Cimarron Wortham

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Current Address:
4215 S Dawson St
Seattle, WA 98118

Education

Massachusetts Institute of Technology and Woods Hole Oceanographic Institution (MIT-WHOI) — Cambridge, MA
Ph.D. Physical Oceanography — February 2013
- Thesis Title: *A multi-dimensional spectral description of ocean variability with applications*
- Advisor: Carl Wunsch

Reed College — Portland, OR
B.A. Physics — May 2004
- Thesis Title: *Motion of launched wavepackets in the infinite square well*
- Advisors: Nicholas Wheeler and David Griffiths

Employment

NorthWest Research Associates — Redmond, WA
Research Scientist — September 2016–present
Postdoctoral Research Scientist — June 2016–September 2016
- Advisor: Eric Kunze

Applied Physics Laboratory-University of Washington — Seattle, WA
Postdoctoral Research Associate — August 2013–June 2016
- Advisor: Eric Kunze

MIT — Cambridge, MA
Postdoctoral Research Associate — September 2012–May 2013
- Advisor: Carl Wunsch

MIT-WHOI Joint Program — Cambridge, MA
Graduate Research and Teaching Assistant — August 2006–August 2012
- Advisor: Carl Wunsch

Reed College Physics Department — Portland, OR
Department Associate — June 2004–July 2006

Awards and Fellowships

Pacific Science Center Science Communication Fellowship — 2016

Outstanding Student Oral Presentation Award, AMS Atmospheric and Oceanic Fluid Dynamics Meeting — 2011

Phi Beta Kappa Honor Society — 2004

Commendation for Excellence in Scholarship, Reed College — 2001–2004

Teaching Experience

MIT Graduate Teaching Certificate Program — Spring 2011

MIT pre-generals student mentor — 2010–2012

Teaching Assistant — Fall 2009
MIT "Atmosphere, Ocean, and Climate Dynamics" for Raffaele Ferrari

Department Associate — June 2004–July 2006
Physics Department, Reed College
- Lab instructor for introductory physics course. Developed new lab projects; supervised student Teaching Assistants; maintained lab equipment; delivered guest lectures.

Math and Physics Tutor — 2003–2004
Reed College

Service and Leadership

Reviewer for *Journal of Physical Oceanography*, *Journal of Atmospheric and Oceanic Technology*, *Ocean Dynamics*

Pacific Science Center "Meet a Scientist" and "Polar Science Weekend" presenter — 2013–present

Graduate Committee Representative — 2010
EAPS Graduate Student Advisory Committee

Fieldwork

- DIMES US1 on *R/V Roger Revelle*. Chief Scientist Jim Ledwell. 45 days at sea. Responsibilities included analysis of altimetry and ADCP data for tracer tracking; DIMES Pacific sound source deployment; RAFOS float deployment; tracer release and sampling; CTD/XBT sampling.

Publications

- M.-P. Lelong, J. J. Early, E. Kunze, M. A. Sundermeyer and **C. J. Wortham** (2016), Lateral stirring in the ocean on scales of 0.1–10 km: The role of internal waves, *International Symposium on Stratified Flows*.
- S. T. Cole, **C. Wortham**, E. Kunze, and W. B. Owens (2015), Eddy stirring and horizontal diffusivity from Argo float observations: Geographic and depth variability, *Geophys. Res. Lett.*, doi:10.1002/2015GL063827.
- R. Abernathey and **C. Wortham** (2015), Phase speed cross spectra of eddy heat fluxes in the Eastern Pacific, *J. Phys. Oceanogr.*, doi:10.1175/JPO-D-14-0160.1.
- **C. Wortham**, J. Callies, and M. G. Scharffenberg (2014), Asymmetries between wavenumber spectra of along- and across-track velocity from tandem mission altimetry, *J. Phys. Oceanogr.*, doi:10.1175/JPO-D-13-0153.1.
- **C. Wortham** and C. Wunsch (2014), A multidimensional spectral description of ocean variability, *J. Phys. Oceanogr.*, doi:10.1175/JPO-D-13-0113.1.

Sponsored Projects

NSF OCE 1737389; PI; $190,525 — September 2017–August 2020
Wave-topography interaction and impact on oceanic kinetic energy distribution.

NASA 80NSSC19K1252; Institutional PI; $590,829 — July 2019–June 2022
Three-dimensional observational estimates of mesoscale eddy kinetic energy in the global ocean: Understanding the energetics of the climate system.

NASA 80NSSC21K1193; PI; $745,346 — September 2021–August 2025
Physically-Consistent Statistical Mapping and Parameter Estimation from Altimetry.

NSF OCE 2123740; co-PI; $981,611 — September 2021–August 2025
Collaborative Research: Global estimates of energy pathways and stirring by internal waves and vortical mode.

Selected Presentations

Ocean Sciences Meeting "Wave-Topography Interaction and Impact on Oceanic Kinetic Energy" (poster)	San Diego, CA February 2020
AMS Atmospheric and Oceanic Fluid Dynamics Meeting "Wave-Topography Interaction and Impact on Oceanic Kinetic Energy"	Portland, ME June 2019
Ocean Sciences Meeting "The Role of Intermittency in Internal Wave Driven Lateral Mixing" (poster)	Portland, OR February 2018
Ocean Sciences Meeting "Eddy Stirring and Isopycnal Diffusivity from Argo Floats"	New Orleans, LA February 2016
NorthWest Research Associates "Horizontal stirring and diffusivity from Argo float observations"	Redmond, WA January 2015
Ocean Sciences Meeting "Asymmetries between wavenumber spectra of along- and across-track velocity from tandem mission altimetry" (poster)	Honolulu, HI February 2014
University of Washington Oceanography Seminar "Space-time scales of low-frequency ocean variability"	Seattle, WA January 2013
ECCO Meeting, Caltech "Vertical structure of currents in the ECCO2 model"	Pasadena, CA October 2012
Woods Hole Oceanographic Institution Oceanography Seminar "Space-time scales of low-frequency ocean variability"	Woods Hole, MA April 2012
University of Rhode Island Oceanography Seminar "Space-time scales of low-frequency ocean variability"	Narragansett, RI April 2012
Ocean Sciences Meeting "Impact of topography on the propagation and vertical structure of long Rossby waves" (poster)	Salt Lake City, UT February 2012
World Climate Research Program Open Science Conference "A 4-dimensional spectral description of ocean variability for uncertainty determination" (poster)	Denver, CO October 2011
AMS Atmospheric and Oceanic Fluid Dynamics Meeting "Impact of small-scale topography on the propagation of long Rossby waves"	Spokane, WA June 2011
ECCO Meeting, MIT "Comparison of ECCO2 and AVISO SSH spectra"	Cambridge, MA May 2011
Florida State University Oceanography Seminar "A multi-dimensional spectral description of ocean variability"	Tallahassee, FL March 2011
Ocean Sciences Meeting "A 4-dimensional spectral description of ocean variability" (poster)	Portland, OR February 2010
Atmosphere-Ocean Science Days Student Meeting, NYU "Analysis of propagating SSH features from satellite altimetry"	New York, NY May 2009