansas
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	Claire Marshall,
Site Characterization of Ozark Plateau Aquifer and Petroleum System in Greater Sedgewick 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
Actualistic Calibration of the Sphaerosiderite Paleoclimate Proxy	National Science Foundation	\$373,647	6/1/07-5/31/10	Greg Ludvigson, Kansas Geological Survey
Experimental Carbonate Precipitation and Dissolution: Novel approaches to understanding and quantifying carbonate mineral precipitation in natural systems	Shell	\$416,000	5/1/06-12/31/09	Jennifer Roberts
Groundwater Ecosystems: Microbial Mineral Weathering and Population Diversity	National Science Foundation	\$393,476	11/1/04-10/3/09	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 supplement to: Heterogeneous Reactions and Groundwater Flow in Reactive Porous Media	National Science Foundation	\$78,088	07/30/05-01/31/07	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 Type ND	\$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
Soil microbial community structure and nutrient availability in tropical rainforest and adjacent anthropogenic grasslands, Central Panama	KU General Research Fund	\$9,992	2002	Jennifer Roberts

RESEARCH SUPERVISION

Primary Supervisor

STUDENT	POSITION/DEGREE	DURATION	CURRENT POST
Christopher Omelon	Laboratory Manager	2016-2017	Assistant Professor, University of Queens
Masato Ueshima	Laboratory Manager	2009-2015	National Institute of Environmental Studies, Japan
Kelsey Bitting	Teaching Post doc	2013-2015	Assistant Professor, Elon University
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 re- searcher	2005-2006	Senior Lecturer, Civil Engineering, University of Strathclyde, UK.
Ezra Kulczycki	PhD.	2010	Geochemist, AMEC Environment and Infrastructure, Burnaby, BC, Canada
Paul Kenward	Ph.D.	2010	Research Scientist, University of British Columbia
Charity Phillips Lander	Ph.D.	2014	Assistant Scientist, Southwest Research Institute
Bryan Rodriguez- Colon	Ph.D.	2020-present	Self Graduate Fellow
Brian Hughes	MS	2005	Environmental consultant, Black and Veatch, Overland Park, KS, USA
Amanda Wilson	MS	2005	Geologist, Anadarko Petroleum Company, Houston, TX, USA

STUDENT	POSITION/DEGREE	DURATION	CURRENT POST
Melissa Marietta	BS/MS	2006-2012	Environmental consultant
Neil Kinnebrew	MS	2012	Project Manager and Consultant, CH2M Hill, Anchorage, AK, USA
Mason Burgess	MS	2009-2012	N/A
Aimee Scheffer	MS	2012	Geologist, Conoco Phillips
Breanna Huff	MS	2014	Research Assistant
Ryan Voegerl	MS	2014	Independent Geologist
Christa Jackson	MS	2015	Applying for PhD Programs
Josh Boling	MS	2015	Nuclear Regulatory Agency
Mathew Edwards	MS	2016	Burns and MacDonald
Adam Yoerg	BS Honors/MS	2016/2018	URS
Bryan Rodriguez-Colon	MS	2017-2020	KU PhD Student
Zijie Gao	MS	2019-2021	KU PhD Student
Rachel Mathis	BS Geology/Microbiology Honors Thesis	2004	Environmental consultant, Burns and MacDonald, Overland Park, KS, USA
Emily McWilliams	BS Geology Honors Thesis	2006	Staff geologist, KDHE Topeka, KS, USA
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
Rosa Fernandez	BS Biology	2014	N/A
Jason Jones	BS Geology/ Honors	2014	Post Doc NC State
Matthew Medina	BS Microbiology/KU PREP Program	2014	PhD Student University of Michigan
Marissa Duckett	BS Microbiology	2018-2020	PhD Student Emory University

GRADUATE STUDENT COMMITTEE SERVICE

MS

Ashley Cocciadiferro, MS, 2020
Adrienne Seiden, MS, 2020
Sarah Rupert, MS, 2019-present
Karin Abramsson, MS 2020
Matt Smith, MS, 2017-present
Erich de Zoeten, MS, 2018
Katherine Kuklewicz, MS, 2017
Joseph Fontana, MS, 2017
Alexa Goers, MS, 2013-present
Sean Hammersburg, MS, 2016
Derek Raisanen, MS 2019
Isabel Villaneda-van Vloten, MS, 2017
Andrew Connolly, MS, 2016
Amanda Livers, MS, 2016
Jeffrey J Nolan, MS, 2016
Luis Montalvo, MS, 2015
Britney Katz, MS, 2014
Molly Long, MS, 2014
Angela Thompson, MS, 2014
Chris Perll, MS, 2013
Tyler Schwenk, MS, 2013
Ian Bowen, MS, 2011
Kim Montague, MS, 2011
Ben Rickards, MS, 2011
Peter Schillig, MS, 2008
Shelby Walters, MS, 2008
Robert Eslick, MS, 2007
Michelle Dambacher, MS, 2005
Debra Jennings, MS, 2005
Jennifer Castle, MS, 2004
Julie Retrum, MS, 2004
Heather Ross, MS, 2004
Elizabeth Johnson, MS, 2003
Kristen Myshrall, MS, 2003

PhD

Zijie Gao, PhD, Geology 2020-present
Zachary Day, PhD, Anthropology 2017-2021
Nilan Kamathewatta, PhD Chemistry 2020
Sasanka Ulapane, PhD, Chemistry, 2020
Brittney Oleniacz, PhD, 2017-present
Leila Joyce Seals, PhD, 2015-present
Matthew Downen, PhD, 2020
Ashley Klymiuk, PhD Biology, 2018
Adam Jackson, PhD, 2020
Michelle Mary, PhD, 2010-present
Nicole Dzenowski, PhD, 2015-2016
Arne Sturm, PhD, 2006-2016
James Lamsdell, PhD, 2014
Rubina Firdous, PhD, 2013
Karla Leslie, PhD, 2012
Julie Retrum, PhD, 2010
Peter Schillig, PhD, 2012
Nick Levsen, PhD Biology, 2008
Steve Sloan, PhD, 2008
Liza Holeski, PhD Biology, 2007
Jon Smith, PhD, 2007

COURSES TAUGHT

(Long-term average teaching load of 1.5 courses per semester)

COURSE TITLE	EN-ROLL-MENT	LEVEL
Introduction to Geology	160-300	Introductory survey course
Introduction to Geology, Honors	20	Introductory survey course for students in the Honors Program—majors and non-majors
Earthquakes and Natural Disasters	600-900	Introductory survey course—non-majors only

Geosciences on the SilverScreen	10	KU Honors Program, Freshmen 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. Focus on field techniques in collecting and preserving 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, 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. Updated to online in 2020
Field and Lab Methods:Geobiology	10	Companion course to Chemical and Microbial Hydro-geology 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 Pharmaceutical Chemistry
Ethics in Geoscience	10	Required seminar course for PhD students and MS students funded by NSF/NIH.
Tipping Points in Earth's Climate	12	Honors first year seminar
Pioneering Women in Science Pre-1950	12	Honors first year seminar
Professional Skills for Graduate Students	20	First year graduate students
Advanced Field Geology: Grand Canyon	14	Upper division undergraduate in collaboration with industry sponsors/instructors
Energy and Society	20	KU Core Goal 5.1; Ethics
Field Methods in Hydro-geology	15	Online, upper division undergraduate and graduate-level course

TEACHING DISTINCTIONS AND SELECTIVE DEVELOPMENTAL OPPORTUNITIES

- KU Center for Teaching Excellence (invited), AAU STEM Analytics Program (2018)
- KU Center for Teaching Excellence (invited), Curriculum Innovation Program (2018)
- Local host, Earth Educators' Rendezvous, Lawrence, KS (2018)
- University Scholars Seminar and Fieldtrip Instructor (2015)
 - Top 20 sophomores took seminar on Energy with related two-week field trip to CO, WY, and SD (invited)
- Course Redesign Workshop, KU Center for Teaching Excellence, January 2013–May 2013
 - Semester-long workshop to guide through process of "flipping" and hybridizing courses
- 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 (invited; 2003)
- NSF "On the Cutting Edge" Workshop for Early Career Faculty (invited; 2003)