

Scott Braddock

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Education:

- Ph.D., 2024 School of Earth and Climate Sciences and Climate Change Institute, University of Maine
Dissertation: *Evidence for Quaternary ice-mass fluctuations of the West Antarctic Ice Sheet using geophysical methods and a relative sea level reconstruction*
Advisors: Dr. Seth Campbell and Dr. Brenda Hall
- M.Sc., 2014 School of Earth and Climate Sciences and Climate Change Institute, University of Maine
Dissertation: *Holocene sea-surface temperatures in McMurdo Sound region, Antarctica*
Advisor: Dr. Brenda Hall
- B.Sc., 2012 Geological Sciences, Central Connecticut State University
Dissertation: *Fracture patterns and paleo-overburden along a retrodeformed cross-section*
Advisor: Dr. Mark Evans

Professional Appointments:

Cold Regions Research and Engineering Laboratory, U.S. Army Corps of Engineers

Research Physical Scientist (2024–Present)

University of Maine, Climate Change Institute

Research Assistant Professor (2024–Present)

College of the Atlantic - Bar Harbor, ME, Earth Science

Visiting Instructor of Earth Science (2023–Present)

University of Maine, School of Earth and Climate Sciences

Research Assistant (2018–2024)

Round River Conservation Studies, Chile & Costa Rica

Conservation Scientist and Instructor (2016–2018)

Publications:

Braddock, S., Hall, B. L., Johnson, J. S., Balco, G., Spoth, M., Whitehouse, P. L., Campbell, S., Goehring, B. M., Rood, D. H., and Woodward, J. Relative sea-level data preclude major late Holocene ice-mass change in Pine Island Bay. (2022). *Nature Geoscience*. 15. 568–572 <https://doi.org/10.1038/s41561-022-00961-y>

Braddock S, Venturelli RA, Nichols K, et al. Lessons learned from shallow subglacial bedrock drilling campaigns in Antarctica (2024). *Annals of Glaciology*. Published online:1-11. [doi:10.1017/aog.2024.12](https://doi.org/10.1017/aog.2024.12)

Johnson, J. S., Woodward, J., Nesbitt, I., Winter, K., Campbell, S., Nichols, K. A., Venturelli, R. A., **Braddock, S.**, et al.: Detecting Holocene retreat and readvance in the Amundsen Sea sector of Antarctica: assessing the suitability of sites near Pine Island Glacier for subglacial bedrock drilling. (2024), *EGUsphere* [preprint], doi.org/10.5194/egusphere-2024-1452

Balco, G., Brown, N., Nichols, K., Venturelli, R. A., Adams, J., **Braddock, S.**, Campbell, S., Goehring, B., Johnson, J. S., Rood, D. H., Wilcken, K., Hall, B., and Woodward, J. Reversible ice sheet thinning in the Amundsen Sea Embayment during the Late Holocene. (2023), *The Cryosphere*, 17, 1787–1801, doi.org/10.5194/tc-17-1787-2023

Johnson, J. S., Venturelli, R. A., Balco, G., Allen, C. S., **Braddock, S.**, Campbell, S., Goehring, B. M., Hall, B., L Neff, P. D., Nichols, K. A., Rood, D. H., Thomas, E. R., and Woodward, J. Review article: Existing and potential evidence for Holocene grounding line retreat and readvance in Antarctica. (2022), *The Cryosphere*, 16, 1543–1562, doi.org/10.5194/tc-16-1543-2022

In Review:

Mannello, M., **Braddock, S.**, Campbell, S.C., Maurer, J., Erwin, E., Schild, K., Koons, P., and McNeil, C. (2024) Variable snow properties and snow water equivalent derived from ground-penetrating radar across the Juneau Icefield, Alaska. *Annals of Glaciology*, [in review]

Current Research Grants:

- **\$9,000,000** (2024–2028): *Impacts of spatial-temporal precipitation, snowpack properties, and snowmelt variability on alpine landscapes and runoff.*
PI: S. Campbell, Co-PI: S. Braddock, et al. (CRREL-2: Terrain Properties and Processes).
- **\$35,000** (2024–2025): *Understanding Changing Ice Sheet, Glacier, and Watershed Hydrology through Citizen Science and Education Initiatives.*
PI: S. Campbell, Co-PI: S. Braddock, et al. (Battelle STEM Grant).

Previously Awarded Grants:

- Maine Space Grant Consortium, UMaine. Quantifying the spatial distribution of firn and snow properties along an elevational transect of the Kahiltna Glacier, Alaska. **Braddock S.**, Campbell, S
- Sturgis Exploration Fund, University of Maine. Characterizing the effects of elevation and ice deformation on the Mt. Hunter ice core record. **Braddock S.**, Erwin, E., Kindstedt, I.
- Churchill Exploration Fund, University of Maine. Mechanisms for glacial acceleration of Southern Patagonian Icefield, Chile. **Braddock S.**
- American Alpine Club. Climate impacts on the glaciers and wildlife of the Southern Patagonian Icefield, Chile. **Braddock S.**
- Geological Society of America. Mechanisms for glacier acceleration of the Southern Patagonian Icefield, Chile. **Braddock S.**

Proposals in process:

- Alaska/Maine EPSCoR: Alaska Collaborative Polar Education Program (ACEP). To be submitted to National Science Foundation, April 2025

- Advancing STEM career pathways for high school and undergraduate students through Arctic science. Pre-proposal to be submitted to Department of Navy (\$600,000). April 2025
- Quantifying Near-Surface Change in Dynamic Northern Latitude Environments at High Spatial and Temporal Resolution using Geophysics, Remote Sensing, and Modeling. Pre-proposal to be submitted to Department of Defense.

Field research experience:

- 2024 *Maine and New Hampshire, USA.* Snow studies Research Scientist
- 2023 *Juneau Icefield, Juneau, AK.* Lead Safety and Research Scientist
Pine Island Glacier, West Antarctica. Research Geophysicist and Safety
Juneau, Alaska. Teaching and Researcher with Upward Bound students
- 2022 *Denali National Park, Talkeetna, AK.* Research Geophysicist
Juneau, Alaska. Teaching and Researcher with Upward Bound students
- 2021 *Juneau Icefield, Alaska.* Teaching and Research Faculty
- 2019 *Amundsen Sea, Antarctica.* Research Vessel Scientist
Chilean Patagonia. Research Scientist
- 2018 *Chilean Patagonia.* Conservation Scientist
- 2017 *Chilean Patagonia.* Conservation Scientist
Osa Peninsula, Costa Rica. Conservation Scientist
- 2016 *Seward, Alaska.* Adventure 60 North – Glacier and Sea Kayak Guide
- 2015 *Juneau, Alaska.* Juneau Icefield Research Program – Field staff and glacier guide
- 2014 *Dry Valleys, Antarctica.* Research Scientist
- 2013 *Dry Valleys, Antarctica.* Research Scientist
Andes, Peru. Research Scientist
- 2012 *Juneau, Alaska, Juneau Icefield Research Program*

Teaching experience:

Visiting Instructor of Earth Science – College of the Atlantic: 2023-Present

- Geology of Mount Desert Island (Field course in Maine)
- Earth Systems (Lecture and Lab)
- Geology of National Parks (Lecture and GIS Lab)
- Glaciers and the Landscape (Lecture and field course)

Instructor – University of Maine: 2018-Present

- Introduction to Integrated Science and Career Exploration (Lecture and lab section)
- Introduction to Earth science - Earth science 102 (Lab section)
- Earth Systems - Earth Science 201 (Lecture)

Field instructor - Round River Conservation Studies: 2016-2018

- Natural history of Patagonia (glaciers, landscapes, oceans, rivers)
- Introduction to biology field methods (sketching, notes, methods)
- Applied conservation biology and restoration ecology
- Humans and the environment

Professional presentations:

- American Geophysical Union, Washington D.C. – December 9-13, Presenter. *The Future of the Juneau Icefield Research Program: A Community Resource for the Next Generation of Polar STEAM Professionals*
- American Geophysical Union, Chicago, IL. - December 12-16, Presenter - *Relative Sea-Level Data Preclude Major Late Holocene Ice-Mass Change in Pine Island Bay, Antarctica*, (poster)
- American Geophysical Union, Chicago, IL. - December 12-16, Presenter - *Engaging High School Learners from Diverse Backgrounds in Polar Science Field Experiences - A Collaboration Between Upward Bound and the Juneau Icefield Research Program* (talk)
- WAIS workshop, Estes Park, CO. - September 26-29, Presenter - *Juneau Icefield Research Program and connections to WAIS* (talk)
- Polar Education Conference, Juneau, AK - July 28 - 30, Conference organizer and presenter
- *Making connections – Field experiences for high school students with Upward Bound and the Juneau Icefield Research Program* (talk)
- WAIS workshop, virtual – presenter - *Recent relative sea-level history for the Pine Island Bay region, West Antarctica* (talk)
- Geological Society of America – presenter - *Mechanisms for glacier acceleration of the Southern Patagonian Icefield, Chile* (poster)

Awards and Honors:

- Outstanding Ph.D. Student Award. University of Maine, College of N. Sciences, Forestry, and Agriculture (2023)
- Switzer Fellowship Finalist (2023)

Certifications and training:

- Wilderness First Responder since 2015
- CPR/AED certified
- Juneau Icefield Research Program – Glacier travel and rescue training Juneau, AK