

Alexander S. Honeyman

Address: Earth System Science, Stanford University, 473 Via Ortega, Stanford, California, USA, 94305.

Office: Green Earth Sciences 321. Email: honeyman@stanford.edu

PROFESSIONAL PREPARATION:

B.A. Biochemistry, Biophysics, and Molecular Biology, *cum laude*, Whitman College, 2016

M.S. Civil and Environmental Engineering, Colorado School of Mines, 2020

Ph.D. Civil and Environmental Engineering, Colorado School of Mines, August 19th, 2022;

Advisor: Dr. John R. Spear

Postdoctoral Fellow. Earth System Science, Stanford University, November 2022 — Present
Laboratory of Dr. Scott Fendorf

PROFESSIONAL POSITIONS:

November 2022 — Present

Postdoctoral Fellow in Soil and Environmental Biogeochemistry, Fendorf Lab, Earth System Science, Stanford University, Stanford, California, USA

October 2021 — December 2021

Invited Visiting Research Ph.D. Candidate: Sensors Lab, Microbiology Section, Department of Biology, Aarhus University, Aarhus, Denmark

Principal Investigator: Dr. Klaus Koren

September 2019 — August 2022

US National Science Foundation Graduate Research Fellow

July 2019 — July 2021

Microbial Diversity Summer Course Molecular Teaching Assistant, Marine Biological Lab, Woods Hole, MA

May 2019 — August 2019

Edna Bailey Sussman Environmental Research Fellow

2018 — 2022

Graduate Student (Ph.D.), Colorado School of Mines

2016 — 2018

Research Technician, Colorado School of Mines

AWARDS/HONORS/AFFILIATIONS:

- Editor's 'Spotlight Selection' and journal cover image for *Applied and Environmental Microbiology*, July, 2022. <https://journals.asm.org/doi/10.1128/aem.01091-22>
- Second Place Poster: Front Range Microbiome Symposium. April 15th, 2022. Fort Collins, Colorado.
- National Microbiome Data Collaborative Champion, 2021 – Present: <https://microbiomedata.org/nmdc-champions/>
- US National Science Foundation Graduate Research Fellowship Awardee, 2019
- Edna Bailey Sussman Environmental Research Fellowship Awardee, 2019
- Colorado School of Mines Graduate Student Fellowship Awardee, 2018 - 2019
- Software Carpentry Teaching Assistant, 2018 – 2022: <https://software-carpentry.org/>
- US National Science Foundation Graduate Research Fellowship Honorable Mention, 2018
- Graduated from Whitman College *cum laude*, 2016
- Whitman College Internship Grant, Rabinovitch Lab, Stanford University, Stanford, CA, 2015
- Whitman College Internship Grant, National Jewish Health, Denver, CO, 2013
- D.K. Pearson Scholarship for exceptional contribution to academic life, Whitman College, 2012 - 2016
- Eagle Scout, Scouts of America, 2012

PUBLICATIONS:

Honeyman, A., Merl, T., Spear, J.R., Koren, K. 2023. Optode-based chemical imaging of laboratory burned soil reveals millimeter-scale heterogeneous biogeochemical responses. *Environmental Research* 224. <https://www.sciencedirect.com/science/article/pii/S001393512300261X>

Honeyman, A. 2022. Explaining soil biogeochemical responses after fire. Ph.D. Dissertation, Civil and Environmental Engineering, Colorado School of Mines, Golden, Colorado.

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- Honeyman, A.**, Feghel, T., Peel, H., Masters, N., Vuono, D., Kleiber, W., Rhoades, C., Spear, J. 2022. Statistical learning and uncommon soil microbiota explain biogeochemical responses after wildfire. *Applied and Environmental Microbiology* 88. <https://journals.asm.org/doi/10.1128/aem.00343-22>
- Thieringer, P., **Honeyman, A.**, Spear, J.R. 2021. Spatial and temporal constraints on the composition of microbial communities in subsurface boreholes of the Edgar Experimental Mine. *Microbiol Spectr* 9:e00631- 21. <https://doi.org/10.1128/Spectrum.00631-21>
- Honeyman, A.**, Day, M., Spear, J.R. 2018. Regional fresh snowfall microbiology and chemistry are driven by geography in storm-tracked events, Colorado, USA. *PeerJ* 6:e5961. <https://doi.org/10.7717/peerj.5961>
- Honeyman, A.** 2016. Developing an in vitro model to test how blood flow influences human endothelial cell phenotype in health and disease. Whitman College Senior Thesis; Dept. of Biochemistry, Biophysics, and Molecular Biology.
- Honeyman, A.**, Browning, J., Hertzberg, J., Schroeder, J., Stalder, A., Fenster, B. 2014. Vorticity for the Assessment of Pulmonary Vascular Hemodynamics in Pulmonary Arterial Hypertension. *J. Cardiovascular Magnetic Resonance* 16 (Suppl 1): P15. Poster: Society for Cardiac Magnetic Resonance National Conference, New Orleans, LA.

PRESENTATIONS & RECENT ABSTRACTS (*Indicates mentee):

- *Blythe, C., Lopez, A., **Honeyman, A.**, Vajedian, S., James, K., Smith, R., Fendorf, S. 2023. Interpolating Groundwater Arsenic Contamination in the San Luis Valley, Colorado, USA. Poster, American Geophysical Union 2023.
- *Southern, J., Lopez, A., **Honeyman, A.**, Carney, D., James, K., Smith, R., Fendorf, S. 2023. Deciphering the Role of Redox Conditions on Groundwater Arsenic Contamination in the San Luis Valley, Colorado. Poster, American Geophysical Union 2023.
- *Liebson, R., Lopez, A., **Honeyman, A.**, James, K., Smith, R., Fendorf, S. 2023. Geothermal Contributions to Groundwater Arsenic Contamination in the San Luis Valley, CO, USA. Poster, American Geophysical Union 2023.
- Honeyman, A.**, Lopez, A., Blythe, C., James, K., Smith, R., Fendorf, S. 2023. Using statistical and machine learning to explain the threat of arsenic in groundwater in the San Luis Valley, Colorado, USA. Oral presentation, Goldschmidt 2023.
- Honeyman, A.** July 19th, 2022. Explaining soil biogeochemical responses after fire. Public Ph.D. Dissertation Defense, Colorado School of Mines, Golden, Colorado.
- Honeyman, A.** November 8th, 2021. Fire in the American West: Genetic sensing of soil biogeochemistry after wildfire in Colorado, USA. Microbiology Section, Department of Biology, Aarhus University, Aarhus, Denmark.
- Honeyman, A.**, Moonen, J.R., Rabinovitch, M. 2015. Developing an in vitro model to test how blood flow influences endothelial cell phenotype in health and disease. Murdock College Science Research Program Annual Conference, Whitman College Biology Keynote Talk.

PRESS:

American Society for Microbiology Press Release: “New Methodology Helps Predict Soil Recovery After Wildfires”. July 25th, 2022.
<https://asm.org/Press-Releases/2022/July/New-Methodology-Helps-Predict-Soil-Recovery-After>

PROFESSIONAL WORKSHOPS & SESSION LEADERSHIP:

- Participant: Planet Labs – Stanford Doerr School of Sustainability 2023. Satellite imagery and artificial intelligence opportunities and collaborations.
- Session co-convenor: Data-driven applications in geochemistry: Bridging the gaps between modeling, experiments, and field observations. 2024 Goldschmidt Conference.

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GRADUATE LEVEL DATA SCIENCE COURSEWORK:

- Statistical Learning
- Machine Learning

RESEARCH FUNDING:

Danish Ministry of Higher Education and Science International Network Programme, 2022 – 2023

- “Initiating an International Network to Study Soils Post-Wildfires – From Chemistry to Microbial Ecology”, Spear, J., **Honeyman, A.**, Zieger, S., and Koren, K.
- \$45,000 over 18 months

National Science Foundation Graduate Research Fellowship, 2019-2022

- \$138,000 over three years

Edna Bailey Sussman Environmental Research Fellowship, Summer 2019

- \$9,000 total

Colorado School of Mines Graduate Student Fellowship, 2018 – 2019

- \$55,000 total

MENTORSHIP:

- *As postdoctoral fellow:* Primary mentor for two Stanford SESUR students (Rebecca Liebson & Jaden Southern)—both presented conference abstracts. Primary mentor for one masters student (Caroline Blythe)—they presented a conference abstract.
- *As doctoral student:* Mentor for masters student (Nicole Masters) and two undergraduate students (Maria Day & Henry Peel): field, laboratory, software, and manuscripts, 2018 – 2022.
- *As doctoral student:* Mentor for High school STEM student (Rachel Christensen): 1st Place Earth and Environmental Sciences at the Denver Metro Regional Science and Engineering Fair, 2021.

SYNERGISTIC LEADERSHIP AND FIELD EXPERIENCE:

- 10 years’ experience as a Volunteer Firefighter, Boulder County 911 System, Colorado, USA, 2012 – 2022
 - o Fire (FFT2, Driver / Engineer), Rescue, EMS (EMT-IV), Incident Command
- Leadership course completions in Technical Alpine Mountaineering and Rock Climbing, American Alpine Institute