SOPHIE RUEHR

Ph.D. Candidate
University of California Berkeley
Dept. of Environmental Science, Policy & Management

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EDUCATION

2020-present **University of California Berkeley** Berkeley, CA
Ph.D. Candidate in Environmental Science, Policy, & Management
Coadvised by Trevor Keenan & Manuela Girotto

2014-2018 **Yale University** New Haven, CT
Bachelor of Science, Geology & Geophysics (cum laude)

RESEARCH & PROFESSIONAL EXPERIENCE

2022-present **SPUR mentor** Berkeley, CA
Research mentor to undergraduate students

2020-present **Data consultant** Berkeley, CA
UC Berkeley D-Lab

2020-2021 **Science mentor for 7th graders** Berkeley, CA
Be a Scientist!

2019-2020 **Newspaper staff reporter** Provincetown, MA
Provincetown Independent

2018-2019 **Huang fellowship for oral history** Port Vila, Vanuatu
Yale University

Summer 2017 **Summer student fellow** Woods Hole, MA
Woods Hole Oceanographic Institution

2016 & 2018 **Newspaper correspondent** Provincetown, MA
Provincetown Banner

Summer 2016 **Environmental science & policy intern** Boston, MA
Save the Harbor, Save the Bay

PUBLICATIONS

1. **Ruehr, S.**, Gerlein-Safdi, C., Falco, N., Seibert, P., Chou, C., Albert, L., Keenan, T.F. Quantifying seasonal and diurnal cycles of solar-induced fluorescence with a novel hyperspectral imager. Manuscript in prep. for *Geophysical Research Letters*.
2. **Ruehr, S.**, Girotto, G., Verfaillie, J., Balodcchi, D., Cabon, A., Keenan, T.F. 2023. Ecosystem groundwater use enhances carbon sinks in a semi-arid oak savanna. *Agricultural & Forest Meteorology*, 342, 109725. 10.1016/j.agrformet.2023.109725.
3. **Ruehr, S.**, Keenan, T.F., Williams, C., Zhou, Y., Lu, X., Bastos, A., Canadell, P., Prentice, I.C., Sitch, S., Terrer, C. Evidence and attribution of the enhanced land carbon sink. 2023. *Nature Reviews Earth & Environment*, 4, 518-534. 10.1038/s43017-023-00456-3.

4. Massoud, E.C., Andrews, L., Reichle, R., Molod, A., Park, J., **Ruehr, S.**, Girotto, M. 2022. Seasonal forecasting skill for the High Mountain Asia region in the Goddard Earth Observing System. *Earth System Dynamics*, 14, 147–171. 10.5194/esd-14-147-2023.
5. Rutkove, S.B., Le, M., Nagy, J.A., **Ruehr, S.**, Semple, C., Sanchez, B. 2022. Design and pilot testing of a 26-gauge impedance-electromyography (iEMG) needle in wild type and ALS mice. *Nerve & Muscle*, 65, 6. 10.1002/mus.27551.
6. **Ruehr, S.** 2021. Beyond the vulnerability/resilience dichotomy: Perceptions of and responses to the climate crisis on Emau, Vanuatu. *Island Studies Journal*. 10.24043/isj.151
7. **Ruehr, S.**, Lee, X., Smith, R., Li, X., Xu, Z., Liu, S., Yang, X., Zhou, Y. 2020. A mechanistic investigation of the oasis effect in the Zhangye cropland in semiarid western China. *Journal of Arid Environments*, 176, 104120. 10.1016/j.jaridenv.2020.104120
8. Espeland, M., Hall, J.P., DeVries, P.J., Lees, D.C., Cornwall, M., Hsu, Y., Wu, L., Campbell, D.L., Talavera, G., Vila, R., Salzman, S., **Ruehr, S.**, Lohman, J.D., Pierce, N.E. 2015. Ancient Neotropical origin and recent recolonisation: Phylogeny, biogeography and diversification of the Riodinidae (Lepidoptera: Papilionoidea). *Molecular Phylogenetic Evolution*, 93, 296-306. 10.1016/j.ympev.2015.08.006
9. Chin, A., **Ruehr, S.**, Tarulli, A., Rutkove, S. 2007. Saline-saturated Balsa Wood as a Testing Mediumfor Rotational Electrical Impedance Myography. *IFMBE Proceedings*, 17, 272-275. 10.1007/978-3-540-73841-1_72

ORAL PRESENTATIONS

1. Ruehr, S. Evidence and attribution of the land carbon sink's historic enhancement (Fall 2023). EEBIOMASS virtual workshop. Max-Planck Institute for Biogeochemistry, Jena, Germany.

1. Ruehr, S. Groundwater drought decreases carbon fixation in a semi-arid oak savannah (Fall 2023). CREAF, Barcelona, Spain.

1. Ruehr, S., Girotto, M., Verfaillie, J., Baldocchi, D., Keenan, T.F. Groundwater drought decreases carbon fixation in a semi-arid oak savannah (Fall 2022). GC55A-03. AGU fall meeting, Chicago, IL, USA.
2. Ruehr, S., Seibert, P., Gerlein-Safdi, C., Falco, N., Wu, Y., Chou, C., Keenan, T.F. Hyperspectral imagery illuminates drivers of solar-induced fluorescence across landscapes (Fall 2022). B43C-04. AGU fall meeting, Chicago, IL, USA.
3. Ruehr, S., Girotto, M., Keenan, T.F. Quantifying ecosystem reliance on groundwater (Fall 2021). H51E-01. AGU fall meeting, New Orleans, LA, USA.
4. Ruehr, S., Gerlein-Safdi, C., Falco, N., Keenan, T.F., Torn, M. S. Picturing SIF: field readiness and initial results from a novel SIF imaging instrument (Fall 2021). B22C-09. AGU fall meeting, New Orleans, LA, USA.
5. Ruehr, S. Carbon emissions and offsets: Global and local research. ARCS Forward National Speaker Series, distinguished speaker (August 24, 2021). Ohio ARCS Chapter, Cleveland, OH, USA.
6. Ruehr, S. Celebration of Distinguished Fellows Selected Student Speaker (April 26, 2021). University of California Berkeley, CA, USA.
7. Ruehr, S. Achievement Rewards for College Scientists Symposium Selected Scholar (April 20, 2021). National presentation, USA.

8. Ruehr, S., Lee, X., Smith, R... Latent heat drives cooling over oases (December 2020). H026-01A. AGU Fall Meeting, USA.
9. Ruehr, S. Stakeholder feedback for a paleoclimate study. (December 10, 2019). Coastal Research Laboratory, Woods Hole Oceanographic Institution, Woods Hole, MA, USA.
10. Ruehr, S. Tracing ancient cyclones: paleoclimate, oral history & climate futures. (November 8, 2018). University of the South Pacific Emalus Campus, Vanuatu.
11. Ruehr, S. The Oasis Effect: Evaluating Intrinsic Biophysical Mechanism Theory and its Implications for Sustainable Water Management in Zhangye, Gansu, China. (May 11, 2018). Dept. of Geology & Geophysics, Yale University, New Haven, CT, USA.
12. Ruehr, S. & Lee, X. Intrinsic Biophysical Mechanism Theory & the Oasis Effect. (March 15, 2018). Key Laboratory of West China's Environmental System, Lanzhou University, Gansu, China.
13. Ruehr, S. & Lee, X. Intrinsic Biophysical Mechanism Theory & the Oasis Effect. (March 13, 2018). School of Geography, Beijing Normal University, Beijing, China.

POSTER PRESENTATIONS

1. Ruehr, S., Gerlein-Safdi, C., Falco, N., Keenan, T.F., Torn, M. S. Picturing SIF: field readiness and initial results from a novel SIF imaging instrument (Fall 2021). B22C-09. AGU fall meeting, New Orleans, LA, USA.
2. Ruehr, S., Girotto, M., Keenan, T.F. Quantifying ecosystem reliance on groundwater (Fall 2021). H51E-01. AGU fall meeting, New Orleans, LA, USA.
3. Ruehr, S., Keenan, TF., Girotto, M. Inter-annual groundwater variation affects ecosystem productivity. (October 2021). AmeriFlux Fall Meeting.
4. Ruehr, S., Lee, X., Smith, R... A mechanistic investigation of the oasis effect in the Zhangye cropland in semiarid western China. (October 2020). AmeriFlux Fall Meeting.
5. Castagno, K., Ruehr, S., Donnelly, J., Woodruff, J. Grain-size distribution and patterns in storm-induced event beds in a coastal pond. (October 2018). EP13D-2125. American Geophysical Union Fall Meeting.
6. Ruehr, S., Castagno, K., Donnelly, J. Newfound aspects of ancient hurricanes: reconstructing storm intensity and sediment deposition dynamics in northeastern coastal ponds. (August 2017). Summer Student Fellow Poster Session, Woods Hole Oceanographic Institution, Woods Hole, MA.

SERVICE

2022-present	UC Berkeley College of Natural Resources LGBTQ+ Coalition
2021-present	AmeriFlux Diversity, Equity & Inclusion Committee member
2020-present	UC Berkeley ESPM Graduate Diversity Council member

OUTREACH & JOURNALISM

2022 Keenan Group TikTok
2022 AmeriFlux 25 years data visualization tool
2022 Berkeley Science Review
2019, 2020 Provincetown Independent
2019 InsideClimate News
2019 WOMR Cape Cod's Outermost Radio
2016, 2018 Provincetown Banner

MENTORING

2022 Tyler Goldstein, UC Berkeley undergradate student
2022 Megan Hur, UC Berkeley undergradate student

FELLOWSHIPS

2022 **FLUXNET Secondment**
FLUXNET
Funding for a 6-week research visit to CREAF, Barcelona, Spain

2022 **Future Investigators in NASA Earth and Space Science and Technology**
National Aeronautics and Space Administration (NASA)
Three years of graduate funding

2020 **Carol Baird Fieldwork Grant**
University of California Berkeley
In support of fieldwork at UC reserve sites

2020 **Environmental Forum Starter Grant**
Dept of Environmental Science, Policy and Management, University of California Berkeley
In support of conference attendance and dissertation research

2020 **Achievement Rewards for College Scientists Fellowship**
ARCS Northern California Chapter
Financial support for first two years of graduate study

2018 **Parker Huang Undergraduate Travel Fellowship**
Yale University
In support of independent research in Vanuatu

2017 **Karen Von Damm 1977 Fellowship**
Yale University Dept. of Geology & Geophysics
In support of senior honors thesis field research in China

2017 **Summer Student Fellowship**
Woods Hole Oceanographic Institution
In support of hurricane paleoclimatology research

2015 **Michael Coe Fieldwork Fund**
Council on Archaeological Studies at Yale
In support of archaeology research in Israel

AWARDS

2021 **First Place: Science/Technology Reporting**
New England Newspaper Association

2021 **First Place: Health Reporting**
New England Newspaper Association

2018 **Hammer Prize**
Yale University Department of Geology & Geophysics

WORKSHOPS

2022 **FluxCourse** Nederland, CO
Two-week field course on eddy covariance flux data and modeling

REVIEWING

2021 Journal of Arid Environments
2023 AGU Advances
2023 Proceedings of the National Academy of Sciences
2023 Geophysical Research Letters

SKILLS

Languages	Bislama (advanced), French (advanced), Italian (basic)
Computer languages	Python, MATLAB, R, Bash, Git
Software	LaTeX, Wordpress, GIS, ENVI, RStudio, Google Earth Engine
Field work	Hyperspectral imager deployment, snow depth and water equivalent, GPS survey, sediment core collection and processing, tree diameter measurement, in situ leaf-level physiology measurements, anthropological research methods