Anna C. Savage

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 Pilot Cruise** (R/V Neil Armstrong): part of
  Office of Naval Research NISKINe Direct Research Initiative
  near-inertial internal waves, interactions with eddies and fronts May 2018
- **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

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

- 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