

## STEVEN ROBERT JAYNE

### EDUCATION

---

Sc.D., 1999, Massachusetts Institute of Technology and Woods Hole Oceanographic Institution –  
Joint Program in Oceanography: Oceanography

S.B., 1994, Massachusetts Institute of Technology: Earth, Atmospheric and Planetary Sciences with  
minors in Mathematics and Music

### POSITIONS HELD

---

Woods Hole Oceanographic Institution – Physical Oceanography Department

*Senior Scientist:* May 2013 – present

*Associate Scientist:* August 2005 – May 2013, *Tenure awarded:* April 2009

*Assistant Scientist:* September 2001 – August 2005

National Center for Atmospheric Research – Climate and Global Dynamics Division

*Affiliate Scientist:* March 2002 – March 2015

King Abdullah University of Science and Technology, KSA – Red Sea Research Center

*Visiting Professor:* January 2010

University of Colorado Boulder – Physics Department and NOAA-CIRES

National Center for Atmospheric Research – Climate and Global Dynamics Division

*Postdoctoral Research Associate:* March 1999 – August 2001

Massachusetts Institute of Technology – Earth, Atmospheric and Planetary Sciences Department

*Research Assistant:* June 1994 – March 1999

Woods Hole Oceanographic Institution – Physical Oceanography Department

*Summer Student Fellow:* June 1993 – August 1993

Bermuda Biological Station for Research

*Work/Study Intern:* January 1993 – May 1993

Massachusetts Institute of Technology – Earth, Atmospheric and Planetary Sciences Department

*Undergraduate Research Opportunities Program:* September 1990 – May 1994

### RESEARCH INTERESTS

---

Collecting and synthesizing the diverse set of global ocean observations to map and understand the ocean's general circulation. Modeling the ocean's dynamics and its role in the Earth's climate. Improving physical parameterizations in ocean circulation models. Studying the special role of western boundary currents in the general circulation and eddy-mean flow interactions within them. Investigating air-sea interaction and ocean dynamics in tropical cyclones and strong storms.

## AWARDS

---

Office of Naval Research, Young Investigator Award, 2003  
 Zeldovich Medal, Committee on Space Research and the Russian Academy of Sciences, 2002  
 National Defense Science and Engineering Graduate Fellowship, 1994  
 National Science Foundation, Graduate Research Fellowship, 1994  
 Dean A. Horn Award for Bachelor's thesis, MIT Sea Grant, 1994  
 Goulandris Foundation Award, MIT Sea Grant, 1992

## REFEREED PUBLICATIONS — Author or coauthor of 76 refereed publications

- 
- Jayne, S. R., W. B. Owens, P. E. Robbins, A. K. Ekholm, N. M. Bogue, and E. R. Sanabia, 2021: The Air-Launched Autonomous Micro-Observer. *Journal of Atmospheric and Oceanic Technology*, submitted.
- Mogensen, K. S., E. R. Sanabia, S. R. Jayne, L. Magnusson, and C. R. Densmore, 2021: Using ALAMO floats to validate the ocean response to hurricane passage in coupled forecasting systems. *Monthly Weather Review*, submitted.
- Shroyer, E., *et al.*, 2021: Bay of Bengal intraseasonal oscillations and the 2018 monsoon onset. *Bulletin of the American Meteorological Society*, in press.
- Johnson, G. C., S. Hosoda, S. R. Jayne, P. R. Oke, S. C. Riser, D. Roemmich, T. Suga, V. Thierry, S.E. Wijffels, and J. Xu, 2021: Argo — Two decades: Global oceanography, revolutionized. *Annual Reviews of Marine Science*, **14**, 1.
- Farrar, J. T., T. Durland, S. R. Jayne, and J. F. Price, 2021: Long-distance radiation of Rossby waves from the equatorial current system. *Journal of Physical Oceanography*, **51**, 1947–1966.
- MacKinnon, J. A., *et al.*, 2021: A warm jet in a cold ocean. *Nature Communications*, **12**, 2418.
- Densmore, C. R., S. R. Jayne, and E. R. Sanabia, 2021: Development and Testing of the AXBT Realtime Editing System (ARES). *Journal of Atmospheric and Oceanic Technology*, **38**, 3–16.
- Macdonald, A. M., S. Yoshida, S. M. Pike, K. O. Buesseler, I. I. Rypina, S. R. Jayne, V. Rossi, J. Kenyon, and J. A. Drysdale, 2020: A Fukushima tracer perspective on four years of North Pacific Mode Water evolution. *Deep-Sea Research I*, **166**, 103379.
- Wong, A. P. S., *et al.*, 2020: Argo data 1999–2019: Two million temperature-salinity profiles and subsurface velocity observations from a global array of profiling floats. *Frontiers in Marine Science*, **7**, 700.
- Sanabia, E. R., and S. R. Jayne, 2020: Ocean observations under two major hurricanes: Evolution of the response across the storm wakes. *AGU Advances*, **1**, e2019AV000161.
- Rudzin, J. E., S. Chen, E. R. Sanabia, and S. R. Jayne, 2020: The air-sea response during Hurricane Irma's (2017) rapid intensification over the Amazon-Orinoco River plume as measured by atmospheric and oceanic observations. *Journal of Geophysical Research: Atmospheres*, **125**, e2019JD032368.

- Danielson, S. L., *et al.*, 2020: Manifestation and consequences of warming and altered heat fluxes over the Bering and Chukchi Sea continental shelves. *Deep-Sea Research II*, **177**, 104781.
- Domingues, R., *et al.*, 2019: Ocean observations in support of studies and forecasts of tropical and extratropical cyclones. *Frontiers in Marine Science*, **6**, 446.
- Stammer, D., *et al.*, 2019: Ocean climate observing requirements in support of climate research and climate information. *Frontiers in Marine Science*, **6**, 444.
- Roemmich, D., *et al.*, 2019: On the future of Argo: A global, full-depth, multi-disciplinary array. *Frontiers in Marine Science*, **6**, 439.
- Wood, K. R., S. R. Jayne, C. W. Mordy, N. Bond, J. E. Overland, C. Ladd, P. J. Stabeno, A. K. Ekholm, P. E. Robbins, M. Schreck, R. Heim, and J. Intrieri, 2018: Results of the first Arctic Heat Open Science Experiment. *Bulletin of the American Meteorological Society*, **99**, 513–520.
- Le Bras, I. A., S. R. Jayne, and J. M. Toole, 2018: The interaction of recirculation gyres and a deep boundary current. *Journal of Physical Oceanography*, **48**, 573–590.
- MacKinnon, J. A., and the Climate Process Team, 2017: Climate Process Team on internal-wave driven ocean mixing. *Bulletin of the American Meteorological Society*, **98**, 2429–2454.
- Jayne, S. R., D. Roemmich, N. Zilberman, S. C. Riser, K. J. Johnson, G. C. Johnson, and S. R. Piotrowicz, 2017: Argo Program: Present and future. *Oceanography*, **30(2)**, 18–28.
- Jayne, S. R., and N. M. Bogue, 2017: Air-deployable profiling floats. *Oceanography*, **30(2)**, 29–31.
- Lee, C. M., *et al.*, 2017: An autonomous approach to observing the seasonal ice zone in the western Arctic. *Oceanography*, **30(2)**, 56–68.
- Centurioni, L. R., *et al.*, 2017: Northern Arabian Sea Circulation-autonomous research (NASCAR): A research initiative based on autonomous sensors. *Oceanography*, **30(2)**, 74–87.
- Goni, G. J., *et al.*, 2017: Autonomous and Lagrangian ocean observations for Atlantic tropical cyclone studies and forecasts. *Oceanography*, **30(2)**, 92–103.
- Chen, S., J. A. Cummings, J. M. Schmidt, E. R. Sanabia, and S. R. Jayne, 2017: Targeted ocean sampling guidance for tropical cyclones. *Journal of Geophysical Research: Oceans*, **122**, 3505–3518.
- Rypina, I. I., D. Fertitta, A. M. Macdonald, S. Yoshida, and S. R. Jayne, 2017: Multi-iteration approach to studying tracer spreading using drifter data. *Journal of Physical Oceanography*, **47**, 339–351.
- Timmermans, M.-L., and S. R. Jayne, 2016: The Arctic Ocean spices up. *Journal of Physical Oceanography*, **46**, 1277–1284.
- Pun, I.-F., J. F. Price, and S. R. Jayne, 2016: Satellite-derived ocean thermal structure for the North Atlantic hurricane season. *Monthly Weather Review*, **144**, 877–896.
- Riser, S. C., H. J. Freeland, and the Argo Steering Team, 2016: Fifteen years of ocean observations with the global Argo array. *Nature Climate Change*, **6**, 145–153.
- Lien, R.-C., B. Ma, C. Lee, T. B. Sanford, V. Mensah, L. R. Centurioni, B. D. Cornuelle, G. Gopalakrishnan, J. L. McClean, A. L. Gordon, M.-H. Chang, S. R. Jayne, Y.-J. Yang, 2016: The Kuroshio and Luzon Undercurrent east of Luzon Island. *Oceanography*, **28(4)**, 54–63.

- Trossman, D. S., B. K. Arbic, J. G. Richman, S. T. Garner, S. R. Jayne, and A. J. Wallcraft, 2016: Impact of topographic internal lee wave drag on an eddying global ocean model. *Ocean Modelling*, **97**, 109–128.
- Yoshida, S., A. M. Macdonald, S. R. Jayne, I. I. Rypina, and K. O. Buesseler, 2015: Observed eastward progression of the Fukushima  $^{134}\text{Cs}$  signal across the North Pacific. *Geophysical Research Letters*, **42**, 7139–7147.
- Delman, A. S., J. L. McClean, J. Sprintall, L. D. Talley, E. Yulaeva, and S. R. Jayne, 2015: Effects of eddy vorticity forcing on the mean state of the Kuroshio Extension. *Journal of Physical Oceanography*, **45**, 1356–1375.
- Rypina, I. I., S. R. Jayne, S. Yoshida, A. M. Macdonald, and K. O. Buesseler, 2014: Drifter-based estimate of the 5 year dispersal of Fukushima-derived radionuclides. *Journal of Geophysical Research: Oceans*, **119**, 8177–8193.
- Rainville, L., S. R. Jayne, and M. F. Cronin, 2014: Variations of the North Pacific Subtropical Mode Water from direct observations. *Journal of Climate*, **27**, 2842–2860.
- Sun, O. M., S. R. Jayne, K. L. Polzin, B. A. Rather, and L. C. St. Laurent, 2013: Scaling turbulent dissipation in the transition layer. *Journal of Physical Oceanography*, **43**, 2475–2489.
- Trossman, D. S., B. K. Arbic, S. T. Garner, J. A. Goff, S. R. Jayne, E. J. Metzger, and A. J. Wallcraft, 2013: Impact of parameterized lee wave drag on the energy budget of an eddying global ocean model. *Ocean Modelling*, **72**, 119–142.
- Douglass, E. M., Y.-O. Kwon, and S. R. Jayne, 2013: A comparison of subtropical mode waters in a climatologically-forced model. *Deep-Sea Research II*, **91**, 139–151.
- Jochum, M., B. P. Briegleb, G. Danabasoglu, W. G. Large, N. J. Norton, S. R. Jayne, M. H. Alford, and F. O. Bryan, 2013: The impact of oceanic near-inertial waves on climate. *Journal of Climate*, **26**, 2833–2844.
- Mrvaljevic, R. K., P. G. Black, L. R. Centurioni, Y.-T. Chang, E. A. D'Asaro, S. R. Jayne, C. M. Lee, R.-C. Lien, I.-I. Lin, J. Morzel, P. P. Niiler, L. Rainville, and T. B. Sanford, 2013: Observations of the cold wake of Typhoon Fanapi (2010). *Geophysical Research Letters*, **40**, 316–321.
- Cronin, M. F., N. A. Bond, J. T. Farrar, H. Ichikawa, S. R. Jayne, Y. Kawai, M. Konda, B. Qiu, L. Rainville, and H. Tomita, 2013: Formation and erosion of the seasonal thermocline in the Kuroshio Extension Recirculation Gyre. *Deep-Sea Research II*, **85**, 62–74. Corrigendum, **132**, 263–264.
- Rypina, I. I., S. R. Jayne, S. Yoshida, A. M. Macdonald, E. M. Douglass, and K. O. Buesseler, 2013: Short-term dispersal of Fukushima-derived radionuclides off Japan: Modeling efforts and model-data intercomparison. *Biogeosciences*, **10**, 4973–4990.
- Charette, M. A., C. F. Breier, P. B. Henderson, S. M. Pike, I. I. Rypina, S. R. Jayne, and K. O. Buesseler, 2013: Radium-based estimates of cesium isotope transport and total direct ocean discharges from the Fukushima Nuclear Power Plant accident. *Biogeosciences*, **10**, 2159–2167.
- Douglass, E. M., S. R. Jayne, F. O. Bryan, S. Peacock, and M. E. Maltrud, 2012: Kuroshio pathways in a climatologically-forced model. *Journal of Oceanography*, **68**, 625–639.

- Bates, S. C., B. Fox-Kemper, S. R. Jayne, W. G. Large, S. Stevenson, and S. G. Yeager, 2012: Mean biases, variability, and trends in air-sea fluxes and SST in the CCSM4. *Journal of Climate*, **25**, 7781–7801.
- Buesseler, K. O., S. R. Jayne, N. S. Fisher, I. I. Rypina, H. Baumann, Z. Baumann, C. F. Breier, E. M. Douglass, J. George, A. M. Macdonald, H. Miyamoto, J. Nishikawa, S. M. Pike, and S. Yoshida, 2012: Fukushima-derived radionuclides in the ocean and biota off Japan. *Proceedings of the National Academy of Sciences*, **109**, 5984–5988.
- Waterman, S. N., and S. R. Jayne, 2012: Eddy-driven recirculations from a localized transient forcing. *Journal of Physical Oceanography*, **42**, 430–447.
- Danabasoglu, G., S. Bates, B. P. Briegleb, S. R. Jayne, M. Jochum, W. G. Large, S. Peacock, and S. G. Yeager, 2012: The CCSM4 ocean component. *Journal of Climate*, **25**, 1361–1389.
- Douglass, E. M., S. R. Jayne, S. Peacock, F. O. Bryan, and M. E. Maltrud, 2012: Subtropical mode water variability in a climatologically-forced model in the Northwestern Pacific Ocean. *Journal of Physical Oceanography*, **42**, 126–140.
- Gent, P. R., G. Danabasoglu, L. J. Donner, M. M. Holland, E. C. Hunke, S. R. Jayne, D. M. Lawrence, R. B. Neale, P. J. Rasch, M. Versteĳn, P. H. Worley, Z.-L. Yang, and M. Zhang, 2011: The Community Climate System Model version 4. *Journal of Climate*, **24**, 4973–4991.
- Waterman, S. N., N. G. Hogg, and S. R. Jayne, 2011: Eddy-mean interaction in the Kuroshio Extension region. *Journal of Physical Oceanography*, **41**, 1182–1208.
- Waterman, S. N., and S. R. Jayne, 2011: Eddy-mean flow interactions in the along-stream development of a western boundary current jet: An idealized model study. *Journal of Physical Oceanography*, **41**, 682–707.
- D’Asaro, E., P. Black, L. Centurioni, P. Harr, S. R. Jayne, I.-I. Lin, C. Lee, J. Morzel, R. Mrvaljevic, P. P. Niiler, L. Rainville, T. Sanford, and T. Y. Tang, 2011: Typhoons and the ocean in the western North Pacific: Part 1. *Oceanography*, **24(4)**, 24–31.
- Canuto, V. M., A. M. Howard, C. J. Muller, A. Leboissetier, Y. Cheng, and S. R. Jayne, 2010: Ocean turbulence, III: New GISS vertical mixing scheme. *Ocean Modelling*, **34**, 70–91.
- Jayne, S. R., N. G. Hogg, S. N. Waterman, L. Rainville, K. A. Donohue, D. R. Watts, J.-H. Park, J. L. McClean, M. E. Maltrud, B. Qiu, S. Chen, and P. Hacker, 2009: The Kuroshio Extension and its recirculation gyres. *Deep-Sea Research I*, **56**, 2088–2099.
- Jayne, S. R., 2009: The impact of abyssal mixing parameterizations in an ocean general circulation model. *Journal of Physical Oceanography*, **39**, 1756–1775.
- McClean, J. L., S. R. Jayne, M. E. Maltrud, and D. P. Ivanova, 2008: The fidelity of ocean models with explicit eddies. In “Ocean Modeling in a Eddy Regime”, M. W. Hecht and H. Hasumi, Eds., AGU Geophysical Monograph Series, **177**, 149–163.
- Park, J.-H., D. R. Watts, K. A. Donohue, and S. R. Jayne, 2008: A comparison of in situ bottom pressure array measurements with GRACE estimates in the Kuroshio Extension. *Geophysical Research Letters*, **35**, L17601.

- Qiu, B., S. Chen, P. Hacker, N. G. Hogg, S. R. Jayne, and H. Sasaki, 2008: The Kuroshio Extension northern recirculation gyre: Profiling float measurements and forcing mechanism. *Journal of Physical Oceanography*, **38**, 1764–1779.
- Montengro, Á., M. Eby, A. J. Weaver, and S. R. Jayne, 2007: Response of a climate model to tidal mixing parameterization under present day and Last Glacial Maximum conditions. *Ocean Modelling*, **19**, 125–137.
- Rainville, L., S. R. Jayne, J. L. McClean, and M. E. Maltrud, 2007: Formation of subtropical mode water in a high-resolution ocean simulation of the Kuroshio Extension region. *Ocean Modelling*, **17**, 338–356.
- Jayne, S. R., 2006: The circulation of the North Atlantic Ocean from altimetry and the Gravity Recovery and Climate Experiment geoid. *Journal of Geophysical Research*, **111**, C03005.
- Qiu, B., P. Hacker, S. Chen, K. A. Donohue, D. R. Watts, H. Mitsudera, N. G. Hogg, and S. R. Jayne, 2006: Observations of the subtropical mode water evolution from the Kuroshio Extension System Study. *Journal of Physical Oceanography*, **36**, 457–473.
- Sandwell, D. T., W. H. F. Smith, S. Gille, E. Kappel, S. Jayne, K. Soofi, B. Coakley, and L. Géli, 2006: Bathymetry from Space: Rationale and requirements for a new, high-resolution altimetric mission. *Comptes Rendus Geoscience*, **338**, 1049–1062.
- Jayne, S. R., L. C. St. Laurent, and S. T. Gille, 2004: Connections between ocean bottom topography and the Earth's climate. *Oceanography*, **17(1)**, 61–70.
- Simmons, H. L., S. R. Jayne, L. C. St. Laurent, and A. J. Weaver, 2004: Tidally driven mixing in a numerical model of the ocean general circulation. *Ocean Modelling*, **6**, 245–263.
- Jayne, S. R., J. M. Wahr, and F. O. Bryan, 2003: Observing ocean heat content using satellite gravity and altimetry. *Journal of Geophysical Research*, **108**, 3031.
- Jayne, S. R., and J. Marotzke, 2002: The oceanic eddy heat transport. *Journal of Physical Oceanography*, **32**, 3328–3345.
- Munk, W., M. Dzieciuch, and S. R. Jayne, 2002: Millennial climate variability: Is there a tidal connection? *Journal of Climate*, **15**, 370–385.
- St. Laurent, L. C., H. L. Simmons, and S. R. Jayne, 2002: Estimates of tidally driven enhanced mixing in the deep ocean. *Geophysical Research Letters*, **29**, 2106.
- Wahr, J. M., S. R. Jayne, and F. O. Bryan, 2002: A method of inferring changes in deep ocean currents from satellite measurements of time variable gravity. *Journal of Geophysical Research*, **107**, 3218.
- Jayne, S. R., and J. Marotzke, 2001: The dynamics of ocean heat transport variability. *Reviews of Geophysics*, **39**, 385–411.
- Jayne, S. R., and L. C. St. Laurent, 2001: Parameterizing dissipation over rough topography. *Geophysical Research Letters*, **28**, 811–814.
- Jayne, S. R., and N. G. Hogg, 1999: On recirculation forced by an unstable jet. *Journal of Physical Oceanography*, **29**, 2711–2718.

- Jayne, S. R., and J. Marotzke, 1999: A destabilizing thermohaline circulation — atmosphere — sea ice feedback. *Journal of Climate*, **12**, 642–651.
- Jayne, S. R., and R. Tokmakian, 1997: Forcing and sampling of ocean general circulation models: Impact of high-frequency motions. *Journal of Physical Oceanography*, **27**, 1173–1179.
- Jayne, S. R., N. G. Hogg, and P. Malanotte-Rizzoli, 1996: Recirculation gyres forced by a beta-plane jet. *Journal of Physical Oceanography*, **26**, 492–504.

#### OTHER PUBLICATIONS — Author or coauthor of 12 other publications

---

- Todd, R. E., D. L. Rudnick, L. R. Centurioni, S. R. Jayne, and C. M. Lee, 2017: Boundary current observations with ALPS. In *Autonomous and Lagrangian Sensors and Platforms (ALPS II)* report, D. L. Rudnick *et al.*, Eds.
- Arbic, B. K., *et al.*, 2014: Inserting tides and topographic wave drag into high-resolution eddy simulation. *CLIVAR Exchanges #65*, 30–33.
- Smith, R., *et al.*, 2010: The Parallel Ocean Program (POP) reference manual: Ocean component of the Community Climate System Model (CCSM). Technical Report LAUR-10-01853, Los Alamos National Laboratory.
- Dushaw, B., *et al.*, 2010: A global ocean acoustic observing network. In *Proceedings of the OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 2)*, Hall, J., D. E. Harrison, and D. Stammer, Eds., ESA Publication WPP-306.
- Shum, C. K., *et al.*, 2010: Geodetic observations of ocean surface topography, ocean currents, ocean mass, and ocean volume changes. In *Proceedings of the OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 2)*, Hall, J., D. E. Harrison, and D. Stammer, Eds., ESA Publication WPP-306.
- Donohue, K. A., *et al.*, 2008: An integrated system study of the Kuroshio Extension, *EOS Transactions AGU*, **89**, 161–162.
- Allison, M. A., *et al.*, 2006: *Hurricanes and the U. S. Gulf Coast: Science and Sustainable Rebuilding*, American Geophysical Union Report, see also *EOS Transactions AGU*, **87**, 245.
- Scott, E. C., *et al.*, 2004: The Morphology of Steve. *Annals of Improbable Research*, **10**, 24–29.
- Sandwell, D. T., W. H. F. Smith, S. Gille, S. R. Jayne, K. Soofi, and B. Coakley, 2001: Bathymetry from space: White paper in support of a high-resolution, ocean altimeter mission. In *Report of the High-Resolution Ocean Topography Science Working Group Meeting*, D. B. Chelton, Ed.
- Jayne, S. R., and J. Marotzke, 2000: The dynamics of ocean heat transport variability. *WOCE International Newsletter #38*, 7–9.
- Jayne, S. R., 1999: *Dynamics of Global Ocean Heat Transport Variability*. Sc.D. Thesis, MIT/WHOI Joint Program in Oceanography and Applied Ocean Sciences. <http://hdl.handle.net/1721.1/69203>
- Jayne, S. R., 1994: *Dynamics of a Beta Plane Jet*. S.B. Thesis, MIT Department of Earth, Atmospheric and Planetary Sciences.

## EDUCATIONAL ACTIVITIES

---

### *Teaching*

12.753 – Marine Geodynamics Seminar program – “Gravity”, 2012  
 12.808 – Introduction to Descriptive Physical Oceanography, 2011  
 Marine Science 204 – Introduction to Physical Oceanography,  
 King Abdullah University of Science and Technology, Winter Enrichment Period, 2010  
 MIT/WHOI Joint Committee for Physical Oceanography, 2006–2009  
 WHOI Education Council, 2006–2009  
 MIT/WHOI Physical Oceanography General Exam Committee, 2005, 2012, 2016  
 Geophysical Fluid Dynamics Summer School, 2004

### *Thesis Students*

ENS Lucas Herron, MIT/WHOI Joint Program – Master’s thesis advisor, 2021–present  
 ENS Michael Zimmerman, MIT/WHOI Joint Program – Master’s thesis advisor, 2021–present  
 LTJG Casey Densmore, MIT/WHOI Joint Program – Master’s thesis advisor, 2018–2020  
 LCDR Stephan Gallagher, MIT/WHOI Joint Program – Master’s thesis advisor, 2017–2019  
 Alexander Miltenberger, MIT/WHOI Joint Program – Master’s thesis advisor, 2011–2012  
 Stephanie Waterman, MIT/WHOI Joint Program – Ph.D. thesis advisor, 2003–2009

### *Postdoctoral Researchers*

Jessica Anderson, WHOI Postdoctoral Investigator – Postdoctoral advisor, 2017–2020  
 Oliver Sun, WHOI Postdoctoral Investigator – Postdoctoral advisor, 2011–2014  
 Iam-Fei Pun, WHOI Postdoctoral Investigator – Postdoctoral advisor, 2012–2013  
 Sachiko Yoshida, WHOI Postdoctoral Investigator – Postdoctoral advisor, 2011–2012  
 Elizabeth Douglass, WHOI Postdoctoral Scholar – Postdoctoral advisor, 2008–2011  
 Luc Rainville, WHOI Postdoctoral Scholar – Postdoctoral advisor, 2004–2007

### *Other Student Advising*

Austin Crocker, Maine Maritime Academy – WHOI guest student – Sponsor, 2016  
 Sophia Merrifield, MIT/WHOI Joint Program – Thesis committee chair, 2016  
 Bryan Kaiser, MIT/WHOI Joint Program – Advisor, 2014–2016  
 Isabela Le Bras, MIT/WHOI Joint Program – Thesis committee member, 2014–2016  
 Emily Cody, University of Vermont – WHOI guest student – Sponsor, 2015  
 Alec Bogandoff, MIT/WHOI Joint Program – Summer advisor, 2011  
 Joseph Lozier, Duke University – WHOI Summer Student Fellow – Sponsor, 2011  
 Ke-Hsien Fu, National Sun Yat-Sen University – WHOI guest student – Sponsor, 2011  
 Keith Gehres, KAUST – WHOI guest student – Sponsor, 2010  
 Pedro De La Torre, KAUST – WHOI guest student – Sponsor, 2010  
 Cimarron Wortham, MIT/WHOI Joint Program – Thesis committee member, 2008–2012  
 Cristian Proistosescu, Princeton University – WHOI Summer Student Fellow – Sponsor, 2008  
 Julian Schanze, MIT/WHOI Joint Program – Summer advisor, 2007  
 Sian Grigg, Macquarie University, Australia – External thesis examiner, 2006  
 Holly Dail, MIT/WHOI Joint Program – WHOI advisor, 2006–2008  
 Colin Goldblatt, University of East Anglia – WHOI Summer Student Fellow – Sponsor, 2002  
 J. Scott Stewart, University of Colorado – Thesis committee member, 2000

## PROFESSIONAL ACTIVITIES

---



*Society Memberships:* American Geophysical Union (1994), American Meteorological Society (1994), Committee on Space Research (2000)

*Associate Editor:* Journal of Geophysical Research: Oceans, 2010–2012

*Community Activities:* Co-Chair: CLIVAR Global Synthesis and Observations Panel, 2018–present; Community Climate System Model (CCSM) Ocean Working Group, 2004–2009; Ocean Sciences Meeting Special Session, 2008; Member: Argo Steering Team 2013–present; Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR) working group for Air Reconnaissance Equipment, 2018–2020; Hurricane Forecast Improvement Program (HFIP): Ocean Model Impact Task Team, 2015–2018; Community Earth System Model 3 (CESM3) Ocean Model Advisory Panel, 2016–2017; CESM Scientific Steering Committee, 2012–2015; Ocean Surface Topography Science Team, 2008–present; Gravity Recovery and Climate Experiment (GRACE) Science Working Team, 2002–2012; National Defense Science and Engineering Graduate Fellowship, Oceanography panel, 2000–2008; AGU Conference of Experts on “Hurricanes and the U.S. Gulf Coast: Science and Sustainable Rebuilding”, 2006; Altimetric Bathymetry from Surface Slopes (ABYSS) Science Working Team, 2001–2004; NASA GPS Oceanography Working Group, 2002

*Reviewer:* Journal Reviewer: Journal of Physical Oceanography, Journal of Climate, Journal of Atmospheric Research, Journal of Atmospheric and Oceanic Technologies, Journal of Geophysical Research, Geophysical Research Letters, Progress in Oceanography, Deep-Sea Research, Journal of Geodesy, Nature, Nature Communications, Dynamics of Atmospheres and Oceans, Ocean Dynamics, Ocean Modelling, Ocean Science, Oceanography, Journal of Oceanography, Geoscientific Model Development, Environmental Research Letters, Mathematical Problems in Engineering; Proposal Reviewer: National Science Foundation, National Aeronautics and Space Administration, Department of Energy, Office of Naval Research Postdoctoral Fellowship Program, UK Natural Environment Research Council, European Research Council; Proposal panelist: NASA Earth Science proposal review panels

*WHOI Committees:* Physical Oceanography Department recruitment committee, 2005–2014, Chair, 2015–2018, 2021; Information Technology Director search committee, 2015; Defined Contribution Retirement Plan committee, 2014–2018; Information Technology Review Panel, 2014; Center for Marine and Environmental Radioactivity advisory committee, 2013–present; Scientific Staff Executive Committee, 2012–2014; Ad Hoc Computer Information Systems review committee, 2007–2008; University Corporation for Atmospheric Research (UCAR) member representative for WHOI, 2004–2015; Arnold Arons Award committee, 2004; Stommel Visiting Scholar organizer, 2003; Information Technology Advisory Committee, 2002–2005

## FIELD EXPERIENCE

---

2013–2021 U.S. Air Force Reserve 53<sup>rd</sup> Weather Reconnaissance Squadron: air-deployable profiling float, AXBT, and drifter deployments; 89 flights, 530 flight hours, 64 hurricane eyewall penetrations  
 2020 U.S. Navy and Marine Corps: float deployments from MH-60S Seahawk and MV-22 Osprey aircraft  
 2011 R/V *Ka'imikai-O-Kanaloa*: Fukushima radionuclide sampling cruise; 15 days at sea, Co-Chief Scientist  
 2010 R/V *Revelle*: Impact of Typhoons on the Pacific coldwake survey cruise; 25 days at sea, Chief Scientist  
 2006 R/V *Melville*: Kuroshio Extension mooring operations cruise; 12 days at sea, Chief Scientist

2005 R/V *Revelle*: Kuroshio Extension mooring operations cruise; 19 days at sea, Co-Chief Scientist  
2004 R/V *Thompson*: Kuroshio Extension mooring operations cruise; 14 days at sea  
2003 R/V *Oceanus*: Irminger Sea hydrographic and mooring operations cruise; 14 days at sea  
1996 R/V *Knorr*: WOCE Indian Ocean (I-2) hydrographic cruise; 56 days at sea  
1993 R/V *Cape Hatteras*: JGOFS/BATS hydrographic cruises; 42 days at sea  
1992 R/V *Delaware II*: clam dredging on NOAA/NMFS shellfish survey cruises; 36 days at sea  
1991 Greenland Ice Sheet Project II: ice core sampling at glacier summit drilling camp; 48 days

## UNITED STATES COAST GUARD RESERVE

---

### *Positions*

Base Boston Naval Engineering Department: March 2020 – present  
Port Security Unit 301: October 2015 – March 2020  
Joint Task Force Guantánamo – Maritime Security Detachment: March 2019 – December 2019  
Research and Development Center – June 2010 – August 2010  
Station Woods Hole: March 2007 – September 2015

### *Personal Awards*

Air Force Aerial Achievement Medal (3)  
Joint Service Commendation Medal  
Coast Guard Commendation Medal  
Coast Guard Achievement Medal (3)  
Commandant's Letter of Commendation  
Boat Force Operations Insignia  
Reserve Enlisted Petty Officer of the Year – 2012, Sector Southeastern New England