Elizabeth E. Webb

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EDUCATION

2022	Ph.D.	University of Florida, Interdisciplinary Ecology Geospatial Analysis Graduate Certificate
2014	M.S.	University of Florida, Biology
2009	B.A.	Carleton College, Geology (Environmental Studies concentration)

PROFESSIONAL EXPERIENCE

2024-	**NSF Postdoctoral Research Fellow**, Duke University, Nicholas School of the Environment
2022-2023	**Postdoctoral Research Associate**, University of Florida, Department of Biology
2022	**Adjunct Lecturer**, University of Florida, School of Natural Resources and Environment
2015-2018	**Research Coordinator,** University of Florida, National High Magnetic Field Lab
2016-2017	**Consulting Scientist**, Woods Hole Research Center
2010-2015	**Field Research Manager and Assistant** (multiple positions, including in Siberia, Alaska, and Florida)

PUBLICATIONS

h-index: 14 | 19 publications (9 first-author) | 1361 citations | Google Scholar page

Webb, E.E., Cooley, S., Levenson, E., and Maze, J. (2026), Discrepancies in Arctic-boreal lake area trends driven by sensitivity to dry conditions. *Scientific Reports*, 16 5816 https://doi.org/10.1038/s41598-026-35981-w

Levenson, E. S., Cooley, S., Mullen, A., **Webb, E. E**., and Watts, J. (2025), Glacial history modifies permafrost controls on the distribution of lakes and ponds. *Geophysical Research Letters*, 52, e2024GL112771. https://doi.org/10.1029/2024GL112771

Webb, E.E., Alexander, H.D., Loranty, M.M., Talucci, A.C., and Lichstein, J.W. (2024), Controls Over Fire Characteristics in Siberian Larch Forests. *Ecosystems*. https://doi.org/10.1007/s10021-024-00927-8

Webb, E.E., Alexander, H.D., Paulson, A.D., Loranty, M.M., Demarco, J., Talucci, A.C., Spektor, V., Zimov, N., Lichstein, J.W. (2024), Fire-induced Carbon Loss and Tree Mortality in Siberian Larch Forests. *Geophysical Research Letters* 51(1), e2023GL105216 https://doi.org/10.1029/2023GL105216

Webb, E.E., Liljedahl, A.L., Loranty, M.M., Witharana, C., and Lichstein, J.W. (2023), Reply to: Detection of long-term Arctic surface water changes. *Nature Climate Change.* http://doi.org/10.1038/s41558-023-01837-8

Rodenhizer, H., Natali, S.M., Mauritz, M., Taylor, M.A., Celis, G.,…, **Webb, E.E.,** et al., (2023), Abrupt permafrost thaw drives spatially heterogeneous soil moisture and carbon dioxide fluxes in upland tundra. *Global Change Biology*. http://doi.org/10.1111/gcb.16936

Webb, E.E. and Liljedahl, A.L. (2023), Diminishing Lake Area Across the Northern Permafrost

Zone, *Nature Geoscience*. 16, pp. 202–209 https://doi.org/10.1038/s41561-023-01128-z

Webb, E.E., Liljedahl, A.L., Cordeiro, J.A., Loranty, M.M., Witharana, C., and Lichstein, J.W. (2022), Permafrost thaw drives surface water decline across lake-rich regions of the Arctic, *Nature Climate Change.* 12, pp. 841–8461 https://doi.org/10.1038/s41558-022-01455-w

Loranty, M. M., Alexander, H. D., Kropp, H., Talucci, A.C., and **Webb, E.E.** (2021), Siberian Ecosystems as Drivers of Cryospheric Climate Feedbacks in the Terrestrial Arctic, *Frontiers in Climate*, 3(141). https://doi.org/10.3389/fclim.2021.730943

Webb, E. E., Loranty, M. M., & Lichstein, J. W. (2021). Surface water, vegetation, and fire as drivers of the terrestrial Arctic-boreal albedo feedback. *Environmental Research Letters*, *16*(8), 084046. https://doi.org/10.1088/1748-9326/ac14ea

Schuur, T., Bracho, R., Celis, G., Belshe, F., Ebert, C.,…,**Webb, E.E.,** et al. (2021). Tundra underlain by thawing permafrost persistently emits carbon to the atmosphere over fifteen years of measurements. *Journal of Geophysical Research: Biogeosciences*, 1–23. https://doi.org/10.1029/2020jg006044

Plaza, C., Pegoraro, E., Bracho, R., Celis, G., Crummer, K.G., Hutchings, J.A.,…,**Webb, E.E.**, et al., (2019). Direct observation of permafrost degradation and rapid soil carbon loss in tundra. *Nature Geoscience*, *12*(8), pp. 627-631.

Schädel, C., Koven, C. D., Lawrence, D. M., Celis, G., Garnello, A. J., Hutchings, J.A,…,**Webb, E.E.**, et al. (2018). Divergent patterns of experimental and model-derived permafrost ecosystem carbon dynamics in response to Arctic warming. *Environmental Research Letters*, 13(10).

Webb, E. E., Heard, K., Natali, S. M., Bunn, A. G., Alexander, H. D., Berner, L. T., et al. (2017). Variability in above- and belowground carbon stocks in a Siberian larch watershed. *Biogeosciences*, 14(18), 4279–4294.

Mauritz, M., Bracho, R., Celis, G., Hutchings, J., Natali, S. M., Pegoraro, E., Salmon, V.G., Schädel, C, **Webb, E.E.**, Schurr, E.A.G. (2017). Nonlinear CO 2 flux response to 7 years of experimentally induced permafrost thaw. *Global Change Biology*, 23(9), 3646–3666.

Celis, G., Mauritz, M., Bracho, R., Salmon, V. G., **Webb, E. E**., Hutchings, J., et al. (2017). Tundra is a consistent source of CO2 at a site with progressive permafrost thaw during 6 years of chamber and eddy covariance measurements. *Journal of Geophysical Research: Biogeosciences*, 122(6), 1471–1485.

Webb, E. E., Schuur, E. A. G., Natali, S. M., Oken, K. L., Bracho, R., Krapek, J. P., et al. (2016). Increased wintertime CO2 loss as a result of sustained tundra warming. *Journal of Geophysical Research: Biogeosciences*, 249–265.

Natali, S. M., Schuur, E. A. G., Mauritz, M., Schade, J. D., Celis, G., Crummer, K. G., et al. (2015). Permafrost thaw and soil moisture driving CO2 and CH4 release from upland tundra. *Journal of Geophysical Research: Biogeosciences*, 120, 1–13.

Natali, S. M., Schuur, E. A. G., **Webb, E. E.,** Hicks Pries, C. E., & Crummer, K. G. (2014). Permafrost degradation stimulates carbon loss from experimentally warmed tundra. *Ecology*, 95(3), 602–608.

FUNDING

2024-2028 **NASA SWOT Science Team**: *Resolving Key Outstanding Questions in Arctic Surface Water Dynamics using SWOT*
PI: Sarah Cooley (Duke), Co-I: Elizabeth Webb (Duke)

Total Award: $909,347 ($909,347 to Duke)

2024-2025 **NSF-OPP Postdoctoral Research Fellowship:** *Tracking Long-Term Changes in Lake Area Across the Arctic*
PI: Elizabeth Webb (Duke)
Total award: $354,026 ($354,026 to Duke)

2019-2022 **NASA FINESST Graduate Fellowship**: *Vegetation dynamics as drivers of albedo change in northern high latitude ecosystems*
PIs: Elizabeth Webb, Jeremy Lichstein (University of Florida)
Total award: $135,000 ($135,000 to UF)

AWARDS

2025	U.S. Permafrost Association Family Care Program ($500)
2024	IOP Outstanding Reviewer Award
2019	Sharon Fitz-Coy Memorial Award ($1,000)
2019	NASA Terrestrial Ecology Science Team Meeting Best Student Presentation
2018-2021	Grinter Fellowship, UF Graduate School ($9,000)
2013	UF I-Cubed Graduate Student Mentoring Award ($500)
2013	U.S. Permafrost Association Travel Grant ($500)
2013	UF College of Liberal Arts and Sciences Graduate Travel Award ($300)
2013	UF Department of Biology Graduate Travel Award ($150)
2013	UF Graduate Student Council Travel Grant ($350)

MENTORING

2025 - **Shehr Naz Ashraf**, undergraduate student
With my guidance, Shehr is performing geospatial analysis of permafrost lake distributions in python; research will contribute to a scientific journal article and Shehr will be offered co-authorship

2020-2022 **Jada Cordeiro**, undergraduate student and post-baccalaureate researcher
Under my supervision, Jada used high resolution satellite imagery to validate coarser-scale satellite products; research outputs lead to co-authorship

2013 **Tom Lane**, high school science teacher

2011-2012 **John Wood**, middle school science teacher
Mentored, conducted field research, and discussed research-specific classroom activities with a middle school and high school teacher for five to six weeks at Alaska field site; collaboration with teachers continued to presentations at state-wide and national conferences

SCIENCE OUTREACH

2023-2024 **Research Fellow**, PolarSTEAM
Working in collaboration with a high school science teacher to develop lesson plans related to Arctic hydrology and remote sensing of Arctic lakes

2021 **Lesson plan development** for local middle school teacher using Arctic sea ice satellite images

2019 **Participant**, Teachers and Arctic Scientists Collaborative Workshop, St. Augustine, FL

2015-2018 **Guest speaker**, Alachua County public schools (K-8), Florida

Offered lessons on the nature of science, magnetism, and light to ~100 classrooms annually

2016-2018 **Science club organizer**, Fort Clarke Middle School, Gainesville, FL

2017-2020 **Organizer,** Talk Science with Her event at local brewery, Gainesville, FL

2017-2019 **Co-Organizer,** Women in Science and Engineering spring break camp for middle school girls

2013 **Guest teacher,** Bellows Free Academy, Fairfax VT

2013 **Workshop leader**, Alaska Math and Science Conference for teachers, Anchorage, AK

2012 **Guest teacher,** Talbert Middle School, Long Beach, CA

PROFESSIONAL SERVICE AND MEMBERSHIP

2026- Member of the U.S. Permafrost Association Community Care Committee

2022-2024 Author team for the Arctic Monitoring and Assessment Program (AMAP) report, hydrology chapter

2022 Member of International Permafrost Association working group on retrogressive thaw slumps

2014 Committee for selecting 2014-2015 PolarTREC teacher cohort

Ad-hoc reviewer for the National Science Foundation
Arctic Natural Sciences and Arctic Observing Network Programs

Reviewer for the following journals:
Nature, Nature Climate Change, Nature Geoscience, Nature Communications, Nature Communications Earth & Environment, Geophysical Research Letters, Earth's Future, Environmental Research Letters, Journal of Geophysical Research - Biogeosciences, Journal of Geophysical Research - Earth Surface, Surveys in Geophysics, Hydrology, Forests, Permafrost and Periglacial Processes, Earth System Science Data, Cantena, Applied Soil Ecology, Land, Inland Waters

Professional membership:
American Geophysical Union, U.S. Permafrost Association

PROFESSIONAL TRAINING

2023 **CORE Institute Fellow**
Program designed to build networks and skills to address climate change issues using AI; sponsored by the NSF Convergence Accelerator

2023 **Arctic Research is Relationship – Exploring the Foundations of Collaborative, Community, and Indigenous-Centered Arctic Research**
Professional development course offered through the NSF Navigating the New Arctic Community office and Alaska Pacific University; the goal is to provide a comprehensive understanding of challenges and the foundations of knowledge co-production, participatory research, and Indigenous-led scientific research.

2023 **Scalable and Computationally Reproducible Approaches to Arctic Research**
Workshop, Arctic Data Center, National Center for Ecological Synthesis

SELECTED PRESENTATIONS

Only presentations where I was the presenting scientist are included

2025 American Geophysical Union Meeting, New Orleans, LA (oral)

2025 NASA ABoVE Team Meeting, Fairbanks, AK (poster)

2024 **Invited Speaker,** American Geophysical Union Meeting, Washington, DC (oral)
2023 American Geophysical Union Meeting, San Francisco, CA
2022 International Circumpolar Remote Sensing Symposium, Fairbanks, AK (oral)
2021 American Geophysical Union Meeting, New Orleans, LA (oral)
2021 **Invited Speaker,** Permafrost Discovery Gateway Seminar (online)
2021 **Invited Speaker,** NASA Artificial Intelligence Center of Excellence (AICOE) Seminar (online)
2019 American Geophysical Union Meeting, San Francisco, CA (poster)
2019 NASA Terrestrial Ecology Science Team Meeting, College Park, MD (poster)
2013 American Geophysical Union Meeting, San Francisco, CA (two oral presentations)
2013 **Invited Speaker**, St. Francis Xavier University, Antigonish, Canada
2013 **Keynote Speake**r, Alaska Math and Science Conference for teachers, Anchorage, AK
2012 American Geophysical Union Meeting, San Francisco, California (poster)
2012 Webinar for a Cyber-based Interdisciplinary Science Educator Physical Science professional development course

TEACHING AND PEDAGOGICAL TRAINING

Undergraduate courses at University of Florida (instructor of record)

2022 EVR 2001 Introduction to Environmental Science (3 credit hours)

Undergraduate courses at Carleton College (teaching assistant)

2009 BIOL 210 Global Change Biology (6 credit hours)
2009 GEOL 110 Introduction to Geology Lab (0 credit hours)

Middle school lessons at W. A. Jones Environmental Education Center (field instructor)

2009-2010 Outdoor lessons in leadership, Ecology, Social Science, Adventure, and evening programs for 5th through 7th grade school groups.

Certificates

2022 Center for the Integration of Research, Teaching, and Learning (CIRTL) Associate Certificate
2022 Preparing Future Faculty participant, UF
2021 Certificate in Multicultural Mentoring, UF

DATA PRODUCTS

Webb, E.E, Cooley, S., Levenson, E. (2025) Global lake area time series 1999-2021. Arctic Data Center. doi:10.18739/A2BZ61B03.

Webb, E. E., Levenson, E., Cooley, S. W., & Maze, J. (2025). ABoVE: Lakes and Ponds Weekly Occurrence, 2016 - 2023 (Version 1). ORNL Distributed Active Archive Center. https://doi.org/10.3334/ORNLDAAC/2430

Webb, E.E., Alexander, H., Lichstein, J., Paulson, A**.** (2023). Fire influences on above- and belowground carbon stocks in Siberian larch forests. Arctic Data Center. doi:10.18739/A21Z41V27.

Webb, E.E. (2022). Pan-Arctic surface water (yearly and trend over time) 2000-2022. Arctic Data Center. doi:10.18739/A2NK3665N.

Garnello, A.J., Mauritz, M., Taylor, M., Ledman, J., **Webb, E. E**., Schuur, E.A.G (2019). Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR): Winter ecosystem respiration measurements using soda lime, 2010-2019, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:568, http://www.lter.uaf.edu/data/data-detail/id/568. doi:10.6073/pasta/c2b7a30546d2698c8b058444bec41ef6

Ledman, J., Schuur, E.A.G., Mauritz, M., **Webb, E. E**. (2018). Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR): Fall ecosystem respiration chamber measurements, 2014 - 2017, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:652, http://www.lter.uaf.edu/data/data-detail/id/652. doi:10.6073/pasta/c74002db1ff5be8083273295e0e72cd2

Ledman, J., Natali, S.M., Schuur, E.A.G., Mauritz, M., **Webb, E. E**. (2018). *Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating and Drying Research (DryPEHR): Fall ecosystem respiration chamber measurements, 2014 - 2017*, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:653, http://www.lter.uaf.edu/data/data-detail/id/653. doi:10.6073/pasta/8ba8476899f18208391f1a1ec8779d5c

Webb, E. E., Schuur, E.A.G., Natali, S.M. (2014). Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating and Drying Research (DryPEHR): Fall ecosystem respiration chamber measurements, 2011,2013, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:573, http://www.lter.uaf.edu/data/data-detail/id/573. doi:10.6073/pasta/97f40ecc413d19fdd754209167ac71aa

Webb, E. E., Schuur, E.A.G (2014). Monitoring permafrost thaw in Denali National Park and Preserve: year one of data collection 2013, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:577, http://www.lter.uaf.edu/data/data-detail/id/577. doi:10.6073/pasta/31811dc109183ea9779bd1ad787c62f3

Webb, E. E., Schuur, E.A.G., Natali, S.M. (2014). Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating and Drying Research (DryPEHR): Winter ecosystem respiration chamber measurements using on-plot method, Oct 2012-May 2013, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:575, http://www.lter.uaf.edu/data/data-detail/id/575. doi:10.6073/pasta/cdee04ed2656f5915015b7f21188644a

Webb, E. E., Schuur, E.A.G., Natali, S.M. (2014). Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR): Fall ecosystem respiration chamber measurements, 2009; 2011-2013, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:572, http://www.lter.uaf.edu/data/data-detail/id/572. doi:10.6073/pasta/5f97eadcff0b815e6cf18894bd7d0899

Webb, E. E., Schuur, E.A.G., Natali, S.M. (2014). Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR): Winter ecosystem respiration chamber measurements using on-plot method, Oct 2012-May 2013, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:574, http://www.lter.uaf.edu/data/data-detail/id/574. doi:10.6073/pasta/4e46fa3b6824b0c70410519149098dbe

Webb, E. E., Schuur, E.A.G., Natali, S.M. (2013) Eight Mile Lake Research Watershed, Carbon in Permafrost Experimental Heating Research (CiPEHR) Extended sites: winter ecosystem respiration chamber measurements using snow removal method, Bonanza Creek LTER - University of Alaska Fairbanks. BNZ:553, http://www.lter.uaf.edu/data/data-detail/id/553. doi:10.6073/pasta/8a092d8928fc140535c990222f59ba83