

# Anna C. Savage

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## CONTACT INFORMATION

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## RESEARCH INTERESTS

Internal gravity waves, internal tides, near-inertial waves, mesoscale and submesoscale eddies, ocean mixing, geophysical fluid dynamics, and internal wave aliasing in satellite altimetry

## EDUCATION

### University of Michigan, Ann Arbor, MI

*Ph.D.*, Applied Physics Program, Advisor: Brian Arbic

*Thesis: Sea surface height signatures of internal gravity waves* 2011-2017

### Kalamazoo College, Kalamazoo, MI

*B.A.*, Physics Major with Applied Math and Studio Art Minors

*Thesis: Analysis of chaotic network dynamics to determine the physical connectivity within neuronal networks* 2007-2011

### Université de Strasbourg, Strasbourg, France

Study Abroad 2009-2010

## RESEARCH AND FIELD EXPERIENCE

- **Post-doctoral scholar (current)**

Co-advised by Amy Waterhouse, Sam Kelly, and Jennifer MacKinnon  
Scripps Institution of Oceanography, San Diego, CA 2017-present

- **Graduate research assistant**

Advised by Brian Arbic  
University of Michigan, Ann Arbor, MI 2012-2017

- **NISKINe Cruises 1-3** (R/V Neil Armstrong): part of Office of Naval Research NISKINe Direct Research Initiative near-inertial internal waves, interactions with eddies and fronts Spring 2018/2019

- **Inner Shelf Cruise** (R/V Sally Ride): part of Office of Naval Research Inner Shelf Direct Research Initiative internal waves, headland eddies, Californian coastal dynamics September 2017

- **Gulf of Mexico Cruise** (R/V Pelican): associated with Consortium for Coastal and River-Dominated Ecosystems (CONCORDE), river plume surveys, wind-driven mixing, tidal-driven mixing April 2016

- **Equatorial Pacific Cruise** (R/V Oceanus): tropical instability waves, Equatorial undercurrent, hydrothermic ventilation, Equatorial cold tongue November 2014

- **NSF Research Experience for Undergraduates**

Biophysics Department  
University of Michigan, Ann Arbor, MI Summer 2010

EXTERNAL  
FUNDING

- **Savage, A. C.**, Low-mode internal tide decay from the Mendocino Ridge, *University of California Ship Funds Program*, 2019.

TEACHING AND  
MENTORING

*Teaching*

- Graduate Student Instructor  
University of Michigan Physics Department  
University of Michigan, Ann Arbor, MI Winter 2016
- Physics teaching assistant  
Physics Department  
Kalamazoo College, Kalamazoo, MI 2008-2011
- Calculus teaching assistant  
Mathematics Department  
Kalamazoo College, Kalamazoo, MI 2010-2011

*Mentoring*

- Ji Ye (undergraduate at University of Michigan) 2016-2017
- Hari Sharma (high school student) Summer 2014

HONORS AND  
AWARDS

- NASA Earth and Space Science Fellowship 2017-2018
- Honors on undergraduate Senior Individualized Project 2011

PUBLICATIONS

- Nelson, A. D., B. K. Arbic, E. D. Zaron, **A. C. Savage**, J. G. Richman, M. C. Buijsman, and J. F. Shriver (2019), Towards realistic nonstationarity of semidiurnal baroclinic tides in a hydrodynamic model, *Journal of Geophysical Research-Oceans*
- Arbic, B. K., M. H. Alford, J. K. Ansong, M. C. Buijsman, R. B. Ciotti, J. T. Farrar, R. W. Hallberg, C. E. Henze, C. N. Hill, C. A. Luecke, D. Menemenlis, E. J. Metzger, M. Müller, A. D. Nelson, B. C. Nelson, H. E. Ngodock, R. M. Ponte, J. G. Richman, **A. C. Savage**, R. B. Scott, J. F. Shriver, H. L. Simmons, I. Souopgui, P. G. Timko, A. J. Wallcraft, L. Zamudio, and Z. Zhao, 2018: A primer on global internal tide and internal gravity wave continuum modeling in HYCOM and MITgcm. In “*New Frontiers in Operational Oceanography*”, E. Chassignet, A. Pascual, J. Tintoré, and J. Verron, Eds., GODAE Ocean View, 307–392, doi:10.17125/gov2018.ch13.
- Warner, S. J., R. M. Holmes, E. H. M. Hawkins, M. Hoecker-Martinez, **A. C. Savage**, J. N. Moum (2018) Buoyant gravity currents released from tropical instability waves, *Journal of Physical Oceanography*, doi:10.1175/JPO-D-17-0144.1.
- **Savage, A. C.**, B. K. Arbic, J. G. Richman, J. F. Shriver, M. H. Alford, M. C. Buijsman, J. T. Farrar, H. Sharma, G. Voet, A. J. Wallcraft, and L. Zamudio (2017), Frequency content of sea surface height variability from internal gravity waves to mesoscale eddies, *J. Geophys. Res. Oceans*, 122, doi:10.1002/2016JC012331.
- **Savage, A. C.**, B. K. Arbic, M. H. Alford, J. K. Ansong, J. T. Farrar, D. Menemenlis, A. K. O’Rourke, J. G. Richman, J. F. Shriver, G. Voet, A. J. Wallcraft, and L. Zamudio (2017), Spectral decomposition of internal gravity wave sea surface height in global models, *J. Geophys. Res. Oceans*, doi:10.1002/2017JC013009.

POSTERS AND  
PRESENTATIONS

- Noncoherence of low mode internal tides in the Tasman Sea (invited)  
AGU Ocean Sciences Meeting, Portland, OR February 2018
- Sea surface height signatures of internal gravity waves and  
implications for swath altimetry  
AGU Ocean Sciences Meeting, Portland, OR February 2018
- Sea surface signatures of internal gravity waves  
CASPO Seminar, Scripps Institution of Oceanography, San Diego, CA March 2017
- Sea surface height variability from internal gravity waves  
to mesoscale eddies and effects on satellite altimetry.  
Physical Oceanography Dissertation Symposium, Honolulu, HI October 2016
- Sea surface height signatures of internal gravity waves  
POA Seminar, Oregon State University, Corvallis, OR October 2016
- Internal gravity wave contributions to sea-surface variability.  
AGU Ocean Sciences Meeting, New Orleans, LA February 2016
- Wavenumber Spectral Exercises with HYCOM  
and the SWOT Ocean Simulator.  
SWOT Science Definition Team Meeting, Toulouse, France July 2015
- High Frequency Tests in the Surface Water  
and Ocean Topography (SWOT) Ocean Simulator.  
SWOT Science Definition Team Meeting, La Jolla, California January 2015
- Analysis of tidal aliasing using tide gauges and an eddying  
global ocean model with embedded tides (poster).  
AGU Ocean Sciences Meeting, Honolulu, HI February 2014
- Comparison of sea surface height in tide gauges and  
high-resolution ocean simulations with embedded tides.  
Layered Ocean Model Meeting, Ann Arbor, MI June 2013

OUTREACH

- Gender Equity Panelist  
Kids Actually Summit  
San Diego, CA May 2018
- Organizing committee member  
APS Conference for Undergraduate Women in Physics  
University of Michigan, Ann Arbor, MI January 2015
- Lead organizer for Society for Women in Physics Demo Day  
Slauson Middle School, Ann Arbor, MI February 2014
- Student community organizer  
Vine Neighborhood Association  
Kalamazoo, MI Spring 2008