

Aquaculture | Coastal Economics | Coastal Health | Coastal Infrastructure



Coastal Planning | Fisheries | Shoreline Management | Storms and Impacts

NORTH CAROLINA'S COASTAL CONFERENCE

April 4 and 5, 2017 | #NCCoastConf



Identifying — and achieving — potential solutions to North Carolina's pressing coastal challenges are not simple tasks.

In the past year, some of those challenges reached far inland. For example, Hurricane Matthew's flooding was devastating well west of the coastal plain. Communities in 50 counties are still in disaster-recovery mode, such as the town of Windsor, which was flooded twice in less than one month last fall.

At the same time, coastal economics are now part of conversations in the Triangle, Triad, Charlotte area and the mountains, as chefs and consumers realize their demand for North Carolina seafood often exceeds current deliveries. Opportunities for innovations in supply chains and aquaculture production are elements of an emerging concept known as North Carolina's Blue Economy.

In our more than 40 years as a state/federal partnership, North Carolina Sea Grant has shown that gathering thought leaders from coastal communities and experts from across the state to address such issues will offer collaborative steps forward — some small, some large and a few even surprising.

Here at North Carolina's Coastal Conference, we offer a broad perspective, with varied voices to consider the science, education and partnerships necessary for coastal ecosystems and economies to thrive. The speakers and your comments will help to identify what we need to know about our coastal resources, including land-use planning, ecosystem services and career pipelines.

But why should Sea Grant convene these sessions?

With our three coastal offices and headquarters in Raleigh, Sea Grant has a long reputation as a trusted broker of information based on applied science. Our team serves as a bridge connecting needs identified within coastal communities to peer-reviewed research conducted by outstanding North Carolina scientists and graduate students — and by sharing those needs and research results with policy makers facing important decisions.

To encourage innovation, we can draw upon lessons learned in 32 other state-based Sea Grant programs. For more than 50 years, the National Sea Grant College Program has been authorized by Congress to provide such critical research and outreach.

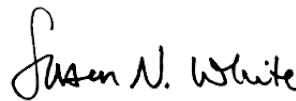
North Carolina Sea Grant, along with our funded researchers and partners, leverage our state and federal support, thereby expanding the return on those investments. Our impacts have included new or expanded businesses, and even resulted in reduced insurance premiums for consumers.

Our 2015 Coastal Conference drew a broad mix of participants, including industry, government and independent agencies, academic experts, and other community leaders. This year, you also will share experiences and data. You should capitalize on opportunities to consider topics not on your normal calendar, or simply listen to different perspectives.

We expect new partnerships will evolve, with key members providing local knowledge of a particular ecosystem or economic sector. Other collaborators may have access to existing data sets or students eager for field work. And yet others will have ideas for new ways to visualize the challenge and/or solution.

To help these new partnerships thrive, we expect a special call for research proposals that will build strong collaborations. Watch for the notice on www.ncseagrant.org.

Our commitment to this state has not wavered. We look forward to hearing a variety of potential solutions to the challenges facing coastal places and people that matter to you. Let's move forward together for decades to come.



Susan N. White
Executive Director
North Carolina Sea Grant

Thank you to the 2017 Coastal Conference Steering Committee:

Brian Boutin *The Nature Conservancy*
Susan Cohen *U.S. Department of Defense*
Bill Crowell *Albemarle-Pamlico National Estuary Partnership*
Carolyn Currin *National Oceanic and Atmospheric Administration*
Braxton Davis *N.C. Department of Environmental Quality*
Marion Deerhake *RTI*
Dave Eggleston *NC State University*

Debbie Hamrick *N.C. Farm Bureau*
Erin Hopper *University of North Carolina General Administration*
Rick Luettich *University of North Carolina at Chapel Hill*
Todd Miller *N.C. Coastal Federation*
Rua Mordecchi *South Atlantic Landscape Conservation Cooperative*
Martin Posey *University of North Carolina Wilmington*

Andy Read *Duke University*
Don Reuter *N.C. State Parks*
Linda Rimer *U.S. Environmental Protection Agency*
Brian Roth *Mayor of Plymouth, N.C.*
Laura Taylor *NC State University*
John Virdin *Duke University*
Nancy White *Coastal Studies Institute*
Rob Young *Western Carolina University*

Conference Schedule

Tuesday, April 4	
8:30 am	Registration Opens Lobby
9:00 am	Welcome Room 1D Susan White <i>Executive Director, North Carolina Sea Grant</i>
9:10-9:45 am	Opening Remarks Room 1D Randy Woodson <i>Chancellor, NC State University</i> Michael Regan <i>Secretary, North Carolina Department of Environmental Quality</i> Craig McLean <i>Assistant Administrator, NOAA Oceanic and Atmospheric Research</i>
9:45-10:15 am	Plenary Room 1D Gavin Smith <i>Director, U.S. Department of Homeland Security's Coastal Resilience Center of Excellence, University of North Carolina at Chapel Hill</i>
10:15-10:30 am	Break Room 1D
10:30-Noon	Plenary Panel: Coastal Resilience Room 1D Jonathan Pennock <i>Director, National Sea Grant College Program</i> Barbara Garrity-Blake <i>Cultural Anthropologist, Duke University</i> Sharon Paynter <i>Assistant Vice Chancellor for Public Service and Community Relations, East Carolina University</i>
Noon-1:30 pm	Lunch, Networking, Student Poster Session Room 1D
1:30-3:00 pm	Concurrent Session I
	Coastal Infrastructure Room 4
	Shoreline Management Room 6
	Michelle Covi <i>Assistant Professor of Practice, Old Dominion University/Virginia Sea Grant</i> Spencer Rogers <i>Coastal Hazards and Erosion Specialist, North Carolina Sea Grant</i> Patrick Flanagan <i>Planning Director, Eastern Carolina Council of Governments</i> Braxton Davis <i>Director, N.C. Division of Coastal Management and N.C. Division of Marine Fisheries</i> Johnny Martin <i>Coastal/Hydraulic Engineer, Moffat and Nichol</i> Carolyn Currin <i>Research Scientist, NOAA National Ocean Service</i>
3:00-3:15 pm	Break Room 1D
3:15-4:45 pm	Concurrent Session II
	Coastal Economics Room 4
	Coastal Storms and Impacts Room 6
	John Virdin <i>Director, Ocean and Coastal Policy Program, Nicholas Institute for Environmental Policy Solutions, Duke University</i> John Whitehead <i>Professor, Appalachian State University</i> John Chaffee <i>President & CEO, NCEast Alliance</i> Jonathan Blaes <i>Science Operations Officer, National Weather Service Raleigh Forecast Office</i> Casey Dietrich <i>Assistant Professor, NC State University</i> Rob Young <i>Director, Program for the Study of Developed Shorelines, Western Carolina University</i>
6:00-8:00 pm	Evening Program at the N.C. Museum of Natural Sciences 121 West Jones St., Raleigh (map on back cover) Emcee: Shannon Vickery <i>Director of Production Partnerships and Business Development, University of North Carolina Public Television</i> Opening Remarks: Emlyn Koster <i>Director, North Carolina Museum of Natural Sciences</i> Student Poster Awards N.C. Representative Pat McElraft N.C. Senator Bill Cook Keynote: Bland Simpson <i>Chair, Kenan Distinguished Professor of English and Creative Writing, University of North Carolina at Chapel Hill</i>

CONFERENCE SCHEDULE

Wednesday, April 5	
8:30 am	Registration Opens Lobby
9:00-9:20 am	Welcome Room 1D Susan White <i>Executive Director, North Carolina Sea Grant</i> Russell Callender <i>Assistant Administrator, NOAA National Ocean Service</i>
9:20-10:00 am	Opening Speaker Room 1D Rear Adm. David Titley <i>Director, Center for Solutions to Weather & Climate Risk, Pennsylvania State University</i>
10:00-10:15 am	Break Room 1D
10:15-11:40 am	Concurrent Session III
	Fisheries Room 4
	Coastal Planning Room 6
	Chad Thomas <i>Coastal Fisheries Supervisor, North Carolina Wildlife Resources Commission</i> Evan Ferguson <i>Foods and Nutrition, and Marketing Education Teacher, Cape Hatteras Secondary School</i> Annette Dunlap <i>Agribusiness Developer, N.C. Department of Agriculture and Consumer Services</i>
	Jason Fine <i>Hydrologist, U.S. Geological Survey</i> Holly White <i>Principal Planner, Town of Nags Head</i> Andy Fox <i>Associate Professor and Co-Director of the Coastal Dynamics Lab, NC State University</i>
11:45 am-1:15 pm	Lunch and Networking Room 1D
1:15-2:45 pm	Concurrent Session IV
	Aquaculture Room 4
	Coastal Health Room 6
	Jay Styron <i>President, N.C. Shellfish Growers Association</i> Ted M. Davis <i>Founder, Aqua Plantations</i> Chris Dumas <i>Professor of Economics, University of North Carolina Wilmington</i>
	Lauren Thie <i>Environmental Program Consultant, N.C. Department of Health and Human Services</i> Jill Stewart <i>Associate Professor, University of North Carolina at Chapel Hill</i> Wayne Litaker <i>Supervisory Ecologist, NOAA, Center for Coastal Fisheries and Habitat Research</i>
2:45-2:55 pm	Break Room 1D
2:55-3:30 pm	Closing Plenary: State and Community Resilience Post-Matthew Room 1D Mike Sprayberry <i>Director, N.C. Emergency Management Division</i> Brian Roth <i>Mayor, Town of Plymouth</i> Gavin Smith <i>Research Professor; Director, U.S. Department of Homeland Security's Coastal Resilience Center of Excellence, University of North Carolina at Chapel Hill</i>

A special thank you to our moderators, timers and note takers: Barbara Doll, Jennifer Dorton, Chris Ellis, Olivia Eskew, Kermit Farrow, Andreeanne Meley, Christy Perrin, Gloria Putnam, Justin Ridge and Jessica Whitehead. Also, thank you to our entire North Carolina Sea Grant team for supporting the planning and logistics for this conference.

Plenary Speakers *For full biographies of all speakers, visit ncseagrant.ncsu.edu/nc-coastal-conference/2017speakers.*



Russell Callender *Assistant Administrator, NOAA National Ocean Service*

Russell Callender is NOAA's assistant administrator for the National Ocean Service. From 2009 to 2012, he served as deputy director, then director of NOAA's National Centers for Coastal Ocean Science. From 2003 to 2009, Callender was the director of NOAA's Center for Coastal Monitoring and Assessment. He also has directed the Office of Scientific Support in NOAA's Office of Oceanic and Atmospheric Research. While he was the assistant director for the Virginia Sea Grant Program, he managed marine and coastal research and outreach projects in the Chesapeake Bay. His duties as the Oceanographer of the Navy included logistics support in Antarctica. He received a doctoral degree in geology from Texas A&M University, with expertise in deep-sea benthic paleoecology and marine geology. In the Gulf of Mexico, his ship and submersible-based research has explored deep-sea chemoautotrophic communities. He has authored 22 peer-reviewed publications in journals such as *Earth and Planetary Science Letters*; *Historical Biology*; *Lethaia*; and *Palaeogeography, Palaeoclimatology, Palaeoecology*.



Senator Bill Cook *N.C. Senate First District*

In the North Carolina General Assembly, Sen. Bill Cook represents the First Senatorial District covering Beaufort, Hyde, Dare, Currituck, Camden, Gates, Pasquotank and Perquimans counties. He previously represented constituents in Beaufort and Pitt counties as a member of the N.C. House of Representatives for the Sixth District. Currently, he co-chairs the Senate's Appropriations on Natural and Economic Resources Committee, as well as the Senate's Agriculture/Environment/Natural Resource Committee. Recognizing the commercial and ecological values of Eastern North Carolina, he has moved boldly to enhance our state's position in shellfish cultivation and aquaculture activities. The General Assembly has enacted several regulatory reform provisions, as well as appropriations, to enhance our state's ability to plant cultch, to fund sanctuary development and to expand the state's oyster industry. He graduated from the University of Maryland, earning a bachelor's degree in business administration with a concentration in economics. He lives in Beaufort County with his wife, Holly.



Barbara Garrity-Blake *Cultural Anthropologist, Duke University*

Barbara Garrity-Blake is a cultural anthropologist and co-author of *Living at the Water's Edge*, *Fish House Opera*, and author of *The Fish Factory*. She has served on the N.C. Marine Fisheries Commission, and was involved in the development of the state's Fisheries Reform Act, as well as efforts to protect public access and working waterfronts along coastal North Carolina. She currently teaches marine fisheries policy at the Duke University Marine Lab in Beaufort, and lives in Gloucester with her husband, Bryan Blake, where they organize the annual Gloucester Mardi Gras and Wild Caught festivals.



Emlyn Koster *Director, N.C. Museum of Natural Sciences*

Emlyn Koster has been director of the N.C. Museum of Natural Sciences since 2013. A geologist educated in England and Canada, he previously led several premier museums in the United States and Canada, leading landmark expansions of their facilities, exhibitions, programming and outreach. At the Liberty Science Center in New Jersey, he turned financial struggles into a \$109 million expansion and renewal, including a model contract with state government to assist at-risk communities. He also led the Ontario Science Centre, Canada's largest science center. Earlier, he directed the Royal Tyrrell Museum of Paleontology in Alberta, launching it and opening a satellite field station in Dinosaur Provincial Park, which was designated as a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization, as well as integrating this new institution into the heritage tourism and scientific research professions. He is a graduate of the University of Sheffield, England, and holds a doctoral degree in geology from the University of Ottawa.

Plenary Speakers



Representative Pat McElraft *N.C. House District 13*

Rep. Pat McElraft serves the 13th District of the N.C. House, covering Carteret and Jones counties. She is vice chair of the Appropriations Committee; and also chairs Appropriations on Agriculture and Natural and Economic Resources, and the Environment Committee. She serves on ethics, insurance, regulatory reform and state personnel committees. A retired technical sales representative for a national microbiology products company, she is a former commissioner for Carteret County, as well as Emerald Isle. She is a part-time real estate broker. McElraft received the N.C. Recreation and Park Association's 2013 Distinguished Legislator honor. She also was a 2016 Woman of Excellence honoree by the National Foundation for Women Legislators. A member of the N.C. Travel & Tourism board, she holds an associate of science degree in medical terminology from Coastal Carolina Community College. She lives in Emerald Isle with her husband, retired U.S. Marine Col. Roger McElraft. She has two children and is a grandmother of two.



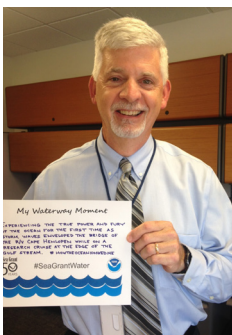
Craig McLean *Assistant Administrator, NOAA Oceanic and Atmospheric Research*

Craig McLean is NOAA's assistant administrator the Office of Oceanic and Atmospheric Research (OAR). He directs and implements NOAA's research enterprise, including a network of laboratories and programs, such as the Climate Program, National Sea Grant and Ocean Exploration. McLean serves as the U.S. representative to the Intergovernmental Oceanographic Commission, and co-chairs the U.S. European Union Marine Working Group. Founding director of OAR's Office of Ocean Exploration and Research, he also served for nearly 25 years in NOAA's Commissioned Corps, where he had the rank of captain and was the first commanding officer of the *NOAA Ship Gordon Gunter*. He led NOAA's planning for the Smithsonian Institution's Sant Ocean Hall, and is recognized for securing the *NOAA Ship Okeanos Explorer*. An attorney, McLean has received numerous honors from the U.S. Department of Commerce and NOAA Corps. He is a fellow of the Explorers Club and the Marine Technology Society, as well as past president and chairman of the Sea-Space Symposium.



Sharon Paynter *Assistant Vice Chancellor, Public Service and Community Relations, East Carolina University*

A native of North Carolina, Sharon Paynter earned her bachelor and master of public administration degrees from the University of North Carolina at Chapel Hill, a master of legal administration from the University of Denver, and a doctorate from North Carolina State University. She currently serves as an associate professor of political science, and is the assistant vice chancellor for Public Service and Community Relations at East Carolina University.



Jonathan Pennock *Director, National Sea Grant College Program*

Prior to joining NOAA as director of the National Sea Grant College Program in 2016, Jonathan Pennock was director of New Hampshire Sea Grant and deputy director of the School of Marine Science and Ocean Engineering at the University of New Hampshire. Pennock is a nationally known coastal scientist with expertise in oceanography and estuarine sciences. He is a past president of the national Sea Grant Association, and served as the group's representative on NOAA Research's Senior Research Council. He also previously worked for Delaware and Mississippi-Alabama Sea Grant programs. His research has focused on understanding human impacts on coastal marine food webs. Pennock has a doctoral degree in oceanography and a master's degree in marine studies from the University of Delaware, as well as bachelor's degree in biology from Earlham College.



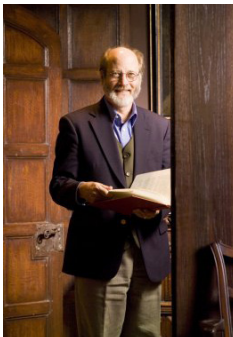
Michael Regan *Secretary, N.C. Department of Environmental Quality*

As secretary of the N.C. Department of Environmental Quality, Michael Regan leads an agency with a mission to protect the state's environment and natural resources. At the Environmental Defense Fund, he had been associate vice president and southeast regional director. At the Environmental Protection Agency in the Clinton and Bush administrations, he designed programs to reduce pollution, and develop market-based solutions for energy efficiency, air quality and climate-related challenges. He also founded M. Regan & Associates, LLC, a firm to help organizations solve complex energy, environmental and economic challenges. He has served on boards for the University of North Carolina School of Law Center for Climate, Energy, Environment and Economics; Green 2.0; N.C. Commission on Global Climate Change; and the N.C. Energy Policy Council. A Goldsboro native, he has a bachelor's degree in earth and environmental science from N.C. Agricultural and Technical State University, and a master's degree in public administration from George Washington University. Regan and his wife, Melvina, live in Raleigh with their son.



Brian Roth *Mayor, Town of Plymouth*

Brian Roth has been the mayor of Plymouth for 16 years. Roth completed the four-year naval science and industrial technology programs at the University of Michigan and Eastern Michigan University. As a commissioned naval officer, he served aboard EA-6B Prowler jets as an electronic countermeasures officer. He flew missions from the USS Ranger and USS Midway aircraft carriers. He later served the Navy as assistant program manager for testing and evaluation in Washington, D.C., developing numerous advanced weapon systems. Recent awards include the NOAA Walter B. Jones Sr. Award for Excellence in Local Government and the N.C. Wildlife Federation's Governor's Award for Municipal Conservationist of the Year.



Bland Simpson *Chair, Kenan Distinguished Professor of English and Creative Writing, University of North Carolina at Chapel Hill*

Bland Simpson is the author of *The Coasts of Carolina: Seaside to Sound Country, Into the Sound Country, and The Inner Islands*. A longtime member of the Tony Award-winning Red Clay Ramblers, he regularly appears on UNC-TV's "Our State." He is chair and Kenan Distinguished Professor of English and creative writing at the University of North Carolina at Chapel Hill. He has received numerous awards, including the UNC Chapel Hill General Alumni Association's Faculty Service Award and the North Carolina Award for Fine Arts, the state's highest civilian honor.



Gavin Smith *Director, U.S. Department of Homeland Security's Coastal Resilience Center of Excellence, University of North Carolina at Chapel Hill*

Gavin Smith is director of the U.S. Department of Homeland Security's Coastal Resilience Center of Excellence, as well as an associate research professor in the Department of City and Regional Planning, both at University of North Carolina at Chapel Hill. He currently leads the Hurricane Matthew Disaster Recovery and Resilience Initiative, advises state officials on state and federal recovery policies and programs, and assists communities in developing disaster recovery plans. Co-editor of *Climate Change Adaptation: Lessons from Natural Hazards Planning*, Smith previously served as North Carolina's assistant director for Hazard Mitigation. Following Hurricane Katrina, he worked in the Mississippi Office of the Governor, directing the Office of Recovery and Renewal. His range of consulting includes working with the U.S. State Department to discuss connectivity between climate-change adaptation and disaster management in Hong Kong and the Philippines, assisting Vermont following Hurricane Irene, and advising FEMA to implement the new National Disaster Recovery Framework.

Plenary Speakers



Mike Sprayberry *Director, North Carolina Emergency Management Division*

In February 2013, Mike Sprayberry was appointed director of the N.C. Emergency Management Division in the N.C. Department of Public Safety. He had joined the agency in July 2005 as deputy director and operations section chief, responsible for the division budget, emergency and human services functions, 24-hour communications center, and field staff for disaster prevention and response. He has spearheaded development and implementation of plans to better prepare and protect North Carolinians during disasters, including the coastal region evacuation and sheltering plan, and the long-term care facility disaster plan. Sprayberry previously served in the U.S. Marine Corps and the N.C. Army National Guard for 25 years. He is a graduate of the Army Command and General Staff College. Sprayberry holds bachelor's and master's degrees from the University of North Carolina at Charlotte. He and his wife, Laura, reside in Raleigh and have two daughters.



David Titley *Director, Center for Solutions to Weather & Climate Risk, Pennsylvania State University*

David Titley is a professor of international affairs at Pennsylvania State University. He is the founding director of Penn State's Center for Solutions to Weather and Climate Risk. A U.S. Navy officer for 32 years, he rose to the rank of rear admiral. Titley's career included duties as commander of the Naval Meteorology and Oceanography Command and oceanographer and navigator of the Navy. While serving in the Pentagon, Titley initiated and led the U.S. Navy's Task Force on Climate Change. After retiring from the Navy, Titley served as the federal deputy undersecretary of commerce for operations, the chief operating officer position at the National Oceanic and Atmospheric Administration. Titley serves on numerous advisory boards and National Academies of Science committees, including the Science and Security Board of the Bulletin of the Atomic Scientists. Titley is a fellow of the American Meteorological Society.



Shannon Vickery *Director of Production Partnerships and Business Development, University of North Carolina Public Television*

Shannon Vickery is the director of production partnerships and business development for UNC-TV, working in collaboration with UNC-TV's content team, which produces more than 240 hours of original North Carolina-based programming each year. She is also an award-winning correspondent and producer. She has been working for UNC-TV since October 1995. Shannon is a graduate of the University of Missouri-Columbia with bachelor's degrees in broadcast journalism and political science. She also has a master's degree with an emphasis in health policy from Duke University.



Susan White *Executive Director, North Carolina Sea Grant*

Susan White is executive director for North Carolina Sea Grant and the Water Resources Research Institute for the University of North Carolina. Both programs provide research, outreach and education projects to address critical coastal, ocean and water resource issues in the state and within the region. White also currently serves as interim director of North Carolina Space Grant, a partnership of the National Aeronautics and Space Administration and the UNC system. White previously was director of the National Oceanic and Atmospheric Administration's Hollings Marine Laboratory in Charleston, S.C. Formerly the national research coordinator for NOAA's Estuarine Reserves Division and National Estuarine Research Reserve System, she has served on national and regional steering committees on topics including technology transfer, integrated drought monitoring and early warning, and climate's connections to health. White earned a doctoral degree from the University of Georgia and a bachelor's degree from Duke University.



Randy Woodson *Chancellor, North Carolina State University*

As North Carolina State University's 14th chancellor, Randy Woodson is a recognized scholar and academic leader guiding the state's largest university, with more than 34,000 students and a budget of \$1.4 billion. In his tenure, NC State has had many transformative changes, such as the opening of the James B. Hunt Jr. Library on Centennial Campus and the launch of the College of Sciences. Woodson is known as a strategic planner who achieves greater effectiveness, efficiency and — most importantly — student success. He came to NC State from Purdue University, where he most recently served as executive vice president for academic affairs. Woodson is an internationally renowned plant molecular biologist specializing in reproductive processes in agricultural crops. He earned his bachelor's degree in horticulture from the University of Arkansas, and his Master of Science and doctoral degrees in plant physiology from Cornell University.



You can contribute to the sustainability of this conference:

Take alternative transportation, such as carpooling or the bus.

Recycle your program after the conference.

Return your nametag to the registration table so it can be reused at future events.

Reuse water and coffee cups, or bring your own mug and/or water bottle.

Monitor your personal water usage.

Turn off unnecessary electronics.

Take the online post-conference survey.



Institute for Coastal Sciences and Policy www.ecu.edu/icsp/ICSP/ICSP.html

Coastal Resources Management Ph.D. Program www.ecu.edu/cs-acad/crm

Center for Natural Hazards Research www.ecu.edu/cs-cas/hazards

UNC Coastal Studies Institute www.coastalstudiesinstitute.org

**NC STATE
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Office of Research, Innovation and Economic Development research.ncsu.edu



THE UNIVERSITY *of* NORTH CAROLINA *at* CHAPEL HILL



The UNC Research Opportunities Initiative provides targeted funding for innovative and potentially game-changing research projects. These projects have the potential to promote economic development and position North Carolina as a leader in strategically important research areas.

The UNC Research Opportunities Initiative is currently accepting pre-proposals in a variety of fields, including coastal and marine sciences.

roi.northcarolina.edu



Sponsors



OFFICE FOR COASTAL MANAGEMENT

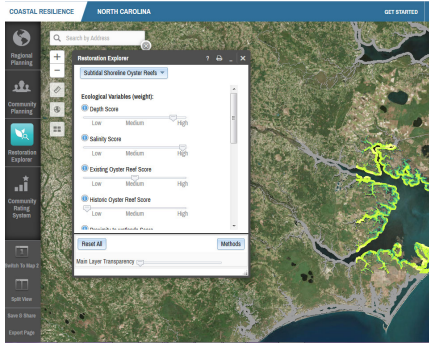
Coastal Zone Management Program
 Coral Reef Conservation Program
 Digital Coast
 National Estuarine Research Reserves

www.coast.noaa.gov



Tools

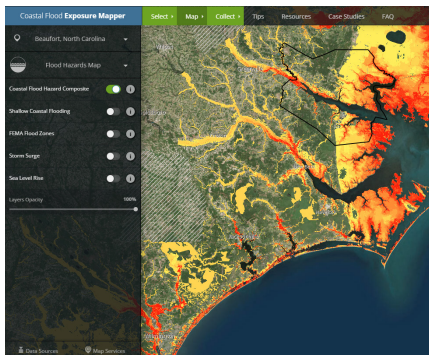
Check out these tools on display during the evening program on April 4, at the N.C. Museum of Natural Sciences:



Coastal Resilience Tool — The Nature Conservancy

Coastal Resilience is a program led by The Nature Conservancy to examine nature's role in reducing coastal flood risk. The program consists of an approach, a web mapping tool, and a network of practitioners around the world supporting hazard mitigation and climate adaptation planning. The plugin architecture customizes the tools to the local scale, catering to the local needs of stakeholders and policy frameworks. In North Carolina, the map tool has two unique applications: 1. Restoration Explorer that helps coastal managers identify and map areas most suitable for oyster reef restoration, and 2. the Community Rating System Explorer (CRS Explorer) that helps planners identify areas that are eligible for Open Space Preservation credits in FEMA's Community Rating System.

Lora Eddy, lora.eddy@tnc.org, 252-441-2525, maps.coastalresilience.org



Coastal Flood Exposure Mapper — NOAA's Office for Coastal Management

The Coastal Flood Exposure Mapper, developed by NOAA's Office for Coastal Management, is an online visualization tool that supports communities that are assessing their coastal hazard risks and vulnerabilities. This easy-to-use tool enables communities to collect maps showing people, places and natural resources exposed to coastal flooding. Maps collected can be downloaded, saved and shared with community members to communicate flood exposure and potential impacts. In addition, the tool provides guidance for using these maps to engage community members and stakeholders. The current geography includes the East Coast and Gulf of Mexico with expansion underway for the Pacific and Caribbean islands and territories.

Adam Bode, adam.bode@noaa.gov, 843-740-1265, coast.noaa.gov/floodexposure



The Scientific Research and Education Network — SciREN

SciREN connects scientist with educators in order to foster the dissemination of current research and enhance the science literacy of youth. SciREN researchers make classroom-ready exercises that appeal to educators using North Carolina standards. The lessons are showcased at networking events held at informal science education institutions.

Debbie Lichti, lichtid12@students.ecu.edu, 765-427-8299, thesciren.org



Drones in Marine Science and Conservation — Duke University Marine Lab

The Marine Robotics and Remote Sensing (MaRRS) Lab at Duke University Marine Lab is using state-of-the-art multiplatform unmanned aircraft to advance marine conservation practices. Collaborating with a variety of conservation agencies and research institutions, the MaRRS Lab is helping address a broad spectrum of issues from marine mammal monitoring to coastal resiliency.

David Johnston, david.johnston@duke.edu, 252-504-7593
superpod.ml.duke.edu/uas

Notes

Use this space to take notes on presentations and conversations with participants. North Carolina Sea Grant anticipates making a special request for research proposals to build upon this conference!

Student Posters For full abstracts, visit ncseagrant.ncsu.edu/nc-coastal-conference/2017posters.

- 1. North Carolina Coastal Area Management Act (CAMA) Goal Analysis: Estuarine Shoreline Stabilization Permitting** Betsy Baldwin, University of North Carolina Wilmington, ehb2904@uncw.edu, Faculty Adviser: Jessica Weinkle
- 2. The Flower Garden Banks National Marine Sanctuary and the Red Snapper** Kathy Cyr, University of North Carolina Wilmington, krc2128@uncw.edu, Faculty Adviser: Jessica Weinkle
- 3. Managing American Oystercatcher (*Haematopus palliatus*) Population Growth by Targeting Breeding Season Vital Rates** Shilo Felton, North Carolina State University, skfelton@ncsu.edu, Faculty Advisers: Theodore Simons and Kenneth Pollock
- 4. Morphological Modeling of Hatteras Island During Hurricane Isabel** Alireza Gharagozlou, North Carolina State University, agharag@ncsu.edu, Faculty Adviser: Casey Dietrich
- 5. Eukaryotic Phytoplankton Community Spatiotemporal Dynamics as Identified Through Gene Expression within a Eutrophied Estuary** Weida Gong, University of North Carolina at Chapel Hill, wdgong@live.unc.edu, Faculty Adviser: Adrian Marchetti
- 6. OBX Stakeholder Values and the CZMA: What is 'Wise Use' and How Can We Achieve It?** Hayley Grabner, University of North Carolina Wilmington, hpg1090@uncw.edu, Faculty Adviser: Jessica Weinkle
- 7. Goal of the Beach Act: Implications for Myrtle Beach, South Carolina** Genevieve Guerry, University of North Carolina Wilmington, gg6372@uncw.edu, Faculty Adviser: Jessica Weinkle
- 8. Quantifying Fecal Contaminants in Stormwater in Coastal North Carolina** Justin Hart, University of North Carolina at Chapel Hill, justhart@live.unc.edu, Faculty Adviser: Rachel Noble
- 9. Examining Fine-Scale Movement of Estuarine Southern Flounder (*Paralichthys lethostigma*) Using a Combination of Active and Passive Acoustic Techniques** Lisa Hollensead, University of North Carolina Wilmington, ldh7520@uncw.edu, Faculty Adviser: Frederick Scharf
- 10. Coastal Community Resilience: Developing and Testing a Framework for Evaluating Climate Change Vulnerabilities in Rural Eastern North Carolina** Matthew Jurjonas, North Carolina State University, mdjurjon@ncsu.edu, Faculty Adviser: Erin Seekamp
- 11. A Natural and Human Systems Coupled Agent-Based Model to Evaluate Housing Dynamics of Coastal Communities Facing Storms and Sea Level Rise** Ayse Karanci, North Carolina State University, akaranc@ncsu.edu, Faculty Adviser: Margery Overton
- 12. Hypoxia and Algal Bloom Modeling for the Neuse River Estuary** Alexey Katin, North Carolina State University, akatin@ncsu.edu, Faculty Adviser: Daniel Obenour
- 13. American Aquaculture: Pitfalls, Values, and Alternatives** Caitlin Lashbrook, University of North Carolina Wilmington, cel6705@uncw.edu, Faculty Adviser: Jessica Weinkle
- 14. Intergenerational Transfer: Are Children the Key to Building a Climate Resilient North Carolina Coast?** Danielle Lawson, North Carolina State University, dafrank2@ncsu.edu, Faculty Advisers: Kathryn Stevenson and Nils Peterson
- 15. Are All Rivers Created Equal? Determining How Food Web Dynamics Affect Fish Nursery Habitat** Deborah Lichti, East Carolina University, lichtid12@students.ecu.edu, Faculty Advisers: David Kimmel and Ariane Peralta
- 16. Were the Post-Sandy Staten Island Buyouts Successful in Reducing National Vulnerability?** Devon McGhee, Duke University, djm47@duke.edu, Faculty Adviser: Elizabeth Albright
- 17. Affects of Noise Pollution on Marine Mammals** Jackie Meyle, University of North Carolina Wilmington, jmm4816@uncw.edu, Faculty Adviser: Jessica Weinkle
- 18. Oregon Inlet: Can We Solve the Unresolved Morphological Puzzle?** Liliana Montoya, North Carolina State University, lvelasq@ncsu.edu, Faculty Adviser: Margery Overton
- 19. Invasion of the Body-Snatchers: Salinity Limits the Spread of an Invasive Castrating Parasite in Populations of North Carolina Mud Crabs** Christopher Moore, East Carolina University, moorech16@students.ecu.edu, Faculty Adviser: April Blakeslee
- 20. Effect of Bromide on Formation of Antibacterially Active Products During Chlorination of Water Containing Doxycycline** Nicole Neth, University of North Carolina at Charlotte, nkenned7@uncc.edu, Faculty Adviser: Olya Keen
- 21. Naturally Armoring North Carolina's Shores: Techniques and Benefits** Justin Ridge, University of North Carolina at Chapel Hill, ridge@unc.edu, Faculty Advisers: Tony Rodriguez and Joel Fodrie
- 22. Shellfish in the Human Dimension: An Examination of CAMA Protection of Coastal Resources** Jennifer Ryan, University of North Carolina Wilmington, jcr9894@uncw.edu, Faculty Adviser: Jessica Weinkle
- 23. Estimating Mortality for Southern Flounder Using a Combined Telemetry and Conventional Tagging Approach** Trevor Scheffel, University of North Carolina Wilmington, tks5852@uncw.edu, Faculty Adviser: Frederick Scharf
- 24. Modeling Nitrogen Loading Trends in Three North Carolina River Basins** Hayden Strickling, North Carolina State University, hlstrick@ncsu.edu, Faculty Adviser: Daniel Obenour
- 25. An Exotic Species Alters Patterns of Marine Community Development** Kathrynlynn Theuerkauf, North Carolina State University, kwjenkin@ncsu.edu, Faculty Adviser: David Eggleston
- 26. Density-Dependent Role of an Invasive Marsh Grass, *Phragmites australis*, on Ecosystem Service Provision** Seth Theuerkauf, North Carolina State University, sjtheuer@ncsu.edu, Faculty Adviser: David Eggleston
- 27. Estimating Southern Flounder Population Connectivity Using Otolith Geochemistry** Verena Wang, University of North Carolina Wilmington, vhw6375@uncw.edu, Faculty Adviser: Frederick Scharf
- 28. New Jersey Public Beach Access** Christopher Yoda, University of North Carolina Wilmington, cyoda6@gmail.com, Faculty Adviser: Jennifer Biddle

Directions to the Evening Program on April 4

The evening program will start at 6 p.m., at the N.C. Museum of Natural Sciences' Nature Research Center, 121 West Jones Street. Parking is available at the Green Square Parking Deck, 120 West Edenton Street. From the McKimmon Center to the entrance of the parking deck:

1. Exit right onto Gorman Street.
2. Turn right onto Western Boulevard.
3. Continue straight onto Martin Luther King Jr. Boulevard.
4. Merge onto McDowell Street via the ramp to downtown.
5. Continue on McDowell Street.
6. Turn right onto W. Jones Street.
7. Turn right onto Salisbury Street.
8. Turn right onto Edenton Street. The Green Square Parking Deck entrance is on the right.
9. After parking, exit the deck on the north side for the entrance to the Nature Research Center.

View the directions on Google Maps:

<https://goo.gl/maps/8n5vaML5F942>



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