

Education & Training

- 2020 – present** **Postdoctoral Research Associate**
University of Montana
Advisor: Cory C. Cleveland
- 2018 – 2020** **Postdoctoral Scholar**
University of California, Davis & The Nature Conservancy
Advisors: Kate M. Scow (UCD) and Deborah A. Bossio (TNC)
- 2013 – 2018** **Ph.D., Soils & Biogeochemistry**
University of California, Davis
Dissertation: Understanding poorly-characterized inputs of nitrogen to
terrestrial ecosystems at ecosystem and global scales
Advisor: Benjamin Z. Houlton
- 2009 – 2013** **B.S., Biochemistry**
Villanova University
Honors Thesis: Molybdenum, phosphorous, and nitrogen availability
control rates of biological N₂-fixation in boreal peatlands
Advisor: Melanie A. Vile

Peer-Reviewed Publications

- Soper, F.M.; Taylor, B.N.; Winbourne, J.B.; Wong, M.Y.; **Dynarski, K.A.**; Reis, C.R.G.; Peoples, M.B.; Cleveland, C.C.; Reed, S.C.; Menge, D.N.L.; Perakis, S.S. A roadmap for sampling and scaling nitrogen fixation in terrestrial ecosystems. *Methods in Ecology and Evolution* (in revision).
- Ospina, M.C.; Turpin, J.M.; Murray, K.A.; Abusaa, S.T.; Jadallah, C.C.; Drwencke, A.M.; Pascoe, E.L.; Godwin, R.L.; Ellison, R.; **Dynarski, K.A.** On interrogating binaries and attending to power through feminist research methodologies in environmental education. *Qualitative Research for Diverse and Underserved Communities* (in review).
- Rippner, D.A.; Margenot, A.J.; Aguilera, L.A.; Li, C.; Sohn, J.; **Dynarski, K.A.**; Waterhouse, H.; McElroy, M.; Wade, J.M.; Hind, S.R.; Green, P.G.; Peak, D.; McElrone, A.J.; Fakra, S.C.; Chen, N.; Feng, R.; Scow, K.M.; Parikh, S.J. Microbial response to copper oxide nanoparticles in soils is controlled by land use rather than copper fate. *Environmental Science: Nano* (in review).
- Cleveland, C.C.; **Dynarski, K.A.**; Batterman, S.; Crews, T.E.; Gei, M.; Gundale, M.J.; Menge, D.N.L.; Peoples, M.P.; Reed, S.C.; Reis, C.R.G.; Salmon, V.G.; Soper, F.M.; Taylor, B.N.; Turner, M.G.; Wurzbarger, N.; Perakis, S.S. Cryptic nitrogen fixers: An important frontier in terrestrial N cycling research. *Ecosystems* (in prep).

Nayfach, S., Roux, S., Seshadri, R., Udway, D., Varghese, N., Schulz, F., Wu, D., Paez-Espino, D., Chen, I.-M., Huntemann, M., Palaniappan, K., Ladau, J., Mukherjee, S., Reddy, T. B. K., Nielsen, T., Kirton, E., Faria, J. P., Edirisinghe, J. N., Henry, C. S., **IMG/M Data Consortium**... Eloe-Fadrosh, E. A. (2020). A genomic catalog of Earth's microbiomes. *Nature Biotechnology*, 1–11.

Dynarski, K.A.; Pett-Ridge, J.C.; Perakis, S.S. Decadal-scale decoupling of soil phosphorus and molybdenum cycles by temperate nitrogen-fixing trees. *Biogeochemistry* (2020).

Dynarski, K.A.; Bossio, D.A.; Scow, K.M. Dynamic stability of soil carbon: reassessing the “permanence” of soil carbon. *Frontiers in Environmental Science* (2020).

Dynarski, K.A.; Houlton, B.Z. Isotopic constraints on plant nitrogen acquisition strategies during ecosystem retrogression. *Oecologia* (2020).

Dynarski, K.A.; Morford, S.L.; Mitchell, S.A.; Houlton, B.Z. Bedrock nitrogen weathering stimulates biological N fixation. *Ecology* (2019).

Dynarski, K.A.; Houlton, B.Z. Nutrient limitation of terrestrial free-living nitrogen fixation. *New Phytologist* (2017).

Vile, M.A.; Wieder, R.K.; Živković, T.; Scott, K.D.; Vitt, D.H.; Hartsock, J.A.; Iosue, C.L.; Quinn, J.C.; Petix, M.; Fillingim, H.M.; Popma, J.M.A.; **Dynarski, K.A.**; Jackman, T.; Albright, C.M.; Wykoff, D.D. N₂-fixation by methanotrophs sustains carbon and nitrogen accumulation in pristine peatlands. *Biogeochemistry* (2014).

Competitive Funding Awarded

- 2018** Early Career Grant, National Geographic Society
Project: “Girls Outdoor Adventure in Leadership and Science”
Awarded amount: \$4,890
- 2018** Community Action Grant, American Association of University Women
Project: “Girls Outdoor Adventure in Leadership and Science”
Awarded amount: \$4,900
- 2017** National Science Foundation Graduate Research Internship Program (GRIP)
Agency collaborator: Dr. Steven Perakis, US Geological Survey
Project: “Molybdenum dynamics in soil organic matter and implications for carbon storage”
Awarded amount: \$5,000
- 2016** Joint Genome Institute Community Science Program,
Project: “Microbial community composition and function throughout decomposition in temperate forests across a bedrock nitrogen gradient.”

2014- 2016 UC Davis Henry A. Jastro Graduate Research Award
Total awarded amount: \$7,247

Teaching Experience

Part-Time Faculty

Fall 2018 *Field Methods in Environmental Science, California State University Sacramento*

Teaching Assistantships

Winter 2016 *Global Environmental Interactions (lead TA), UC Davis*

Winter 2015 *Global Environmental Interactions, UC Davis*

Invited Guest Lectures

Winter 2018, 2019 “Introduction to Soils,” *Global Environmental Interactions, UC Davis*

Spring 2017, 2019 “Introduction to Meta-Analysis,” *Ecosystem Biogeochemistry (graduate course), UC Davis*

Spring 2019 “Microbial Biogeochemistry,” *Ecosystem Biogeochemistry (graduate course), UC Davis*

Awards & Fellowships

2020 Mass Media Science and Engineering Fellowship, American Association for the Advancement of Science & Ralph W.F. Hardy Endowment

2019 Distinguished Community Service Award, UC Davis Department of Land, Air & Water Resources

2014- 2017 Graduate Research Fellowship, National Science Foundation

Undergraduate Research Mentorship

Angel Fong, Emma Hansen-Smith, and Joyce Wong. UC Davis. 2016-2017.

Project title: “Heavy Metal Sequestration by Douglas Firs on Serpentine Soil”

Christina Day, Andy Parks, Elisa Fernandes-McDade, Emma Hansen-Smith, Sara Hutton, Avery Kruger, and Kelly Norris (participants in Strategies for Ecological Education, Diversity, and Sustainability [SEEDS] program at UC Davis). 2014-2015.

Project title: “Mycorrhizal Enzyme Activity in the Pygmy Forest”

Presentations and Posters

Invited Talks

Invited seminar speaker, “Bedrock Nitrogen, Microbes, and Soil Carbon” (2018). Department of Environmental Studies Seminar Series, California State University Sacramento, Sacramento, California.

Invited panelist, “Children and youth in climate change: an intergenerational perspective” (2018). Global Climate Action Summit, San Francisco, California.

Invited panelist, “The Future of Resource Management & Research in the Parks” (2018). Sequoia & Kings Canyon Science Symposium, Three Rivers, California.

Contributed Talks

Murray, K.; Jadallah, C.; Ospina, M.C.; Pascoe, E.; Drwencke, A.; Godwin, R.; Ellison, R.; **Dynarski, K.**; Abusaa, S. (2020). Community, collaboration, and care: Feminist methodologies for environmental education research. North American Association for Environmental Education Annual Research Symposium.

Dynarski, K.; Mitchell, S. A.; Morford, S.L.; Houlton, B.Z. (2017). Bedrock nitrogen influences ecosystem nitrogen cycling. Goldschmidt Conference (Geochemical Society), Paris, France.

Dynarski, K.; Mitchell, S.A.; Morford, S.L.; Houlton, B.Z. (2015). Bedrock nitrogen inputs support litter nitrogen fixation and temperate forest ecosystem fertility. American Geophysical Union Fall Meeting, San Francisco, California.

Contributed Posters

Dynarski, K.; Bossio, D.A.; Scow, K.M. (2019). Dynamic stability: building soil carbon for soil health & climate change mitigation. Soil Health Institute Annual Meeting, Sacramento, California.

Murray, K.; **Dynarski, K.**; Holzer, I.; Clapp, M.; Winokur, O.; Patterson, N.; Fiske, A.; Schmidt, J.; Pascoe, E.; Holcomb, K.; Waterhouse, H. (2018). Engaging girls and non-binary youth in field-based science and leadership development through a free program in Sequoia National Park. Sequoia & Kings Canyon Science Symposium, Three Rivers, California.

Dynarski, K.; Morford, S.L.; Houlton, B.Z. (2015). Role of bedrock nitrogen in regulating asymbiotic nitrogen fixation and plant tissue chemistry. Ecological Society of America Annual Meeting, Baltimore, Maryland.

Dynarski, K.; Wieder, R.K.; Vile, M.A. (2013). Phosphorus limitation controls rates of biological N₂-fixation in boreal peatlands. American Geophysical Union Fall Meeting. San Francisco, California.

Dynarski, K.; Wieder, R.K.; Vile, M.A. (2012). Nitrogen fixation in Sphagnum mosses in Canadian boreal peatlands: the role of molybdenum and phosphorus availability. BIOGEMON: 7th International Symposium on Ecosystem Behavior. University of Maine, Northport, ME.

Public Outreach & Education

Girls Outdoor Adventure Leadership in Science (GOALS) UC Davis Chapter, 2017-2019

- Co-founder, 2017-2018/2018-2019 program chair

- Collaborated on a team of graduate students and early career scientists to design, fundraise, and implement a free immersive science education summer program for high school girls from backgrounds underrepresented in STEM
- Developed curriculum for teaching environmental science in a wilderness setting
- Established a novel collaboration between UC Davis and Sequoia and Kings Canyon National Parks

Science Informed Leadership (now a part of the Union of Concerned Scientists Science Network), 2016

- Co-founder and 2016 messaging director
- Worked with a team of graduate students to promote scientific advocacy at a state and national political level through an op-ed writing and letter writing campaign
- Co-wrote articles appearing on blogs of the Union of Concerned Scientists, Scientific American, and the Ecological Society of America

Ecological Science Educator/Facilitator, Insight Garden Program, Solano State Prison, 2014-2017

- Taught ecological principles and their applicability to both successfully growing a garden and developing healthy life skills in a weekly class for inmates at Solano State Prison

Ecological Restoration Mentor, Student & Landowner Education & Watershed Stewardship Program, 2013-2018

- Taught high school students about ecological principles, provides college and career mentorship, and supervises student participation in riparian zone restoration field days

Academic Service

Working Groups

John Wesley Powell Center for Analysis and Synthesis Working Group: “Global Terrestrial Synthesis of Biological Nitrogen Fixation” (January 2020-present)

Committees Served On

UC Davis Soils & Biogeochemistry Graduate Group Seminar Committee (2017-2018)
UC Davis Graduate Student Association - Soils & Biogeochemistry Representative (2014-2016)

Journals Reviewed For

Ecology, Functional Ecology, Biogeochemistry, Global Biogeochemical Cycles, Plant & Soil, Proceedings of the National Academy of Sciences, PeerJ, Agronomy Journal, Global Change Biology, Biotropica, PLoS ONE, Journal of Ecology, Journal of Geophysical Research – Biogeosciences

Workshops Organized

NSF-GRFP Application Workshop, UC Davis, September 2014
“Genome Detectives” Workshop at Expanding Your Horizons UC Berkeley (invited workshop), 2014-2018

Professional Organization Membership

American Women in Science, American Geophysical Union, Ecological Society of America

Selected Outreach Presentations and Publications

“Preventing Over-Fertilization for Better Crop Quality and Yield” – Teralytic Blog, December 2018. <https://blog.teralytic.com/preventing-over-fertilization/>

“How Microbes Make Soils – and Crops – Healthier” – Teralytic Blog, November 2018. <https://blog.teralytic.com/soil-microbes/>

“Graduate Students Organize to Promote Science-Informed Leadership in the New Executive Administration” – Union of Concerned Scientists Blog, December 2016.

<https://blog.ucsusa.org/science-blogger/graduate-students-organize-to-promote-science-informed-leadership-in-the-new-executive-administration>

Professional Development

Workshops Attended

School of Advanced Science on nitrogen cycling, environmental sustainability and climate change, organized by University of São Paulo Center of Nuclear Energy in Agriculture (USP-CENA) and the Inter-American Institute for Global Change Research (IAI), São Pedro, São Paulo, Brazil. July 31-August 10 2016.

NSF NEON: Mapping species, composition (foliar chemistry) and soil properties with spectroscopy, organized by Boise Center Aerospace Laboratory, Boise State University. Boise, ID. August 29-31 2016.

NSF NEON: Topographic, Geomorphic, and Vegetation Analysis with Lidar, organized by Boise Center Aerospace Laboratory, Boise State University. Boise, ID. September 28-30 2016.