Paul O. Seibert

Curriculum vitae, updated October 3, 2025

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Education

Since 2022	**PhD Candidate in Environmental Engineering.** Quantifying the effects of fog and dew on water and carbon cycling. University of California, Berkeley. *Advisor:* Prof. Cynthia Gerlein-Safdi.
2022	**M.Sc. in Environmental Engineering**, Dept. of Civil and Environmental Engineering, University of California, Berkeley.
2021	**B.Sc. in Civil Engineering**, Dept. of Civil and Environmental Engineering, University of Maryland, College Park, MD.

Research and Professional Experience

2022 - Present	**Lawrence Berkeley National Laboratory** (CA, USA), Climate and Ecosystems Sciences Division. Affiliate. Using novel solar-induced fluorescence imagery to detect diurnal and seasonal photosynthetic cycles.
Summer 2025	**NASA Ames** (Mountain View, CA, USA), NASA DEVELOP Remote Sensing Researcher. Coupling remote sensing and machine learning to quantify and predict fog for coast redwood conservation.
2021 – 2022	**Blue Forest Conservation** (CA, USA), Engineering consultant. Developed remote sensing evapotranspiration models for forest management in the Sierra Nevada and Cascade mountains. *Supervisor:* Dr. Tessa Maurer.
2019 – 2021	**University of Maryland** (MD, USA), Maryland Water Resources Research Center. Undergraduate research assistant. Evaluated the sensitivity of the dimensionless unit hydrograph parameters for hydrologic design in Maryland watersheds. *Advisor:* Prof. Kaye L. Brubaker.
2017 – 2021	**University of Maryland** (MD, USA), Gemstone Honors Research Program. Led an undergraduate research team on a four-year project evaluating biosorption of trace heavy metals in wastewater using macroalgae. *Advisor:* Prof. Natasha Almeida e Andrade.
2020	**Technical University of Denmark** (Lyngby, Denmark), Environmental Dept. Assisted in field studies for resolving inland water bodies via unmanned aerial vehicles. *Advisor:* Prof. Peter Bauer-Gottwein.

Publications

P.O. Seibert, C. Gerlein-Safdi, N. Falco, E. Pegoraro, M. Torn. *In prep.* Proximal hyperspectral imaging of solar-induced fluorescence in a heterogeneous grassland.

P.O. Seibert, Z. Li, C. Gerlein-Safdi. *In prep.* Is foliar water uptake a universal process? Insights from a meta analysis and targeted experiment.

A. Cao, Z. Li, **P.O. Seibert**, C. Gerlein-Safdi. September 2025. The Role of Leaf Wettability and Morphology on Leaf Surface Water Storage: A Cross-Biome Synthesis. *Under review, Ecohydrology.* `https://doi.org/10.22541/au.175922187.73235892/v1`.

K. Blount, J. V. Wilkening, A. Kagawa-Viviani, S.H. Ledford, A. Cao, X. Chen, S.L. Fathel, X. Feng, C. Gerlein-Safdi, K. E. Kaiser, C.J. Oswald, A.J. Parolari, V. Rexausen, C.A. Ross, **P.O. Seibert**, A. B. Willis. *Under review, Water Resources Research.* Out of the Forest and into the Concrete Jungle: Challenges, Opportunities, and Innovations in Urban Hydrology.

P.O. Seibert, E. Camp, T. Dawson, C. Gerlein-Safdi. February 2025. Drought limits foliar water uptake in C_3 perennial grasses. *Under review, Journal of Geophysical Research: Biogeosciences.*
`https://essopenarchive.org/doi/full/10.22541/essoar.174395305.53667933/v1`.

S. Ruehr, C. Gerlein-Safdi, N. Falco, **P.O. Seibert**, C. Chou, L. Albert, T. Keenan. July 28, 2024. Quantifying seasonal and diurnal cycles of solar-induced fluorescence with a novel hyperspectral imager. Geophysical Research Letters, 51, e2023GL107429. https://doi.org/10.1029/2023GL107429

Reports

D. Wilcox, A. Palmer, **P. Seibert**, M. Hartmann. August 12, 2025. California Coast Ecological Conservation: Coupling Satellite Observations and Machine Learning to Understand Future Fog Prevalence Along the Coast Redwood Range. https://ntrs.nasa.gov/api/citations/20250008796/downloads/2025Sum_ARC_CaliforniaCoastEco_TechPaper_FD-final.pdf

K. Brubaker, M. Zadeh, C. Walcott, J. Eisenstadht, **P. Seibert**, J. Slattery, T. Gleason, J. Walsch. August 31, 2021. Research on Dimensionless Unit Hydrograph and Time of Concentration for Maryland Watersheds. State of Maryland Department of Transportation. Report no. MD-21-SHA/UM/5-04. https://www.roads.maryland.gov/OPR_Research/2021.08.30_SHAUM5-04_DUH-Tc_FinalReport.pdf

B. Baitman, J. Chang, B. Croce, J. Parker, **P. Seibert**, E. Weiss, J. Weller, W. Zhou. 2021. Evaluating the Biosorptive Properties of Anacostia River Biomass to Facilitate Heavy Metal Removal from Contaminated Water, *2021 Gemstone Thesis Conference*, doi: 10.13016/briu-nie7

Conference Presentations

Oral presentations

AGU Fall Meeting 2024	**P. Seibert**, C. Gerlein-Safdi, S. Ruehr, N. Falco, M. Torn. Characterizing spatial heterogeneity of phenology and productivity using a solar-induced fluorescence imaging spectrometer: results from a multi-year field campaign in a coastal California grassland, Dec 2024, Washington DC, United States. Abstract B21B-09.
SpecNet 2024	C. Gerlein-Safdi and **P. Seibert**. Proximal imaging of SIF and spectral reflectance of coastal grasslands, Nov 2024.
WaterSciCon 2024	C. Gerlein-Safdi, **P. Seibert**, S. Ruehr, N. Falco, M. Torn. Variations of the diurnal dynamics of the photosynthetic activity of a coastal grassland along a water availability gradient, June 2024, Minneapolis, United States. Abstract 330-04.
AGU Fall Meeting 2023	Y. Wu, C. Chou, B. Avora, M. Berkelhammer, E. Brodie, R. Carroll, J. Chen, B. Dafflon, C. Gerlein-Safdi, **P. Seibert**, N. Thiros, M. Sprenger, T. Tokunaga, K. Williams, E. Siirila-Woodburn. Cross Approach Comparison of ET Quantifications at the Mountainous East River Watershed, December 2023, San Francisco, United States. Abstract 1318203.
AGU Fall Meeting 2022	C. Gerlein-Safdi and **P. Seibert**. Estimating transpiration rates in drylands with TROPOMI solar-induced chlorophyll fluorescence, ECOSTRESS surface temperatures, and machine learning-based gap filling techniques, December 2022, Chicago, United States. Abstract B16A-03.

Poster presentations

WaterSciCon 2024	**P. Seibert**, C. Gerlein-Safdi. Do Coastal Grasses Rely on Fog? Initial Results from a Field Campaign and Foliar Water Uptake Experiment, June 2024, Minneapolis, United States. Abstract 217-137.
AGU Fall Meeting 2023	**P. Seibert**, C. Gerlein-Safdi, N. Falco, S. Ruehr. Capturing solar-induced chlorophyll fluorescence dynamics with a novel hyperspectral imager: results from a multidimensional field campaign in a coastal California grassland, December 2023, San Francisco, United States. Abstract 1324529.
AGU Fall Meeting 2023	S. Ruehr, C. Gerlein-Safdi, N. Falco, **P. Seibert**, C. Chou, L. Albert, T. Keenan. Imaging solar-induced fluorescence across leaves and canopies, December 2023, San Francisco, United States. Abstract 1342075.
International Fog and Dew 2023	**P. Seibert**. Point Reyes As A Microcosm: Initial Results From A Fog-Dependent Ecosystem Warming Experiment, July 2023, Fort Collins, United States. Abstract 155.
AGU Fall Meeting 2022	S. Ruehr, **P. Seibert**, C. Gerlein-Safdi, N. Falco, T. Keenan. Hyperspectral imagery illuminates drivers of solar-induced fluorescence across landscapes, December 2022, Chicago, United States. Abstract B43C-04.

News articles, press, and media

≻ Seeking Spatial Patterns of Photosynthesis by Paul Seibert, **Innovative technology and the UC Botanical Garden Collections**, April 2024.

https://botanicalgarden.berkeley.edu/learn/garden-stories/innovative-technology-and-the-uc-botanical-garden-collections/
≻ Bay Area 2050 by **ABC7 News**, San Francisco, Fall 2023. A documentary about climate change predictions for the San Francisco Bay Area.
https://abc7news.com/bayarea2050/

Fellowships and Awards

2025-2026	U.S. Dept. of Energy Office of Science Graduate Student Research Fellowship (DOE SCGSR).
2025	Robert Selleck Memorial Fellowship, UC Berkeley Dept. of Civil & Environmental Engineering.
2017 – 2021	State Senatorial and Delegate Scholarships, Maryland Higher Education Commission, State of Maryland.
2020	Gilman Scholar, United States Department of State.
2018	Daughters of the American Revolution Scholarship.

Research Grants

2022	Carol Baird Award for Graduate Student Research. *Investigating Grassland Water Partitioning Response to Climate Change*
2022	Mildred E. Mathias Graduate Student Research Grant. *Investigating Grassland Water Partitioning Response to Climate Change*
2017 – 2021	Maryland Sea Grant, University of Maryland. *Evaluating the biosorptive properties of Anacostia River Biomass to Facilitate Heavy Metal Removal*
2019 – 2021	Sustainability Grant, University of Maryland. *Evaluating the biosorptive properties of Anacostia River Biomass to Facilitate Heavy Metal Removal*

Professional Organizations

≻ American Geophysical Union. 2022 – Present.

Academic Service

≻ AGU Ecohydrology Technical Committee. 2024 – Present.
≻ Journal Reviewer:
Journal of Hydrology. 2024 – Present.
Tree Physiology, 2025 – Present.
IEEE Sensors Letters 2025 – Present.
≻ President of the Environmental Engineering Advocacy Team. 2022 – 2023.

Certifications & Courses

2025	Certificate in Teaching and Learning in Higher Education , University of California, Berkeley.
2022	IsoCamp, University of New Mexico Center for Stable Isotopes.
2021	Engineer in Training, State of Maryland Board of Engineers #58417.

Teaching

➢ **PHYS 8A: Introductory Physics**, University of California, Berkeley, Spring 2022. *Graduate Student Instructor.*
➢ **ESPM 116B: Grassland and Woodland Ecology**, University of California, Berkeley, Spring 2024. *Graduate Student Instructor.*

Mentoring & Advising

➢ **Undergraduate student mentoring**
- Caitlyn Johnson (University of Maryland, CEE Alumni Mentoring Program)
- Whitley Breeze (University of California, Berkeley, Research Assistant, 2023)
- Ella Camp (University of California, Berkeley, Research Assistant, 2023-2024)
- Rebecca Hope Consaga (University of California, Berkeley, Research Mentoring, 2024-Present)
- Peri Muftuoglu (University of California, Berkeley, Research Apprentice Program, 2025)
- Liv Staton (University of California, Berkeley, Research Apprentice Program, 2025-Present)
- Mahika Behani (University of California, Berkeley, Research Assistant, 2025-Present)

➢ **Graduate student mentoring**
- Zeyin Li (University of California, Berkeley, Research Assistant, 2024-Present)
- Joaquin Jamieson (University of California, Berkeley, Research Assistant, 2023-2024)

Skills & Expertise

Ecohydrology, plant physiology, stable isotopes, remote sensing