Adrianne Seiden

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Education

University of California Merced — *Merced, CA*
PhD Aspirant, Environmental Systems (Terrestrial Biogeochemistry) — *08/2024 - present*
- Advisor: Dr. Asmeret Asefaw Berhe

University of Kansas — *Lawrence, KS*
MS Geology (Geobiology) — *08/2017 - 05/2020*
- Advisor: Dr. Alison Olcott
- Thesis title: Thermally altered microbialites of the terminal Ediacaran Dengying Formation

Tulane University — *New Orleans, LA*
BS Ecology & Evolutionary Biology, Spanish (double major) — *08/2012 - 05/2016*

Professional Experience

08/2025 – 08/2026	**NSF Research Trainee (NRT) | CONDESA**, University of California, Merced
01/2025 – 08/2025	**Graduate Student Researcher | Terrestrial Biogeochemistry**, University of California, Merced
08/2024 – 12/2024	**Graduate Teaching Assistant | Environmental Systems Science** , University of California, Merced
09/2021 – 07/2024	**Laboratory and Field Technician | Silver Lab**, University of California, Berkeley
06/2021 – 08/2021	**Summer Fellow | SB1383 Research**, California Climate Action Corps | San Jose Conservation Corps
08/2017 – 05/2019	**Graduate Teaching Assistant | Introduction to Geology Lab**, University of Kansas

Research Projects

Unraveling the Potential of Suberin-Enriched Roots in Soil Carbon Sequestration: A Critical Investigation — *UC Merced*
PI: Asmeret Asefaw Berhe | Co-PI: Adrianne Seiden — *08/2024 – Present*
- Funded by the Salk Institute for Biological Research and the Center for Resilient, Equitable and Sustainable Futures
- Laboratory incubations with isotopically-labeled root material; cumulative flux, mass loss, and spectroscopic measurements

Influence of forest management activities on critical zone characteristics & processes in the Southern Sierra Nevada — *UC Merced*
PI: Asmeret Asefaw Berhe — *08/2024 – Present*
- Compiling, cleaning and visualizing spatial and geochemical data from a watershed-level forest management experiment

Geomicrobiology & Biogeochemistry in the Critical Zone (CZCN) — *UC Berkeley*
PI: Whendee Silver — *08/2021 – 07/2024*
- Managed lab processing, planning, and data organization for a large collaborative project involving 8 sites, and over 1000 soil samples
- Extracted and measured 11 different nutrient pools

Supplementing Enhanced Weathering With Organic Amendments in Rangeland Soils — *UC Berkeley*
Co-PIs: Tyler Anthony, Whendee Silver — *08/2021 – 07/2024*
- Field work: soil, soil-water and aboveground biomass sampling; maintenance of automated flux chamber system
- Lab work: measurement of pH and gravimetric water content, extraction and measurement of iron and nitrogen pools via spectrophotometry, sample preparation and measurement of total C and N via dry combustion

Farming microbes (EBI) *UC Berkeley*

Co-PIs: Tibisay Pérez, Whendee Silver *08/2021 – 07/2024*

- Assisted with field application of biochar and ground basalt
- Helped collect soil, biomass, and lysimeter water samples throughout the growing season
- Measured mineral nitrogen concentrations, TC/TN, pH and equivalent soil mass

Drivers of Spatial Heterogeneity in Nitrous Oxide Emissions *UC Berkeley*

Co-PIs: Charlotte Kwong, Whendee Silver *01/2022 – 05/2024*

- Assisted with field setup and maintenance of the soil greenhouse gas flux measurement system
- Measured pH, iron species, and mineral nitrogen

Presentations

Seiden, A., Chacon, S.S., Rajurkar, A., Quintana, M., Busch, W., & Berhe, A.A. (2025) *Does Root Suberin Content Influence Belowground Carbon Retention?* [Poster] CANVAS 2025, Salt Lake City, UT. 169870

Seiden, A., Chacon, S.S., Rajurkar, A., Quintana, M., Busch, W., & Berhe, A.A. (2025) *Effects of Root Suberin Enrichment on Decomposition and Soil Carbon Storage*. [Poster] AGU 2025, New Orleans, LA. B51L-0737

Awards & Grants

2025 – Present	**Convergence of Nano-engineered Devices for Environmental and Sustainable Applications (CONDESA) Fellowship** (NSF-DGE-2125510) *PI: Sayantani Ghosh, co-PIs: Thomas C. Harmon, Asmeret A. Berhe, Michael Scheibner, Mehmet Z. Baykara*
2025 – Present	**Unraveling the Potential of Suberin-Enriched Roots in Soil Carbon Sequestration: A Critical Investigation** ($46,015) *PI: Asmeret Asefaw Berhe, co-PIs: Adrianne Seiden, Stephany Chacon*
2017	**Selig August Award**, University of Kansas

Professional Development

Workshops

January 12–16, 2026	**Science & Engineering of Environmental Sensors (SEES) Incubator** *UC Merced* Over the course of 5 days, participants worked in groups to design and present a nano-enhanced environmental sensor.
October 27–29, 2025	**X-ray Fluorescence Microscopy for Trace Element Analysis in Environmental Research** *Brookhaven National Laboratory (NSLS-II)* The workshop covered X-ray fluorescence microscopy and X-ray absorption spectroscopy techniques, and included hands-on training for sample preparation, data collection and data processing (AttoMap software).

Relevant Skills

Analytical instruments: Nuclear Magnetic Resonance Spectroscopy (NMR), Fourier Transform Infrared Spectroscopy (FTIR), Discrete Analyzer (SEAL AQ300), C/N Elemental Analyzer, Gas Chromatograph (Shimadzu), UV-Vis Spectrophotometer, Automated Soil Flux Chambers & Multiplexer + CRDS Greenhouse Gas Analyzer

Programming Languages: R, Python, VBA, Google Apps Script, QGIS