Melissa Moulton

Applied Physics Laboratory
University of Washington
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mmoulton@apl.uw.edu

EDUCATION

Doctor of Philosophy, Physical Oceanography — February 2016
Massachusetts Institute of Technology and Woods Hole Oceanographic Institution
Woods Hole, MA
Advisor: Dr. Steve Elgar, Senior Scientist, Applied Ocean Physics and Engineering

Bachelor of Arts, Physics — June 2009
Amherst College
Amherst, MA

PROFESSIONAL EXPERIENCE

National Center for Atmospheric Research — October 2019 – present
Project Scientist
Climate and Global Dynamics Laboratory

University of Washington — November 2017 – present
Affiliate Faculty
Department of Civil and Environmental Engineering

Applied Physics Laboratory, University of Washington — February 2021 – present
Principal Research Scientist/Engineer (Associate Level)
Department of Air-Sea Interaction and Remote Sensing

Applied Physics Laboratory, University of Washington — February 2016 – February 2021
Senior Research Scientist/Engineer (Assistant Level)
Department of Air-Sea Interaction and Remote Sensing

Woods Hole Oceanographic Institution — February 2016 – present
Guest Investigator
Department of Applied Ocean Physics and Engineering

Woods Hole Oceanographic Institution — June 2010 – February 2016
Graduate Research Assistant
Department of Physical Oceanography

Institute of Marine Sciences, Zanzibar, Tanzania — June – September 2009
Postbaccalaureate Researcher
NSF International Research Experiences for Students

Woods Hole Oceanographic Institution — June – August 2008
Summer Student Fellow
Department of Applied Ocean Physics and Engineering

REFEREED PUBLICATIONS

Spydell, M., A. Suanda, D. Grimes, J. Becherer, J. McSweeney, C. Chickadel, **M. Moulton**, J. Thomson, J. Lerczak, J. Barth, J. MacMahan, J. Colosi, R. Romeiser, A. Waterhouse, J. Calantoni, F. Feddersen (*In Press*), Internal bore evolution across the shelf near Pt. Sal CA interpreted as a gravity current, *Journal of Physical Oceanography*.

Kumar, N., J. C. Lerczak, ... **M. Moulton**, et al. (many authors), The Inner-Shelf Dynamics Experiment (2021), *Bulletin of the American Meteorol. Society*, doi:10.1175/BAMS-D-19-0281.1.

Moulton, M., C. Chickadel, and J. Thomson, Warm and cool nearshore plumes connecting the surf zone to the inner shelf (2021), *Geophysical Research Letters*, doi:10.1029/2020GL091675.

Baker, C. M.*, **M. Moulton**, N. Kumar, S. Elgar, and B. Raubenheimer, Modeling of three-dimensional currents and eddies on an alongshore variable barred beach (2021), *Journal of Geophysical Research: Oceans*, doi:10.1029/2020JC016899.

Elgar, S., B. Raubenheimer, D. Clark, and **M. Moulton** (2019), Extremely low frequency (0.1 to 1.0 mHz) surf zone currents, *Geophysical Research Letters*, *46*, 1531–1536, doi:10.1029/2018GL081106.

Moulton, M., G. Dusek, S. Elgar, and B. Raubenheimer (2017), Comparison of rip current hazard likelihood forecasts with observed rip current speeds, *Weather and Forecasting*, *32*, 1659–1666, doi:10.1175/WAF-D-17-0076.1.

Moulton, M., S. Elgar, B. Raubenheimer, J. C. Warner, and N. Kumar (2017), Rip currents and alongshore flows in channels dredged in the surf zone, *Journal of Geophysical Research: Oceans*, *122*, doi:10.1002/2016JC012222.

Zavala-Garay, J., J. Theiss, **M. Moulton**, C. Walsh, R. van Woesik, C. Mayorga-Adame, M. Garcia-Reyes, D. Mukaka, K. Whilden, and Y. Shaghude (2015), On the dynamics of the Zanzibar Channel, *Journal of Geophysical Research: Oceans*, *120*, 6091–6113, doi:10.1002/2015JC01087.

Moulton, M., S. Elgar, and B. Raubenheimer (2014), A surfzone morphological diffusivity estimated from the evolution of excavated holes, *Geophysical Research Letters*, *41*, 4628–4636, doi:10.1002/2014GL060519. (Fye Award for Excellence in Oceanographic Research, WHOI)

Moulton, M., S. Elgar, and B. Raubenheimer (2014), Improving time resolution of surfzone bathymetry using in situ altimeters, *Ocean Dynamics*, *64*(5), 755–770, doi:10.1007/s10236-014-0715-8.

Elgar S., B. Raubenheimer, J. Thomson, and **M. Moulton** (2012), Resonances in an evolving hole in the swash zone, *Journal of Waterway, Port, Coastal, and Ocean Engineering*, *138*, 299–302, doi:10.1061/(asce)ww.1943-5460.0000136. (ASCE "Research Highlight")

MANUSCRIPTS IN PREPARATION

Moulton, M., A. Suanda, N. Kumar, M. Fewings, and J. Pringle, Mechanisms for the transport of nutrients, plankton, and pollutants between the shore and shelf waters (*Invited, In Prep.*), *Annual Review of Marine Science*.

Baker, C. M.*, M. Palmsten, K. Brodie, and **M. Moulton**, Remote sensing of short-crested surface waves in a laboratory wave basin (*In Prep.*), *Remote Sensing of Environment*.

Moulton, M., C. Chickadel, S. Elgar, and B. Raubenheimer, Video observations of surface currents near complex surfzone bathymetry (*In Prep.*), *Remote Sensing of Environment*.

PROCEEDINGS AND OTHER PUBLICATIONS

Thomson, J., **M. Moulton**, A. de Klerk, J. Talbert, S. Kastner, M. Smith, M. Schwendeman, S. Zippel, and S. Nylund (2019), A new SWIFT platform for waves, currents, and turbulence in the ocean surface layer, in *IEEE/OES Currents, Waves & Turbulence Meas.*

F. Feddersen, ... **M. Moulton**, et al. (many authors) (2016), Inner Shelf Dynamics Science and Experiment Plan, Tech. rep., Applied Physics Laboratory, UW, www.apl.washington.edu/innershelf.

Moulton, M. (2016), Hydrodynamic and morphodynamic responses to surfzone seafloor perturbations, *Ph.D. Thesis, MIT-WHOI Joint Program in Oceanography.*

Jaffre, F., P. Traykovski, **M. Moulton**, G. Lawson, and T. Austin (2015), Development of underwater acoustic backscatter and Doppler instruments from a small and versatile multi-frequency sonar board, in *OCEANS'15 MTS/IEEE*, Genova, 141204-105.

Moulton, M., S. Elgar, and B. Raubenheimer (2013), Evolution of rip currents in dredged channels, in *Proceedings of Coastal Dynamics '13*, ASCE, Arcachon, France, 1263–1274.

INVITED AND DEPARTMENTAL SEMINARS

Institute of Marine Science Seminar, *U. North Carolina*, November 2021

Coastal Ocean Fluid Dynamics Laboratory Seminar, *WHOI*, July 2021

Physical Oceanography Seminar, *University of Rhode Island*, Dec. 2020

Faculty Innovators Summer Seminar, *NCAR, Boulder, CO*, August 2019

Summer Seminar Series, *Naval Research Laboratory, Stennis, MS*, July 2019

Invited Speaker in Session: Advances in Understanding the Physics of Shallow and Nearshore Coastal Waters, *Coastal Dynamics Gordon Research Conference*, June 2019

Physical Sciences Seminar, *Virginia Institute of Marine Science*, May 2019

Ocean Resources Engineering Seminar, *University of Hawaii*, May 2019

Earth Sciences Seminar, *University of Minnesota*, March 2019

Civil and Environmental Engineering Seminar, *MIT*, March 2019

Civil and Environmental Engineering Seminar, *Northeastern University*, Jan. 2019

Physical Oceanography Seminar, *Dalhousie University*, Oct. 2018

Department of Marine and Coastal Sciences Seminar, *Rutgers University*, May 2018

Coastal Ocean Fluid Dynamics Laboratory Seminar, *WHOI*, June 2017

Physical Oceanography Dissertation Symposium, *Sponsored by ONR & NSF*, Oct. 2016

Physics Colloquium, *Amherst College*, Sept. 2015

Applied Physics Laboratory Seminar Series, *APL-UW*, Sept. 2015

Hydrology & Environmental Fluid Mechanics Seminar, *MIT*, Sept. 2015

Coastal Hydraulics Laboratory Seminar, *US Army Corps of Engineers*, Duck, NC, April 2015

Environmental Fluid Mechanics Seminar, *University of Washington*, Feb. 2015

Coastal Ocean Fluid Dynamics Lab Seminar, *Woods Hole Oceanographic Inst.*, June 2013

CONFERENCE ABSTRACTS AND PRESENTATIONS

Smith, E.*, S. Zick, A. Siems-Anderson, and **M. Moulton**, Using Bayes' Theorem to Understand Uncertainty in the North American Mesoscale (NAM) Model: A Spatial Analysis of Rainfall Forecast Error for Hurricane Barry (2021), *AMS Special Symposium on Tropical Meteorology and Tropical Cyclones.*

Xue, Z. G., D. Bao, D. Yin, R. He, J. B. Zambon, **M. Moulton**, J. C. Warner, Z. Defne, D. Gochis, and W. Yu (2020), Investigating hurricane-induced compound flooding and sediment dispersal using coupled hydrology and ocean models, *AGU Fall Meeting.* (Invited)

Kleypas, J. A., S. D. Bachman, and C. J. Shakespeare, **M. Moulton**, F. Bryan, F. Judt, D. Cherian, F. S. Castruccio, R. E. Mora-Escalante, P. Ureña-Mora*, E. N. Curchitser (2020), Coral reefs are complex and so are the science disciplines needed to save them, *AGU Fall Meeting.*

Trimble, S. M., A. Penko, C. Maryan, and **M. Moulton** (2020), Investigating the correlation between optically identified rip channels in time exposure imagery and in situ observations, including bathymetry and flow, *AGU Fall Meeting.*

Nuss, E. S.*, C. M. Baker*, **M. Moulton**, and N. Kumar (2020), Phase-resolved modeling and lab investigation of surfzone eddies and transient rip currents, *AGU Fall Meeting.*

He, R., J. Zambon, J. C. Warner, Z. G. Xue, **M. Moulton**, D. Yin*, D. Bao*, and Z. Defne (2020), Investigating compound flooding and contaminant dispersal during Hurricane Florence using coupled hydrology and ocean models, *Unified Forecast System (UFS) Users Workshop.*

Thomson, J., **M. Moulton**, M. Derakhti and E. J. Rainville (2020), Measuring and modeling surf zone dynamics during storm events, *American Shore and Beach Preservation Association (ASBPA) Conference.*

Moulton, M., J. Zambon, Z. G. Xue, R. He, Z. Defne, D. Yin, D. Bao, H. Zong, and J. C. Warner (2020), Investigating compound flooding and contaminant dispersal during Hurricane Florence using coupled hydrology and ocean models, *American Shore and Beach Preservation Association (ASBPA) Conference.*

Moulton, M., J. Zambon, Z. G. Xue, R. He, Z. Defne, D. Yin, D. Bao, H. Zong*, and J. C. Warner (2020), New forecast tools for coastal flooding and contaminant dispersal during extreme precipitation, Research and Practice Highlight, *45th Annual Natural Hazards Research and Applications Workshop.*

Kumar, N., J. M. Pringle, **M. Moulton**, S. Suanda, and M. R. Fewings (2020), Quantifying the relative importance of various physical mechanisms for plankton and nutrient transport between the shore and the shelf waters, *Ocean Sciences*, PI11A-04.

Baker, C. M.*, **M. Moulton**, M. Palmsten, K. Brodie, and N. Kumar (2020), Remote sensing of transient rip currents and surface waves in a laboratory wave basin, *Ocean Sciences*, CP42A-04.

Spydell, M., F. Feddersen, J. MacMahan, J. Thomson, M. Kovatch, and **M. Moulton** (2020), The effect of inner shelf processes on surface drifter trajectories and dispersion, *Ocean Sciences*, CP34E-1290.

Moulton, M., C. Chickadel, and J. Thomson (2020), Remote sensing and modeling of warm and cool plumes connecting the surf zone and inner shelf, *Ocean Sciences*, CP44G-1447.

Chickadel, C., **M. Moulton**, J. Thomson, A. F. Waterhouse, J. A. MacKinnon, J. Moum, and J. Becherer (2020), Horizontal temperature length scales on the inner shelf due to breaking internal waves, *Ocean Sciences*, CP34E-1284.

Moulton, M., (2019), Processes controlling exchange between the surf zone and the inner shelf (Invited speaker in session: Advances in understanding the physics of shallow and nearshore coastal waters), *Gordon Research Conference in Coastal Ocean Dynamics, Manchester, NH.*

Baker, C. M.*, **M. Moulton**, and N. Kumar (2018), Three-dimensional modeling of transient rip currents, *Young Coastal Scientists and Engineers Conference – Americas, Mérida, México.*

Baker, C. M.*, **M. Moulton**, and N. Kumar (2018), Rip-current driven cross-shore exchange: observations and model simulations, *Eastern Pacific Oceanography Conference.*

Moulton, M., C. Chickadel, and J. Thomson (2018), Observations of rip-current and internal-wave driven exchange between the surf zone and inner shelf, *Ocean Sciences*, CD14C-0071.

Baker, C. M.*, **M. Moulton**, S. Elgar, B. Raubenheimer, and N. Kumar (2018), Rip-current driven cross-shore exchange dynamics on a natural barred beach, *Ocean Sciences*, CD14B-0042.

Chickadel, C., **M. Moulton**, M., and G. Farquharson (2018), Spatial and temporal scales of internal waves, fronts, and eddies on the inner shelf, *Ocean Sciences*, CD11A-04.

Barth, J., J. A. Lerczak, **M. Moulton**, et al. (2018), An Overview of the 2017 Point Sal, California, Inner Shelf Dynamics Experiment, *Ocean Sciences*, CD14C-0056.

Kovatch, M., F. Feddersen, **M. Moulton**, et al. (2018), Headland Flow Dynamics and Differential Upwelling Around Point Sal, CA, *Ocean Sciences*, CD14C-0058.

Swann, C., J. Calantoni, ... **M. Moulton**, et al. (many authors) (2018), Field Observations of Turbulent Bottom Boundary Layer Processes along the Inner Shelf, *Ocean Sciences Meeting*, CD14C-0077.

Moulton, M., C. Chickadel, G. Farquharson (2017), Airborne remote sensing of inner shelf processes, *Coastal Ocean Dynamics Gordon Research Conference*.

Moulton, M., G. Dusek, S. Elgar, and B. Raubenheimer (2017), Comparing statistical rip current forecast model output with in situ and theoretical rip current speeds, *97th American Meteorological Society Annual Meeting, 15th Symposium on the Coastal Environment*, 305823.

Moulton, M., C. Chickadel, S. Elgar, and B. Raubenheimer (2016), Comparison of in-situ and optical current-meter estimates of rip-current circulation, *AGU Fall Meeting*, 130838.

Moulton, M. (2016), Hydrodynamic and morphodynamic responses to surfzone seafloor perturbations, *Physical Oceanography Dissertation Symposium*, Sponsored by ONR and NSF.

Moulton, M., S. Elgar, B. Raubenheimer, and J. C. Warner (2016), What controls rip-current speeds?: Comparing observations, simulations, and a parameterization, *Ocean Sciences*, EC11A-02.

Moulton, M., S. Elgar, B. Raubenheimer, J. C. Warner, and N. Kumar (2015), Bathymetric controls on rip currents and alongshore flows, *Coastal Sediments Conference*, 145.

Moulton, M., S. Elgar, J. C. Warner, and B. Raubenheimer (2014), Modeled and observed transitions between rip currents and alongshore flows, *AGU Fall Meeting*, OS11A-1249.

Moulton, M., S. Elgar, and B. Raubenheimer (2014), Field observations of transitions between rip currents and alongshore flows in dredged channels, *Young Coastal Scientists and Engineers Conference, University of Delaware*. (Best Presentation Award)

Moulton, M., S. Elgar, and B. Raubenheimer (2013), Structure and evolution of rip currents in dredged channels, *Coastal Dynamics*, Arcachon, France. (Best Student Presentation Award)

Moulton, M., S. Elgar, and B. Raubenheimer (2012), Diffusive smoothing of surfzone bathymetry by gravity-driven sediment transport, *AGU Fall Meeting*, OS21B-1715.

Moulton, M., S. Elgar, and B. Raubenheimer (2012), Effects of large bottom slopes on sediment transport and bed level changes in holes in the surf zone, *Ocean Sciences*, OS-B0855, 9953.

Moulton, M., S. Elgar, and B. Raubenheimer (2010), Holes in the surf zone: waves, currents, and sediment transport in a seafloor perturbation experiment, *AGU Fall Meeting*, OS51B-1299.

Moulton, M., G. Mayorga-Adame, G., M. Garcia-Reyes, P. Nadeau, J. Zavala-Garay, and J. Theiss (2010), Modeling seasonal dynamics in the Zanzibar Channel, *Ocean Sciences*, ED25B-01.

Moulton, M., B. Raubenheimer, E. Ladouceur, and S. Elgar (2008), Nearshore circulation over a muddy seafloor, *AGU Fall Meeting*, OS33C-1359.

*Student author advisee of Moulton

AWARDS, HONORS, AND FELLOWSHIPS

Young Investigator Program Award, *Office of Naval Research*, April 2020

Panteleyev Award for Commitment to Improving the Graduate Education Experience, *MIT-WHOI*, June 2016

Fye Award for Excellence in Oceanographic Research, *MIT-WHOI*, June 2015

Best Presentation, *Young Coastal Scientists/Engineers Conference, U. Delaware*, July 2014

Best Student Presentation Award, *Coastal Dynamics Conference*, France, June 2013

Graduate Research Fellowship, *National Science Foundation*, 2013 – 2015

National Defense Science and Engineering Graduate Fellowship, *DoD*, 2010 – 2013

Bassett and Stifler Prizes in Physics, *Amherst College*, June 2006 & 2009

GRANTS

Nearshore plume dynamics: airborne observations and modeling of surf-shelf exchange, lead PI with Co-PI Chickadel, *National Science Foundation, Physical Oceanography*, 2021 – 2024

Combined effects of coastal ocean dynamics and hydrology on flooding and pollutant dispersal during extreme events: Hurricane Florence and future climate scenarios, PI, *United States Geological Survey, Coastal Change Hazards*, 2020 – 2023

Remote sensing and modeling of coastal exchange, PI, *Office of Naval Research, Young Investigator Program Award*, 2020 – 2023

Physics and connectivity informing reef conservation: an interdisciplinary study of coastal oceanography of the eastern tropical Pacific, Co-PI with J. Kleypas, S. Bachman, F. Judt, F. Bryan, D. Cherian, F. Castruccio, R. E. Mora-Escalante, P. Ureña-Mora, E. Curchitser, *President's Strategic Initiative Fund, UCAR*, 2019 – 2022

Coherent drifter arrays at DUNEX (nearshore extreme events rapid response observations), Co-PI with J. Thomson, M. Derakhti, *US Coastal Research Program*, 2019 – 2022

Transient rip currents: lab measurements and modeling of surfzone vorticity, Co-PI with N. Kumar, *National Science Foundation, Physical Oceanography*, 2017 – 2021

Airborne remote sensing of cross-shelf exchange, PI, *University of Washington, Royalty Research Fund*, 2017 – 2018

Rip currents: coupling and feedbacks between waves, flows and morphology, Co-PI with S. Elgar, *National Science Foundation, Physical Oceanography*, 2015 – 2018

Using altimeters to improve the temporal resolution of surfzone bathymetry, PI, *Coastal Ocean Institute, Woods Hole Oceanographic Institution*, 2014 – 2015

TEACHING EXPERIENCE

Guest Lecturer, Dynamics of Ocean Tides, *Virginia Institute of Marine Science*, Spring 2019

Guest Lecturer, Coastal Engineering, *Civil and Env. Engineering, U. Washington*, Spring 2018

Guest Lecturer, Numerical Modeling of Hydrodynamics, *Civil and Env. Engineering, U. Washington*, Spring 2017 & 2018

Teaching Assistant and Guest Lecturer, Coastal Physical Oceanography, *MIT-WHOI*, Fall 2014

Lecturer, Math Review Course, *MIT / Woods Hole Oceanographic Institution*, Summer 2013

Graduate Teaching Certificate Program, *MIT*, Spring 2013

Teaching Assistant and Peer Tutor in several Physics courses, *Amherst College*, 2006 – 2009

OUTREACH, EDUCATION, & DEI ACTIVITIES

Writing Mentor for undergraduate protégé, *Significant Opportunities in Atmospheric Research and Science (SOARS)*, Summers 2020 & 2021

Unlearning Racism in GEoscience (URGE) pod member, 2021

Women's Advisory Board Representative, Applied Physics Laboratory, 2018 – present

Engineering Discovery Days, *University of Washington*, annual, 2017 – present

Reviewer, Nearshore Processes Fundamentals curriculum, *COMET MetEd*, Spring 2020

Planning Committee Member, SeaTalk: building trust and respect within the University of Washington seagoing community, 2017 – 2019

Interviews and expert comments on coastal hazards, *The Weather Channel*, Apr. 2017, Nov. 2019

Mentoring Physical Oceanography Women to Increase Retention (MPOWIR), member of mentor groups and participant in networking activities, 2016 – present

Co-developer, NOAA Rip Current Science public web page, 2018

Climate Symposium, *Furnace Brook Middle School*, Marshfield, MA, June 2016

Women's Committee Representative, Woods Hole Oceanographic Institution, 2013 – 2015

The Riddle of Rip Currents, authored by Evan Lubofsky, *Oceanus*, December 2015

STEM careers panel for undergraduate women, *Amherst College*, October 2014

Geophysical Fluid Dynamics Lab Tours, *Woods Hole Oceanographic Institution*, 2013 – 2014

Featured in STEM careers video series, *Office of Naval Research*, 2010

Elementary after-school education program, *All Kids Are Scientists!*, Portland, OR, 2009

Co-Founder and Co-Editor-in-Chief of a science literacy magazine, *Amherst College*, 2009

FIELD AND LAB EXPERIENCE

During Nearshore Event Experiment (DUNEX) drifter releases, Duck, NC, Fall 2021

Nearshore Extreme Events Reconnaissance (NEER), Virtual participant, 2019 – present

Wake verification and validation study, NIWC-PAC, Washington, Summer 2019

Transient rip current experiments, Hinsdale Wave Research Laboratory, National Hazards Engineering Research Infrastructure, Oregon State University, Spring and Fall 2018

ONR Inner Shelf DRI aircraft and small-boat observations, Point Sal, CA, Fall 2017

Quinault river mouth UAV remote sensing and drifter releases, Taholah, WA, April 2017

ROLLEX infrared remote sensing, Duck, NC, October 2016

Katama Bay and Inlet study, Martha's Vineyard, MA, Summers 2013 and 2014

Surfzone vorticity experiments, USACE Field Research Facility, Duck, NC, October 2013

Tropical Field Ecology course, MIT-WHOI, Panama, January 2013

Channel dredging experiments, USACE Field Research Facility, Duck, NC, Summer 2012

ONR RIVET I, New River Inlet, NC, April 2012

Altimeter field tests, USACE Field Research Facility, Duck, NC, October 2011

Hole excavation experiments, USACE Field Research Facility, Duck, NC, Summer 2010

Zanzibar Channel dynamics study, Zanzibar, Tanzania, Summer 2009

Bioluminescent bays, Keck Geology Consortium, Puerto Rico, Summers 2006 and 2007

AAUS-certified SCUBA diver, Specialties: NITROX, Dry Suit, since 2010 (lapsed)

OTHER PROFESSIONAL ACTIVITIES

Graduate Students Advised:

Christine M. Baker, *UW CEE, PhD student*, 2017 – present (MS received Dec. 2019)
Emma Nuss, *UW CEE, PhD student*, 2020 – present
E. J. Rainville, *UW CEE, PhD student*, co-advised with Thomson & Derakhti, 2020 – present

Graduate Student Committees:

Sam Kastner, *UW CEE, PhD*, 2018 – 2020 (PhD received Aug. 2020)

Reviewer:

Natural Hazards
Journal of Geophysical Research: Earth Surface
Journal of Physical Oceanography
Ocean Modelling
Ocean Science (European Geosciences Union)
Marie Curie Postdoctoral Fellowships Programme
National Science Foundation, Major Research Instrumentation Program
National Science Foundation, Physical Oceanography, write-in

Review Panelist:

National Science Foundation, Physical Oceanography Program
National Science Foundation, Graduate Research Fellowship Program, 2018
National Defense Science and Engineering Graduate Fellowship, 2017

Member:

American Shore and Beach Preservation Association, 2020 – present
NEER: Nearshore Extreme Events Reconnaissance, 2019 – present
Society for Women in Marine Science, 2017 – present
Coastal Imaging Research Network, 2016 – present
The Coastal Society, 2015 – present
American Geophysical Union, 2008 – present

Representative:

Dive Control Board, Woods Hole Oceanographic Institution, 2012 – 2016
MIT-WHOI Student Organization, 2012 – 2013

Convener:

Novel Approaches to Observing in Coastal Systems, *Gordon Res. Conf.*, 2023 (Upcoming)
The Inner Shelf: Impacts of Interconnected Processes, *Ocean Sciences*, 2020
Interdisciplinary studies of transport from the shelf to the shoreline, *EPOC*, 2018
Nearshore Processes Session, *American Geophysical Union Fall Meeting*, 2016

Workshops and Training:

Workshop on SHared Operational REsearch Logistics in the Nearshore Environment (SHORELINE21): Uniting field and lab research across disciplines to reduce hurricane impacts to the built and natural environments, virtual, 2021
US Coastal Research Program: Human & Ecosystem Health Workshop, virtual, 2021
The Community WRF-Hydro Modeling System Training Workshop, virtual, 2020
Coastal Zone Foundation Water Quality Short Course, virtual, 2020
Natural Hazards Research and Applications Workshop, virtual, 2020
Nearshore Extreme Events Reconnaissance (NEER) Workshop, Arlington, VA, 2019

Natural Hazards Reconnaissance Facility (RAPID) Intensive Workshop, NHERI, 2019
Software Carpentry Workshop, UW eScience Institute, 2019
Coastlines and People (CoPe) Workshop, *National Science Foundation*, 2018
Coastal image annotation repository for machine learning applications, contributor, 2018
Unmanned Aerial Vehicle Imaging, *Coastal Imaging Research Network*, Duck, NC, 2017
Coastal Hazards & Resilience Workshop, *NOAA*, Suffolk, VA, 2015
COAWST Modeling System Workshop, *USGS*, Woods Hole, MA, 2014
Self-Organized Morphodynamic Patterns Short Course, Arcachon, France, 2013
The Past and Future of Nearshore Processes Research, Kitty Hawk, NC, 2013
Path of Professorship Workshop, *MIT*, 2013
Graduate Teaching Certificate Program, *MIT*, 2013