

Curriculum Vitae

Michael P. Slattery

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Education

Doctor of Philosophy, Marine and Atmospheric Science, Stony Brook University, Stony Brook, New York, December 2010

Master of Science, Earth Science, University of North Carolina Wilmington, Wilmington, NC, 2006

Bachelor of Science, Marine Science, Coastal Carolina University, Conway, SC, 2002

Research Interests

- Coastal sediment dynamics
- Coastal Hazards/Mitigation (Storm surge, Sea Level variability)
- Rip currents and public awareness
- Barrier Island migration/development
- Beach morphology and Evolution
- Coastal Marine Issues
- Environmental and Marine Education/outreach

Professional Positions

Assistant Professor of Marine Sciences, August 2015-present

- Instruct courses in Marine Science, Physical Oceanography, Geology, and Environmental Science
- Conduct research on the geophysical aspects of the Marine, nearshore terrestrial and atmospheric environments.

Coastal Processes Specialist-South Carolina, SC Sea Grant Consortium/Coastal Carolina University, Conway, SC August 2011-present
(50/50 position with SC Sea Grant and Coastal Carolina University's School of Coastal and Marine Systems Science)

- Project and Activity specifics split into appropriate categories below
- Design and implement education programs for coastal communities on coastal topics/issues
- Actively engage in research related to coastal community issues in order to better bridge the gap between science and the public

- Assess needs or data gaps within the coastal communities and translate these needs to the scientific community in order to seek research funding in addressing these needs/gaps
- Operate several coastal research programs

Research and Outreach/Extension

Beach Erosion Research and Monitoring, BERM program, Project manager, Coastal Carolina University, Conway, SC September 2011-present.

- Plan and conduct monthly shore parallel surveys of the beach to track changes in the shoreline for two local municipalities using RTK-DGPS technology.
- Troubleshoot in field equipment issues and maintain equipment
- Create annual MoU language for continuation of the program for securing funding
- Complete shore perpendicular surveys annually, to assess the performance of beach renourishment
- Generate report to local municipalities and Army Corps of Engineers regarding the condition of the renourishment material and determine if the trigger point has been reached for subsequent nourishment cycles

Rip Current Awareness, Project manager, South Carolina Sea Grant Consortium, South Carolina, 2011-present

- Responsible for securing funds for rip current outreach products, including providing rip current signage for public access along the SC coast
- Created a “train the trainer” rip current program for local lifesaving and state park rangers in South Carolina. Talks have been completed at the annual State Park Managers meeting, Hunting Island State Park and Huntington Beach State Park
- Assisted and advise a graduate student in obtaining funds for an original rip current, social science study along the Grand Strand of South Carolina (\$25,000 in student support, set to end August 30th, 2015)
- Work with the Wilmington, NC office of the National Weather Service and NC Sea Grant as well at NOAA to update rip current awareness efforts, assess success of existing methods and further refine rip current modelling techniques
- Provide public awareness materials at events throughout state of SC such as the annual StormFest activities in Myrtle Beach, SC

Coastal Hazards Outreach/Support, Coastal Carolina University and SC Sea Grant Consortium, South Carolina 2011-present

- Provide support to local municipalities on understanding the changes to flood insurance from the implementation (then postponement) of the Bigger-Waters Act 2012

- Provide expertise to local municipalities regarding adjusting to the changes to the Community Rating System (for decreasing flood insurance costs) manual released in 2013.
- Provide insight into the nature of changing sea levels on a local scale for actionable information on hazard mitigation to potential changes in sea level
- Provide direct input and product generation to local municipalities looking to update their Beach Management Plans (North Myrtle Beach and Folly Beach)
- Provide information to the public regarding past hazards, damage, and an assessment of modern day consequences of a similar event (ie. Hurricane Hazel's impact on North Myrtle Beach in 1954)

Wind Energy Outreach/Education, local coordinator, Coastal Carolina University and SC Sea Grant Consortium, South Carolina 2012-present

- Assisted in the installation of two, educational, land-based wind turbines in North Myrtle Beach, SC (funded by a state grant through the state power company, based on a federal stimulus grant)
- Monitor energy production trends and complete data analysis on energy production and wind energy potential
- Create web-based informational products regarding the energy production (<http://bccmws.coastal.edu/projects/wind-outreach>)
- Generate grades 6-12, hands on curricula and teach that curricula to students (over 600 students in 2 years reached)
- Provide data analysis to statewide stakeholders working on alternative energy administered via Orangeburg-Calhoun Technical College.
- Provided information to the North Myrtle Beach Historical Museum on wind energy including procuring a decommissioned turbine for display.

Econet (grant funded), Coastal Carolina University, Conway, SC Fall 2011-Spring 2013

- Oversaw the connection of meteorological and oceanographic monitoring sites to feed into the MADIS system for use in development of better weather forecasting
- Installed Davis vantage pro II met stations
- Coordinated the interdisciplinary team of researchers to ensure reliable, real-time data flow into the MADIS system

Coastal Monitoring-Rip currents, Stony Brook University, Stony Brook, NY Spring 2006-Fall 2010

- Use SWAN wave model to predict wave conditions for coastal locations
- Implement use of cameras to monitor frequency of rip currents
- Utilize seismic data for a proxy of wave period
- Maintain remotely deployed instruments
- Deploy nearshore pressure sensors to help truth seismic readings
- Use spectral analysis to compare seismic readings from multiple sites

Coastal Monitoring-Beach evolution, Stony Brook University, Stony Brook, NY Fall 2005-Fall 2010

- Oversee scheduling of survey dates approximately every 6 weeks

- Use a Nikon DTM-420 total station and telescoping rod to monitor beach change every 6 weeks
- QA/QC data and maintain equipment
- Analyze beach width and volume change using Excel and R-MAP
- Use Dreamweaver to add new data to maintained website of survey history
- Assemble reports for NY Department of State for each survey (2005-2007)
- Order and implement usage of new Trimble RTK GPS system in lieu of Nikon Method

Public Field Trip, Reading the Beach, Smith Point Park, NY, Sponsored by the Long Island Geologists, October 2009

- Presented educational seminar regarding the nearshore dynamics of the Long Island south shore
- Lead public educators and community members through a 2-hour field course on the beach to observe traits that indicate dominant physical processes

Estuary Management, New York State Department of Environmental Conservation, East Setauket, NY August 2008-March 2009

- Use a GPS unit to record locations of tidal wetland plant communities
- Identify high marsh, low marsh, transitional and adjacent plant communities using aerial imagery and ground-truthing
- Digitized environmental boundaries and georeferenced aerial imagery
- Compared traits of modern versus historical aerial imagery to determine wetland change
- Install Surface Elevation Tables at wetland loss study sites
- Utilize pressure sensor and CTD to quantify tidal restriction
- Deploy fyke nets and seine for fish species collection and identification for baseline restoration monitoring

Ground Water Monitoring, Guam, joint Stony Brook University and Woods Hole Oceanographic Institute, November 2008

- Took part in aspects of ground water research over two weeks
- Deployed and monitored flow meters for 7-10 hours/day
- Collected both data on flow rates and water samples for nutrient analysis
- Deployed and analyzed pressure sensor data for wave and tide records

Georgica Pond Breaching, joint Stony Brook University and US Army Corps of Engineers, Stony Brook University, Stony Brook, NY, April 2008

- Assisted in planning of breach monitoring field plan
- Recruited volunteers to help in carrying out the plan
- Acted as liaison between Stony Brook University and USACE parties
- Conducted pre- and post-breach surveys
- Assisted in the monitoring of the short term rapid evolution of the breach over the course of two days

Hudson River Multi-beam, Stony Brook University, Supervised by Roger Flood

October 2005

- Served as research crew during a 1-week multi-beam survey of the Hudson River
- Real-Time monitored sonar data for “structure strikes” keeping a time log
- Post-Processed multi-beam data as files were created stored
- Assisted in deployment of towfish for sidescan surveys in between multi-beam surveys

Identifying the Nature of Inner Shelf Sediments, Long Bay, NC 2003-2005

- Sampled from ship deck for a day every other month
- Collected water samples using a Niskin Rosette/CTD bundle
- Collected sediments via ponar grab, used Secchi disk
- Filtered water samples while aboard vessel
- In lab filtered the sediment samples into fine (less than 63 μm) and coarse fractions
- Combusted samples for organic content percentage
- Ran sub sample of coarse fraction through a Coulter Counter

Barrier Island Development, North Island, Georgetown, SC Summer 2001

- Collected 27+ vibracores over eight days on North Island (2 stints of 4 days)
- Cleared trails to sites while navigating with handheld GPS
- Worked on all aspects of core collection and retrieval
- Split and described core samples
- Analyzed sediments via sieving and combustion

Teaching Positions/Experience

Faculty/Staff, Coastal Carolina University, Conway, SC, August 2011-present
Courses Instructed:

MSCI 112, The origin and Evolution of the Marine Environment: co-instructor Fall 2014 (1 section), and Instructor Spring 2013 (2 sections)

- Geologic history of the earth, ocean basins and the introduction to evolution of life. The focus was more on marginal/coastal processes
- Cross-list as honors course requiring field experience

IDS 495 (Internship) Wind Energy Analysis and Extension Spring 2014

- Spawned from Extension work surrounding 3, educational wind turbines installed in a nearby city
- Co-produced curricula for grades 6-12, with undergraduate student focusing on energy in general, with a focus on “science in your community” in discussing wind energy.
- Created web pages for the general public including Analysis of energy production and generated reports for the general public regarding turbine operations (<http://bccmws.coastal.edu/projects/wind-outreach>)
- Student presented a poster at AGU 2012 and is now employed as an operational tech with Clemson University

MSCI 499 (Directed Undergraduate Research) Swash variability Fall 2013

- Directed an undergraduate in the study of a morphological variability at a swash (similar to an inlet) on the South Carolina coast
- Student compared monthly positional changes to wave conditions at offshore buoys for potential trends in swash variability
- Student now employed as technician managing two projects for an environmental water quality lab at Coastal Carolina University.

MSCI 399 (Independent Study) Shoreline Variability, Spring 2012

- Directed an undergraduate freshman in the study historical beach transects using RMAP and ArcGIS software for analysis
- Student used data, dating to 2006 to compare beach width and volume changes over the sampling period along the beaches of the Grand Strand region of South Carolina
- Student is currently still finishing their degree

FYE 110 (First Year Experience) Fall 2012, Fall 2011

- Half “freshmen success” type course, half, intro to science course
- Taught student regarding time management, ethics, history of learning, study habits half the semester
- Oversaw the students creation of ROVs which were deployed for data collection and creation of scientific papers for the other half of the semester.

Adjunct Instructor, ITT Tech, Myrtle Beach, SC, March 2011-March 2012

- Instructed Problem Solving course that focused on math application to potential jobs and thought problems
- Substitute for class periods for which the instructor of record is unavailable
- Tutor students as needed

Ph.D. Candidate Stony Brook University. Stony Brook, NY Fall 2005-Fall 2010

Courses Instructed:

Mar 101, Long Island Sound: Science and Use, Sponsored by Ward Melville Heritage Organization Summer of Science (SOS), July 26-August 13 2010

- Introduction to Oceanography applied to the marine environment of Long Island Sound, its marshes, ecosystems, and geological history
- Instructed 14, 15-17 year old high school students in an official, for-credit, Summer session II, college course
- Prepared 3-hour lectures M-F, organized field trips and 1-hour daily excursions to explore Long Island Sound marsh and coastal habitats.
- Responsible for all tests, assignments, evaluations
- Drove 15 passenger van to all outings away from classroom
- Arranged for special expert guests for the daily field excursions

Courses Assisted:

Mar 104, Introduction to Oceanography Spring 2006

- Grade tests/assignments
- Meet on individual or small group basis for additional student instruction
- Lectured for two classes

ENV 105, Introduction to Environmental Issues, Fall 2005

- Assisted students with grasp of course topics

- Graded tests/quizzes/assignments

Master's Candidate, University of North Carolina, Wilmington. Wilmington, NC Fall 2003-Spring 2005

Miscellaneous Educational Instruction:

NSF GK-12 Scholar, State of North Carolina 6th grade science curriculum 2004- 2005

- Taught in two separate middle schools 2 days a week for an academic year
- Generated hands-on activities to demonstrate scientific ideas in line with state Curriculum
- Panelist at “Conference on K-12 Outreach from University Science Departments: 2005 for Panel 2: “Discussion and Responses: How do scientists address K-8?” (Note: erroneously listed as “Matt” under panel session, correct in the participants section)
- Helped coach Science Olympiad team at one of the middle schools
- Judged Science competitions up to the regional level

Courses Instructed:

GLY 101 Principles of Geology Lab, University of North Carolina Wilmington, Wilmington, NC, Fall 2003-Spring 2004

- Instructed a two hour Introduction to Physical Geology Lab
- Created and evaluated tests, quizzes, and assignments

Staff, Coastal Carolina University, Conway, SC

Courses Instructed:

MSCI 101, Introduction to Marine Science Summer 2003

- Instructed both lecture and lab for the Introduction to Marine Science summer course (two hours lab, two hours lecture, four days/week for five weeks)
- Generated lecture notes, handouts, tests, quizzes, written assignment criteria, conducted all lab field trips and completed all grading.

Science 101 Lab Manager, Introduction to Science for non-science majors Lab, Coastal Carolina University, Conway, SC Fall 2002- Spring 2003

- Updated existing lab activities while developing new activities
- Coordinated fourteen undergraduate Teaching assistants who ran the labs
- Oversaw the application process and evaluated qualifications of applicants
- Taught several sections of the lab

Undergraduate Student, Coastal Carolina University, Conway, SC

Courses Instructed:

Science 101 Lab, teaching assistant, Fall 2001-Spring 2002

- Ran sections of Science 101 lab for non-science majors including being responsible for evaluating student performance.

Chemistry 111/112 Workshop peer leader

- Taught two, peer lead chemistry workshops/semester
- Reinforced chemistry concepts from courses by teaching a workshop of currently enrolled undergraduate students.
- Created activities and quizzes for the workshop participants

Publications/Presentations

- Pietrafesa, L.J., **M.P. Slattery**, T. Yan, S. Bao, P. T. Gayes. *Accepted with revisions*. On Sea Level Variability and Trends in the United States Coastal Waters and Relationships with Climate Factors. *Advances in Adaptive Data Analysis*.
- Pietrafesa, L.J., P.T. Gayes, **M.P. Slattery (presenter)**. 2012. On Sea Level Variability and Trends. Geological Society of America 2012 Annual Meeting and Exposition, Charlotte, NC.
- Bokuniewicz, H.J., N. C. Kraus, S. Munger, **M. Slattery** and R. Coffey. 2011. Monitoring Incipient Breaching at an Artificial Inlet: Georgica Pond, New York. *Journal of Coastal Research*, Special Issue 59: 111-117
- Slattery, M.P.**, H.J. Bokuniewicz, P.T. Gayes. 2011. Flash rip currents along the south shore of Long Island, NY. In S. Leatherman, J. Fletemeyer, *Rip Currents: Beach Safety Physical Oceanography and Wave Modeling*. Boca Raton, FL. CRC Press: 31-43
- Buonaiuto, F.S., **M.P. Slattery**, H.J. Bokuniewicz. 2011. Wave Modeling of Long Island Coastal Waters. *Journal of Coastal Research*, 27(3): 470-477.
- Slattery, M.P.** 2010. Assessing the nature of rip currents along the south shore of Long Island, NY: Dominant rip type and insights into possible forcing mechanisms. Ph.D. Dissertation. Stony Brook University.
- Slattery, M.P.** 2006. The Influence of the Cape Fear River on Characteristics of Shelf Sediments in Long Bay, NC. M.S. Thesis. University of North Carolina Wilmington.