

Earle A. Wilson

Assistant Professor

Dept. of Earth System Science and, by courtesy, Geophysics, and Oceans,
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EDUCATION

University of Washington, Ph.D. in Oceanography (2019)
University of Washington, M.S. in Oceanography (2014)
Columbia University, B.S. in Applied Physics (2011)

PROFESSIONAL APPOINTMENTS

Assistant Professor, Stanford University (2022–present)
Postdoctoral Research Scholar, California Institute of Technology (2019–2022)
Graduate Research Assistant, University of Washington (2012–2019)
Research Assistant, Lamont Doherty Earth Observatory (2011–2012)

HONORS & AWARDS

Terman Fellow, Stanford University (2022)
Geophysical Fluid Dynamics Fellowship, Woods Hole Oceanographic Institute (2017)
Outstanding Student Paper Award, AGU Ocean Sciences Meeting (2014)
UW Program on Climate Change Fellowship (2012)

PUBLICATIONS

Moorman, R., A. Thompson, and **E. Wilson** (2023), Coastal Polynyas Enable Transitions Between High and Low West Antarctic Ice Shelf Melt Rates, *Geophysical Research Letters*, 50, e2023GL104724. <https://doi.org/10.1029/2023GL104724>

Wilson, E., D. Bonan, A. Thompson, N. Armstrong, and S. Riser (2023), Mechanisms for abrupt summertime circumpolar warming in the Southern Ocean, *Journal of Climate*, 36, 7025-7039, <https://doi.org/10.1175/JCLI-D-22-0501.1>

Ryan, C., M. Santangelo, B. Stephenson, T. Branch, **E. Wilson**, and M. Savoca (2023), Commercial krill fishing within a foraging supergroup of fin whales in the Southern Ocean, *Ecology*, <https://doi.org/10.1002/ecy.4002>.

Robel, A., **E. Wilson**, and H. Seroussi (2022), Layered seawater intrusion and melt under grounded ice, *The Cryosphere*, 16, 451–469, <https://doi.org/10.5194/tc-16-451-2022>, (selected for Editorial Highlight)

Wilson, E. A., A. F. Thompson, A. Stewart, and S. Sun (2022), Bathymetric control of the subpolar gyres and overturning circulation in the Southern Ocean, *Journal of Physical Oceanography*, **52**, 205–223, <https://doi.org/10.1175/JPO-D-21-0136.1>.

Lund D. C., Z. Chase, K. E. Kohfeld, and **E. A. Wilson** (2021), Tracking Southern Ocean sea ice extent with winter water: A new method based on the oxygen isotopic signature of foraminifera, *Paleoceanography and Paleoclimatology*, **36**, <https://doi.org/10.1029/2020PA004095>.

Haumann, F. A., R. Moorman, S. Riser, L. H. Smedsrud, T. Maksym, A. P. S. Wong, **E. A. Wilson**, R. Drucker, L. D. Talley, K. S. Johnson, R. M. Key, and J. L. Sarmiento (2020), Supercooled Southern Ocean Waters, *Geophysical Research Letters*, **47**, e2020GL090242, <https://doi.org/10.1029/2020GL090242>.

Wilson, E. A., A. Wells, I. Hewitt, and C. Cenedese (2020), The dynamics of a subglacial salt wedge, *Journal of Fluid Mechanics*, **895**, A20, <https://doi.org/10.1017/jfm.2020.308>.

Campbell, E., **E. A. Wilson**, G. W. K. Moore, S. C. Riser, C. Brayton, M. R. Mazloff, and L. Talley (2019), Southern Hemisphere climate anomalies drive Antarctic sea ice openings, *Nature*, **570**, 319–325, <https://doi.org/10.1038/s41586-019-1294-0>.

Wilson, E. A., S. C. Riser, E. C. Campbell, and A. Wong (2019), Winter upper ocean stability and ice-ocean feedbacks in the sea-ice-covered Southern Ocean, *Journal of Physical Oceanography*, **49**, 1099–1117, <https://doi.org/10.1175/JPO-D-18-0184.1>.

Wilson, E. A., S. C. Riser (2015), An assessment of the seasonal salinity budget for the upper Bay of Bengal, *Journal of Physical Oceanography*, **46**, 1361–1376, <https://doi.org/10.1175/JPO-D-15-0147.1>.

Wilson, E. A., A. L. Gordon, and D. Kim (2013), Observations of the Madden Julian Oscillation during Indian Ocean Dipole events, *Journal of Geophysical Research: Atmospheres*, **118**, 2588–2599, <https://doi.org/10.1002/jgrd.50241>.

RESEARCH FUNDING

Stanford Woods Institute EVP grant: *Constraining floe-scale Antarctic sea ice dynamics using synthetic aperture radar*. PIs: Earle Wilson and Dustin Schroeder (2023-2025)

Caltech Terrestrial Hazard Observation and Reporting Center: *A New Antarctic? Oceanic Control on Antarctic Ice Sheet Melting*. PIs: Earle Wilson and Andrew Thompson (2021–2022)

MENTORING & ADVISING

Postdoctoral Scholars

Zachary Kaufman, Stanford, 2023–present

Graduate Students

JeongHyun Kim, Stanford, 2023–present

Lemona Nui, Stanford, 2023–present

Lexi Arlen, Stanford, 2022–present

Eliza Dawson, Stanford, 2022–present (co-advised with Dustin Schroeder)

Christopher Auckland, Fall 2022 (visiting from the University of Southampton)

Dissertation Committees

Jared Trok, Earth System Science, Stanford

Peiyun Zhu, Civil and Environmental Engineering, Stanford

Stephy Liberia, University of Tasmania

Undergraduate Students (research)

Chloe Cheng, Stanford, 2023-present

Yuchen Li, Stanford, 2023–present

Allie Skalnik, Stanford, 2023–present

Natalie Armstrong, Caltech, Summer 2020

Camila Buitrago, Caltech, Spring 2020

TEACHING

Courses Offered

ESS 246B, Atmosphere, ocean and Climate Dynamics, The Ocean Circulation, Stanford University, (Winter 2023)

Teaching Assistantship

OCEAN 215, Methods of Data Analysis, University of Washington (Spring 2015)

OCEAN 420, Physical processes in the ocean, University of Washington (Winter 2014)

SERVICE ACTIVITIES

Reviewer for:

- Nature Communications, Journal of Geophysical Research: Oceans, Ocean Dynamics, Ocean Science, Journal of Climate, Journal of Physical Oceanography, Limnology and Oceanography, and Continental Shelf Research, US National Science Foundation

Committee Membership

- Polar Research Board, National Academy of Sciences, Engineering, and Medicine, 2022-2026
- External Advisory Committee, GO-BGC Argo, 2023-present
- Advisory committee, Sustainability Science and Practice Master's Program, Stanford University, 2022
- Postdoc representative on Diversity, Equity, and Inclusion Committee, GPS Division, Caltech (2020–2021)

Outreach

- Science communication fellow at Pacific Science Center, Seattle, WA (2018–2020)

SOCIETY MEMBERSHIP

- American Geophysical Union (2012–present)
- American Meteorological Society (2022-present)
- National Society of Black Physicists (2022-present)

INVITED SEMINARS AND COLLOQUIA

UC Berkeley, Earth and Planetary Science seminar, October 12, 2023
UC Santa Cruz, Whole Earth Seminar, May 9, 2023
UC Berkeley, Ocean Engineering Seminar, April 14, 2023
SOFLUX webinar, October 20, 2022
UC San Diego, Scripps Institute of Oceanography, Polar Hour Seminar, May 12, 2022
Oxford University, AOPP Seminar, November 11, 2021
Colorado School of Mines, Department of Geophysics, Heiland Lecture Series, October 20, 2021
University of Southern California, Department of Earth Sciences, May 6, 2021
Georgia Institute of Technology, School of Earth and Atmospheric Sciences, April 15, 2021
Brown University, DEEPS Colloquium, March 3, 2021
Oregon State University, CEOAS Pathways seminar, February 11, 2021
NOAA GFDL seminar, January 21, 2021
University of Rhode Island, GSO seminar, December 18, 2020
University of Washington, School of Oceanography, November 18, 2020
University of Maryland, AOSC seminar, October 22, 2020
University of Colorado, Boulder, INSTAAR seminar, October 12, 2020
University of Texas, Institute of Geophysics, September 25, 2020
Lamont Doherty Earth Observatory, OCP seminar, June 2018

CONFERENCE PRESENTATIONS (first author only)

American Geophysical Union Fall Meeting December 2022
Stanford University, Harnessing Data and Tech for Ocean Sustainability, November 18, 2022 (invited)
American Meteorological Society, Collective Madison Meeting, August 2022 (invited)
Ocean Sciences Meeting, February 2022
National Society of Black Physicists Annual Conference, November 6, 2021 (invited)
American Geophysical Union Fall Meeting December 2020
CalGFD Meeting (virtual conference), August 21, 2020
Southern Ocean Carbon and Climate Observations and Modeling Annual Meeting, May 2019
American Geophysical Union Fall Meeting, December 2018
Southern Ocean Carbon and Climate Observations and Modeling Annual Meeting, June 2018
Ocean Sciences Meeting, February 2018
Southern Ocean Carbon and Climate Observations and Modeling Annual Meeting, May 2017
American Geophysical Union Fall Meeting, December 2016.
National Institute of Oceanography, India, IO50 symposium, December 2016
American Geophysical Union Fall Meeting, December 2014
Ocean Sciences Meeting, February 2014 (Awarded Outstanding Student Presentation)
American Geophysical Union Fall Meeting, December 2012

FIELDWORK

I08S Repeat Hydrography cruise: R/V Revelle, February 4 - March 19, 2016
Cha' Ba mooring recovery cruise: R/V Thomas G. Thompson, Sep 22-25, 2013