

## Earle A. Wilson

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CONTACT INFORMATION	Environmental Science and Engineering, California Institute of Technology, Pasadena, CA 91125	<a href="mailto:earlew@caltech.edu">earlew@caltech.edu</a>
RESEARCH INTERESTS	General ocean circulation, Southern Ocean dynamics, ice-ocean interactions, polar climate.	
EDUCATION	<b>Ph.D., Oceanography</b> , University of Washington <i>Thesis</i> : “Sea Ice and Upper Ocean Variability in the Southern Ocean” <i>Advisor</i> : Professor Stephen Riser	June 2019
	<b>M.S., Oceanography</b> , University of Washington	February 2014
	<b>B.S., Applied Physics</b> , Columbia University	May 2011
	B.S. Candidate, Physics, Morehouse College	2006–2009
PROFESSIONAL RESEARCH EXPERIENCE	<b>Postdoctoral Scholar</b> California Institute of Technology <i>Advisor</i> : Andrew Thompson	September 2019 to Present
	<b>Graduate Research Assistant</b> University of Washington <i>Advisor</i> : Stephen Riser	2012–2019
	<b>Geophysical Fluid Dynamics Fellow</b> Woods Hole Oceanography Institute <i>Mentors</i> : Ian Hewitt, Andrew Wells, and Claudia Cenedese	Summer 2017
	<b>Research Assistant</b> , Lamont Doherty Earth Observatory Lamont Doherty Earth Observatory <i>Advisor</i> : Arnold Gordon	2011–2012
AWARDS AND FELLOWSHIPS	Woods Hole Oceanographic Institute, Geophysical Fluid Dynamics Fellowship (2017)	
	AGU Ocean Sciences Meeting, Outstanding Student Paper Award (2014)	
	UW Program on Climate Change Fellowship (2012)	
FUNDED PROJECTS	Terrestrial Hazard Observation and Reporting Center: <i>A New Antarctic? Oceanic Control on Antarctic Ice Sheet Melting</i> . PIs: Earle Wilson and Andrew Thompson, Caltech. 2021–2022 (\$85k)	
REFEREED PUBLICATIONS	Lund D. C., Z. Chase, K. E. Kohfeld, and <b>E. A. Wilson</b> (2021), Tracking Southern Ocean sea ice extent with winter water: A new method based on the oxygen isotopic signature of foraminifera, <i>Paleoceanography and Paleoclimatology</i> , <b>36</b> , doi: <a href="https://doi.org/10.1029/2020PA004095">10.1029/2020PA004095</a>	
	Haumann, F. A., R. Moorman, S. Riser, L. H. Smedsrud, T. Maksym, A. P. S. Wong, <b>E. A. Wilson</b> , R. Drucker, L. D. Talley, K. S. Johnson, R. M. Key, and J. L. Sarmiento (2020), Supercooled Southern Ocean Waters, <i>Geophysical Research Letters</i> , <b>47</b> , e2020GL090242,	

doi: [10.1029/2020GL090242](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. doi: [10.1017/jfm.2020.308](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, doi: [10.1038/s41586-019-1294-0](https://doi.org/10.1038/s41586-019-1294-0).

**Wilson, E. A.**, S. C. Riser, A. Wong, and E. C. Campbell (2019), Winter upper ocean stability and ice-ocean feedbacks in the sea-ice-covered Southern Ocean, *Journal of Physical Oceanography*, **49**, 1099–1117, doi:[10.1175/JPO-D-18-0184.1](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, doi: [10.1175/JPO-D-15-0147.1](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, doi: [10.1002/jgrd.50241](https://doi.org/10.1002/jgrd.50241).

MANUSCRIPTS  
SUBMITTED OR IN  
PREPARATION

**Wilson, E. A.**, A. F. Thompson, A. Stewart, and S. Sun, Bathymetric control of the subpolar gyres and overturning circulation in the Southern Ocean, *Journal of Physical Oceanography*, *submitted*.

Robel, A., **E. A. Wilson**, H. Seroussi, Layered seawater intrusion and melt under grounded ice, *The Cryosphere*, *submitted*.

**Wilson, E. A.**, N. Armstrong, A. Thompson, and S. C. Riser, Drivers of recent abrupt surface warming events across the Southern Ocean, *in prep*.

INVITED SEMINARS

University of Southern California, Department of Earth Sciences: *Towards a more complete understanding of the Southern Ocean overturning circulation*, May 6, 2021.

Brown University, DEEPS Colloquium: *Subpolar gyres and the overturning circulation of the Southern Ocean*, March 3, 2021.

Oregon State University, CEOAS Pathways seminar: *Bottom-up control of subpolar gyres and the Southern Ocean overturning circulation*, February 11, 2021.

NOAA GFDL seminar: *Subpolar gyres and the overturning circulation of the Southern Ocean*, January 21, 2021.

University of Rhode Island, GSO seminar: *Subpolar gyres and the overturning circulation of the Southern Ocean: the impact of zonal bathymetry*, December 18, 2020.

University of Washington, School of Oceanography, PO seminar: *Subpolar gyres and the overturning circulation of the Southern Ocean: the impact of zonal bathymetry*, November 18, 2020.

University of Maryland, AOSC seminar: *Subpolar gyres and the overturning circulation of the Southern Ocean: the impact of zonal bathymetry*, October 22, 2020.

University of Colorado, Boulder, INSTAAR seminar: *The role of polar gyres in the Southern Ocean overturning circulation*, October 12, 2020.

University of Texas, Institute of Geophysics: *The role of polar gyres in the Southern Ocean overturning circulation*, September 25, 2020.

Lamont Doherty Earth Observatory, OCP seminar: *Winter upper ocean stability and ice-ocean feedbacks in the Southern Ocean*, Palisades, NY, June 2018.

CONFERENCE AND  
WORKSHOP  
PRESENTATIONS

American Geophysical Union Fall Meeting: *The role of polar gyres in the Southern Ocean overturning circulation*, December 16, 2020.

CalGFD Meeting (virtual conference): *The role of polar gyres in the Southern Ocean overturning circulation*, August 21, 2020.

Gateways to the Ocean: A Symposium Celebrating Arnold Gordon's Contributions to Physical Oceanography, *Drivers of recent sea ice and upper ocean variability in the Southern Ocean*, San Diego, CA, February 2020. (invited)

Southern Ocean Carbon and Climate Observations and Modeling (SOCCOM) Annual Meeting, *Drivers of recent surface temperature variability in the Southern Ocean*, Princeton, NJ, May 2019.

American Geophysical Union Fall Meeting: *Winter ice-ocean feedbacks in the Southern Ocean: the impact of strong storms on upper ocean stability and winter sea ice growth*, Washington, DC, December 2018.

Southern Ocean Carbon and Climate Observations and Modeling (SOCCOM) Annual Meeting, *Ice-ocean feedbacks in the Southern Ocean: the impact of winter storms on upper ocean stability*, Princeton, NJ, June 2018.

Ocean Sciences Meeting: *Deep ocean ventilation and ice-ocean feedbacks in the Southern Ocean*, Portland, OR, February 2018.

Southern Ocean Carbon and Climate Observations and Modeling (SOCCOM) Annual Meeting: *Observations of upper ocean stability from under-ice Argo floats*, Princeton, NJ, May 2017.

American Geophysical Union Fall Meeting: *Observations of upper ocean stability and vertical heat fluxes in the Antarctic from under-ice Argo floats*, San Francisco, CA, December 2016.

IO50-NIO Symposium: *An assessment of the seasonal salinity budget for the upper Bay of Bengal*, Goa, India, December 2015.

American Geophysical Union Fall Meeting: *Comparisons of HYCOM output and Argo data in the Bay of Bengal*, San Francisco, CA, December 2014.

Ocean Sciences Meeting: *Seasonal freshwater circulation in the Bay of Bengal*, Honolulu, HI, February 2014. Poster. *Received award for Outstanding Student Presentation*.

American Geophysical Union Fall Meeting: *Seasonal upper ocean freshwater circulation in the Bay of Bengal*, San Francisco, CA, December 2012.

RESEARCH ADVISING	Natalie Armstrong, visiting undergraduate researcher at Caltech	Summer 2020
	Camila Buitrago, undergraduate student, Caltech	Spring 2020
TEACHING EXPERIENCE	<b>University of Washington, Seattle, WA</b>	
	Teaching Assistant	Spring 2015
	OCEAN 215 - Methods of data analysis (first time offered)	
	Instructor: Stephen Riser	
	Note: Assisted with course development and provided some lecture material	
	Teaching Assistant	Winter 2014
	OCEAN 420 - Physical processes in the ocean	
	Instructor: Mitsuhiro Kawase	
FIELD WORK	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.	
SERVICE ACTIVITIES	Referee for <i>Nature Communications</i> , <i>Journal of Geophysical Research: Oceans</i> , <i>Ocean Dynamics</i> , <i>Journal of Climate</i> , <i>Limnology and Oceanography</i> , and <i>Continental Shelf Research</i> .	
	Proposal reviewer for the US National Science Foundation.	
	Postdoc representative on Diversity, Equity, and Inclusion Committee, GPS Division, Caltech (2020–2021).	
	Science communication fellow at Pacific Science Center, Seattle, WA (2018–2020).	
	Member of American Geophysical Union (2012–present).	
	Student representative on Graduate Curriculum Review committee, School of Oceanography, University of Washington (2017).	
	Instructor and helper for Software Carpentry workshop, University of Washington (January 2015).	