

## **RUOYING (ROY) HE**

### ***Distinguished Professor of Marine, Earth and Atmospheric Sciences***

Department of Marine, Earth and Atmospheric Sciences (MEAS)

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### **1. EDUCATION**

Bachelor of Science	Ocean University of China	1996	Oceanography
Doctorate of Philosophy	University of South Florida	2002	Physical Oceanography

### **2. EMPLOYMENT HISTORY**

Distinguished Professor, North Carolina State University	2014-present
Professor, North Carolina State University	2012-2014
Associate Professor, North Carolina State University	2007-2012
Adjunct Scientist, Woods Hole Oceanographic Institution	2007-present
Adjunct Professor, Ocean University of China	2007-present
Assistant Scientist, Woods Hole Oceanographic Institution	2004-2007
Postdoctoral Scholar, Woods Hole Oceanographic Institution	2003-2004
Postdoctoral Associate, University of South Florida	2002-2003

### **3. HONORS AND AWARDS**

Distinguished Professor, North Carolina State University	2014
Best Paper Award, Global Ocean Data Assimilation Experiment International Symposium	2013
NC State Alumni Association Outstanding Research Award College Nominee	2012
National Aeronautics and Space Administration (NASA) Young Investigator Award	2006
Sears Collaboration Award, Woods Hole Oceanographic Institution	2006
Coastal Ocean Research Award, Woods Hole Oceanographic Institution	2005
Green Innovative Technology Award, Woods Hole Oceanographic Institution	2004
Sackett Innovative Research Award, University of South Florida	2004
Postdoctoral Scholarship Award, Woods Hole Oceanographic Institution	2003
Knight Research Fellowship Award, University of South Florida	2002
Phi Kappa Phi Honor Society	2001
Carrels Research Fellowship Award, University of South Florida	2000
Getting Research Fellowship Award, University of South Florida	1999

#### **4. PROFESSIONAL SERVICES**

##### Governance

- 1) Committee Member, National Science Foundation-Ocean Observatories Initiative Facilities Board (OOIFB), 2017-present
- 2) Committee Member, National Academy of Sciences – Loop Current Study Program, 2017
- 3) Steering Team Member, U.S. Integrated Ocean Observing and Modeling System, 2013- present
- 4) Member, NASA Ocean Topography Science Team, 2012- 2017
- 5) Board Member, Southeast Coastal Ocean Observing Regional Association (SECOORA), 2012-2018
- 6) Member, Consortium for Ocean Leadership
- 7) Advisory Committee, National Weather Service New Port
- 8) Project Scientist - Scientific User Requirement Group for National Science Foundation Ocean Observatories Initiative (NSF OOI), Cyber Infrastructure Implementing Organization, 2009
- 9) Project Scientist – NOAA National Scientific Research, Development, Demonstration, and Technology Transfer (RDDTT) Plan on Reducing Impacts from Harmful Algal Blooms, 2008

##### Editorial Boards

- 1) Associate Editor, *Journal of Geophysical Research- Oceans*, 2007-2013
- 2) Guest Editor, *Ocean Dynamics*, Special Issue, 2011
- 3) Review Editor, *Frontiers in Marine Science*, 2012- present

##### International Advisory Boards

- 1) Member, International GODAE Coastal and Shelf Seas Task Team, 2010-present
- 2) Review panel member, National Science Foundation China (NSFC)

##### Professional Leadership

- 1) Elected Chair, Gordon Research Conference on Coastal Circulation Dynamics, 2017
- 2) Elected Vice-Chair, Gordon Research Conference on Coastal Ocean Modeling, 2015
- 3) Panelist, National Science Foundation, Ocean Observatories Initiative (OOI), 2014, 2016
- 4) Panelist, National Oceanic and Atmospheric Administration, Gulf of Mexico Hypoxia Research Coordination and Advancement Program, 2013
- 5) Panelist, National Oceanic and Atmospheric Administration, Sea Grant Program, 2011, 2013
- 6) Panelist, National Science Foundation, Earth System Climate Modeling, 2010
- 7) Panelist, National Oceanic and Atmospheric Administration, ECOHAB Program, 2010
- 8) Panelist, National Science Foundation, Physical Oceanography Program, 2008
- 9) Panelist, National Oceanographic Partnership Program, 2004

- 10) Chair, 2017 Asia Oceania Geosciences Society Conference “Variability of Physics and Bio-geochemistry in Semi-Enclosed and Shelf Seas”, Singapore
- 11) Chair, 2016 Asia Oceania Geosciences Society Conference “Western Boundary Current, Eddies and Continental Shelf Processes”, China
- 12) Chair, 2015 Asia Oceania Geosciences Society Conference “Variability of Physics and Bio-geochemistry in Semi-Enclosed and Shelf Seas”, Singapore
- 13) Co-organizer, 2015 International conference on “Mesoscale, and Sub-mesoscale Ocean Processes,” Qingdao, China
- 14) Chair, 2014 Asia Oceania Geosciences Society Conference “Western Boundary Currents, Transport, Path Variability, Eddies and Continental Shelf Processes”, Sapporo, Japan
- 15) Chair, 2013 International Symposium on “Boundary Current Dynamics: Its Connection with Open-ocean and Coastal Processes and Responses to Global Climate Change”. Lijiang, China
- 16) Chair, 2013 Asia Oceania Geosciences Society Conference “Ocean Analysis, Modeling, and Prediction in Marginal/shelf Seas”, Brisbane, Australia
- 17) Organizer, 2012 Ocean Sciences Meeting, “Advances in Coastal Ocean Modeling, Analysis, and Prediction”. Salt Lake City, Utah
- 18) Organizer, 2011 US NSF Ocean Observatories Initiative (OOI) Science Workshop for Shelf/Slope Processes and Pioneer Array. Providence, RI
- 19) Organizer, 2010 AGU Town Hall Meeting on Ocean Observatories Initiative (OOI) Pioneer Array and Shelf/Slope Processes. San Francisco, CA
- 20) Chair, 2010 International Symposium on “Boundary Current Dynamics: Its Connection with Open-ocean and Coastal Processes and Responses to Global Climate Change”. Qingdao, China
- 21) Chair, 2010 Ocean Sciences Meeting, “Coastal Ocean Circulation and Ecosystem Prediction and Assimilation”, Portland, OR
- 22) Chair, 2009 Joint Mid-Atlantic Bight Physical Oceanography and Meteorology (MABPOM) and Southeast Coastal Oceanography and Meteorology (SECOM) Conference, Raleigh, NC
- 23) Chair, 2008 Ocean Sciences Meeting, “Coastal Ocean Modeling and Prediction”, Hawaii, HI
- 24) Chair, 2006 AGU Western Pacific Geophysical Meeting, “Modeling and Prediction on Circulation, Ecosystem and Coastal Environment”, Beijing, China

#### University Committee Service and Leadership

- 1) Member, Advisory Council Committee, College of Physical and Mathematical Sciences, 2010-2011
- 2) Member, MEAS Faculty (geophysicist) Search Committee, 2009-2010
- 3) Member, MEAS Departmental Web Committee, 2013-2014
- 4) Member, MEAS Department Head Search Committee, 2010-2011
- 5) Member, MEAS Faculty (Marine Biologist) Search Committee, 2015-2016

- 6) Member, MEAS Department Head Search Committee, 2015-2016
- 7) Member, MEAS Faculty Affair Committee, 2016- present
- 8) Chair, MEAS Departmental Computer Committee, 2011-present
- 9) Chair, MEAS Departmental Seminar Committee, 2012-2013
- 10) Chair, MEAS Departmental F&A Committee, 2012-2015
- 11) Chair, MEAS Faculty (Physical Oceanographer) Search Committee, 2014-2015
- 12) Faculty advisor, Marine Technology Society, NCSU Student Chapter, 2014- present

#### Reviewer for Professional Journals

- 1) *Chinese Journal of Oceanology and Limnology*
- 2) *Continental Shelf Research*
- 3) *Deep-Sea Research I*
- 4) *Deep-Sea Research II*
- 5) *Dynamics of Atmospheres and Oceans*
- 6) *Geophysical Research Letters*
- 7) *Harmful Algae*
- 8) *Journal of Atmospheric and Oceanic Technology*
- 9) *Journal of Geophysical Research*
- 10) *Journal of Physical Oceanography*
- 11) *Journal of Marine Research*
- 12) *Journal of Marine System*
- 13) *Limnology and Oceanography*
- 14) *Nature*
- 15) *Nature Geoscience*
- 16) *Ocean Modelling*
- 17) *Oceanography*
- 18) *Ocean Science*
- 19) *Progress in Oceanography*
- 20) *Science*

#### Reviewer for Federal and International Funding Agencies

- 1) National Aeronautics and Space Administration (NASA), USA
- 2) National Oceanic and Atmospheric Administration (NOAA), USA
- 3) National Oceanographic Partnership Program (NOPP), USA
- 4) National Science Foundation (NSF), USA
- 5) Natural Environment Research Council (NERC), UK

- 6) European Research Council
- 7) Israel Science Foundation
- 8) Innovation and Technology Commission, Hong Kong SAR Government
- 9) Indonesian Agency for Meteorology, Climatology and Geophysics

#### Professional Organization Memberships

- 1) Member, American Geophysical Union (AGU)
- 2) Member, American Meteorological Society (AMS)
- 3) Member, The Oceanography Society (TOS)
- 4) Faculty Advisor, Marine Technology Society (MTS)

### **5. RESEARCH EXPERTISE**

Professor He's research expertise spans from coastal circulation dynamics and air-sea interaction to marine physical-biogeochemical interactions. As the director of [the Ocean Observing and Modeling Group \(OOMG\)](#), he and his research team conduct coastal ocean observations, perform remote-sensing data analyses, and develop predictive models of ocean circulation, air-sea-wave interactions, and physical-biogeochemical couplings, as well as data assimilation. His approach is to use both in situ and remote sensing observations, in conjunction with numerical model analysis and assimilation methods to examine fundamental ocean circulation physics, and to gain an integrated understanding of their interactions with the atmosphere and with ocean biological, geological, and chemical processes.

### **6. FUNDED PROJECTS AND GRANTS**

- 1) **WHOI 2004-2006**, Award: \$51,000. R. He

“Evaluation of Global Ocean Data Assimilation Experiment (GODAE) Hindcast in Providing Open Boundary Conditions for High Resolution Coastal Circulation Modeling”

- 2) **WHOI 2005-2007**, Award: \$48,000. R. He (PI)

“Data Assimilative Interdisciplinary Modeling of the Adjacent Coastal Water of the Martha's Vineyard Coastal Observatory”

- 3) **NOPP 2006-2008**, Award: \$42,000, R. He (PI)

“Community Sediment Transport Modeling”

- 4) **NOAA 2006-2012**, NCSU Award: \$472,058, R. He (PI)

“Dynamics of *Alexandrium fundyense* Distributions in the Gulf of Maine - an Observational and Modeling Study of Nearshore and Offshore Shellfish Toxicity, Vertical Toxin Flux, and Bloom Dynamics in a Complex Shelf Sea”

5) **ONR 2006-2011**, NCSU Award \$750,000, R. He (PI)

“Rapid Environmental Assessment Using an Integrated Coastal Ocean Observation and Modeling System”

6) **NC DENR 2007-2009**, NCSU Award \$220,264, R. He (Co-PI with Dr. J. Lin)

“Development of a Combined Hydrodynamic, Sediment Transport and Nutrient Response Model System for Falls of the Neuse Reservoir, Neuse River Basin”

7) **NASA 2007-2010**, NCSU Award \$317,119, R. He (PI)

“Investigation of Coastal Phytoplankton Dynamics by Adjoint Data Assimilation of Satellite Ocean Color Data”

8) **USGS 2007-2012**, NCSU Award \$175,000, R. He (PI)

“Coastal Ocean Processes and Sediment Transport Dynamics”

9) **NCSU 2008-2009**, Award \$4000, R. He (PI)

“Understanding Shelf Hydrography Seasonal Evolution Using Novel Glider Technology”

10) **NOAA 2009-2011**, NCSU Award \$10,000, R. He (Co-PI with Dr. D. Eggleston)

“NOAA Cooperative Institute for Ocean Exploration, Research, and Technology: Connectivity Between Deep and Shallow Ecosystems: Ecosystem-based Management of New Shelf Edge MPAs”

11) **NSF 2009-2012**, NCSU Award \$233,326, R. He (PI)

“Collaborative Research: Frontal Interaction and Atmospheric Forcing North of Cape Hatteras: An Analysis and Modeling Study”

12) **DOE 2010-2012**, NCSU Award \$125,000, R. He (PI)

“Operational Ocean Forecast System Pilot Project”

13) **ONR 2010-2011**, NCSU Award \$138,487, R. He (PI)

“Eddy-Wind-Topography Interaction Dynamics”

14) **NASA 2010-2013**, NCSU Award \$342,678, R. He (PI)

“Assessing Impacts of Climate and Land Use Change on Terrestrial-Ocean Fluxes of Carbon and Nutrients and Their Cycling in Coastal Ecosystems”

15) **NOAA Sea Grant 2010-2011**, NCSU Award \$7000, R. He (PI)

“Modeling the Vertical and Horizontal Distributions of the Oil Plumes Arising From the Deepwater Horizon Spill in the Southeast U.S. Coastal Waters”

16) **NSF 2010-2011**, NCSU Award \$81,240, R. He (PI)

“3D Model Forecast of the Vertical and Horizontal Distributions of the Oil Plumes Arising from the Deepwater Horizon Spill”

17) **NOAA 2010-2012**, NCSU Award \$160,000, R. He (PI)

“Implementation of Regional Integrated Ocean Observing System Support of RCOOS Development”

18) **NSF 2011-2016**, NCSU Award \$473,346, R. He (co-PI with Dr. D. Eggleston)

“Collaborative Research: Connectivity in Western Atlantic Seep Populations: Oceanographic and Life History Processes Underlying Genetic Structure”

19) **NOAA 2011-2016**, NCSU Award \$487,462, R. He (PI)

“Implementation of an Operational Model for Prediction of *Alexandrium fundyense* Blooms in the Gulf of Maine”

20) **NOAA 2011-2016**, NCSU Award \$620,000, R. He (PI)

“Southeast Coastal Ocean Observing Regional Association: An Environmental monitoring and Assessment Program to Support Decision-Makers’ Needs for Coastal and ocean Data and Products”

21) **GOMRI 2011-2015**, NCSU Award \$210,000, R. He (PI)

“Gulf Integrated Spill Response Consortium: Circulation Modeling”

22) **NASA 2013-2014**, NCSU Award \$84,009, R. He (PI)

“Development of Observational Products and Coupled Models of Land-Ocean-Atmospheric Fluxes in the Mississippi River Watershed and Gulf of Mexico in Support of Carbon Monitoring”

23) **NASA 2013-2017**, NCSU Award \$437,873, R. He (PI)

“The Impact of Western Boundary Current and Eddies on the Across-shelf Exchange in the South Atlantic Bight: an Integrated Study Using Satellite Altimeters Time Series, In-situ Observations, and Data Assimilative Numerical Modeling”

24) **SAIC 2013-2014**, NCSU Award \$29,846, R. He (PI)

“Analysis of Loop Current Observations”

25) **UNC CSI 2013-2014**, NCSU Award \$68,400, R. He (PI)

“Development of High-Resolution Ocean Circulation Prediction and Assessment System in Support of Ocean Energy Studies”

26) **USGS 2014-2016**, NCSU Award \$120,000, R. He (PI)

“Hurricane Process Study: Numerical Model Investigation of Coastal Erosion and Accretion as a Result of Major Storm Events”

27) **NASA 2014-2016**, NCSU Award \$198,400, R. He (PI)

“Air-Sea CO<sub>2</sub> Flux and Carbon Budget Synthesis and Modeling in the Entire Gulf of Mexico”

28) **NOAA 2014-2016**, NCSU Award \$254,122, R. He (co-PI with Dr. J. Buckel)

“Estimating Discard Morality of Shallow and Deep Water Reef Fishes Using Conventional and Telemetry Tags”

29) **NASA 2014-2017**, NCSU Award \$298,603, R. He (PI)

“An Integrated Terrestrial-Coastal Ocean Observation and Modeling Framework for Carbon Management Decision Support”

30) **UNC CSI 2014-2015**, NCSU Award \$62,377, R. He (PI)

“Developing an Integrated Modeling-Observing Prediction and Assessment System in Support of North Carolina Renewable Ocean Energy Studies”

31) **DOI 2015-2017**, NCSU Award \$46,999, R. He (PI)

“Development of a South Atlantic Ecosystem Model: A Coupled Marine Environmental Assessment and Prediction System for the Southeastern U.S. Coastal Ocean in Support of Effective Marine Ecosystem-Based Management”

32) **NOAA 2015-2018**, NCSU Award \$138,061, R. He (PI)



“ECO HAB: Interannual Variability of PSP Toxicity in Eastern Maine: Testing the Leaky Gyre Hypothesis and Improving Regional Forecasts and Management”

33) **NOAA 2015-2017**, NCSU Award \$53,769, R. He (PI)

“Use of a Biophysical Modeling Framework to Develop a Recruitment Index for Inclusion in Stock Assessments in the Gulf of Mexico and South Atlantic”

34) **NSF 2015-2018**, NCSU Award \$377,597, R. He (PI)

“Collaborative Research: Contribution of Prydz Bay Shelf Water to Antarctic Bottom Water Formation”

35) **NSF 2016-2020**, NCSU Award \$684,899, R. He (PI)

“Collaborative Research: Processes driving Exchange At Cape Hatteras (PEACH)”

36) **GOMRI 2016-2019**, NCSU Award \$563,632, R. He (PI)

“Three-dimensional Gulf Circulation and Biogeochemical Processes Unveiled by State-of-the-Art Profiling Float Technology and Data Assimilative Ocean Models”

37) **NOAA IOOS/SECOORA 2016-2020**, NCSU Award \$650,000, R. He (PI)

“A Coupled Marine Environmental Assessment and Prediction System for the Southeastern U.S. Coastal Ocean in Support of Effective Marine Ecosystem-Based Management, Efficient Marine Operations, and Resilient Coastal Communities”

38) **NOAA IOOS/SECOORA 2016-2020**, NCSU Award \$125,000, R. He (PI)

“Cooperative Regional Glider Observatory”

39) **UNC CSI 2016-2018**, NCSU Award \$109,683, R. He (PI)

“Comprehensive Gulf Stream Ocean Energy Resource Assessment Using an Integrated Observing and Modeling Approach”

40) **DOE 2016-2017**, NCSU Award \$164,127, R. He (PI)

“U.S. East Coast Wave Energy Resource Assessment”

41) **NCSU 2017-2018**, Chancellor Innovative Funds Award \$75,000, R. He (PI)

“Virtual Marine Ecosystem, The Ocean at Your Fingertip”

42) **Kenan 2017-2018**, NCSU Award \$45,000, R. He (PI)

“Climate downscaling of Marine Environment Conditions off North Carolina”

43) **C. Kelly Memorial Funds** for U.S. –Japan Scientific Cooperation, NCSU Award \$3,000, R. He (PI)

“Mesoscale and Submesoscale Coastal Ocean Variability Associated with the Western Boundary Currents”

## 7. REFEREED PUBLICATIONS (\*Student/postdocs advised by R. He)

- 1) **He, R.**, and R. H. Weisberg (2002), Tides on the West Florida Shelf. *Journal of Physical Oceanography*, Vol. 32, 12, 3455-3473 [\[PDF\]](#)
- 2) **He, R.**, and R. H. Weisberg (2002), West Florida Shelf circulation and heat budget for the 1999 spring transition. *Continental Shelf Research*, Vol. 22, 5, 719-748 [\[PDF\]](#)
- 3) **He, R.**, and R. H. Weisberg (2002), Modeling of the West Florida Shelf circulation. In *Estuarine and Coastal Modeling*, M. L. Spaulding and H. L. Butler, eds., ASCE, Reston, VA, 25-40 [\[PDF\]](#)
- 4) **He, R.**, and R. H. Weisberg (2003), A Loop Current intrusion case study on the West Florida Shelf. *Journal of Physical Oceanography*, Vol. 33, 2, 465-477 [\[PDF\]](#)
- 5) **He, R.**, and R. H. Weisberg (2003), West Florida Shelf circulation and temperature budget for the 1998 fall transition. *Continental Shelf Research*, Vol. 23, 8, 777-800 [\[PDF\]](#)
- 6) **He, R.**, R. H. Weisberg, H. Zhang, F. E. Muller-Karger, and R. W. Helber (2003), A cloud-free, satellite-derived, sea surface temperature analysis for the West Florida Shelf. *Geophysical Research Letters*, Vol. 30, 15, 1811, doi:10.1029/2003GL017673 [\[PDF\]](#)
- 7) Jolliff, J., J. J. Walsh, **R. He**, R. H. Weisberg, A. Stovall-Leonard, P. G. Coble, R. Conmy, C. Heil., B. Nababan, H. Zhang, C. Hu, and F. E. Muller-Karger (2003), The Dispersal of the Suwannee River plume over the West Florida shelf: Simulation and observation of the optical and biochemical consequences of a flushing event. *Geophysical Research Letters*, Vol. 30, No. 13, 1709, doi: 10.1029 /2003GL01 [\[PDF\]](#)
- 8) Walsh, J. J., R. H. Weisberg, D.A. Dieterle, **R. He**, B. P. Darrow, J. K. Jolliff, K. M. Lester, G. A. Vargo, G. J. Kirkpatrick, K. A. Fanning, T. T. Sutton, A. E. Jochens, D. C. Biggs, S. Nababan, C. Hu., and F. E. Muller Karger (2003), Phytoplankton response to intrusions of slope water on the West Florida Shelf: Models and observations. *Journal of Geophysical Research*, Vol. 108, 6, 3190, doi:10.1029/ 2002JC001406 [\[PDF\]](#)
- 9) Weisberg, R. H. and **R. He** (2003), Local and deep-ocean forcing contributions to anomalous water properties on the West Florida Shelf. *Journal of Geophysical Research*, Vol. 108, 6, 3148, doi: 10.1029/ 2002JC001407 [\[PDF\]](#)
- 10) **He, R.**, Y. Liu, and R. H. Weisberg (2004), Coastal ocean wind fields gauged against the performance of an ocean circulation model. *Geophysical Research Letters*, Vol. 31, 14, 14303, doi:10.1029 /2003GL019261 [\[PDF\]](#)
- 11) Weisberg, R. H., **R. He**, and J. J. Walsh (2004), Coastal ocean circulation influences on remotely sensed optical properties. *Oceanography*, 17, 68-75 [\[PDF\]](#)

- 12) Anderson, D., D. McGillicuddy, B. Keafer, M. Mickelson, S. Libby, J. Manning, **R. He**, D. Lynch, K. Smith, S. Mayo, D. Whitaker, and M. Hickey (2005), Initial observations of the 2005 *Alexandrium fundyense* bloom in southern New England: Consistency with conceptual models. *Deep Sea Research*, 52, 2856-2876 [\[PDF\]](#)
- 13) **He, R.**, D. J. McGillicuddy, K. W. Smith, D. R. Lynch, C. A. Stock, and J. P. Manning (2005), Data assimilative hindcast of the Gulf of Maine coastal circulation. *Journal of Geophysical Research*, Vol. 110, C10, C10011, doi:10.1029/2004JC002807 [\[PDF\]](#)
- 14) Weisberg, R. H., **R. He**, Y. Liu, and J. Virmani (2005), West Florida Shelf circulation on synoptic, seasonal and inter-annual time scales, Book Chapter: *Circulation in the Gulf of Mexico: Observations and Models*, AGU Monographs. W. Sturges and A. Lugo-Fernandez, Eds. 325-350.
- 15) **He, R.** and J. L. Wilkin (2006), Barotropic tides on the southeast New England shelf: A view from a hybrid data assimilative modeling approach, *Journal of Geophysical Research*, 111, C08002, doi:10.1029/2005JC003254. [\[PDF\]](#)
- 16) Liu Y., R. H. Weisberg, and **R. He**. (2006), Sea surface temperature patterns on the West Florida Shelf using growing hierarchical self-organizing maps. *Journal of Atmospheric and Oceanic Technology*, Vol. 23, 2, 325-339. [\[PDF\]](#)
- 17) Milroy, S. P., D. A. Dieterle, **R. He**, G. J. Kirkpatrick, K. M. Lester, K. Steidinger, G. A. Vargo, J. J. Walsh, and R. H. Weisberg (2007), A three-dimensional biophysical model of *Karenia brevis* dynamics on the West Florida Shelf: A look at physical transport and potential zooplankton grazing controls, *Continental Shelf Research*, doi:10.1016/j.csr.2007.04.013 [\[PDF\]](#)
- 18) **He, R.** and D. J. McGillicuddy (2008), Historic 2005 toxic bloom of *Alexandrium fundyense* in the west Gulf of Maine: 1. In situ observations of coastal hydrography and circulation. *Journal of Geophysical Research*, 113,C07039, doi:10.1029/2007JC004691 [\[PDF\]](#)
- 19) **He, R.**, D. J. McGillicuddy, D. Anderson and B. Keafer (2008), Historic 2005 toxic bloom of *Alexandrium fundyense* in the western Gulf of Maine: 2. Coupled biophysical numerical modeling. *Journal of Geophysical Research*, 113, C07040,doi:10.1029/2007JC004602 [\[PDF\]](#)
- 20) Lenés, J. M., B. A. Darrow, J. J. Walsh, J. M. Prospero, **R. He**, R. Weisberg, G. A. Vargo, and C. A. Heil (2008), Saharan dust and phosphatic fidelity: A three-dimensional biogeochemical model of *Trichodesmium* as a nutrient source for red tides on the West Florida Shelf, *Continental Shelf Research*, DOI: 10.1016/j.csr.2007.11.025. [\[PDF\]](#)
- 21) Chassignet, E. P., H. Hurlburt, E. Metzger, O. Smedstad, J. Cummings, G. Halliwell, R. Blek, R. Baraille, A. Wallcraft, C. Lozano, H. Tolman, A. Srinivasan, S. Hankin, P. Cornillon, R. Weisberg, A. Barth, **R. He**, F. Werner, and J. Wilkin (2009), U.S. GODAE: Global Ocean Prediction with the HYbrid Coordinate Ocean Model (HYCOM), *Oceanography*, v22, 3, 48-59. [\[PDF\]](#)
- 22) Lehmann, M., K. Fennel, and **R. He** (2009), Statistical validation of a 3-D bio-physical model of the western North Atlantic, *Biogeosciences*. 6, 1-14 [\[PDF\]](#)

- 23) Li, Y\*., **R. He**, D. McGillicuddy, D. Anderson, and B. Keafer (2009), Investigation of 2006 *Alexandrium fundyense* bloom in the Gulf of Maine: In-situ observations and numerical modeling. *Continental Shelf Research*, 29(2009) 2069-2082. [\[PDF\]](#)
- 24) Miles, T. N.\*, **R. He**, and M. Li (2009). Characterizing the South Atlantic Bight seasonal variability and cold water event in 2003 using a daily cloud-free SST and chlorophyll analysis. *Geophysical Research Letters*, 36, L02604, doi: 10.1029/2008GL036393 [\[PDF\]](#)
- 25) Walsh, J., R. Weisberg, J. Lenos, F. Chen, D. Dieterle, L. Zheng, K. Carder, G. Vargo, J. Havens, E. Peebles, D. Hollander, **R. He**, C. Heil, B. Mahmoudi, and J. Landsberg (2009), Isotopic evidence for dead fish maintenance of Florida red tides with implications for coastal fisheries over both source regions of the West Florida shelf and within downstream waters of the South Atlantic Bight. *Progress in Oceanography*, v. 80, Issue 1-2, p 51-73. [\[PDF\]](#)
- 26) Chen, K\*. and **R. He** (2010), Numerical investigation of the Middle Atlantic Bight frontal circulation using a high resolution ocean hindcast model. *Journal of Physical Oceanography*, v. 40, 5, 949-964. [\[PDF\]](#)
- 27) **He, R.**, K. Chen, T. Moore, and M. Li (2010) Mesoscale variations of sea surface temperature and ocean color patterns at the Mid-Atlantic Bight shelfbreak, *Geophysical Research Letters*, doi: 10.1029/2010GL043067 [\[PDF\]](#)
- 28) Hyun, K. H.\* and **R. He** (2010), Coastal upwelling in the South Atlantic Bight: A revisit of the 2003 cold event using long term observations and model hindcast solutions. *Journal of Marine Systems*, v83, 1-13 [\[PDF\]](#)
- 29) Miles, T.\* and **R. He** (2010), Seasonal surface ocean temporal and spatial variability of the South Atlantic Bight: Revisiting with MODIS SST and chl-a imagery, *Continental Shelf Research*, 30 (2010) 1951-1962. [\[PDF\]](#)
- 30) Warner, J., B. Armstrong, **R. He**, and J. Zambon (2010), Development of a Coupled Ocean-Atmosphere- Wave-Sediment Transport (COAWST) modeling system, *Ocean Modelling*, v35, 3, 30-244 [\[PDF\]](#)
- 31) **He, R.**, K. Chen, K. Fennel, G. Gawarkiewicz, and D. McGillicuddy (2011), Seasonal and interannual variability of physical and biological dynamics at the shelfbreak front of the Middle Atlantic Bight: Nutrient supply mechanisms. *Biogeosciences*, 8, 2935-2946, doi: 10.5194/bgd-8-1555-2011. [\[PDF\]](#)
- 32) McGillicuddy, Jr. D. J., D. W. Townsend, **R. He**, B. A. Keafer, J. L. Kleindinst, Y. Li, J. P. Manning, D. G. Mountain, M. A. Thomas, and D. M. Anderson (2011), Suppression of the 2010 *Alexandrium fundyense* bloom by changes in physical, biological, and chemical properties of the Gulf of Maine, *Limnology and Oceanography*, 56(6), 2411-2426. [\[PDF\]](#)
- 33) North, E. W., E. E. Adams, Z. Schlag, C. R. Sherwood, **R. He**, K. H. Hyun. and S. A. Socolofsky (2011) Simulating oil droplet dispersal from the Deepwater Horizon spill With a Lagrangian approach, in *Monitoring and Modeling the Deepwater Horizon Oil Spill: A Record-Breaking Enterprise* (eds. Y. Liu, A. Macfadyen, Z.-G. Ji and R. H. Weisberg), American Geophysical Union, Washington, D. C.. doi: 10.1029/2011GM001102 [\[PDF\]](#)

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- 2) He, R. and R. H. Weisberg, Dynamics of Mixed Layers in the Shallow Water. Gordon Research Conference-Coastal Modeling. 1999

- 3) Zhang, H., M. Luther, D. Legler, S. Meyers, and R. He, High Frequency Wind Forcing from NSCAT in a Model of the Indian Ocean Circulation, Ocean Science Meeting, 2000.
- 4) Weisberg, R. H., R. He, W. Hemme, Z. Li, and H. Yang, ECOHAB in Florida, Physical Oceanography. Symposium on Harmful Marine Algae in the U.S. 2000
- 5) He, R. and R. H. Weisberg, Modeling the Coastal Circulation on the West Florida Continental Shelf, SEACOOS conference, University of Miami, 2001
- 6) Virmani, J., R. He, and R. H. Weisberg, Ocean Atmosphere Flux Variability in the Gulf of Mexico, AMS WCRP/SCOR Conference, 2001
- 7) He, R. and R. H. Weisberg, The Circulation and Temperature Budget on the West Florida Continental Shelf during the 1999 Spring Transition. Gordon Research Conference, 2001
- 8) He, R. and R. H. Weisberg, Numerical Study of Tides on the West Florida Continental Shelf. Gordon Research Conference-Coastal Ocean Circulation, 2001
- 9) Weisberg, R. H. and R. He, West Florida Shelf Air-Sea Fluxes and SST Variability. Coastal Atmospheric and Oceanic Prediction and Process, American Meteorological Society, 2001
- 10) He, R. and R. H. Weisberg, Modeling of West Florida Shelf Circulation, International Conference of Estuarine and Coastal Modeling, 2001
- 11) Weisberg, R. H. and R. He, Real Time Monitoring and Circulation Modeling on the West Florida Shelf, American Geophysical Union Fall Meeting, 2001
- 12) He, R. and R. H. Weisberg, West Florida Shelf Circulation in Spring Transition, American Geophysical Union Fall Meeting, 2001
- 13) He, R. and R. H. Weisberg, Material Property Distributions on the West Florida Shelf, Ocean Science Meeting, 2002
- 14) Jolliff, J., J. J. Wash, R. He, R. H. Weisberg, and others, On the Dispersal of Terrestrial Organic Matter over the West Florida Shelf: A Simulation of River Discharge and Photolysis of Colored Dissolved Organic Matter. Xth International Conference on Harmful Algae, 2002
- 15) Walsh, J. J., D. A. Dieterle, R. H. Weisberg, and R. He, Three Dimensional Biophysical Models of Florida Red Tides. Xth International Conference on Harmful Algae, 2002.
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- 19) He, R. and R. H. Weisberg, SEACOOS Model-Product Coordinate Committee Meeting, 2003
- 20) Virmani, J., R. He, and R. H. Weisberg, Momentum and Heat Flux Effects on the West Florida Shelf. 12th Conference on Interaction of the sea and atmosphere. American Meteorological Society, 2003

- 21) Weisberg, R. H. and R. He, West Florida Shelf Modeling. 8th Hybrid Coordinate Ocean Modeling Workshop, 2003
- 22) He, R., An Isopycnally Averaged Climatology for the Southeast Coastal Ocean. SEACOOS data and modeling workshop, 2003
- 23) He, R., R. Helber, R. Weisberg, H. Zhang, and F. Muller-Karger, Merging Multiple Satellite Sea Surface Temperature: A Near-real Time Cloud-free Sea Surface Temperature Analysis for the Southeastern Coastal Atlantic Ocean. AGU Ocean Science Meeting, 2004
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- 26) He, R., D. J. McGillicuddy, and D. R. Lynch, Data Assimilative Model Hindcast of the Gulf of Maine Coastal Circulation. AGU Fall meeting, 2004
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- 30) He, R., Applying Basin-Scale Hindcast in Providing Open Ocean Boundary Conditions for Nested High-resolution ROMS Coastal Circulation Model, Regional Ocean Modeling System/Terrain-following Ocean Model workshop, 2005
- 31) He, R., Applying Basin-Scale HYCOM Hindcasts in Providing Open Boundary Conditions for Nested High-Resolution Coastal Circulation Modeling, Hybrid Coordinate Ocean Modeling (HYCOM) Workshop, 2005
- 32) He, R., Multi-scale Synthesis of Coastal Circulation off the Northeastern United States. Honolulu, HI. AGU Ocean Science Meeting, 2006
- 33) Anderson D., B. Keafer, K. Norton, R. He, D. McGillicuddy, C. Pilskaln, and D. Couture, A Massive Bloom of *Alexandrium fundyense* in the Gulf of Maine: General Pattern and Mechanisms and Future Implication, Honolulu, HI. AGU Ocean Sciences 2006
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- 37) He, R., Understanding Coastal Circulation in the Gulf of Maine and Mid-Atlantic Bight: A Regional Model Hindcast Experiment, MABPOM Annual Conference, Chapel Hill, NC 2006
- 38) He, R., Understanding Coastal Circulation in the Gulf of Maine and Mid-Atlantic Bight: A Regional Model Hindcast Experiment, ROMS European workshop, Madrid, Spain, 2006
- 39) He, R., K. Hill, M. Li, J. Warner, and G. Lackmann, Implementing an ocean-wave-atmosphere coupled modeling system for the Gulf of Mexico and South Atlantic Bight, Southeast Coastal Oceanography and Meteorology Conference (SECOM), Miami, FL 2007
- 40) He, R., Understanding Coastal Circulation in the Gulf of Maine and Mid-Atlantic Bight: A Regional Model Hindcast Experiment, New London, NH, 2007
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- 42) He, R., K. Hill, M. Li, J. Warner, and G. Lackmann, Implementing an Ocean-Wave-Atmosphere Coupled Modeling System for the Gulf of Mexico and South Atlantic Bight, Gordon Research Conference, NH, 2007
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- 47) Miles, T. and R. He, Covariations of Satellite Sea Surface Temperature and Ocean Color in the South Atlantic Bight, Ocean Sciences Meeting, Orlando, FL, 2008
- 48) McGillicuddy, D. J., D. M. Anderson, R. He, and B. A. Keafer, Hindcasting the Historic 2005 New England Red Tide: Forcing Mechanisms and Future Implications. Ocean Sciences Meeting, Orlando, FL, 2008

- 49) Li, M, and R. He, Numerical Modeling Study on Coastal Ocean Biophysical Response to Hurricanes. Ocean Sciences Meeting, Orlando, FL, 2008
- 50) Lenes, J. M, J. J. Walsh, R. H. Weisberg, D. A. Dieterle, C. A. Heil, R. Chen, J. Jolliff, A. Barth, R. He, and J. M. Prospero, A *Karenia* Odyssey: Model implications for Current and Future Understanding, Ocean Sciences Meeting, Orlando, FL, 2008.
- 51) Lehmann, M, K. Fennel, R. He, and J. Wilkin, A Bio-optical Product from a Coupled Bio-physical Ocean Circulation Model of the Western North Atlantic, Ocean Sciences Meeting, Orlando, FL, 2008
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- 57) K. Chen, and R. He, Investigation of Northeastern North America Coastal Circulation Using a Nested Regional Circulation Hindcast Model, OS41A-1204, AGU Fall Meeting, San Francisco, CA, 2008
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- 60) He, R, J. C. Warner, B. Armstrong, and J. B. Zambon, Investigation of Coastal Ocean Response to Landfalling Hurricane Using Coupled Ocean-Atmosphere-Wave-Sediment Transport (COAWST) Model: Realistic Hindcast, OS53D-1351, AGU Fall Meeting, San Francisco, CA, 2008
- 61) Chen, K. and R. He, Coastal Circulation in the Gulf of Maine and Mid-Atlantic Bight, MABPOM Meeting, Woods Hole, MA, 2008
- 62) He, R. and K. Chen, Investigation of Northeast North American Coastal Circulation Using a Nested Regional Hindcast Model. MABPOM Meeting, Woods Hole, MA, 2008



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- 65) Chen, K., and R. He, Investigation of MAB Shelfbreak Circulation and Biophysical Interactions, Mid- Atlantic Bight Physical Oceanography Meteorology & Southeast Coastal Oceanography and Meteorology Conference, Raleigh, NC, 2009
- 66) Hyun, K. H and He, R., Effects of Winds and the Gulf Stream on the Cold Water Event in the South Atlantic Bight, Mid-Atlantic Bight Physical Oceanography Meteorology & Southeast Coastal Oceanography and Meteorology Conference, Raleigh, NC, 2009
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- 68) Chen, K., and R. He, Investigation of MAB Shelfbreak Circulation and Biophysical Interactions, Mid- Atlantic Bight Physical Oceanography Meteorology & Southeast Coastal Oceanography and Meteorology Conference, Raleigh, NC, 2009
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- 73) Hyun, K. and R. He, Impacts of Two Major Hurricanes Gustav and Ike on the Gulf of Mexico Circulation in 2008: Numerical Investigation Using a Nested Regional Ocean Model, AGU Ocean Sciences Meeting, Portland, OR, 2010

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- 75) Chen, K., and R. He, Numerical Investigation of the Middle Atlantic Bight Shelfbreak Circulation and Ecosystem Dynamics, AGU Ocean Sciences Meeting, Portland, OR, 2010
- 76) Xue, Z., J. Liu, D. J. DeMaster, R. He, and E. L. Leithold, A Source-to-Sink Study of the Mekong Subaqueous Delta. AGU Ocean Sciences Meeting, Portland, OR, 2010
- 77) 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
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- 84) He, R., W. Zhang, K. Hyun, K. Chen, and H. Qian, Hindcasting of the Gulf of Mexico Circulation and Age and Distribution of the Oil Plume Arising from the Deepwater Horizon Spill. Joint subcommittee on Ocean Science & Technology Conference on Deepwater Horizon Oil Spill, St. Petersburg, FL, 2010
- 85) Gawarkiewicz, G., J. H. Churchill, R. He, and Y. Gong, Shelfbreak Frontal Structure and Gulf Stream Interaction North of Cape Hatteras: High Resolution Observations and Regional Modeling, AGU fall meeting, San Francisco, CA, 2010
- 86) Ma, Y., K. Xu, R. He, P. A. Wren, Y. Gong, B. Quigley, and D. Tarpley, Hydrodynamic and Sediment Transport Processes in Long Bay of the Carolinas. AGU fall meeting, San Francisco, CA, 2010
- 87) North, E. W., Z. Schlag, E. Adams, R. He, K. Hyun, C. R. Sherwood, R. P. Signell, and S. D. Peckham, Simulating the Three Dimensional Dispersal of Aging Oil with a Lagrangian Approach, AGU fall meeting, San Francisco, CA, 2010

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- 89) He, R., Modeling Shelfbreak Processes: Physics and Ecosystem Dynamics, NSF OOI Pioneer Array Science Workshop, Providence, RI, 2011
- 90) He, R., D. McGillicuddy, D. Anderson, B. Keafer, and Y. Li. Predicting the Harmful Algal Bloom in the Gulf of Maine: From Seasonal Ensemble Forecasting to Data Assimilative Hindcasting, EGU General Assembly, Vienna, Austria, 2011
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- 93) Li, Y, and R. He, The Coastal Connectivity in the Gulf of Maine, Gordon Research Conference, South Hadley, MA, 2011
- 94) Yao, Z., Z. Xue, and R. He, Climate Projections of Coastal Wind and Sea Levels off the U. S. Atlantic and Gulf of Mexico Coasts, Gordon Research Conference, South Hadley, MA, 2011
- 95) Gong, Y. and He, R., Numerical Investigation of Coastal Circulation Dynamics near Cape Hatteras, North Carolina in January 2005, Gordon Research Conference, South Hadley, MA, 2011
- 96) Chen, K., R. He, B. Powell, and A. Moore, Data Assimilative Modeling Investigation of Gulf Stream Warm-Core Ring Interaction with the Mid-Atlantic Bight Continental Shelf and Slope, Gordon Research Conference, South Hadley, MA, 2011
- 97) Zambon, J., R. He, and J. Warner, Investigation of Hurricane Ivan Using a 3-Way Coupled Ocean- Atmosphere-Wave-Sediment Transport Model, Gordon Research Conference, 2011, South Hadley, MA.
- 98) Nelson, J. and R. He., Effect of the Gulf Stream on Winter Extratropical Cyclones, Gordon Research Conference, South Hadley, MA, 2011
- 99) Xue, Z., R. He, J. P. Liu, and J. Warner, Modeling Transport and Deposition of Mekong River Sediment, Gordon Research Conference, South Hadley, MA, 2011
- 100) He, R., K. H. Hyun, W. G. Zhang, H. Qian, and K. Chen, Hindcasting the Gulf of Mexico Circulation and Age and Distribution of the Oil Plume Arising from the Deepwater Horizon Spill, Gordon Research Conference, South Hadley, MA, 2011
- 101) Lohrenz, S., W. Cai, H. Tian, R. He, C. Hopkinson, and S. Howden, Coupled Terrestrial-Ocean Modeling of Climate and Land Use Change Impacts on Biogeochemical and Ecosystem Processes in the Mississippi Basin and Gulf of Mexico, Ocean Sciences Meeting, Salt Lake City, UT, 2012

- 102) Xue, Z., R. He, K. Fennel, W. Cai, and S. Lohrenz, Modeling Seasonal and Interannual Variability of Circulation and Biogeochemical Processes in the Gulf of Mexico, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 103) Li, Y., R. He, and D. J. McGillicuddy, Interannual Variability of Coastal Hydrography in the Gulf of Maine: 2002-2010, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 104) De Mey, P., R. He, V. Kourafalou, and A. Kurapov, Advances in Coastal Ocean Modeling, Analysis, and Prediction, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 105) Woods N., D. Fratantoni, R. He, M. Baumgartner, and R. Ji, Physical Controls on Dense Copepod Aggregations in the Great South Channel, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 106) Farrara, J., Y. Chao, Z. Li, X. Wang, H. Zhang, P. Li, Q. Vu, R. He, and H. Qian, A ROMS-Based Data Assimilating Ocean Forecast System for the Gulf of Mexico, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 107) Chen, K. and R. He, Data-Assimilative Modeling Investigation of Gulf Stream Warm-Core Ring Interaction with Continental Shelf and Slope, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 108) Qian, H. and R. He, Modeling the Circulation and Transport Connectivity in the Intra-Americas Sea, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 109) Gong, Y., R. He, G. Gawarkiewicz, and D. Savidge, Numerical Investigation of Coastal Circulation Dynamics Near Cape Hatteras, North Carolina, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 110) Mooers, C. N., E. D. Zaron, M. Howard, Y. Chao, B. Cornuelle, R. He, D. Ko, L. Oey, A. Mehra, and R. Patchen, The Gulf of Mexico Pilot Prediction Project (GOMEX-PPP), Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 111) Yin, Y., X. Lin, and R. He, The Dynamics of Yellow Sea Warm Current, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 112) He, R. and J. S. Nelson, Effect of the Gulf Stream on Winter Extratropical Cyclone Outbreaks, Ocean Sciences Meeting, Salt Lake City, UT, 2012
- 113) He, R., Z. Xue, and J. Zambon, An Integrated Ocean Circulation, Wave, Atmosphere and Marine Ecosystem Prediction System for the South Atlantic Bight and Gulf of Mexico, SECOORA Meeting, Miami, FL, 2012
- 114) He, R., W. Woods, Z. Xue, J. 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, SECOORA Meeting, Miami, FL, 2012
- 115) Farrara, J. D., Y. Chao, Z. Li, X. Wang, H. Zhang, R. He, and H. Qian, A Real-time Data Assimilating Nowcast / Forecast System for the Gulf of Mexico, AGU Fall meeting, San Francisco, CA, 2012
- 116) Chao, Y., Z. Li, J. Farrara, H. Zhang, R. He, and F. Chai, Development and Implementation of a Regional Ocean Nowcast/Forecast System, AMS Fall meeting, San Francisco, CA, 2012

- 117) He, R., Z. Xue, J. Zambon, and Y. Liu, An Integrated Ocean Circulation, Wave, Atmosphere and Marine Ecosystem Prediction system for the Gulf of Mexico, Gulf of Mexico Oil Spill and Ecosystem Research Conference, New Orleans, LA, 2013
- 118) Qian, H., R. He, and Y. Li, Circulation Transport and Connectivity in the Gulf of Mexico, Gulf of Mexico Oil Spill and Ecosystem Research Conference, New Orleans, LA, 2013
- 119) Tian, H., R. He, W. Ren, Z. Xue, W-J. Cai, and S. Lohrenz, Impacts of Population Growth, Urbanization and Agricultural Expansion on Riverine Fluxes and Coastal Ecosystems in the Southeastern U.S. - Application of a Coupled Land-Ocean Modeling System, Part 1: Riverine Flux Variations, North America Carbon Program Science Meeting, Albuquerque, NM, 2013
- 120) He, R., H. Tian, W. Ren, Z. Xue, W-J. Cai, and S. Lohrenz, Impacts of Population Growth, Urbanization and Agricultural Expansion on Riverine Fluxes and Coastal Ecosystems in the Southeastern U.S. - Application of a Coupled Land-Ocean Modeling System, Part 2: Marine Ecosystem Responses, North America Carbon Program Science Meeting, Albuquerque, NM, 2013
- 121) Castelao, R. and R. He, Mesoscale Eddies in the South Atlantic Bight, Gordon Research Conference, Portland, ME, 2013
- 122) He, R., Y. Li, and Y. Gong, Interactions between Shelf Circulation and Western Boundary Currents: Case Studies, Asia Oceania Geosciences Society Conference, Brisbane, Australia, 2013
- 123) Zambon, J. B., R. He, and J. C. Warner, Investigation of Hurricane Sandy Dynamics Using the 3-Way Coupled Ocean-Atmosphere-Wave-Sediment Transport Model, Ocean Sciences Meeting, Honolulu, HI, 2014
- 124) Yao, Z., F. Xue, and R. He, Construction of High-resolution Temperature and Salinity Climatology for the U.S. East Coastal Ocean and Intra-America Sea Using Data Interpolating Variational Analysis Technique, Ocean Sciences Meeting, Honolulu, HI, 2014
- 125) Li, Y. and R. He, Variational Data Assimilative Modeling Investigation of the Gulf of Mexico Coastal Circulation in Spring and Summer, 2010. Ocean Sciences Meeting, Honolulu, HI, 2014
- 126) Xue, Z., R. He, K. Fennel, W-J. Cai, and S. Lohrenz, Modeling Seasonal and International Variability of Ocean Circulation and Biogeochemical Variables in the Gulf of Mexico, Ocean Sciences Meeting, Honolulu, HI, 2014
- 127) He, R. and Y. Li, Impact of Mesoscale Eddies on the Gulf Stream and Shelf Ecosystem in the Southeastern United States, Ocean Sciences Meeting, Honolulu, HI, 2014
- 128) He, R., Z. Xue, K. Fennel, W-J. Cai, and S. Lohrenz, Modeling Seasonal and International Variability of Ocean Circulation and Biogeochemical Variables in the Gulf of Mexico, Gulf of Mexico Oil Spill & Ecosystem Science Conference, Mobile, AL, 2014
- 129) He, R., Z. Xue, J. Zambon, and Y. Liu, An Integrated Ocean Circulation, Wave, Atmosphere and Marine Ecosystem Prediction system for the Gulf of Mexico, SECOORA 2014 Annual Conference, Savannah, GA.
- 130) He, R., Mesoscale Eddy Impact on the Gulf Stream and Shelf Ecosystem in the Southeastern U.S. Coastal Ocean. AOGS 2014, Sapporo, Japan

- 131) He, R., Mesoscale Eddy Impact on the Gulf Stream and Shelf Ecosystem in the Southeastern U.S. Coastal Ocean. Ocean Surface Topography Science Team Meeting, Constance, Germany.
- 132) Austin C. Todd and He. R., Age and Residence Time of Terrestrial Source Water in the Western Atlantic Ocean and Gulf of Mexico, MABPOM 2014, VIMS, VA
- 133) Austin C. Todd and He. R., Age and Residence Time of Terrestrial Source Water in the Gulf of Mexico, Gulf of Mexico Oil Spill & Ecosystem Science Conference, Houston, TX, 2015
- 134) He, R, J. Zambon, A. Todd, Z, Yao. R. He, A Coupled Ocean Circulation, Wave, Atmosphere and Marine Ecosystem Prediction System for the Northwest Atlantic Ocean, Marine Environmental Monitoring, Modelling and Prediction, 47th International Liege Colloquium, Liege, Belgium, 2015
- 135) Muglia M., He R., Lowcher, C., Bane J., Taylor P., Gong, Y., Gulf Stream marine hydrokinetic energy resource characterization off Cape Hatteras, North Carolina, Poster presented at American Geophysical Union meeting: December 14-18, 2015. San Francisco, CA
- 136) Todd, A. C. and He. R., Age and Residence Time of Terrestrial Source Water in the Western Atlantic Ocean and Gulf of Mexico, Gordon Research Conference, Portland, ME, 2015
- 137) Zambon, J. B., R. He, and J. C. Warner, Air-Sea interactions during hurricanes, Gordon Research Conference, Portland, ME, 2015
- 138) Zhai, P. and R. He, Numerical Investigations of subduction of Eighteen Degree mode water in North Atlantic, , Gordon Research Conference, Portland, ME, 2015
- 139) He. R and A. C. Todd, Age and Residence Time of Terrestrial Source Water in the Western Atlantic Ocean and Gulf of Mexico, Ocean Sciences Meeting, New Orleans, LA, 2016
- 140) Zambon, J. B., R. He, A Coupled Ocean Circulation, Wave, Atmosphere and Marine Ecosystem Prediction System for the Northwest Atlantic Ocean, Marine Environmental Monitoring, Modelling and Prediction, Ocean Sciences Meeting, New Orleans, LA, 2016
- 141) Zhai, P. and R. He, Numerical Investigations of subduction of Eighteen Degree mode water in North Atlantic, Ocean Sciences Meeting, New Orleans, LA, 2016
- 142) Shay, N. R. He, K. Fennel, P. Furze, Three dimensional circulation and biogeochemical process using state-of-the-art profiling floats and data assimilative ocean models, Gulf Oil Spill and Science Meeting, Tampa, FL, 2015
- 143) Xue, Z, R. He, K. Fennel, W-J. Cai, S. Lohrenz, W-J. Huang, W. Ren: Connecting the Mississippi River with Carbon Variability in the Gulf of Mexico, Ocean Sciences Meeting, New Orleans, LA, 2016
- 144) Tian, H., J. Yang, B. Zhang, S. Lohrenz, W-J, Cai, R. He, Z. Xue, C. Lu, W. Ren, W-J Huang, Y. Yao, Anthropogenic and climatic controls on carbon and nitrogen exports from Mississippi river basin to Gulf of Mexico during 1800-2100: Implications for hypoxia and ocean acidification, Ocean Sciences Meeting, New Orleans, LA, 2016
- 145) Zambon J. and R. He, Development of the Coupled Northwest Atlantic Prediction System (CNAPS), Ocean Sciences Meeting6, New Orleans, LA, 2016

- 146) Zeng, X. and R. He, Diagnosing large Gulf Stream meanders in the South Atlantic Bight using adjoint sensitivity analysis, Ocean Sciences Meeting, New Orleans, LA, 2016
- 147) Yin, Y., X. Lin and R. He, Impact of Mesoscale Eddies on Kuroshio Intrusion Variations Northeast of Taiwan, Ocean Sciences Meeting, New Orleans, LA, 2016.
- 148) Lebrasse, M. C., C. L. Osburn, D. R. Bohnenstiehl, R. He, The influence of tide-induced water circulation on dissolved organic matter dynamics and export from Bald Head creek estuary, NC, AGU Fall meeting, San Francisco, CA, 2016.
- 149) McGee, L., R. He, Mesoscale and Submesoscale mechanisms behind asymmetric cooling and phytoplankton blooms induced by hurricanes: a comparison between open ocean and continental shelf cases, *Gordon Research Conference*, Biddeford, ME, 2017.
- 150) Jonson, B. K., J. A. Willison, R. He, Reconciling Walin's transformation framework with classical water mass analysis, *AMS meeting*, Portland, OR, 2017.
- 151) Tian, H., B. Zhang, R. Najjar, S. Lorentz, M. Friedrichs, C. Hopkinson, W-J Cai, E. Hofmann, R. He, G. Chen, C. Lu, A. Mannino, S. Pan, W. Ren, Z. Wang, R. Xu, Z. Xue, J. Yang, Q. Yang, Y. Yao, Magnitude and spatiotemporal variations of terrestrial carbon export from North America to oceans estimated by using a process-based land model, AGU fall meeting, New Orleans, 2017.
- 152) Mao, S., R. He, Predicting shelf circulation off North Carolina using a multi-scale nested modeling system, MABPOM 2017, Wanchese, NC, October, 2017.
- 153) McGee, L., R. He, Mesoscale and Submesoscale Mechanisms Behind Asymmetric Cooling and Phytoplankton Blooms Induced by Hurricanes: A Comparison Between an Open Ocean Case and a Continental Shelf Sea Case, , Ocean Sciences Meeting, Portland, OR, Feb 2018.
- 154) Muglia, M., P. Taylor, L. Dubbs, S. Lockhart, B. Edge, J. Bane, S. Haines, H. Seim, R. He, A. Mazzoleni, S. Bin-Karim and C. Vermillion (2017) Gulf Stream Marine Hydrokinetic Energy Off Cape Hatteras, North Carolina U.S.A. Proc. of Offshore Energy and Storage, Cape Cod, MA, USA July, 2017.
- 155) Zeng, X., R. He, J. Bane, Modeling processes driving exchanges near Cape Hatteras, NC, E44A0310, Ocean Sciences Meeting, Portland, OR, Feb 2018
- 156) Zong, H. R. He, Marine biogeochemical responses to a large Gulf Stream offshore meander, OM31A-07, Ocean Sciences Meeting, Portland, OR, Feb 2018.

## 11. INVITED SEMINARS/KEYNOTE PRESENTATIONS

- |  |      |
|--|------|
| 69) Ocean University of China, College of Marine Environmental Sciences        | 2018 |
| 68) AGU Fall Meeting, Invited Speaker in session "Carbon and Nutrient Cycling" | 2017 |
| 67) Nagoya University, Japan: Division for Land-Ocean Ecosystem Research       | 2017 |
| 66) NOAA Fishery Science Center, Beaufort Lab                                  | 2017 |

65) Virginia Institute of Marine Sciences	2017
65) University of South Florida, College of Marine Science	2017
64) Institute of Oceanology, Chinese Academy of Sciences	2017
63) Xiamen Symposium on Marine Environmental Sciences, Invited Speaker	2017
62) Seoul National University, School of Earth and Environmental Sciences	2016
61) Rutgers University, Department of Marine and Coastal Sciences	2016
60) Dalhousie University, Department of Oceanography	2016
59) University of South Carolina, School of the Earth, Ocean and Environment	2016
58) National University of Singapore, Tropical Marine Science Institute	2016
57) Xiamen University, State Key Laboratory of Marine Environmental Science	2016
56) Shenyang Institute of Automation, Chinese Academy of Sciences	2016
55) Zhejiang University, Department of Marine Sciences	2015
54) South Atlantic Ecosystem- Fish and Wildlife Conservation Commission	2015
53) Duke University, Marine Lab	2015
52) University of Tokyo, Atmosphere and Ocean Research Institute	2014
51) Hong Kong University of Science and Technology, Marine Science Program	2014
50) Ocean Surface Topography Science Team Meeting, Konstanz, Germany, Keynote Speaker	2014
49) University of North Carolina, Chapel Hill, Department of Marine Sciences	2014
48) Columbia University, Lamont-Doherty Earth Observatory	2014
47) Old Dominion University, Center for Coastal Physical Oceanography	2014
46) CLIVAR Conference on Boundary Current Dynamics, Invited Speaker	2013
45) NOAA Southeast Fisheries Science Center, Beaufort Lab	2013
44) University of Delaware, College of Earth, Ocean and Environment	2013
43) Ocean University of China, College of Geosciences	2012
42) Nanjing University of Information Science & Technology, College of Marine Science	2012
41) GODAE OceanView International Science Conference, Miami	2012
40) Rutgers University, Institute of Marine Sciences	2011
39) Woods Hole Oceanographic Institution, Dept. of Applied Ocean Physics and Engineering	2011
38) National Ocean Environmental Forecasting Center, China	2011
37) Ocean University of China, College of Marine Environment	2011
36) Peking University, Dept. of Atmospheric and Marine Sciences	2011
35) Proudman Oceanographic Laboratory, U.K. National Oceanography Center	2011
34) Imperial College London, Dept. of Earth Science and Engineering	2011
33) Duke University, Nicholas School, Earth and Ocean Sciences Division	2010
32) AGU Ocean Sciences Meeting, Invited Speaker in session “Harmful Algal Bloom Prediction”	2010
31) South Atlantic Sea Grant Program: BP Oil Spill Physical Oceanography Summit	2010



30) Jet Propulsion Laboratory, Climate, Oceans and Solid Earth Science Division	2010
29) Woods Hole Oceanographic Institution, Applied Ocean Physics and Engineering	2010
28) Old Dominion University, Center for Coastal Physical Oceanography	2010
27) Ocean University of China, College of Marine Environment	2010
26) University of Georgia, Department of Marine Sciences	2009
25) Florida State University, Department of Oceanography	2009
24) Ocean University of China, College of Marine Environment	2008
23) Woods Hole Oceanographic Institution, Dept. of Applied Ocean Physics and Engineering	2008
22) U.S. Geological Survey, St. Petersburg Center	2008
21) Ocean University of China, College of Marine Environment	2007
20) University of North Carolina, Chapel Hill, Department of Marine Sciences	2007
19) University of Maryland Center for Environmental Science, Horn Point Lab	2006
18) Dalhousie University, Department of Oceanography	2006
17) Rutgers University, Institute of Marine & Coastal Sciences	2006
16) Chinese Academy of Sciences, Ocean Science and Technology Forum	2006
15) Ocean University of China, College of Marine Environment	2006
14) North Carolina State University, Department of Marine, Earth and Atmospheric Sciences	2006
13) Massachusetts Institute of Technology, Sea Grant Red Tide Symposium	2006
12) Oregon State University, College of Oceanic and Atmospheric Sciences	2005
11) Scripps Institution of Oceanography	2005
10) University of South Florida, College of Marine Science	2004
9) Chinese State Oceanic Administration, Second Institute of Oceanography	2004
8) Chinese Academy of Sciences, Institute of Oceanography	2004
7) Ocean University of China, College of Marine Environment	2004
6) University of Connecticut, Department of Marine Sciences	2004
5) Office of Naval Research, WHOI Onsite Review	2004
4) University of Miami, Rosenstiel School of Marine and Atmospheric Science	2003
3) Woods Hole Oceanographic Institution, Department of Physical Oceanography	2003
2) University of North Carolina, Chapel Hill, Department of Marine Sciences	2003
1) University of Miami, Rosenstiel School of Marine and Atmospheric Science	2001

## **12. RESEARCH CRUISES AS CHIEF SCIENTIST/SCIENTIST**

24) NSF Gulf of Mexico Cruise and Deep-sea (2500 m) <i>Alvin</i> Dive	R/V Atlantis	06/2014
23) NSF North Carolina Mooring Cruise	R/V Endeavor	08/2013
22) NSF Barbados Mooring Cruise	R/V Atlantis	06/2012
21) South Atlantic Bight Glider Cruise	R/V Seahawk	03/2012

20) North Carolina Shelf Glider Cruise	R/V Seahawk	08/2011
19) NSF Barbados Mooring Cruise	R/V Oceanus	05/2011
18) North Carolina Shelf Survey	R/V Cape Hatteras	11/2008
17) Gulf of Maine Harmful Algal Bloom Survey	R/V Tioga	04/2006
16) Gulf of Maine Harmful Algal Bloom Survey	R/V Oceanus	05/2005
15) Gulf of Maine Harmful Algal Bloom Rapid Response Survey	R/V Tioga	06/2005
14) Gulf of Maine Harmful Algal Bloom Rapid Response Survey	R/V Tioga	05/2005
13) Gulf of Maine Harmful Algal Bloom Survey	R/V Oceanus	05/2003
12) West Florida Shelf ECOHAB Survey	R/V Suncoaster	01/2002
11) West Florida Shelf ECOHAB Survey	R/V Suncoaster	07/2001
10) West Florida Shelf ECOHAB Survey	R/V Suncoaster	01/2001
9) West Florida Shelf ECOHAB Survey	R/V Suncoaster	09/2000
8) West Florida Shelf ECOHAB Survey	R/V Suncoaster	04/2000
7) West Florida Shelf ECOHAB Survey	R/V Suncoaster	11/1999
6) West Florida Shelf ECOHAB Survey	R/V Suncoaster	07/1999
5) West Florida Shelf ECOHAB Survey	R/V Suncoaster	12/1998
4) West Florida Shelf ECOHAB Survey	R/V Bellows	08/1998
3) West Florida Shelf ECOHAB Survey	R/V Suncoaster	07/1998
2) West Florida Shelf ECOHAB Survey	R/V Bellows	03/1999
1) East China Sea Hydrographic Survey	R/V Dongfanghong	07/1997

### 13. GRADUATE/ UNDERGRADUATE TEACHING

MEA741: Synoptic Physical Oceanography	Fall	2007
MEA735: Geophysical Data Analysis	Spring	2008
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring	2008
MEA744: Dynamics of Shelf Circulation	Fall	2008
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring	2009
MEA741: Synoptic Physical Oceanography	Fall	2009
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring	2010
MEA611: Special Topic: Ocean Modeling I	Spring	2010
MEA611: Special Topic: Ocean Modeling II	Fall	2010
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring	2011
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring	2012
MEA744: Dynamics of Shelf Circulation	Fall	2012
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring	2013
MEA611: Ocean Modeling	Fall	2013

MEA462: Observational Methods and Data Analysis in Marine Physics	Spring 2014
MEA611: Special Topic: Ocean Circulation	Fall 2014
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring 2015
MEA611: Special Topic: Ocean Modeling	Fall 2016
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring 2017
MEA744: Dynamics of Shelf Circulation	Fall 2017
MEA462: Observational Methods and Data Analysis in Marine Physics	Spring 2018

#### 14. POSTDOC/STUDENT ADVISING

Postdoctoral Researchers (16):

	Name	Period	Current affiliation
1	Dr. M. Li	2007-2008	Associate professor, Ocean University of China
2	Dr. K. H. Hyun	2008-2012	Lecturer, North Carolina Central University
3	Dr. Z. Xue	2010-2014	Assistant Professor, Louisiana State University
4	Dr. K. Chen	2011-2012	Assistant Scientist, Wood Hole Oceanographic
5	Dr. Y. Li	2012-2014	Research Science, NOAA
6	Dr. Z. Yao	2012-2014	Lecturer, Ocean University of China
7	Dr. Y. Xu	2013-2014	Lecturer, East China Normal University
8	Dr. A. Todd	2013-2015	Scientist, Berlin Data analytics
9	Dr. P. Zhai	2014-2015	Postdoctoral researcher, Princeton University
10	Dr. Z. Wang	2015	Postdoctoral researcher, NC State University
11	Dr. J. Zambon	2014-2017	Research Assistant Professor, NC State University
12	Dr. J. Willison	2015-present	Postdoctoral researcher, NC State University
13	Dr. H. Zong	2016-present	Postdoctoral researcher, NC State University
14	Dr. B. Johnson	2016-present	Postdoctoral researcher, NC State University
15	Dr. Nabi Allahdadi	2016-present	Postdoctoral researcher, NC State University
16	Dr. Xiangming Zeng	2016-present	Postdoctoral researcher, NC State University

Ph. D. Students (22):

	Name	Period	Advising role of R. He
1	K. Chen (NCSU)	2007-2011	Major advisor
2	Y. Li (NCSU)	2009-2012	Major advisor
3	H. Qian (NCSU)	2010-2013	Major advisor
4	J. Zambon (NCSU)	2009-2014	Major advisor
5	Y. Gong (NCSU)	2011-2016	Major advisor

6	X. Zeng (NCSU)	2012-2016	Major advisor
7	S. Mao (NCSU)	2016- present	Major advisor
8	L. McGee (NCSU)	2017- present	Major advisor
9	Y. Liu (NCSU)	2017-present	Co-advisor
10	Z. Yao (OUC)	2007-2012	Co- advisor
11	Y. Yin (OUC)	2011-2013	Co- advisor
12	J. He (NCSU)	2011-2015	Co- advisor
13	C. Du (XMU)	2014-2016	Committee member
14	Z. Xue (NCSU)	2005-2010	Committee member
15	B. Puckett (NCSU)	2006-2013	Committee member
16	L. Waters (NCSU)	2005-2014	Committee member
17	J. Sha (Univ. Delaware)	2012-2015	Committee member
18	J. Rudzin (Univ. Miami)	2014-2018	Committee member
19	D. McVeigh (NCSU)	2011-2016	Committee member
20	S. Shan (Dalhousie Univ.)	2015-2017	Committee member
21	A. K. Sperrevik (Univ. of Bergen)	2017	Examine committee member
22	Z. Chen (Rutgers Univ.)	2016-2018	Committee member

## M. S. Students (12):

	Name	Period	Advising role of R. He
1	T. Miles (NCSU)	2007-2009	Major advisor
2	Y. Li (NCSU)	2007-2009	Major advisor
3	J. Zambon (NCSU)	2007-2009	Major advisor
4	Y. Gong (NCSU)	2009-2011	Major advisor
5	J. Nelson (NCSU)	2009-2011	Major advisor
6	X. Feng (NCSU)	2011-2013	Major advisor
7	L. McGee (NCSU)	2015-2017	Major advisor
8	Y. Zhao (NCSU)	2010-2011	Co-advisor
9	S. Kim (NCSU)	2007-2009	Committee member
10	A. Hasse (NCSU)	2007-2009	Committee member
11	M. Angus (NCSU)	2010-2012	Committee member
12	Y. Chen (NCSU)	2011-2013	Committee member

Undergraduate Students (32): C. Amos, T. Shropshire, and others.