Sarrah Dunham-Cheatham

sarrahdc.com dr.smdcheatham@gmail.com 219-476-6977

EDUCATION

Doctor of Philosophy, Geochemistry 2013
University of Notre Dame, Notre Dame, IN
College of Engineering, Department of Civil & Environmental Engineering & Earth Sciences
Dissertation: *Biomineralization and biosorption involving bacteria: Metal phosphate precipitation and mercury adsorption experiments*

Bachelor of Science, Natural Resources & Environmental Science 2007
Purdue University, West Lafayette, IN
College of Agriculture, Department of Natural Resources & Environmental Science

RESEARCH & TEACHING APPOINTMENTS

Postdoctoral Scholar May 2016-Present
University of Nevada, Reno, Civil & Environmental Engineering Department and Department of Natural Resources and Environmental Science
Advisors: Mae Gustin, Benjamin Sullivan, Yu (Frank) Yang, Elizabeth Leger

Lecturer Aug 2014-May 2016
Washington University in St. Louis, Department of Earth and Planetary Sciences
Supervisor: Jeff Catalano

Instructor of Environmental Science & Chemistry Aug 2012-May 2014
Colorado Mesa University, Department of Physical & Environmental Sciences
Supervisor: Russ Walker

Life Science Research Assistant & Field Site Manager Aug 2011-Dec 2011
Stanford Linear Accelerator Center National Laboratory, Stanford Synchrotron Radiation Lightsource
Advisor: John Bargar

Course Instructor Fall 2010
University of Notre Dame, Department of Civil Engineering and Geological Sciences

Graduate Research Assistant Jun 2007-July 2012
University of Notre Dame, Department of Civil & Environmental Engineering & Earth Sciences
Advisor: Jeremy Fein

Graduate Teaching Assistant Aug 2007-Aug 2011
University of Notre Dame, Department of Civil Engineering and Geological Sciences
Supervisors: Jeremy Fein, Jeffrey Talley, Patricia Maurice, Clive Neal

CURRENT PROJECTS

Refining and testing methods for identifying and quantifying gaseous oxidized mercury in air
Collaborators: Addie Luippold, Matthieu Miller, Seth Lyman, and Mae Gustin

Chronological relationships between microbial community and aboveground plant community diversity in W. S. Cooper's succession sites in Glacier Bay National Park
Collaborators: Sarah Bisbing, Brian Buma, Sarah Castle, David Vuono, and Benjamin Sullivan

PUBLICATIONS

"Glucose-primed soil organic carbon mineralization under an anaerobic-aerobic transition"
Authors: Sarrah Dunham-Cheatham, Qian Zhao, Simon Poulson, Daniel Obrist, and Yu Yang; In preparation.

"Aerobic microbial respiration of mineral-bound organic carbon: bioavailability and priming effect"
Collaborators: Dinesh Adhikari, Sarrah Dunham-Cheatham, Dawit Wordofa, Simon Poulson, Eric Roden, and Yu Yang; In preparation

"Anaerobic-aerobic transition inhibits the oxidation of organic carbon"
Authors: Qian Zhao, Sarrah Dunham-Cheatham, Simon Poulson, and Yu Yang; In preparation.

"The influence of Fe on C mineralization following rewetting of degraded meadow soils in the Sierra Nevadas"
Authors: Sarrah Dunham-Cheatham, Cody Reed, Sarah Castle, and Benjamin Sullivan; In preparation.

"In situ remobilization potential of noncrystalline U(IV) species in groundwater"
Authors: Daniel Alessi, Malgorzata Stylo, Juan Lezama Pacheco, Sarrah Dunham-Cheatham, Kenneth Williams, Philip Long, John Bargar, and Rizlan Bernier-Latmani; In preparation.

"Plant-soil relationships in a native salt desert shrubland differ from relationships in an adjacent restored agricultural field"
Authors: Sarrah Dunham-Cheatham, Stephanie Freund, Shauna Uselman, Jay Davison, Wally Miller, Elizabeth Leger, and Benjamin Sullivan; Submitted.

"General Techniques in Geochemistry and Microbiology", In: *Analytical Geomicrobiology* (Cambridge University Press, Cambridge)
Authors: Sarrah Dunham-Cheatham and Yaqi You; Submitted, expected summer 2018.

"The effect of natural organic matter on the adsorption of mercury to bacterial cells"
Authors: Sarrah Dunham-Cheatham, Bhoopesh Mishra, Satish Myneni, and Jeremy Fein
Geochimica et Cosmochimica Acta, (2015) 150, 1-10.

"The effect of chloride on the adsorption of Hg onto three bacterial species"
Authors: Sarrah Dunham-Cheatham, Brian Farrell, Bhoopesh Mishra, Satish Myneni, and Jeremy Fein
Chemical Geology, (2014) 373, 106-114.

"Bioreduction of hydrogen uranyl phosphate: mechanisms and U(IV) products"
Authors: Xue Rui, Man Jae Kwon, Edward O'Loughlin, Sarrah Dunham-Cheatham, Jeremy Fein, Bruce Bunker, Kenneth Kemner, and Maxim Boyanov
Environmental Science & Technology, (2013) 47, 5668-5678.

"The effects of non-metabolizing bacterial cells on the precipitation of U, Pb and Ca phosphates"
Authors: Sarrah Dunham-Cheatham, Xue Rui, Bruce Bunker, Nicolas Menguy, Roland Hellmann, and Jeremy Fein
Geochimica et Cosmochimica Acta, (2011) 75, 2828-2847.

FEATURED RESEARCH

"Natural organic matter fails to make more mercury cling to bacteria"
Author: Danielle Venton
Advanced Photon Source Science 2015, (2016), ISSN 1931-5007.

PROFESSIONAL & INVITED PRESENTATIONS

Colloquium, Desert Research Institute, Reno July 2017
University of Nevada, Reno, Department Natural Resources & Environmental Sciences

Department Seminar Series, UNR, Department of Civil & Environmental Engineering April 2017
University of Nevada, Reno, Department of Civil & Environmental Engineering

American Chemical Society 253rd National Conference, San Francisco, California April 2017
University of Nevada, Reno, Department of Civil & Environmental Engineering

Sustainability Council Faculty Discussion Panel Nov 2013
Colorado Mesa University

Goldschmidt™ 2010, Knoxville, Tennessee June 2010
University of Notre Dame, Department of Civil Engineering & Geological Sciences

John J Reilley Center for Science, Technology, and Values: Toward Regulation of Nanomaterials Conference: Conversation between academia, industry, law, and government May 2010
University of Notre Dame, Department of Civil Engineering & Geological Sciences

Goldschmidt™ 2009, Davos, Switzerland June 2009
University of Notre Dame, Department of Civil Engineering & Geological Sciences

Brownfields 2006 Annual Convention, Boston, Massachusetts Nov 2006
Purdue University, College of Engineering, Department of Engineering Education

Undergraduate Research & Poster Symposium Apr 2006
Purdue University, Colleges of Agriculture, Engineering, Science & Technology

CONFERENCE ABSTRACTS & POSTERS

"Biogeochemical stability and reactions of iron-organic carbon complexes" 2017
Authors: Dinesh Adhikari, Qian Zhao, Sarrah Dunham-Cheatham, Kamol Das, Jacqueline Mejia, Rixiang Huang, Xilong Wang, Simon Poulson, Yuanzhi Tang, Daniel Obrist, Eric Roden, and Yu Yang
American Geophysical Union

"Biogeochemical fate and stability of iron oxide-organic carbon complexes" 2017
Authors: Dinesh Adhikari, Dawit Wordofa, Qian Zhao, Sarrah Dunham-Cheatham, Kamol Das, Rixiang Huang, Jacqueline Mejia, Simon Poulson, Xilong Wang, Yuanzhi Tang, Eric Roden, and Yu Yang
Soil Science Society of America Annual Meeting

"Comparison of plant-soil relationships between native salt desert shrub communities and a restored agricultural field" 2017
Authors: Stephanie Freund, Sarrah Dunham-Cheatham, Shauna Uselman, Elizabeth Leger, and Ben Sullivan
Ecological Society of America

"Glucose-primed anaerobic respiration of organic carbon" 2017
Authors: Sarrah Dunham-Cheatham, Qian Zhao, Simon Poulson, and Yu Yang
U.S. Department of Energy Environmental System Science PI Meeting

"Biogeochemical reactions for ferrihydrite-model organic carbon complexes during microbial reduction" 2017
Authors: Dinesh Adhikari, Dawit Wordofa, Sarrah Dunham-Cheatham, Simon Poulson, Yuanzhi Tang, and Yu Yang
U.S. Department of Energy Environmental System Science PI Meeting

"Processes for iron-bound organic carbon in redox reactions: natural soils and model complexes" 2017
Authors: Qian Zhao, Dinesh Adhikari, Sarrah Dunham-Cheatham, Dawit Wordofa, Jacqueline Mejia, Chunmei Chen, Aman Patel, Simon Poulson, Malak Tfaily, Yuanzhi Tang, Aaron Thompson, Xilong Wang, Annie Kersting, Baohua Gu, Daniel Obrist, Eric Roden, and Yu Yang
U.S. Department of Energy Environmental System Science PI Meeting

"Biogeochemical controls on the stability of iron-bound soil organic carbon" 2017
Authors: Sarrah Dunham-Cheatham, Qian Zhao, Daniel Obrist, and Yu Yang
American Chemical Society 253rd National Meeting

"Biogeochemical cycling of uranium in a reduced aquifer"
Authors: Noémie Janot, Juan Lezama-Pacheco, Sarrah Dunham-Cheatham, Don Pham, Kenneth H. Williams, Philip Long, Daniel Alessi, Rizlan Bernier-Latmani, Li Yang, and James Davis
Abstracts of Papers of the American-Chemical Society, (2013) 245.

"Passive cell wall biomineralization: A universal phenomenon?"
Authors: Sarrah Dunham-Cheatham and Jeremy B. Fein
Geochimica et Cosmochimica Acta, (2010) 74:12. A251.

"The effects of bacterial cell walls on precipitation of uranyl phosphates"
Authors: Sarrah Dunham-Cheatham, Xue Rui, Bruce A. Bunker, Roland Hellmann, Nicolas Menguy, and Jeremy B. Fein
Geochimica et Cosmochimica Acta, (2009) 73:13. A313.

"X-ray absorption fine structure investigation of uranyl-phosphate biomineralization"
Authors: Xue Rui, Bruce A. Bunker, Sarrah Dunham-Cheatham, and Jeremy B. Fein
Geochimica et Cosmochimica Acta, (2009) 73:13. A1131.

EDITORIAL CONTRIBUTIONS

Reviewer: *Biogeosciences; Environmental Science: Processes & Impacts; Geochimica et Cosmochimica Acta; Geomicrobiology J.; J. of Environmental Chemical Engineering; J. of Environmental Quality*

PROFESSIONAL POSITIONS, ACTIVITIES, & SERVICES

Honors Senior Thesis Committee, Molly Chaney — Aug 2015-May 2016
Washington University, Earth & Planetary Sciences Department

Faculty Advisor, Reed Kalash — Fall 2015
U.S. Public Interest Research Group

CMU/WCCC Composting Facility Board of Directors — January 2014-May 2014
Colorado Mesa University, Sustainability Council

Faculty Advisor — January 2014-May 2014
Colorado Mesa University, Sustainability Council

Graduate Student Union, Publicity & Procedures Chair — Aug 2008-May 2011
University of Notre Dame, Graduate Student Union Office

PROFESSIONAL DEVELOPMENT & MEMBERSHIPS

Associate Certificate, Center for the Integration of Research, Teaching, and Learning (CIRTL) — Feb 2016
Teaching Center, Washington University in St. Louis

iTeach Faculty Symposium, Attendee — Jan 2016
Teaching Center, Washington University in St. Louis

Memberships

American Chemical Society	2017-Present
Earth Science Women's Network	2017-Present
National Postdoctoral Association	2016-Present
National Center for Faculty Development & Diversity	2016-Present

Courses

Graduate Environmental Statistics (audit), *University of Nevada, Reno*	Fall 2017
The Age of Sustainable Development MOOC, *Columbia University*	Nov 2015
Emerging Trends & Technologies in the Virtual Classroom MOOC, *U. of CA, Irvine*	Sept 2015
Introduction to GIS (audit), *Washington University in St. Louis*	Spring 2015

TRAININGS & CERTIFICATIONS

Defensive Driving Training	May 2017
Code of Conduct Recertification	March 2016
Basic Environmental Health & Safety Training	July 2015
HIPAA 101 Certification	June 2015
Code of Conduct Certification	June 2015
15 Passenger Van Safety	March 2014
Hazardous Waste Management	Sept 2011
General Employee Radiological Training	Aug 2011
Radiological Worker Training I, II	Aug 2011
Cryogenic & Oxygen Deficiency Safety Training	Aug 2011
Hazardous Waste Operator/Emergency Response Technician (OSHA)	Spring 2006, Spring 2007
Introduction to the Incident Command System (FEMA)	Spring 2006
National Incident Management System: An Introduction (NIMS)	Spring 2006

AWARDS & HONORS

Department of Natural Resources & Environmental Sciences Outstanding Senior, *Purdue U.* AY 06/07
Summer Undergraduate Research Fellowship (SURF) Program, *Purdue U.* Summer 2006
First Place for "Design of Social Science" in the 2006 College of Science Undergraduate Research & Poster Symposium, *Purdue U.* April 2006
Semester Honors, *Purdue U.* Spring 2006, Fall 2005, Spring 2005

COMMUNITY SERVICES

Academy of Science St. Louis Science Fair Judge – Honors Division	February 2016
Academy of Science St. Louis Science Fair Judge	April 2015
Colorado Science Fair Judge	Mar 2013, Feb 2014
Indiana Science Fair Environmental Sciences Judge	Mar 2009, 2010
Celery Bog Lilly Nature Center Youth Soils Display	Dec 2006
Elementary School Science Fair Judge	Apr 2005
Lifetime Girl Scout Member, Silver Award Recipient	Apr 2000

ADDITIONAL EXPERIENCE

Camp Counselor & Science Educator May 2014 – April 2016
Summer Science Blast, Saint Louis Science Center

Web Content Management Assistant Summer 2012
Colorado Department of Parks & Wildlife

Science Honors Learning & Leadership Community Mentor Aug 2006-May 2007
Purdue University, College of Science, Undergraduate Education Office

Resident Advisor Aug 2006-May 2007
Purdue University, University Residences, McCutcheon Hall

Intern: Curriculum Design of the Environmental Protection Agency's "Our Town" Project for 4-H Extension Outreach Jan 2006-May 2007
Purdue University, College of Engineering, Department of Engineering Education
Advisor: Daniel Somerville

Student Assistant to the Dean Aug 2005-May 2007
Purdue University, College of Science, Science Administration Office

Intern: Environmental Leaching Properties of Class F Fly Ash-Based Geopolymer Concrete
Purdue University, College of Engineering, Department of Civil Engineering May-Aug 2006
Advisors: Linda Lee, Tom Seager, Jennifer Siehling

Intern: Marine Geophysics - Tectonic Dynamics of the English Channel Summer 2005
Purdue University, Université de Bretagne Occidentale, Brest, France
Advisor: Eric Calais

Experimental Chemistry Assistant Spring 2005
Purdue University, College of Liberal Arts, Gifted Education Research Institute

Camp Counselor Jul 2004, Jul 2005
Purdue University, College of Science, Science Diversity Programs, ScienceScape

Intern: Effects of Urban Sprawl on Historic Streamflow Aug-Dec 2004
Purdue University, College of Science, Department of Earth & Atmospheric Science
Advisors: John Harbor, Carrie Davis

Women in Science Learning Community Mentor Fall 2003
Purdue University, College of Science, Women in Science / Undergraduate Education Office