

STEVEN ROBERT JAYNE

EDUCATION

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

W. Van Alan Clark Chair for Excellence in Oceanography: November 2025 – present

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

Developing and deploying autonomous sensing systems to make persistent ocean observations.

Investigating air-sea interaction and ocean dynamics in tropical cyclones and strong storms.

Collecting and synthesizing diverse datasets of global ocean observations to map and understand the ocean's general circulation.

AWARDS

W. Van Alan Clark Chair for Excellence in Oceanography, WHOI, November 2025
 Office of Naval Research, Young Investigator Award, 2003
 Zeldovich Medal, Committee on Space Research – International Council for Science, 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 79 refereed publications

Polichtchouk, I., K. S. Mogensen, E. R. Sanabia, S. R. Jayne, L. Magnusson, C. R. Densmore, S. Hatfield, I. Hadade, N. Wedi, V. Anantharaj, P. Lopez, and A. K. Ekholm, 2025: Effects of atmosphere and ocean horizontal model resolution on tropical cyclone and upper-ocean response forecasts in four major hurricanes. *Monthly Weather Review*, **153**, 2257–2278.

Thierry, V., *et al.*, 2025: Advancing ocean monitoring and knowledge for societal benefit: The urgency to expand Argo to OneArgo by 2030. *Frontiers in Marine Science*, **12**, 1593904.

Zimmerman, M. T., S. R. Jayne, L. Rainville, C. M. Lee, J. M. Toole, J. B. Edson, C. A. Clayson, A. K. Ekholm, and C. R. Densmore, 2024: Observations of the upper ocean from autonomous platforms during the passage of Extratropical Cyclone Epsilon (2020). *Oceanography*, **37**(4), 48–57.

Densmore, C. R., E. R. Sanabia, and S. R. Jayne, 2023: Ocean temperature observations in Hurricane Dorian (2019). *Monthly Weather Review*, **151**, 1509–1520.

Jayne, S. R., W. B. Owens, P. E. Robbins, A. K. Ekholm, N. M. Bogue, and E. R. Sanabia, 2022: The Air-Launched Autonomous Micro-Observer. *Journal of Atmospheric and Oceanic Technology*, **39**, 491–502.

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, 2022: Argo — Two decades: Global oceanography, revolutionized. *Annual Reviews of Marine Science*, **14**, 379–403.

Shroyer, E., *et al.*, 2021: Bay of Bengal intraseasonal oscillations and the 2018 monsoon onset. *Bulletin of the American Meteorological Society*, **102**, E1936–E1951.

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}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. Vertenstein, 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 Eddying 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 15 other publications

Richter, D. H., et al., 2025: SASCWATCH: Study on Air-Sea Coupling with WAVes, Turbulence, and Clouds at High winds science plan. Notre Dame University. doi:10.7274/30120322

Stahr, F., R. Lueck, and S. R. Jayne, 2023: Autonomous turbulence profiling with the microALTO float. In *Microstructure Sensing from Autonomous Platforms*, A Report of the Office of Naval Research Sponsored Workshop. Shroyer, E. and L. C. St. Laurent, Eds., May 2022, Lake Arrowhead, CA, 32 pp.

Todd, R. E., D. L. Rudnick, L. R. Centurioni, S. R. Jayne, and C. M. Lee, 2018: Boundary current observations with ALPS. In *ALPS II – Autonomous Lagrangian Platforms and Sensors*, A Report of the ALPS II Workshop. Rudnick, D., D. Costa, K. Johnson, C. Lee, and M.-L. Timmermans, Eds., February 2017, La Jolla, CA, 66 pp.

Pail, R., et al., 2015: Science and user needs for observing global mass transport to understand global change and to benefit society. *Surveys in Geophysics*, **36**, 743–772.

Arbic, B. K., et al., 2014: Inserting tides and topographic wave drag into high-resolution eddying simulations. *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
 KAUST 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

LCDR Lawrence Cen, MIT/WHOI Joint Program – Master’s thesis advisor, 2024–present
 LTJG Lucas Herron, MIT/WHOI Joint Program – Master’s thesis advisor, 2021–2023
 LTJG Michael Zimmerman, MIT/WHOI Joint Program – Master’s thesis advisor, 2021–2023
 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

Jacob Davis, WHOI Postdoctoral Scholar – Postdoctoral advisor, 2025–present
 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, 2018–2022; Community Climate System Model (CCSM) Ocean Working Group, 2004–2009; Ocean Sciences Meeting Special Session, 2008; Member: Argo Steering Team 2013–present; 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, Weather and Forecasting; Proposal Reviewer: National Science Foundation, National Aeronautics and Space Administration, Department of Energy, Office of Naval Research Postdoctoral Fellowship Program, United Kingdom’s Natural Environment Research Council, Kuwait Foundation for the Advancement of Sciences, European Research Council, Le Fonds de la Recherche Scientifique, New Zealand MBIE, National Nuclear Security Administration; Proposal panelist: NASA Earth Science proposal review panels

WHOI Committees: Research Compliance Committee, 2024–present; Advisory Group for WHOI Strategic Facilities Assessment, 2022–present; 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–present U.S. Air Force Reserve 53rd Weather Reconnaissance Squadron: air-deployable profiling float, AXBT, and drifter deployments; 110 flights, 632 flight hours, 84 hurricane eye penetrations in 22 named storms as a Mission Essential Personnel

2022 U.S. Marine Corps: float and drifter deployments from KC-130J aircraft in support of RIMPAC

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