Weifeng (Gordon) Zhang

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EDUCATION:

B.S.	2000	Fluid Mechanics, Zhejiang University, China
M.E.	2003	Fluid Mechanics, Zhejiang University, China
Ph.D.	2009	Oceanography, Rutgers, The State University of New Jersey

PROFESSIONAL EXPERIENCE:

2018 – present	Associate Scientist with Tenure, Woods Hole Oceanographic Institution
2015 – 2018	Associate Scientist, Woods Hole Oceanographic Institution
2011 – 2015	Assistant Scientist, Woods Hole Oceanographic Institution
2009 – 2011	Postdoctoral Scholar, Woods Hole Oceanographic Institution
2004 – 2009	Research Assistant, Institute of Marine and Coastal Sciences, Rutgers University

AWARDS AND HONORS:

2009	Woods Hole Oceanographic Institution Postdoctoral Scholarship
2008	Invited to Physical Oceanography Dissertation Symposium
2008	AGU Ocean Science Meeting Travel Award
2003	Rutgers University Graduate Fellowship

PROFESSIONAL AFFLIATIONS:

American Geophysical Union
American Meteorological Society
The Oceanographic Society

RESEARCH INTERESTS:

Coastal ocean circulation, polar oceanography, frontal dynamics, internal wave dynamics, gravity currents, bio-physical interactions, coral reef hydrodynamics, numerical ocean modeling, data assimilation, model-based observing system design

PROFESSIONAL ACTIVITIES:

WHOI (Non Education Related):

2011 – 2015	WHOI Community Cluster (Scylla) Advisory Committee
2016 – 2018	WHOI Scientific Staff Executive Committee (SciSEC)
2016 – 2018	WHOI Information System Advisory Committee
2020 – present	WHOI Coral Reef Catalyst Team

Outside WHOI

Invited to NSF EarthCube Early Career Strategic Visioning Workshop, Oct 16–17, 2012
Panelist and proposal reviewer for NSF Division of Ocean Sciences
Invited to participate in NSF OOI cyber-infrastructure beta test
Invited to NSF OOI Coastal Arrays Workshop, Jan 5-7, 2016
Invited to present at OOIFB Town Hall at Ocean Science Meeting, Portland, Oregon, Feb 13, 2018
Invited to participate in NSF OOI Pioneer Array Relocation Innovation Lab, Mar 15-19, 2021
Reviewed manuscripts for *Applied Mathematical Modelling*, *Chinese Journal of Oceanology and limnology, Continental Shelf Research, Deep-Sea Research*, *Dynamics of Atmospheres and Oceans, Geophysical Research Letters, Journal of Atmospheric and Oceanic Technology*, *Journal of Geophysical Research – Oceans*, *Journal of Ocean University of China*, *Journal of Physical Oceanography*, *Ocean Dynamics*, *Ocean Modelling*, *PLOS ONE,* and *Progress in Oceanography*.

SUPERVISION AT WHOI:

Sep 2012 – Mar 2014	Ilya Udovydchenkov (Research Associate)
Mar 2020 – Jun 2020	Jacob Partida (Research Assistant)

PARTICIPATION IN EDUCATION PROGRAMS:

Educational Activities

2012 – 2014	WHOI Summer Student Fellowship Selection Committee
2018 – 2019	WHOI Postdoctoral Scholarship Selection Committee
2018 – 2019	WHOI AOP&E Postdoctoral Mentoring Committee Chair
2019 – present	MIT-WHOI Joint Program Applied Ocean Science & Engineering Discipline Education Coordinator

Teaching:

Nov 2016	Guest lecturer in *Coastal Physical Oceanography*, MIT-WHOI Joint Program course 12.862 (taught by Robert Todd and David Ralston)
Spring 2018	*Computational Ocean Modeling*, MIT-WHOI Joint Program course 12.850 (co-teach with Amala Mahadevan)
Spring 2020	*Computational Ocean Modeling*, MIT-WHOI Joint Program course 12.850 (co-teach with Amala Mahadevan)

Advising

Ph.D. Students (MIT-WHOI Joint Program): Cristina Schultz (2017-2019; co-advise with Scott Doney); Yilang Xu (2018-present); Phadtaya Poemnamthip (2019-present); Jacob Partida (2020-present; co-advise with Andone Lavery); Alan Gaul (2020-present; co-advise with Claudia Cenedese); Lukas Lobert (10/2020-06/2021, second general exam project).

Post-Doctoral Scholars/Investigators: Zhen Cheng (2017-2017; co-advise with Peter Traykovski); Elizabeth Allan (2019-2020; co-advise with Andone Lavery and Annette Govindarajan); Jiabi

Du (2019-present); Hilde Oliver (2019-2021; co-advise with Dennis McGillicuddy); Zihua Liu (2020-present; co-advise with Karl Helfrich).

Summer/Guest Students: Jacob Partida (May 2016 – Jul 2016; May 2017 – Aug 2017, summer student fellow); Bofu Zheng (Oct 2016 – Mar 2017, guest undergraduate student); Ankitha Kannad (May 2018 – Aug 2018, guest undergraduate student); Canbo Xiao (Oct 2018 – Oct 2019, guest graduate student); Xiaodan Li (Oct 2018 – Sep 2019, guest graduate student).

Thesis Defense Chair:

Margaux Martin-Filippi, 2018; Jeffrey Mei, 2020; Jacob Forsyth, 2020.

CRUISE PARTICIPATION:

June 2021 R/V Neil Armstrong, AR57, New England Shelf Break Acoustics Project Cruise, Woods Hole to Woods Hole
Physical Oceanographer, CTD operation lead, real-time data analyst, onboard real-time ocean prediction
Conducted physical, biological, and acoustic survey at the New England shelfbreak region and Alvin Canyon

May 2021 R/V Neil Armstrong, AR55, New England Shelf Break Acoustics Project Cruise, Woods Hole to Woods Hole
Physical Oceanographer, CTD operation lead, real-time data analyst, onboard real-time ocean prediction
Conducted physical, biological, and acoustic survey at the New England shelfbreak region

Jul 2019 R/V Thomas G. Thompson, TN368, Shelfbreak Frontal Dynamics and Biophysical Interaction Project Cruise, Woods Hole to Woods Hole
Physical Oceanographer, CTD operation group lead, real-time data analyst
Conducted physical, biological, and acoustic survey at the New England shelfbreak region

May 2019 NOAAS Ronald H. Brown, RB1905, Shelfbreak Frontal Dynamics and Biophysical Interaction Project Cruise, Woods Hole to Woods Hole
Physical Oceanographer, CTD operation group lead, real-time data analyst
Conducted physical, biological, and acoustic survey at the New England shelfbreak region

Aug 2018 NOAAS Henry Bigelow, HB1805, the WHOI Twilight Zone Project Deep-See Test and Evaluation Cruise, New Port to New Port
physical oceanographer, CTD operation group lead, help test and evaluation of the Deep-See vehicle in the slope sea

Apr 2018 R/V Neil Armstrong, AR29, Shelfbreak Frontal Dynamics and Biophysical Interaction Project Cruise, Woods Hole to Woods Hole
Physical Oceanographer, CTD and Echo-sounder operation lead, real-time data

analyst
Conducted physical, biological, and acoustic survey at the New England shelfbreak region

Oct 2017 AR24A, R/V Neil Armstrong OOI Pioneer Array Maintenance Cruise (CTD and Echo-sounder operator)
Conducting acoustic and hydrographic survey at the New England shelfbreak region

May 2017 AR19A, R/V Neil Armstrong OOI Pioneer Array Maintenance Cruise (CTD and Echo-sounder operator)
Conducting acoustic and hydrographic survey at the New England shelfbreak region

Jun 2016 AR06, R/V Neil Armstrong Science Verification Cruise VI (CTD operator and physical oceanographer)
Sampling of circulation and biophysical Interactions at the New England shelfbreak, slope, and canyon regions

Apr 2016 Monsoon Onset Monitoring and its Social and Ecosystem Impact (MOMSEI) 2016 Cruise in Andaman Sea, R/V Chakratong Tongyai (ecosounder operator)
Measuring solitary internal waves and its impact on shelf circulation and ecology

Aug 2010 R/V *Tioga*
One-day hydrographic survey of the flow east of Cape Cod with a REMUS-100

May 2010 OC460, R/V *Oceanus* (CTD operator)
Synoptic mapping of hydrography and *Alexandrium fundyense* concentration on Georges Bank and in the Gulf of Maine

Aug 2006 US Coast Guard Cutter *Sturgeon Bay*
One-day hydrographic survey in New York Harbor

May 2005 One-day hydrographic survey in Passaic River, New Jersey

Apr 2004 One-day mooring deployment in New York Bight

PAPERS IN REFEREED JOURNALS AND BOOKS:

(* supervised students; + supervised postdoc)

1) Li, X.*, **W. G Zhang**, and Z. Rong, 2021, The interaction between warm-core rings and submarine canyons and its influence on the onshore transport of offshore waters, *Journal of Geophysical Research: Oceans*, resubmitted with minor revision.

2) Oliver, H.+, **W. G Zhang**, K. M. Archibald, A. J. Hirzel, W. O. Smith, H. M. Sosik, R. H. R. Stanley, and D. McGillicuddy, 2021, Ephemeral surface chlorophyll enhancement at the New England shelf break driven by Ekman restratification, *Journal of Geophysical Research: Oceans,* resubmitted with minor revisions.

3) Snow, T. **W. Zhang**, E. Schreiber, W. Abdalati, and T. Scambos, 2021, Alongshore winds force warm Atlantic Water toward Helheim Glacier in southeast Greenland, *Geophysical Research Letters*, submitted.

4) Allan, E. A.[+], A. C. Lavery, A. F. Govindarajan, and **W. G. Zhang,** 2021: Modeling characterization of the vertical and temporal variability of environmental DNA in the mesopelagic ocean, *Scientific Reports*, 11:21273.

5) Du, J.[+], **W.G. Zhang**, and Y. Li, 2021, Variability of deep water in Gulf of Maine: influence of Gulf Stream, warm-core rings, and Nova Scotia Current, *Journal of Geophysical Research: Oceans*, 126, e2020JC017136.

6) **Zhang, W. G.**, Z. Cheng[+], and A. Ashton, 2021, Exploring the potential for internal tides to reshape the continental shelf edge seafloor, *Progress in Oceanography*, 195, 102575.

7) Duda, T. **W. G Zhang**, and Y.-T. Lin, 2021, Effects of ice cover and Pacific Summer Water layer structure on Beaufort Sea underwater sound ducting, *The Journal of Acoustical Society of America*, 149, 2117.

8) Oliver, H.[+], **W. G Zhang**, W. O. Smith, P. Alatalo, P. D. Chappell, A. Hirzel, C. R. Selden, H. M. Sosik, R. H. R. Stanley, Y. Zhu, and D. McGillicuddy, 2021, Extraordinary diatom blooms driven by western boundary current instability, *Geophysical Research Letter*, 48, e2020GL091943.

9) Du, J., K. Park, C. Jensen, T. M. Dellapenna, **W. G. Zhang**, Y. Shi, 2021, Massive oyster kill in Galveston Bay caused by prolonged low-salinity exposure after Hurricane Harvey, Science of the Total Environment, 774, 145132.

10) Smith, W. O., **W. G Zhang**, A., Hirzel, R. M. Stanley, M. G. Meyer, Sosik, H. M., P. Alatalo, H. Oliver[+], Z. Sandwith, T. Crockford, E. E. Peachock, A. Mehta, D. J. McGillicuddy, 2021: A regional, early spring bloom of Phaeocystis pouchetii on the New England continental shelf. *Journal of Geophysical Research: Oceans***,** 126, e2020JC016856.

11) Govindarajan, A. F., R. Francolini, J. M. Jach, A. Lavery, J. K. Llopiz, P. Wiebe, **W. G. Zhang**, 2021, Exploring the use of environmental DNA (eDNA) to detect animal taxa in the mesopelagic zone, *Frontiers in Ecology and Evolution*, 9, 574877.

12) Xiao, C[*], **W. G. Zhang**, and Y. Chen, 2020: Impact of shelf valleys on the spread of surface-trapped river plumes, *Journal of Physical Oceanography*, 51, 247-266.

13) Allan, E. A.[+], **W. G. Zhang**, A. C. Lavery, and A. F. Govindarajan, 2020: Environmental DNA shedding and decay rates from diverse animal forms and thermal regimes, *Environmental DNA*, 4, 492-514.

14) Schultz, C[*], S. C. Doney, **W. G. Zhang**, H. Regan, P. Holland, M. P. Meredith, and S. Stammerjohn, 2020: Modeling of the influence of sea ice cycle and Langmuir circulation on the upper ocean mixed layer depth and freshwater distribution at the West Antarctic Peninsula, *Journal of Geophysical Research – Oceans*, 125, e2020JC016109.

15) **Zhang, W. G.**, and D. J. McGillicuddy, 2020: Warm spiral streamers over Gulf Stream warm-core rings, *Journal of Physical Oceanography*, 50, 3331-3351.

16) Duda, T., Y.-T. Lin, A. E. Newhall, K. R. Helfrich, J. F. Lynch, **W. G. Zhang**, P. F. J. Lermusiaux, J. Wilkin, 2019: Multiscale Multiphysics data-informed modeling for three-

dimensional ocean acoustic simulation and prediction, *The Journal of the Acoustical Society of America*, 146, 1996-2015.

17) **Zhang, W. G.**, and J. Partida*, 2018: Frontal subduction of the Mid-Atlantic Bight shelf water at the onshore edge of a warm-core ring, *Journal of Geophysical Research - Oceans*, 123(11), 7795-7818.

18) Gawarkiewicz, G. G., R. E. Todd, **W. G. Zhang**, J. Partida*, A. Gangopadhyay, M.-U.-H. Monim, P. Fratantoni, A. M. Mercer, and M. Dent, 2018: The changing nature of shelf break exchange revealed by the OOI Pioneer Array, *Oceanography*, 31(1), 60-70.

19) **Zhang, W. G.**, and S. J. Lentz, 2018: Wind-driven circulation in a shelf valley. Part II: Dynamics of the along-valley velocity and transport, *Journal of Physical Oceanography*, 49, 883-904.

20) **Zhang, W. G.**, and S. J. Lentz, 2017: Wind-driven circulation in a shelf valley. Part I: Mechanism of the asymmetrical response to along-shelf winds in opposite directions, *Journal of Physical Oceanography*, 47, 2927-2947.

21) **Zhang, W. G.**, and G. G. Gawarkiewicz, 2015: Dynamics of the Direct Intrusion of Gulf Stream Ring Water onto the Mid-Atlantic Bight Shelf, *Geophysical Research Letters*, 42, 7687-7695.

22) **Zhang, W. G.**, and G. G. Gawarkiewicz, 2015: Length-scale of the finite-amplitude meanders of shelfbreak fronts, *Journal of Physical Oceanography*, 45, 2598-2620.

23) Chen, K, G. Gawarkiewicz, Y.-O. Kwon, and **W. G. Zhang**, 2015: The role of atmospheric forcing versus ocean advection during the extreme warming of the Northeast U.S. continental shelf in 2012, *Journal of Geophysical Research: Oceans*, 120, 4324-4339.

24) Li, Y., W. Han, J. L. Wilkin, **W. G. Zhang**, H. Arango, J. Zavala-Garay, J. Levin, F. S. Castruccio, 2014: Interannual variability of the surface summertime eastward jet in the South China Sea, *Journal of Geophysical Research – Oceans*, 119, 7205-7228.

25) **Zhang, W. G.**, C. Cenedese, 2014: The dispersal of dense water formed in an idealized coastal polynya on a shallow sloping shelf, *Journal of Physical Oceanography*, 44(6), 1563-1581.

26) **Zhang, W. G.**, T. F. Duda, Ilya A. Udovydchenkov, 2014: Modeling and analysis of internal-tide generation and beam-like onshore propagation in the vicinity of shelfbreak canyons, *Journal of Physical Oceanography*, 44(3), 834-849.

27) **Zhang, W. G.**, T. F. Duda, 2013: Intrinsic nonlinear and spectral structure of internal tides at a shelfbreak, *Journal of Physical Oceanography*, 43(12), 2641-2660.

28) **Zhang, W. G.**, D. J. McGillicuddy, and G. G. Gawarkiewicz, 2013: Is biological productivity enhanced at the New England Shelfbreak Front? *Journal of Geophysical Research – Oceans***,** 118(1), 517-535.

29) Garau, B., Ruiz, B., **W. G. Zhang**, A. Pascual, E. Heslop, J. Kerfoot, and J. Tintore, 2011: Thermal lag correction on Slocum CTD glider data, *Journal of Atmospheric and Oceanic Technology*, 28(9), 1065-1071.

30) **Zhang, W. G.**, G. G. Gawarkiewicz, D. J. McGillicuddy, and J. L. Wilkin, 2011: Climatological mean circulation at the New England shelf break, *Journal of Physical Oceanography*, 41(10), 1874-1893.

31) Wilkin, J. L., **W. G. Zhang**, B. Cahill and R. C. Chant, 2011: Integrating coastal models and observations for studies of ocean dynamics, observing systems and forecasting, In operational Oceanography in the 21st Century, A. Shiller and G. Brassington (eds.), Springer, pp 487-512 (book chapter), DOI: 10.1007/978-94-007-0332-2_19.

32) **Zhang, W. G.**, J. L. Wilkin, J. C. Levin, 2010b: Towards building an integrated observation and modeling system in the New York Bight using variational methods, Part II: representer-based observing system evaluation, *Ocean Modelling*, 35(3), 134-145.

33) **Zhang, W. G.**, J. L. Wilkin, H. G. Arango, 2010a: Towards building an integrated observation and modeling system in the New York Bight using variational methods, Part I: 4DVAR data assimilation, *Ocean Modelling*, 35(3), 119-133.

34) **Zhang, W. G.**, J. L. Wilkin, O. M. E. Schofield, 2010: Simulation of age and residence time in the New York Bight, *Journal of Physical Oceanography*, 40(5), 965-982.

35) **Zhang, W. G.**, J. L. Wilkin, J. C. Levin, H. G. Arango, 2009b: An Adjoint Sensitivity Study of Buoyancy- and Wind-driven Circulation on the New Jersey Inner Shelf, *Journal of Physical Oceanography*, 39(7), 1652-1668.

36) **Zhang, W. G.**, J. L. Wilkin, R. J. Chant, 2009a: Modeling of the pathways and mean dynamics of river plume dispersal in New York Bight, *Journal of Physical Oceanography*, 39(5), 1167-1183.

37) Chant, R. J., J. Wilkin, **W. G. Zhang**, B.-J. Choi, E. Hunter, R. Castelao, S. Glenn, J. Jurisa, O. Schofield, R. Houghton, J. Kohut, T.K. Frazer, and M.A. Moline, 2008: Dispersal of the Hudson River Plume in the New York Bight: synthesis of observational and numerical studies during LaTTE, *Oceanography*, 21(4), 148-161.

38) Lin, J. Z., K. Sun, **W. Zhang**, 2008: Orientation distribution of fibers and rheological property in fiber suspensions flowing in a turbulent boundary layer, *ACTA MECHANICA SINICA*, 24(3), 243-250.

39) Wilkin, J. L., **W. G. Zhang**, 2007: Modes of mesoscale sea surface height and temperature variability in the East Australian Current, *Journal of Geophysical Research*, 112(C1), C01013.

40) Zhang, S. L., J. Z. Lin, **W. Zhang**, 2007: Numerical research on the fiber suspensions in a turbulent T-shaped branching channel flow, *Chinese Journal of Chemical Engineering*, 15(1), 30-38.

41) Lin, J. Z., L. X. Zhang, **W. Zhang**, 2006: Pheological behavior of fiber suspensions in a turbulent channel flow, *Journal of Colloid and Interface Science*, 296(2), 721-728.

42) Zhang, L. X., J. Z. Lin, **W. Zhang**, 2006: Theoretical model of particle orientation distribution function in a cylindrical particle suspension subject to turbulent shear flow, *Progress in Natural Science*, 16(1), 16-20.

43) Lin, J. Z., J. Li, **W. Zhang**, 2005: Orientation distribution of fibres in a channel flow of fibre suspension, *Chinese Physics*, 14(12), 2529-2538.

44) Lin, J. Z., Y. L. Wang, **W. Zhang**, 2005: Sedimentation of short cylindrical pollutants with mechanical contacts, *Journal of Environmental Sciences,* 17(6), 906-911.

45) You, Z. J., J. Z. Lin, X. M. Shao, **W. Zhang**, 2004: Stability and drag reduction in transient channel flow of fibre suspension, *Chinese Journal of Chemical Engineering*, 12(3), 319-323.

46) Lin, J. Z., J. Li, **W. Zhang**, 2004: The force for cylindrical particles in an elongational-shear flow, *International Journal of Nonlinear Sciences and Numerical Simulation*, 5(1), 9-16.

47) Lin, J. Z., **W. Zhang**, Z. S. Yu, 2004: Numerical research on the orientation distribution of fibers immersed in laminar and turbulent pipe flows, *Journal of Aerosol Science,* 35(1), 63-82.

48) **Zhang, W.**, J. Z. Lin, 2004: Research on the motion of particles in the turbulent pipe flow of fiber suspensions, *Applied Mathematics and Mechanics*, 25(7), 417-750.

49) **Zhang, W.**, J. Z. Lin, 2003: Research on the orientation of cylindrical particles in gas-solid two-phase pipe flows, *ACTA Aerodynamica Sinica,* 21(2), 237-243. (In Chinese)

50) Lin, J. Z., **W. Zhang**, Y. L. Wang, 2002: Research on the orientation distribution of fibers immersed in a pipe flow, *Journal of Zhejiang University SCIENCE (English Edition)*, 3(5), 501-506.

PAPERS IN CONFERENCE PROCEEDINGS:

1) Duda, T. F., **W. G. Zhang**, K. R. Helfrich, Y.-T. Lin, and A. E. Newhall, 2016: Modeling internal solitary wave development at the head of a submarine canyon. In VIIIth International Symposium on Stratified Flows, San Diego, USA, Aug. 29 – Sep. 1, 2016, (8 pp.).

2) Duda, T. F., **W. G. Zhang**, K. R. Helfrich, A. E. Newhall, Y.-T. Lin, and J. F. Lynch, 2014: Issues and progress in the prediction of ocean submesoscale features and internal waves. In *Oceans '14 St. Johns Conference Proceedings,* IEEE/MTS, (9 pp.).

3) Duda, T. F., Y.-T. Lin, A. E. Newhall, K. R. Helfrich, **W. G. Zhang**, M. Badiey, P. F. J. Lermusianx, J. A., Colosi, and J. F. Lynch, 2014: The "Integrated Ocean Dynamics and Acoustics" (IODA) hybrid modeling effort. In *Proceedings of the international conference on Underwater Acoustics – 2014 (UA2014)*, 621-628, 22–27 June 2014, Island of Rhodes, Greece, doi: 10.13140/2.1.2853.3123.

4) Duda, T. F., **W. G. Zhang**, and Y.-T. Lin, 2012: Studies of internal tide generation at a slope with nonlinear and linearized simulations: Dynamics and implications for ocean acoustics. In *Oceans 2012, Hamptons Road, Virginia, Conference Proceedings*, MTS/IEEE.

5) Duda, T. F., Y.-T. Lin, **W. G. Zhang**, B. D. Cornuelle, P. F. J. Lermusiaux, 2011: Computational studies of three-dimensional ocean sound fields in areas of complex seafloor topography and active ocean dynamics. In *Proceedings of the 10th International Conference on Theoretical and Computational Acoustics*, ICTCA 2011, Taipei, Taiwan, World Scientific Publishing.

6) Duda, T.F., Y.-T. Lin, A.E. Newhall, **W. G. Zhang**, and J.F. Lynch, 2010: Computational studies of time-varying three-dimensional acoustic propagation in canyon and slope regions. In *Oceans 2010, Seattle, WA, Conference Proceedings*, IEEE/MTS.

7) Wilkin, J., J. Zavala-Garay, J., Levin, and **W. G. Zhang**, 2008: Four-dimensional variational assimilation of satellite temperature and sea level data in the coastal ocean and adjacent deep sea, *Geoscience and Remote Sensing Symposium*, IGARSS 2008, IEEE International, 3, pp.III-427-III-430, 7-11 July 2008, doi: 10.1109/IGARSS.2008.4779375.

INVITED PRESENTATIONS:

2021 "Processes of cross-shelf exchange induced by Gulf Stream warm-core rings", 24 May, Department of Hydraulic and Ocean Engineering, National Cheng Kung University, Taiwan.

"Processes of cross-shelf exchange induced by Gulf Stream warm-core rings", 8 April, Pennsylvania State System of Higher Education Earth & Environmental Sciences Seminar Series, Millersville University, PA.

2020 "Warm spiral streamers over Gulf Stream warm-core rings", 1 December, Oregon State University, OR.

"Processes of cross-shelf exchange induced by Gulf Stream warm-core rings", 11 December, University of Maine, ME.

2018 "Asymmetrical response of flow in a shelf valley to along-shelf winds of opposite directions", 19 June, Hong Kong University of Science and Technology, Hong Kong.

"Asymmetrical response of flow in a shelf valley to along-shelf winds of opposite directions", 20 June, Eastern China Normal University, Shanghai, China.

"Processes of cross-shelf exchange revealed by OOI Pioneer Array", 21 June, Shanghai Jiaotong University, Shanghai, China.

"Processes of cross-shelf exchange revealed by OOI Pioneer Array", 22 June, Second Institute of Oceanography, Hangzhou, China.

"Asymmetrical response of flow in a shelf valley to along-shelf winds of opposite directions", 25 June, Zhejiang University – Ocean College, Zhoushan, Zhejiang, China,

"Processes of cross-shelf exchange revealed by OOI Pioneer Array", 3 July, First Institute of Oceanography, Qingdao, China.

"Asymmetrical response of flow in a shelf valley to along-shelf winds of opposite directions", 26 July, Ocean University of China, Qingdao, China.

2016 "Direct intrusion of the Gulf Stream warm-core ring water onto the Mid-Atlantic Bight continental shelf", Oct 24, University of New South Wales, Sydney, Australia.

"Frontal instability and warm-core ring water intrusion at the Mid-Atlantic Bight shelfbreak", Apr 8, Lamont-Doherty Earth Observatory, NY.

"Frontal instability and warm-core ring water intrusion at the Mid-Atlantic Bight shelfbreak", Apr 25, South China Sea Institute of Oceanography, Chinese Academy of Science, Guangzhou, China.

2015 "Tidally driven internal wave generation at the edge of a continental shelf." The 6th WESTPAC Summer School on Monsoon Onset Monitoring and Its Social & Ecosystem Impacts (MOMSEI Summer School – VI), Oct 26-30, 2015, Phuket Marine Biology Center, Phuket, Thailand.

"Internal waves and frontal instability at the Mid-Atlantic Bight continental shelfbreak." *Gordon Research Conference – Coastal Ocean Modeling*, Jun 7-12, 2015, University of New England, Biddeford, ME.

2014 "The generation of internal tides at a shelf edge." May 12, College of Physical and Environmental Oceanography, Ocean University of China, Qingdao, China.

"The generation of internal tides at a shelf edge." May 10, Department of Information

Science & Electronic Engineering, Zhejiang University, Hangzhou, China.

"The generation of internal tides at a shelf edge." May 8, The Second Institute of Oceanography, State Ocean Administration, Hangzhou, China.

2013 "Dispersal of the Hudson River plume in the New York Bight." Oct 25, State Key Laboratory of Estuarine and Coastal Research, East China Normal University, Shanghai, China.

"Dispersal of the Hudson River plume in the New York Bight." Oct 22, Ocean College, Zhejiang University, Hangzhou, China.

2012 "Is biological productivity enhanced at the New England Shelfbreak?" Apr 18, The School for Marine Science and Technology, University of Massachusetts Dartmouth.

2010 "Pathways and time scales of the freshwater dispersal on the New York Bight." Sep 17, Graduate School of Oceanography, University of Rhode Island.

2009 "Towards building an integrated observation and modeling system in the New York Bight using variational methods." Glider Data Assimilation Workshop, Sep. 17-18, Chapel Hill, North Carolina.

2008 "Modeling of the New York Bight for freshwater dispersal study and observing system design." Dec. 10, Applied Ocean Physics & Engineering Department, Woods Hole Oceanographic Institution, Massachusetts.

"Coastal Ocean Modeling Using Variational Methods for Data Assimilation and Observing System Design." Oct. 17, Department of Civil and Environmental Engineering, Princeton University, New Jersey.

"Coastal Ocean Modeling Using Variational Methods for Data Assimilation and Observing System Design." *Physical Oceanography Dissertation Symposium*, Oct. 5-10, Honolulu, Hawaii.

2005 "Sensitivity Analysis of SST along New Jersey coast with ROMS Adjoint model." ROMS workshop, Oct. 24-26, La Jolla, CA.

CONFERENCE PRESENTATIONS:

2020 "Warm spiral streamers over Gulf Stream warm-core rings", *Ocean Science Meeting*, Feb 16-21, 2020, San Diego, CA. (talk)

2019 "Frontal subduction of the Mid-Atlantic Bight shelf water at the onshore edge of a warm-core ring", *Gordon Research Conference – Coastal Ocean Dynamics*, Jun 16-21, 2019, South New Hampshire University, Manchester, New Hampshire. (poster)

"Frontal subduction of the Mid-Atlantic Bight shelf water at the onshore edge of a warm-core ring", *Mid-Atlantic Bight Physical Oceanography and Meteorology Conference*, Oct 11-12, Woods Hole, MA. (poster)

2018 "Frontal subduction of the Mid-Atlantic Bight shelf water at the onshore edge of a warm-core ring", *Gordon Research Conference – Ocean Mixing*, Jun 3-8, 2018, Proctor Academy, Andover, New Hampshire. (poster)

"Morphodynamical interaction of tides, internal tides and sediment transport at the shelf edge", *Ocean Science Meeting*, Feb 12-16, Portland, Oregon. (talk)

"Asymmetrical flow response in a shelf valley to along-shelf winds of opposite directions – A lee-wave mechanism", *Ocean Science Meeting*, Feb 12-16, Portland, Oregon. (poster)

"New processes of cross-shelf water exchange revealed by OOI Pioneer Array", OOI FB Town Hall at *Ocean Science Meeting*, Feb 13, Portland, Oregon. (talk)

2017 "Subsurface offshore transport of the Mid-Atlantic Bight shelf water induced by a warm-core ring", *Mid-Atlantic Bight Physical Oceanography and Meteorology Conference*, Sep 28-29, 2017, University of North Carolina Coastal Studies Institute, Wanchese, North Carolina. (talk)

"Asymmetrical flow response in a shelf valley to along-shelf winds of opposite directions", *Gordon Research Conference – Coastal Ocean Circulation*, Jun 11-16, 2017, University of New England, Bidderford, Maine. (poster)

"Internal waves in Andaman Sea – Connecting the open ocean to shelf processes and coral reef biogeochemistry", *The 10th WESTPAC International Scientific Conference*, Apr 17-20, 2017, Qingdao, China. (talk)

2016 "Dispersal of polynya dense water on a sloping shelf", *ROMS Asia-Pacific Workshop*, Oct 17-20, 2016, University of Tasmania, Hobart, Australia. (talk)

"Inhomogeneous Generation and Propagation of Internal Waves at a Shelfbreak Canyon", *INCISE International Submarine Canyon Symposium*, July 25-27, Victoria, BC, Canada. (talk)

"Direct Intrusion of Gulf Stream Ring Water onto Mid-Atlantic Bight Continental Shelf", *Ocean Science Meeting*, Feb 21-26, New Orleans, Louisiana. (talk)

2015 "Internal-tide Generation and Beam-like Onshore Propagation in the Vicinity of Shelfbreak Canyons" *The 4th Forum for Arctic Modeling and Observational Synthesis (FAMOS) School and Meeting*, Nov 4-6, Hyannis, MA. (poster)

2014 "Length-scale of the meanders of the MAB shelfbreak front." *Mid-Atlantic Bight Physical Oceanography and Meteorology Conference*, Oct, 29-30, Virginia Institute of Marine Science, Virginia. (talk)

"Dispersal of the dense water formed in a coastal polynya", *Forum for Arctic Modeling and Observational Synthesis (FAMOS)*, Oct 21-24, Woods Hole, MA. (poster)

"Modeling and analysis of internal-tide generation and beam-like onshore propagation in the vicinity of shelfbreak canyons." *Ocean Science Meeting*, Feb 24-28, Honolulu, HI. (poster)

2013 "Intrinsic nonlinear and spectral structure of internal tides at a shelfbreak." *Gordon Research Conference – Coastal Ocean Circulation*, Jun 9-14, University of New England, Biddeford, ME. (poster)

2012 "Is biological productivity enhanced at the New England Shelfbreak?" *The Middle Atlantic Bight Physical Oceanography and Meteorology Conference*, Nov 7-8, University of Connecticut, Avery Point, Connecticut. (talk)

"Mean circulation and biological production at the New England Shelfbreak." *Ocean Science Meeting*, Feb 20-24, Salt Lake City, UT. (poster)

2011 "Climatological mean circulation at the New England shelf break." *Gordon Research Conference – Coastal Ocean Modeling*, Jun 26-Jul 1, Mount Holyoke College, South Hadley, MA. (poster)

2010 "Towards an integrated coastal ocean observation and modeling system." *Ocean Science Meeting*, Feb 22-26, Portland, Oregon. (poster)

2009 "Representer-based observing system in the New York Bight." *The 8th Workshop on Adjoint Model Applications in Dynamic Meteorology*, May 18-22, Tannersville, Pennsylvania. (talk)

2008 "Simulation of age and residence time in the New York Bight." Dec 15-19, *AGU Fall Meeting*, San Francisco, California. (talk)

"Modeling of the mean dynamics and freshwater pathways in New York Bight." *Ocean Science Meeting*, Mar 3-7, Orlando, FL. (poster)

2007 "Variational Data Assimilation off New Jersey Coast." *Gordon Research Conference - Coastal Ocean Modeling*, Jun 17-22, Colby-Sawyer College, New London, NH. (poster)

2006 "Adjoint Sensitivity Analysis of SST on New Jersey coast." *The 7th International Workshop on Adjoint Applications in Dynamics Meteorology*, Oct 8-13, Obergurgl, Tyrol, Austria. Abstract (208), p39. (talk)

WHOI SEMINAR PRESENTATIONS:

2020 "Warm spiral streamers over Gulf Stream warm-core rings", Jan 8, AOP&E department seminar

2019 "Exploring the potential for internal tides to reshape the shelf edge seafloor", Mar 29, Coastal Ocean and Fluid Dynamics Lab Seminar

"Processes of warm-core rings interacting with the surrounding waters", Jan 29, Ocean Twilight Light Zone project seminar

"Shelf-break exchange processes revealed by OOI Pioneer Array", Jan 15, OOI Lunch and Learn seminar

2018 "Ring interaction and shelf-break exchange processes revealed by OOI Pioneer Array", May 30, AOP&E department seminar

"Coastal physical oceanography and biophysical interaction", Mar 14, WHOI-MIT Joint Program Open House presentation

"Asymmetrical response of circulation in a shallow shelf valley to along-shelf winds in opposite directions", Feb 27, Physical Oceanography Department Seminar.

2017 "Asymmetry can also be beautiful – when it occurs in a submarine canyon", Jan 27, Coastal Ocean and Fluid Dynamics Lab Seminar.

2016 "Subsurface water exchange at the MAB shelfbreak revealed by the OOI Pioneer Array", Sep 16, Coastal Ocean and Fluid Dynamics Lab Seminar.

"Coastal Physical Oceanography and its various influences", Mar 15, WHOI-MIT Joint Program Open House presentation

"Frontal instability and warm-core ring water intrusion at the Mid-Atlantic Bight shelfbreak", May 18, AOP&E department seminar

"Pinocchio's Nose Intrusion of the Gulf Stream ring water at the Mid-Atlantic Bight shelfbreak", July 6, WHOI Summer Lecture Series

2014 "The generation of internal tides at a shelf-break canyon." Nov 5, AOP&E Department Seminar.

2013 "Dispersal of the dense water formed in an idealized coastal polynya." Dec 6, Coastal Ocean and Fluid Dynamics Lab Seminar.

"Distributed source physics of internal tide horizontal beam patterns near shelfbreak canyons." Sep 4, Applied Ocean Physics & Engineering Department Seminar.

2012 "Intrinsic nonlinearity and spectral structure of internal tides at a shelf break." Sep 26, Applied Ocean Physics & Engineering Department Seminar.

2011 "Mean biological production at the New England Shelfbreak." Dec 16, Coastal Ocean and Fluid Dynamics Lab Seminar.

"Climatological mean circulation at the New England Shelfbreak." Nov 16, Applied Ocean Physics & Engineering Department Seminar.

2010 "Coastal ocean modeling for studying circulation and transport across the continental shelf in the Mid-Atlantic Bight." Jun 9, Applied Ocean Physics & Engineering Department Seminar.

"Towards an integrated coastal ocean observation and modeling system." Jan 20, Applied Ocean Physics & Engineering Department Seminar.

OUTREACH ACTIVITIES:

2018-2020 Judge for Falmouth Science and Engineering Fair

Mar 2019 Classroom science presentation and demonstration on Polynyas in Coastal Antarctica to 5th grade students at Morse Pond School in Falmouth

Mar 2017 Classroom science presentation and demonstration on Ocean and Estuarine Circulation to 3rd grade students at Mullen Hall School in Falmouth