

UNCW's Center for Marine Science supports coastal and marine sciences through research.



UNCW has global impact

Top-ranked university's research leads to more sustainable relationship with oceans

Scholars at the University of North Carolina Wilmington are conducting research of regional and global significance, including the effects of rising ocean waters and the continuous movement of shorelines; the causes of marine mammal stranding; the creation of sustainable fisheries and more.

> Oyster research

Building a sustainable shellfish aquaculture industry is a paramount objective for UNCW's Shellfish Hatchery. Research conducted at the hatchery contributes to the state's efforts to restore declining populations of ecological and commercial shellfish. Current research focuses on issues constraining the development of shellfish aquaculture industry, including the selective breeding of oysters for superior growth and survival; the investigation of best practices for the cultivation of sunray venus clams and bay scallops; and the evaluation of the effects of triploidy on performance.

> North Carolina shellfish siting tool

UNCW researchers developed an interactive tool for the N.C. coastline that aids in site selection for new or expanding

shellfish operations. The tool is designed to help potential shellfish growers determine site feasibility and identify potential risks and long-term suitability. It provides data related to salinity, bottom type, depth soundings, shellfish growing area classifications, boat access areas, surrounding land cover and current shellfish growing operations.

> From the coastline to the stars

Physics and physical oceanography Associate Professor Dylan McNamara is leading an interdisciplinary team of researchers from seven universities – from geomorphologists to economists – to investigate ways public policies will affect both economic decisions and the coastal environment. The results of the team's research will provide insight into how real estate markets respond to complex changes in environmental conditions, public policies, scientific knowledge, and individual attitudes and values.

Professor John Morrison, also in the Department of Physics and Physical Oceanography, and a team of international scientists have developed a one-of-a-kind ocean color nanosatellite, or CubeSat, that can enhance scientists' ability to observe the ocean. The CubeSat, the size of a loaf of bread, provides a unique

vantage point to observe the ocean's surface, alerting researchers to expansion of harmful algal blooms and potential fishing zones, among other things. The project will enhance scientists' ability to observe ocean color while increasing worldwide accessibility to the data. The group is working with representatives from NASA's Goddard Space Flight Center, Cloudland Instruments and Clyde Space.

> Coastal Ocean Research and Monitoring Program

The Coastal Ocean Research and Monitoring Program (www.cormp.org) operates nine oceanographic and marine weather platforms in the coastal waters off North and South Carolina. Through partnerships, CORMP helps diverse stakeholders prepare for and respond to both natural and man-made risks to economic growth, prosperity and survivability, and ensure a safe, productive, resilient ocean and coastal zone. Lynn Leonard, professor in the Department of Earth and Ocean Sciences, leads the program.

> Research facilities

Many of these compelling discoveries take place at UNCW's MARBIONC, the Center for Marine Science, the Finfish Aquaculture Facility and the Shellfish Research Hatchery, North Carolina's only shellfish research hatchery.

MARBIONC develops and markets new products and technologies derived from living organisms found in the sea. The facility also provides commercial research laboratories for companies focusing on biotechnology, analytical services, environmental sciences, translational science, and early-stage pharmaceutical research and development. The accelerator is currently affiliated with 11 partners, including SeaTox Research Inc., a company that developed toxin tests for seafood.

The Center for Marine Science supports and promotes coastal and marine science through research, outreach and service, and teaching. The CMS's outreach involves the Cape Fear River Program, N.C. SeaGrant, the National Estuarine Research Reserve, regional aquaculture growers, local governments, industries and nonprofits.

Interested in working with MARBIONC?
Visit www.uncw.edu/marbionc.

> Global collaboration

UNCW, the state's coastal university, is internationally recognized for excellence in coastal and marine sciences. Its location, with convenient access to the Atlantic Ocean, Intracoastal Waterway and coastal habitats, is ideally suited to experiential learning and field research.

To leverage UNCW's expertise and broaden collaborative research, the university convened its first Global Marine Summit in fall 2017. International scientists, policymakers and industry leaders focused on developing progressive solutions for global marine science issues and improving the economic climate of coastal regions around the world. Information from the summit will be used to improve and sustain coastal economies and to partner with local, state and federal agencies tasked with setting policies.

UNCW has been at the forefront of coastal and marine science research and education for more than 30 years, continuously improving coastal resilience and economic sustainability.

"North Carolina's 'blue economy' is largely dependent on the responsible management and stewardship of its marine resources," said College of Arts and Sciences Dean Aswani Volety. "Scientists and researchers from UNCW's marine science programs are working to develop solutions to the very complex environmental and economic issues facing our region and other coastal communities around the world."

Marine biology graduate students tend the shellfish along the Intracoastal Waterway where UNCW's Shellfish Hatchery grows its research specimens.

