Welcome to Rutgers’ Department of Marine and Coastal Science (DMCS) where we are exploring and discovering critical processes on this ocean planet. Faculty and students are working all over the world spanning from the tropical to polar seas. Our undergraduate and graduate students are critical members of our research teams. Rutgers marine science students anchor expeditions across the globe having traveled to all seven continents. Students are working in laboratories using state of the art tools and they are joining research expeditions all over the world. The Department is internationally recognized for science leadership and are leaders in providing cutting edge hands-on education experiences.

Our students gain hands-on experiences spanning from analytical skills, robotics, and computer modeling. Students move into a diverse range of private and government jobs. Rutgers undergraduates made history in 2009 by piloting the first autonomous underwater robot across an ocean basin. From 2013 to 2016 undergraduates helped circumnavigate an ocean basin, another first. Come join the Rutgers team which has been a cradle for modern marine science, modern technology, and sustainable practices for over a century.

RUTGERS MARINE SCIENCE AND EDUCATION AT A GLANCE:
- Has been ranked by Thompson Reuters as one of the top five marine research institutions in the world. College Values Online ranks Rutgers Marine Science number twelve as a best value for the money for earning a Bachelor’s Marine Science degree in the nation.
- Rutgers marine faculty are world renowned. Faculty are highly decorated with the highest honors and awards. The research program generates tens of millions of dollars each year.
- Rutgers undergraduates with the faculty have conducted research all over the world’s ocean and travel throughout the United States, the Arctic, Antarctica, Europe, South America, Asia, Pacific Islands, Africa and Australia.
- Rutgers undergraduates made history navigating an underwater robot from New Jersey to Spain. This was recognized by the White House and the government of Spain. Students made history circumnavigating the South Atlantic Ocean from South Africa to Brazil and then back to Africa. Come join the next group of students now navigating a robot through the Indian Ocean.
- Rutgers research is helping to keep New Jersey waters clean and safe, helping build thriving aquaculture industries, and keep world fisheries healthy.
- New education programs that can fast track professional degrees and certificates are giving students an advantage in employment upon graduation.

READ SOME TESTIMONIALS FROM STUDENTS:
The US Research vessel Laurence Gould surveying the West Antarctic Peninsula which is exhibiting dramatic change over the last few decades. Students are annual members of the field team for these expeditions.
COLLIN DOBSON

“I chose to attend Rutgers University after touring the Department of Marine and Coastal Sciences and witnessing all of the awesome research that was happening there. At the time I had hoped to eventually get involved with some research but figured it wouldn’t be possible until the latter part of my undergraduate career. The opportunities for undergraduates of the Rutgers University Marine Science Department are practically limitless. From my very first day I was involved with hands-on, practical, and real scientific projects. I am extremely grateful for all the experience and knowledge that I gained as a member of Rutgers Marine Science has fully prepared me for the next step in my career.”

KATIE TODOROFF

“In December of 2014, I embarked on my journey to Palmer Station, Antarctica where my team provided an unprecedented view of the Palmer ecosystem. As a culmination of my research in Antarctica, I was a lead author on my second research paper and was given the opportunity to go to Washington D.C. to present my work at the MTS/IEEE Oceans ’15 conference. If you are looking for a college to meet extraordinary staff and students, gain a plethora of knowledge and open your mind, Rutgers’s is the place to attend. Department of Marine and Coastal Science is a welcoming place where you can find a quiet location to study, or walk around and witness incredible research being conducted everywhere. The oceanography classes are small and personable too, and are taught by professors who are attentive to the needs of every student. The research endeavors that Rutgers offers to students are limitless but they have one common goal: to study and understand the great unknown of earth, our oceans.”

JIM FLORENDINO

“Choosing Rutgers was undoubtedly the best decision I made as an undergraduate. While a student at Rutgers, I have had every opportunity to pursue my interests and develop my skills as a scientist. Many of the courses offered involve getting students out of the classroom to work with real equipment and methods in the field, and there are plenty of opportunities to work or volunteer in a lab. During my time at Rutgers, I have caught and tagged shad in the Raritan River, spent two weeks at the Haskin Shellfish Research Laboratory in Port Norris, NJ growing oysters for a class in aquaculture, taken a training course in the operation of unmanned underwater gliders, and even worked as a field team leader in Antarctica. Rutgers allowed me to find what I loved to do and provided access to extensive resources and faculty that enabled me to pursue my interests beyond what I would have thought possible.”
Undergraduates are frequently joining international experiments. This is a picture of international experiments conducted in Norway, where Rutgers faculty and students are core members.
The Marine Science curriculum emphasizes improvement of oral and written communication skills and in accessing, reading, and understanding of the sciences. Many of the courses include hands-on, learning in the laboratory or in field. Students complete an experience-based education. The program includes the following options allowing students to choose topical areas in which they are interested.

**MARINE BIOLOGY/BIOLOGICAL OCEANOGRAPHY**
This option prepares students for professional opportunities or graduate study in oceanography or the biological sciences. Concentrations within the option permit students to focus on different levels of biological organization: at the molecular, cellular, organismic, community, or ecosystem level. Depending on their choice of electives, students also may fulfill the requirements of a major in the biological sciences or ecology and natural resources.

**MARINE CHEMISTRY**
This option prepares students for professional opportunities or graduate study in oceanography or chemistry. Depending on their choice of electives, students also may fulfill the requirements of a major in chemistry.

**PHYSICAL OCEANOGRAPHY**
This option prepares students for graduate study in physical oceanography, meteorology, fluid dynamics, or a related field, as well as immediate employment in environmental agencies or consulting firms and technical positions in marine sciences. Students in SAS may also wish to consider the major in physics with the Ocean Physics option.

**MARINE GEOLOGY**
This option prepares students for graduate study in oceanography, geology, environmental science, or an allied field, as well as for immediate employment. Depending on their choice of electives, students also may fulfill the requirements of a major in geological sciences.

**DIRECTED MARINE STUDIES**
*This option is only available to SEBS Students*
This option prepares students for professional opportunities in oceanography, the biological sciences, and related fields. The course of study most closely resembles the marine biology option, but includes a requirement to complete one of eight SEBS or SAS minors or certificate programs most relevant to finding employment following graduation.

The Department also offers a range of minors and professional training opportunities. Some of the unique education opportunities include:
Rutgers Fisheries Minor is focused on issues associated with fisheries. The minor provides deeper understanding of the ecology of fish, humans, and international policies/regulation/law. The goal is to provide an understanding of fisheries as a complex system setting students up for a range of careers.

Rutgers Masters of Operational Oceanography is focused on training students for the blue economy that requires information to support decisions that enable maritime sector industries. These jobs require a student to be well-versed in emerging technologies and use a diverse observations and forecasts. This is a new 4+1 program where students can enroll in accelerated 14-month Master degree after completing their undergraduate degree.

Rutgers provides a wide range of the facilities that are used by the undergraduates.

THE RUTGERS UNIVERSITY MARINE FIELD STATION (RUMFS)
RUMFS is a research lab situated in the Mullica River-Great Bay estuary which is one of the most pristine estuaries on the east coast. The Mullica River-Great Bay estuary is an exceptionally productive estuarine system for shellfish and finfish and has been a focus of estuarine studies since the late 1890s. Many undergraduates spend portions of their student’s careers down at the field station.

THE HASKIN SHELLFISH RESEARCH LABORATORY (HSRL)
HSRL supports fisheries and aquaculture research. The station has a century of experience working with state and federal agencies and the fisheries and aquaculture communities in New Jersey. It is a unique student resource for Rutgers support and an international leader in aquaculture research.

RUTGERS UNIVERSITY CENTER OF OCEAN OBSERVING LEADERSHIP (RU COOL)
RU COOL is a world leader in the development, deployment and operation of ocean observatories. RU COOL manages an extensive satellite system, the world’s largest high frequency radar network, and a fleet of underwater robots. The live streaming data is integrated into undergraduate class room teaching.
RUTGERS UNIVERSITY FISHERIES CENTER

Rutgers fisheries scientists are improving our understanding of sustainable management of wild fisheries and aquaculture. Their focus includes locally important species like summer flounder, black sea bass, and oysters as well as global analysis of fishery responses to threats such as climate change and overfishing. Their work involves close collaboration with commercial and recreational fishermen and fishery managers.

Many Rutgers University-wide initiatives are closely affiliated with the Marine Sciences: Undergraduates benefit from these programs with all offering a range of resources spanning research opportunities, paid internships, and unique team efforts spanning from these initiatives including:

Rutgers Energy Institute is focused on fostering both fundamental and applied scientific research and policy research to develop sustainable energy production compatible with economic growth and environmental vitality. Students benefit from the Institute’s focus on the education of undergraduate and graduate students; pioneering research; outreach to the community to share information and engage the public; and policy advice to government, business, and civic leaders who require current knowledge about energy use, alternatives, and innovations to guide decision-making and public planning.

Rutgers Institute of Earth, Ocean and Atmospheric Sciences unites faculty, researchers, and graduate students studying Earth’s interior, continents, oceans, atmosphere, and biosphere, their interactions through Earth history, and their effects on human civilization today. From the Jersey Shore to ancient Australia, from deep-sea vents to the open ocean, from the Antarctic to the asteroid belt, EOAS research spans worlds.

Rutgers Sustainable Raritan River Initiative is a collaborative effort of the schools and departments on the university’s New Brunswick campus. The Initiative recognizes the critical value of the Raritan and its environs to the social, economic and ecological integrity of the region that Rutgers calls home. The Initiative coordinates many activities and opportunities that often have students exploring, researching, and traveling throughout the local Raritan watershed.

Come join our family and open yourself to a world of adventure and lots of awesome nerdy science. Listen to student testimonials through this student created video marine.rutgers.edu/main/why-study-at-rutgers. Also given the faculty are focused on communicating the importance of the science, check some of the feature length movies made about Rutgers marine science faculty. Check out the films Antarctic Edge 70°South, Atlantic Crossing: A Robot’s Daring Mission (marine.rutgers.edu).
Rutgers researchers collecting the samples using SCUBA.
What About Financial Aid? Rutgers University offers a comprehensive program of federal and state grants, loans, and work-study jobs, based on financial need and scholastic achievement, see studentaid.rutgers.edu

Why Rutgers? Marine Science at Rutgers delivers a small school feel with students working in faculty labs but has the benefits of a large research University with a wide range of facilities and research labs with which to work and learn.

JOIN THE RICH HISTORY OF MARINE SCIENCES AT RUTGERS

Marine science at Rutgers has a rich century-long legacy and is a cradle for modern marine science and conservation. Rutgers scientist Julius Nelson, at the turn of the 20th century, lead the nation to move away from unregulated shellfish “harvesting” to sustainable yields based on scientific knowledge. In the 1950’s Rutgers marine scientists figured the cause (disease) and then reversed the declines in oysters. This effort saved the eastern seaboard oyster fishery from the spreading disease. This legacy continues today with a modern facility that has produced the first complete sequence of an oyster genome. The Rutgers University Marine Field Station opened in 1972. Over the next 5 decades Tuckerton has become a home of fisheries research documenting the shifts of Mid-Atlantic fish associated with a warming ocean. In 1988 when Dr. Frederick Grassle formed Rutgers Institute and Department of Marine and Coastal Sciences with a vision of building modern capability to enable ocean exploration. Fred’s efforts lead to the birth of modern ocean observatories. Faculty have developed global leadership in developing new approaches to sustain ocean exploration. A modern Marine Science Building on New Brunswick campus was opened in 1993 and Rutgers invested in a cohort of new Rutgers faculty. The Rutgers program has since then grown dramatically and faculty have developed global regional models for ocean forecasting, established integrated ocean observing networks that are being emulated globally, established one of the world’s leading marine microbiology research consortium, is developing paleochemistry techniques to understand Earth’s past, is leading the ability to map sea level change and associated societal impacts, innovating new approaches to allow for sustainable and economic vital fisheries. Recent investments in new faculty ensures that this legacy will continue to thrive in the coming years.
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