

Dr. Joseph B. Zambon, Ph.D.

Research Assistant Professor

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1. RESEARCH FIELDS

- 1 Numerical geophysical modeling
- 2 Tropical cyclone modeling and forecasting
- 3 Air-sea interactions
- 4 Coupled ocean-atmosphere-wave numerical modeling
- 5 Coastal ocean circulation dynamics
- 6 Statistical validation of numerical models
- 7 Deep sea research and submersible vehicles

2. EDUCATION

- 1 Ph.D., North Carolina State University – Marine, Earth and Atmospheric Sciences 2014
- 2 M.S., North Carolina State University – Marine, Earth and Atmospheric Sciences 2009
- 3 B.S., University at Albany (SUNY) – Atmospheric Science 2007

3. EMPLOYMENT HISTORY

- 1 Research Assistant Professor, North Carolina State University 2017-present
- 2 Vice President of Research and Development, Co-Founder, Fathom Science LLC 2017-present
- 3 Postdoctoral Research Scholar, North Carolina State University 2014-2017
- 4 Graduate Student Research Assistant, North Carolina State University 2007-2014
- 5 Supervisor and Technician, ITS Helpdesk, University at Albany 2005-2007
- 6 Student Intern, National Weather Service, Albany, NY 2006
- 7 Student Intern, National Weather Service, Buffalo, NY 2004

4. GRANTS, AWARDS, AND SCHOLARSHIPS [Total to date: \$339,674]

- 1 United States Geological Survey. *Using a Coupled Numerical Modeling System to Investigate Flooding Impacts During Hurricane Florence (2018)*. PI. Award amount: \$192,132 2020-2023
- 2 National Academies of Sciences, Engineering and Medicine – Gulf Research Program. *Understanding and Predicting the Gulf of Mexico Loop Current, Topic 8: Numerical Modeling*. Key project personnel; model data analysis and management. Award amount: \$126,792 of \$2,100,946 2019-2020

- 3 Amazon.com, Inc. – Amazon Web Services (AWS) Cloud Credits for Research Program. *Proposal to Transition the NC State Coupled Northwest Atlantic Prediction System (CNAPS) to AWS Cloud Computing*. PI. Award amount: \$45,000 2019-2021
- 4 Southeast Coastal Ocean Observing Regional Association (SECOORA) Data Challenge Award. *Development of a 5-Year Daily, Cloud-Free Sea Surface Temperature (SST) and Chlorophyll-a Reconstruction Dataset Using the Data Interpolating Empirical Orthogonal Functions (DINEOF) Method*. PI. Award amount: \$2,500 2017-2018
- 5 North Carolina Space Grant Research Fellowship, National Aeronautics and Space Administration (NASA). *Assimilating Satellite Observations in a Fully Coupled Ocean – Atmosphere – Wave – Sediment Transport (COAWST) Model*. PI. Award amount: \$8,000 2010-2011
- 6 University Graduate Student Association (UGSA) Travel Award, North Carolina State University. Award amount: \$250 2010
- 7 United University Professions Undergraduate Scholarship, University at Albany. Scholarship amount: \$4,000 2003-2007
- 8 Wegmans Employee Undergraduate Scholarship, University at Albany. Scholarship amount: \$6,000 2003-2007

5. PROFESSIONAL SERVICES

International and National Level

- 1 Member – National Weather Association 2014-present
- 2 Member – American Geophysical Union 2008-present
- 3 Member – American Meteorological Society 2005-present

University Level

- 1 Convener and Chair – Marine, Earth and Atmospheric Sciences Graduate Student Research Symposium on Numerical Modeling. North Carolina State University, Raleigh, NC. 2011
- 2 President – Marine, Earth and Atmospheric Sciences Graduate Student Association, North Carolina State University, Raleigh, NC. 2009-2010
- 3 Secretary – Marine, Earth and Atmospheric Sciences Graduate Student Association, North Carolina State University, Raleigh, NC. 2010-2012

Reviewer for Professional Journals

- 1 *Monthly Weather Review*
- 2 *Ocean Dynamics*
- 3 *Journal of Geophysical Research – Oceans*

- 4 *Journal of Geophysical Research – Atmospheres*
- 5 *Journal of Marine Systems*
- 6 *Ocean Modelling*
- 7 *Artificial Intelligence for the Earth Systems*
- 8 *Journal of the Ocean University of China*
- 9 *Atmósfera*
- 10 *Energies*

Outreach

- 1 Invited Speaker – NC State University Geographic Information Systems (GIS) Day 2019
 - 2 Invited Speaker – Weddington Middle School, NC SeaGrant Oceanography Lectures 2017
 - 3 Invited Speaker – Victor Middle School, Men and Womens Leadership Group 2016
 - 4 Invited Instructor – North Carolina Museum of Natural Sciences (via satellite from *R/V Atlantis* in the North Atlantic) 2016
 - 5 Guest Instructor – Exploris Middle School, Raleigh, NC. 2007
6. REFEREED PUBLICATIONS [Number of Citations 870, h-Index: 5 (as of Nov. 2021)]

Published/In Press

- 1 **Zambon, J. B.**, R. He, J. C. Warner, and C. Hegermiller (2021). Impact of SST and surface waves on Hurricane Florence (2018): A coupled modeling investigation. *Weather and Forecasting*, doi: 10.1175/WAF-D-20-0171.1
- 2 Xue, Z., **J. B. Zambon**, Z. Yao, Y. Liu, and R. He (2015). An integrated ocean circulation, wave, atmosphere and marine ecosystem prediction system for the South Atlantic Bight and Gulf of Mexico. *Journal of Operational Oceanography*, Vol. 8, 80–91, doi: 10.1080/1755876X.2015.1014667
- 3 **Zambon, J. B.** (2014). Air-sea interaction during landfalling tropical and extra-tropical cyclones. *Ph.D. Dissertation – North Carolina State University*, 201pp, Available online: <http://repository.lib.ncsu.edu/ir/handle/1840.16/9951>
- 4 **Zambon, J. B.**, R. He, and J. C. Warner (2014). Tropical to extratropical: Marine environmental changes associated with Superstorm Sandy prior to its landfall. *Geophysical Research Letters*, 2014GL061357, doi:10.1002/2014GL061357
- 5 **Zambon, J. B.**, R. He, and J. C. Warner (2014). Investigation of Hurricane Ivan using the coupled ocean-atmosphere-wave-sediment transport (COAWST) model. *Ocean Dynamics*, Vol. 64, 1535–1554, doi:10.1007/s10236-014-0777-7

- 6 Olabarrieta, M., J. C. Warner, B. Armstrong, **J. B. Zambon**, and R. He (2012). Ocean–atmosphere dynamics during Hurricane Ida and Nor’Ida: An application of the coupled ocean–atmosphere–wave–sediment transport (COAWST) modeling system. *Ocean Modelling*, Vol. 43-44, 112–137, doi:10.1016/j.ocemod.2011.12.008
- 7 Warner, J. C., B. Armstrong, R. He, and **J. B. Zambon** (2010). Development of a coupled ocean–atmosphere–wave–sediment transport (COAWST) modeling system. *Ocean Modelling*, Vol. 35, 230–244, doi:10.1016/j.ocemod.2010.07.010
- 8 **Zambon, J. B.** (2009). An examination of tropical cyclone dynamics utilizing the 3-Way coupled ocean atmosphere wave sediment transport (COAWST) model. *Masters Thesis – North Carolina State University*, 154pp, Available online: <http://repository.lib.ncsu.edu/ir/handle/1840.16/475>

In Review/To Be Submitted

- 9 Seim, H. E., D. Savidge, M. Andres, J. Bane, C. Edwards, G. Gawarkiewicz, R. He, R. E. Todd, M. Muglia, **J. B. Zambon**, L. Han, and S. Mao (submitted). Overview of the Processes driving Exchange At Cape Hatteras (PEACH) Program. *Oceanography*
- 10 **Zambon, J. B.**, R. He, J. Bane, J. Clayson, and C. A. Clayson (in preparation). From the bottom of the ocean to the top of the atmosphere: a 3-dimensional examination of explosive cyclogenesis crossing the Gulf Stream onboard the R/V Neil Armstrong. To be submitted to *Geophysical Research Letters*
- 11 Yao, Z, **J. B. Zambon**, A. C. Todd, Z. Xue, and R. He (in review). A fully coupled ocean circulation, wave, and atmosphere nowcast and forecast system for the northwest Atlantic coastal ocean. *Ocean Dynamics, Topical Collection on Coastal Ocean Forecasting Science*

7. PROFESSIONAL MEETINGS AND ABSTRACTS

- 1 **Zambon, J. B.**, R. He, J. C. Warner, and C. Hegermiller, Investigation of extreme weather, ocean current, wave, and coastal flooding during Hurricane Florence (2018) using the Coupled Ocean–Atmosphere–Wave–Sediment Transport (COAWST) model. 100th Annual AMS Annual Meeting, Boston, MA, 2020
- 2 Xue, Z. G., D. Bao, D. Yin, R. He, **J. B. Zambon**, M. Moulton, J. C. Warner, Z. Dafne, D. Gochis, and W. Yu, Investigating hurricane-induced compound flooding and sediment dispersal using coupled hydrology and ocean models. AGU Fall Meeting, Virtual, 2020
- 3 He, R. S. Mao, **J. B. Zambon**, J. Bane, G. Gawarkiewicz, R. E. Todd, H. Seim, C. Edwards, M. Andres, and D. Savidge. Ocean responses to major hurricanes during PEACH: a model synthesis study. AGU Ocean Sciences Meeting, San Diego, CA, 2020

- 4 Bane, J. H. Seim, S. Haines, R. He, **J. B. Zambon**, and G. Gawarkiewicz. Atmospheric forcing of the Hatteras coastal ocean during PEACH. AGU Ocean Sciences Meeting, San Diego, CA, 2020
- 5 Warner, J. C., **J. B. Zambon**, R. He, Z. Dafne, and C. Hegermiller. Integrating WRF Hydro into the Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) modeling system: application to Hurricane Florence (2018). AGU Ocean Sciences Meeting, San Diego, CA, 2020
- 6 **Zambon, J. B.**, R. He, J. C. Warner, and C. Hegermiller, WRF explicit surface wave modeling experiments beneath Hurricane Florence (2018). NCAR WRF/MPAS Workshop, Boulder, CO, 2019
- 7 He, R., S. Mao, and **J. B. Zambon**, Hurricane Florence and its impact on coastal ocean off Carolinas, United States. AGU Fall Meeting, Washington, D.C., 2018
- 8 **Zambon, J. B.**, R. He, and J. Bane, From top to bottom: an investigation of wintertime atmosphere-ocean interaction in the vicinity of the Gulf Stream in January 2018. Mid-Atlantic Bight Physical Oceanography and Meteorology (MABPOM) Conference, Woods Hole Oceanographic Institute, Woods Hole, MA, 2018
- 9 Rudzin, J. E., L. K. Shay, B. Jaimes, **J. B. Zambon**, and R. He, Examining the influence of caribbean sea upper ocean variability on Hurricane Ivan (2004) using uncoupled and coupled simulations. 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, FL, 2018
- 10 **Zambon, J. B.**, R. He, J. C. Warner, and H. Zong, Investigation of precipitation on upper-ocean stratification during Hurricanes Irene (2011) and Harvey (2017). AGU Ocean Sciences Meeting, Portland, OR, 2018
- 11 **Zambon, J. B.**, R. He, and J. Bane, Preliminary comparisons of the Coupled Northwest Atlantic Prediction System (CNAPS) to data at the Cape Hatteras shelf break in April 2017. Mid-Atlantic Bight Physical Oceanography and Meteorology (MABPOM) Conference, Coastal Studies Institute, Wanchese, NC, 2017
- 12 **Zambon, J. B.**, R. He, and J. C. Warner, Development of the Coupled Northwest Atlantic Prediction System (CNAPS). AGU Ocean Sciences Meeting, New Orleans, LA, 2016
- 13 He, R. W. Woods, **J. B. Zambon**, and Z. Xue, Monitoring the Gulf Stream and shelf environment in the South Atlantic Bight through integrated autonomous underwater glider observations and data assimilative ocean model predictions. OCEANS, Shanghai, 2016

- 14 **Zambon, J. B.**, Tropical to extratropical: marine environmental changes associated with Superstorm Sandy prior to its landfall. Coastal Ocean Modeling Gordon Research Conference, University of New England, Biddeford, ME, 2015
- 15 **Zambon, J. B.**, Tropical to extratropical: marine environmental changes associated with Superstorm Sandy prior to its landfall. Marine, Earth and Atmospheric Sciences (MEAS) and Forestry and Environmental Resources (FER) Graduate Research Symposium, North Carolina State University, Raleigh, NC, 2014
- 16 Ricchi, A., M. M. Miglietta, A. Benetazzo, J. C. Warner, **J. B. Zambon**, D. Bonaldo, F. M. Falcieri, A. Bergamasco, M. Sclavo, and S. Carniel, A coupled atmosphere-ocean modelling system to investigate the exceptional winter 2012 conditions in the northern Adriatic Sea. EGU General Assembly, Vienna, Austria, 2015
- 17 **Zambon, J. B.**, R. He, and J. C. Warner, Northeast tropical/extra-tropical cyclone case studies: Irene (2011) and Sandy (2012). Coastal Processes Project Meeting, Woods Hole Oceanographic Institute, Woods Hole, MA, 2014
- 18 **Zambon, J. B.**, R. He, and J. C. Warner, Investigation of Hurricane Sandy dynamics using the 3-way Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model. AGU Ocean Sciences Meeting, Honolulu, HI, 2014
- 19 He, R., **J. B. Zambon**, Z. Yao, J. Nelson, and J. C. Warner, NCSU COAWST nowcast/forecast modeling system: implementation and examples. Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) Modeling Meeting, Washington, DC, 2013
- 20 **Zambon, J. B.**, and R. He, Coupled application examples: modeling of tropical cyclones. Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) User Workshop, Woods Hole Oceanographic Institute, Woods Hole, MA, 2012
- 21 He, R., Z. Xue, and **J. B. Zambon**, An integrated ocean circulation, wave, atmosphere and marine ecosystem prediction system for the South Atlantic Bight and Gulf of Mexico. Southeast Coastal Ocean Observing Regional Association (SECOORA) Meeting, Miami, FL, 2012
- 22 He, R., W. Woods, Z. Xue, **J. B. Zambon**, K. Chen, Y. Li, Y. Gong, and Y. Yin, Glider surveys in the South Atlantic Bight: a component of an integrated coastal ocean observing and data assimilative prediction system. Southeast Coastal Ocean Observing Regional Association (SECOORA) Meeting, Miami, FL, 2012
- 23 **Zambon, J. B.**, Using the Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model to forecast Hurricane Irene. Department of Marine, Earth and Atmospheric Sciences (MEAS) Seminar, North Carolina State University, Raleigh, NC 2012

- 24 **Zambon, J. B.**, R. He, and J. C. Warner, Investigation of Hurricane Ivan using the 3-way Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) Model. 10th Symposium on the Coastal Environment. AMS Annual Meeting, New Orleans, LA, 2012
- 25 **Zambon, J. B.**, Investigation of Hurricane Ivan using the 3-way Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model. Marine, Earth and Atmospheric Science Graduate Student Symposium, North Carolina State University, Raleigh, NC, 2011
- 26 **Zambon, J. B.**, R. He, J. C. Warner, Investigation of Hurricane Ivan using the 3-way Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model. Ocean Modeling Gordon Research Conference, Mount Holyoke College, South Hadley, MA, 2011
- 27 **Zambon, J. B.**, R. He, J. C. Warner, Investigation of Hurricane Ivan using the 3-way Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model. North Carolina State University Graduate Student Research Symposium, North Carolina State University, Raleigh, NC, 2010
- 28 Warner, J. C., B. N. Armstrong, M. Olabarrieta, R. He, **J. B. Zambon**, G. Voulgaris, N. Kumar, and K. A. Haas, Development and application of a Coupled-Ocean-Atmosphere- Wave-Sediment Transport (COAWST) modeling system for nearshore environments (Invited). AGU Ocean Sciences Meeting, Portland, OR, 2010
- 29 **Zambon, J. B.**, R. He, and J. C. Warner, Investigation of Hurricane Ivan using the 3-way Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model. AGU Ocean Sciences Meeting, Portland, OR, 2010
- 30 Warner, J. C., R. He, B. Armstrong, and **J. B. Zambon**, Numerical investigation of Hurricane Isabel Impacts. Mid-Atlantic Bight Physical Oceanography and Meteorology and Southeast Coastal Oceanography and Meteorology (MABPOM SECOM) Conference, North Carolina State University, Raleigh, NC, 2009
- 31 **Zambon, J. B.**, Numerical investigation of Hurricane Ivan. Mid-Atlantic Bight Physical Oceanography and Meteorology and Southeast Coastal Oceanography and Meteorology (MABPOM SECOM) Conference, North Carolina State University, Raleigh, NC, 2009
- 32 **Zambon, J. B.**, Investigation of tropical cyclone using a new Coupled-Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model. Masters Thesis Defense to the Department of Marine, Earth and Atmospheric Sciences (MEAS), North Carolina State University Raleigh, NC, 2009

- 33 **Zambon, J. B.**, R. He, J. C. Warner, 2008: Investigation of coastal ocean response to landfalling hurricane using Coupled-Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model: idealized experiments. American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, 2008
- 34 Warner, J. C., B. Armstrong, R. He, **J. B. Zambon**, 2008: Using a Coupled-Ocean-Atmosphere-Wave-Sediment Transport (COAWST) modeling system to investigate impacts of storms on coastal systems. American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, 2008
- 35 He, R., J. C. Warner, B. Armstrong, **J. B. Zambon**, 2008: Investigation of coastal ocean response to landfalling hurricane using a Coupled-Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model: realistic hindcast. American Geophysical Union (AGU) Fall Meeting, San Francisco, CA, 2008
- 36 **Zambon, J. B.**, 2008: Investigating a 3-way coupled model of a landfalling tropical cyclone. Department of Marine, Earth and Atmospheric Sciences (MEAS) Seminar, North Carolina State University, Raleigh, NC 2008

8. WHITE PAPERS AND TECHNICAL REPORTS

- 1 He, R., W. Woods, **J. B. Zambon**, and Z. Xue, 2016: Monitoring the Gulf Stream and shelf environment in the South Atlantic Bight through integrated autonomous underwater glider observations and data assimilative ocean model predictions. OCEANS 2016, pp. 1-4

9. NC STATE RESEARCH PROJECTS

- 1 **Title:** Using a coupled numerical modeling system to investigate flooding impacts during Hurricane Florence (2018)
Sponsor: United States Geological Survey
Duration: 2020-2023
- 2 **Title:** Understanding and predicting the Gulf of Mexico Loop Current, Topic 8: numerical modeling.
Sponsor: National Academies of Sciences, Engineering, and Medicine
Duration: 2019-2022
- 3 **Title:** Transitioning the NC State Coupled Northwest Atlantic Prediction System (CNAPS) to AWS Cloud Computing
Sponsor: Amazon Web Services, Amazon.com, Inc.
Duration: 2019-2021
- 4 **Title:** Processes driving Exchange At Cape Hatteras (PEACH).
Sponsor: National Science Foundation (NSF) Award OCE-1559178
Duration: 2016-2020

- 5 **Title:** Development of a 5-year daily, cloud-free Sea Surface Temperature (SST) and Chlorophyll-a reconstruction dataset using the Data Interpolating Empirical Orthogonal Functions (DINEOF) Method.
Sponsor: Southeast Coastal Ocean Observing Regional Association (SECOORA)
Duration: 2017-2018

- 6 **Title:** Developing at-sea & telepresence-led deep-submergence science leadership (National Science Foundation Early-concept Grants for Exploratory Research; NSF EAGER)
Sponsor: National Science Foundation (NSF) Award #1641453
Duration: 2016-2017

- 7 **Title:** Connectivity in western Atlantic Seep Populations: oceanographic and life history processes underlying genetic structure
Sponsor: National Science Foundation (NSF) Award #1031050
Duration: 2010-2015

- 8 **Title:** Coastal ocean processes and sediment transport dynamics
Sponsor: U. S. Geological Survey (USGS)
Duration: 2007-2012

- 9 **Title:** Assimilating satellite observations in a fully Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) model
Sponsor: National Aeronautics and Space Administration North Carolina (NASA NC) Space Grant
Duration: 2010-2011

10. FATHOM SCIENCE LLC RESEARCH PROJECTS
 - 1 **Title:** Porting a prototype operational ocean prediction system to a cloud-computing infrastructure (part of the Total Water Project)
Sponsor: Southeast Coastal Ocean Observing Regional Association (SECOORA) and National Oceanic and Atmospheric Administration (NOAA)
Duration: 2017-2018

 - 2 **Title:** Discovery and innovation using a virtual marine ecosystem powered by state-of-the-art ocean prediction technology and on-demand service
Sponsor: North Carolina State University Chancellor's Innovation Fund
Duration: 2017-2019

 - 3 **Title:** Developing an integrated coastal water predictive capability to promote resilience to water risks (part of the Coastal Ocean Modeling Testbed)
Sponsor: Southeast Coastal Ocean Observing Regional Association (SECOORA) and National Oceanic and Atmospheric Administration (NOAA)
Duration: 2018-2022

- 4 **Title:** Predicting the long distance dispersal of ichthyoplankton in the Intra-Americas Sea: A data-assimilative decision support tool for effective living marine resource management
Sponsor: National Aeronautics and Space Administration (NASA)
Duration: 2021-2023
- 5 **Title:** COAWST-WSSSR coupled ocean atmosphere waves sediment transport – waves sediment, surge, and structure response forecasting system
Sponsor: National Oceanographic Partnership Program (NOPP) and the United States Navy
Duration: 2021-2024
- 6 **Title:** Integrated Forecasting technology for MMS1 / Coupled Atmosphere-Wave-Ocean (CAWO) Model
Sponsor: Baron Weather Intelligence and BMKG (Indonesian Government)
Duration: 2021-2025

11. RESEARCH CRUISES AS CHIEF SCIENTIST (*) / RESEARCH SCIENTIST

1	NSF: Processes driving Exchanges at Cape Hatteras	R/V Neil Armstrong	11/2018
2	NSF: Processes driving Exchanges at Cape Hatteras	R/V Neil Armstrong	01/2018
3	NSF: Processes driving Exchanges at Cape Hatteras	R/V Neil Armstrong	04/2017
4	*NSF: Deep submergence science leadership	R/V Atlantis	07-08/2016
5	NSF: US east coast survey	R/V Atlantis	07/2015
6	NSF: Gulf of Mexico survey	R/V Pelican	11/2013
7	NSF: North Atlantic shelf survey	R/V Endeavor	08/2013
8	NSF: North Atlantic shelf survey	R/V Cape Hatteras	10-11/2012
9	NSF: Caribbean Sea, Barbados shelf	R/V Atlantis	05-06/2012
10	Glider Deployment: Mid-Atlantic coastal shelf	R/V Seahawk	03/2012
11	Glider Deployment: Mid-Atlantic coastal shelf	R/V Seahawk	08/2011
12	NSF: Caribbean Sea, Barbados shelf	R/V Oceanus	05/2011
13	NC State: Student Research Cruise, NC coast	R/V Cape Hatteras	11/2008

12. GRADUATE/UNDERGRADUATE TEACHING

1	MEA 462: Observational Methods and Data Analysis in Marine Physics	North Carolina State University	Spring 2015-2021
2	MEA 611: Ocean Modeling	North Carolina State University	Fall 2023
3	MEA 611: Ocean Modeling	North Carolina State University	Spring 2011
4	MEA 811: Air-Sea Interaction	North Carolina State University	Fall 2009

13. STUDENT ADVISING

1	S. Mao, North Carolina State University, committee member.	2016-Present
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14. VOLUNTEER EXPERIENCE

1	Captain/EMT	Swift Creek Fire Department	Cary, NC	2019-2021
2	Firefighter/EMT	Swift Creek Fire Department	Cary, NC	2007-present
3	Chairman	Swift Creek Firefighters Association	Cary, NC	2018-present
4	Pilot	Pilots n' Paws	Sanford, NC	2013-present
5	EMT	Western Turnpike Rescue Squad	Guilderland, NY	2006-2007
6	Firefighter	McKownville Fire Department	Guilderland, NY	2004-2007

15. VOLUNTEER EXPERIENCE

- 1 Certificated Private Pilot with over 152 hours flying time and 10 years flying experience
- 2 Licensed North Carolina Emergency Medical Technician (EMT-B; exp. 4/2022)
- 3 NFPA Firefighter I/II (IFSAC accredited), NFPA Driver/Operator (IFSAC accredited), Hazardous Materials Operations
- 4 USA Hockey, ice hockey player and team captain
- 5 PADI Open Water Diver