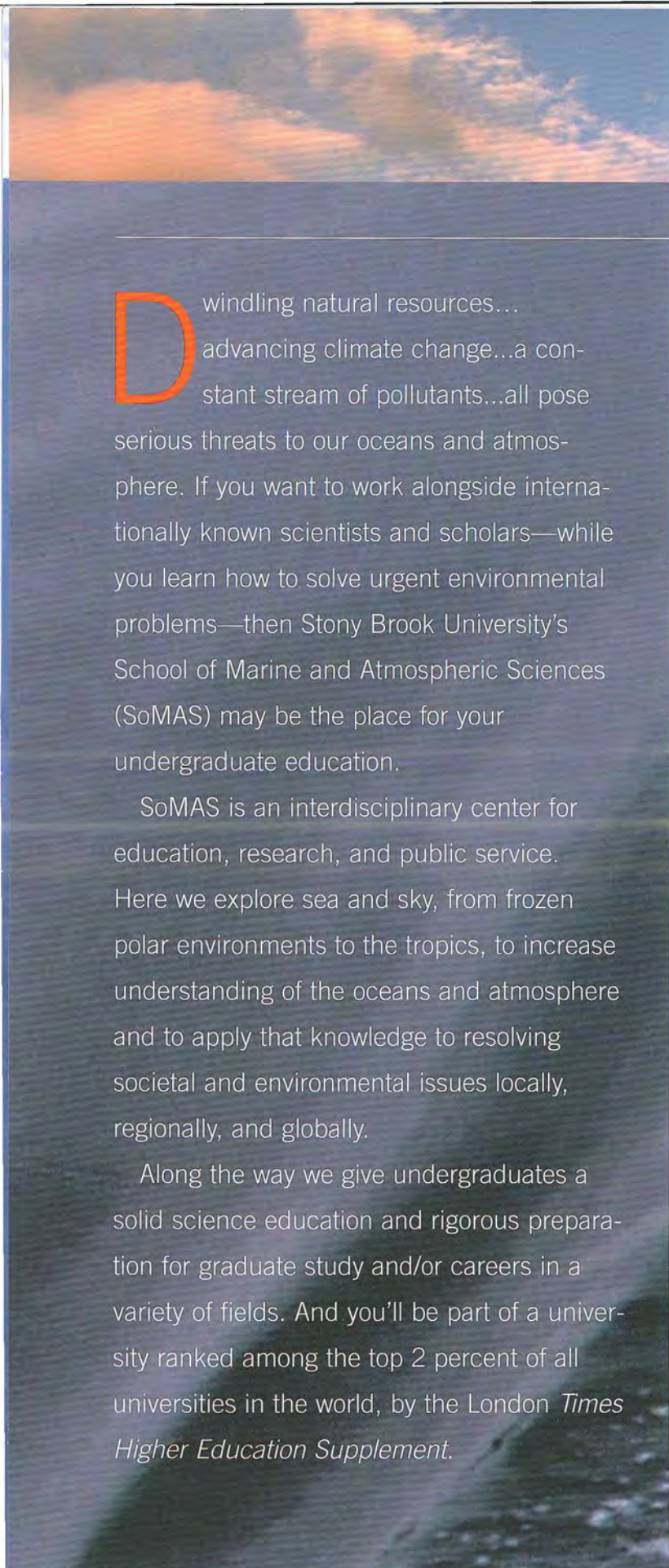


STONY BROOK UNIVERSITY

SCHOOL OF
MARINE AND
ATMOSPHERIC
SCIENCES





DEAN'S MESSAGE

Dwindling natural resources...
advancing climate change...a constant stream of pollutants...all pose serious threats to our oceans and atmosphere. If you want to work alongside internationally known scientists and scholars—while you learn how to solve urgent environmental problems—then Stony Brook University's School of Marine and Atmospheric Sciences (SoMAS) may be the place for your undergraduate education.

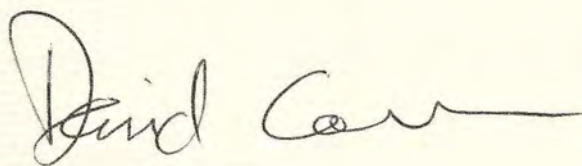
SoMAS is an interdisciplinary center for education, research, and public service. Here we explore sea and sky, from frozen polar environments to the tropics, to increase understanding of the oceans and atmosphere and to apply that knowledge to resolving societal and environmental issues locally, regionally, and globally.

Along the way we give undergraduates a solid science education and rigorous preparation for graduate study and/or careers in a variety of fields. And you'll be part of a university ranked among the top 2 percent of all universities in the world, by the London *Times Higher Education Supplement*.

Welcome to SoMAS! Many opportunities await you here.

As part of our curriculum, SoMAS students engage in field and laboratory work that teaches the quantitative and analytical skills critical to academic and professional success. Our faculty are involved in research around the world. Undergraduates who participate in these projects often travel to remote and wonderful areas, as well as throughout the beautiful and diverse environments of the New York region.

With several hundred students (undergraduate and graduate) from 16 different nations, SoMAS is a thriving and energetic place. We encourage you to find out more about us. Visit our locations at Stony Brook and Stony Brook Southampton, or look at our Web page: www.somas.stonybrook.edu



Dr. David O. Conover

Dean and Director

School of Marine and Atmospheric Sciences



ACADEMIC PROGRAMS

SoMAS offers undergraduate majors in Atmospheric and Oceanic Sciences, Environmental Studies, Marine Sciences, and Marine Vertebrate Biology.

B.S. in Atmospheric and Oceanic Sciences: Provides a foundation in the fundamental physical processes through which the ocean and atmosphere interact. Two tracks of study are available. The Atmospheric track will prepare you for a career as a weather forecaster or for graduate study. You'll learn how to use computer modeling to examine weather phenomena and processes. The Oceanic track is for students who want to study such phenomena as air-sea interaction, ocean circulation, currents, and waves. This major is available at the Stony Brook campus only.

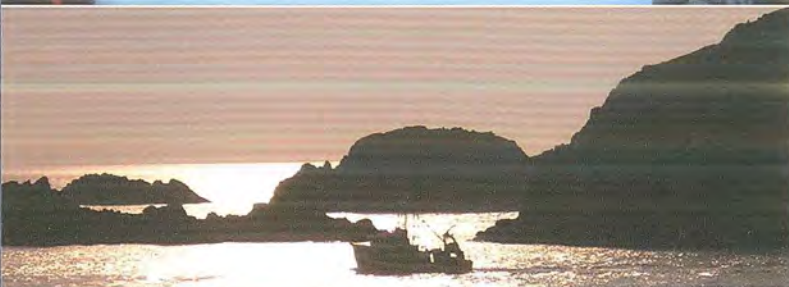
B.A. in Environmental Studies: There are no easy answers to complex environmental problems. We give you the broad background needed to understand our world's most urgent challenges, with plenty of opportunity for focused study in your particular area of interest. Through this interdisciplinary and integrated program, students delve into the ethical, legal, political, scientific, and socioeconomic perspectives that define and surround environmental issues. If you're interested in environmental conservation, environmental law, science journalism, or waste management (to name just a few of the areas covered), this major is for you. Available at Stony Brook and Stony Brook Southampton campuses.

B.S. in Marine Sciences: Marine sciences is a highly interdisciplinary field that requires a strong foundation in basic science. This major gives students a comprehensive background in biology, as well as in the physics and chemistry of the ocean. Upper-division electives provide a deeper understanding of particular organisms (algae, fish, marine invertebrates, marine mammals, and micro-organisms) and of habitats (barrier islands, dunes, estuaries, open ocean, rocky intertidal, and salt marshes). This rigorous program is preparation for graduate study and research in marine sciences. Students take classes for this major at the Stony Brook and Stony Brook Southampton campuses. Currently the major is offered at Stony Brook.

B.S. in Marine Vertebrate Biology: This degree offers a background in basic biology, with an emphasis on marine vertebrate organisms such as birds, fish, marine mammals, sharks, and turtles. This program includes more intensive training in zoology than the Marine Sciences degree. Students take classes for this major at the Stony Brook and Stony Brook Southampton classes. Currently the major is offered at Stony Brook.

SoMAS also offers undergraduate minors in Marine Sciences and Environmental Studies, and graduate degrees (M.S. and Ph.D.) in Marine and Atmospheric Sciences.





RESEARCH OPPORTUNITIES

Hands-on field and laboratory experience is an important part of being a SoMAS undergraduate. A typical morning might find you aboard our 80-foot research vessel *Seawolf*—collecting samples of water, sediments, and animals from local marine habitats—then bringing them back to the lab to do experiments. Or you might probe the secrets of the seafloor, using sophisticated echosonar technology to locate colonial shipwrecks at the bottom of New York Harbor.

Some of the research projects in which our students take an active part:

- Causes and consequences of shellfish disease
- Development of real-time weather prediction systems
- The role of rising sea level in New York's shrinking salt marshes
- Using paleoceanography to reconstruct climate changes during the past 10,000 years
- Storm-related and tidal surges
- Population biology of local marine fishes

TRAVEL

Our locations at the Stony Brook and Stony Brook Southampton campuses make us ideally suited to studying New York's diverse environments. But your studies at SoMAS can take you even further afield, to places like:

- Jamaica's coral reefs, as part of our popular Tropical Marine Ecology course
- Tanzania's Lake Victoria, where you'll examine the interaction between the environment and human health

Our students also participate in exciting programs like:

- Sailing a tall ship and learning maritime policy through the Sea Education Association
- REU (Research Experience for Undergraduates) at Alabama's Dauphin Island Sea Lab, or at the University of Alaska
- National Student Exchange or study abroad

As a SoMAS undergraduate, you'll conduct field studies that help develop the quantitative and analytical skills you need to explore the natural world.



Did you check the weather report today?

Then you probably
know Katherine
Rojowsky's work.

The Atmospheric and
Oceanic Studies Major

has prepared forecasts for
the Weather Channel, advised the

Mets on being rained out, and warned golfers of possible lightning strikes on their favorite courses. She's currently doing an independent research project on major wind events related to storm surges in the New York area.

Katherine chose SoMAS for its "impressive faculty and individual attention to students." She says, "Yes, the coursework is rigorous. But the professors are eager to help you if you show genuine interest and dedication." SoMAS faculty member Brian Colle says, "Katherine is a good example of the talented, accomplished students SoMAS attracts."

She credits "amazing internships" with helping her mature as a meteorologist. At WCBS-TV, Katherine prepared weather graphics and forecasts that were broadcast to millions of viewers and used by the Weather Channel. Private forecasting companies MetroWeather and Weather 2000 Inc. asked her to make weather predictions used by film and television production companies, golf courses, and local sports teams like the Mets and Long Island Ducks.

"Once I was trained, my internship supervisors said, 'You're on your own—let's see what you can do,'" Katherine recalls. "Everything I've learned at SoMAS gave me the confidence to meet that challenge."

Katherine is writing computer programs to analyze 30 years' worth of hourly weather observations from Kennedy and LaGuardia airports. She'll use the data to research nor'easters and tropical storms associated with storm surges.

"I thought that being at SoMAS would help get me places, and I was right," Katherine says. "I've already succeeded beyond my wildest dreams."

INTERNSHIPS

Academic internships let our students put theory to practice and gain valuable real-world skills. Recent internship experiences include:

- Rehabilitating and releasing marine mammals and sea turtles for the Riverhead Foundation for Marine Research and Preservation
- Identifying and monitoring nesting sites for the Town of Southampton's piping plover protection and management program
- Using graphical weather programs and preparing forecasts for television broadcasts seen by millions of viewers

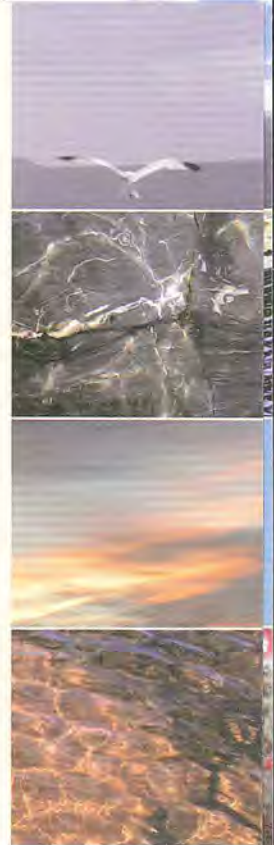
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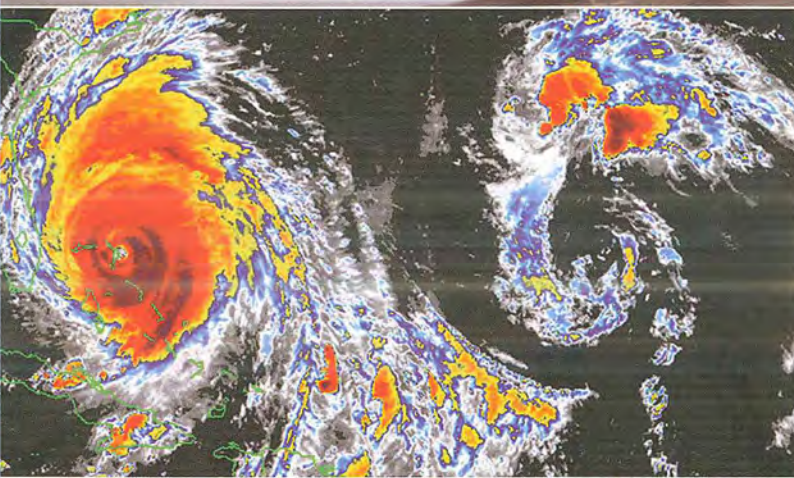
With nearly 300 student clubs on the Stony Brook and Southampton campuses, you'll be sure to find at least one that matches your interests. Or start your own! Here's a sampling of clubs SoMAS students are involved in:

Marine Science Club—Members embark on whale watches and other seafaring adventures, and program an oceanography lecture series. Last year SoMAS alum Greg Marshall, inventor of the revolutionary "Cittercam," accepted the club's invitation to speak.

Meteorology Club—This weather-enthusiast group competes in national forecasting competitions (vying for the title of "top undergraduate weather forecaster" in the nation), prepares local forecasts used by newspapers and broadcast media, and hosts speakers like Stony Brook alum and well-known meteorologist Craig Allen.

Environmental Studies Club—Adopt endangered animals, roll up your sleeves and help beautify the campus and community, plan an Earth Day celebration, or lead a recycling drive with others who want to preserve our planet.





FACILITIES

Research Vessels

Through its Marine Sciences Research Center, SoMAS operates a fleet of well-equipped research vessels. The 80-foot RV *Seawolf*, berthed in nearby Port Jefferson Harbor, carries students and faculty on extended trips for large-scale oceanographic sampling and trawling. We use the RV *Pritchard* for sampling near-shore waters around Long Island.

Southampton Marine Station

The SoMAS Southampton Marine Station, on Old Fort Pond in Shinnecock Bay, gives direct access to the Atlantic Ocean. Live marine species are housed at the station's aquarium. Vessels maintained at Southampton include the 44-foot, oceangoing RV *Paumanok*; the RV *Shinnecock* (a 35-foot platform craft); and the RV *Peconic*, a 45-foot catamaran.

Flax Pond Marine Laboratory

A pristine tidal estuary located only a few miles from campus, Flax Pond is a beautiful place of great biodiversity. It is home to a large variety of birds, plants, shellfish, diamond-back terrapins, and a marine laboratory. The Flax Pond lab supports experiments that require a 24-hour, flowing sea water environment. Wet labs and a greenhouse contain fiberglass tanks of varying dimensions, to meet the changing needs of researchers as their work progresses. The facility is used for studies of finfish, marine algae, salt marsh ecosystems, and shellfish.

Meteorological Facilities

Through our Institute for Terrestrial and Planetary Atmospheres, students have access to the most up-to-date facilities for weather analysis, forecasting, and research. The Institute has a comprehensive system (developed by UNIDATA) for ingesting and displaying such real-time data as Doppler radar, facsimile maps, lightning data, numerical weather prediction model output, satellite imagery, and surface and upper-air observations. Software used to access this data include Mcldas (process satellite information), GEMPAK (interactive system for displaying meteorological data), and WXP (meteorological calculations and display). Real-time data is also available from the Stony Brook weather station, and from the Stony Brook-Brookhaven National Laboratory polar orbiting satellite receiving station. We also have a map room for viewing weather data in print and electronic form.

Scientific data from sea and sky help us understand complex interactions between oceanic and atmospheric ecosystems.

Marine Animal Disease Laboratory

The much-publicized lobster die-off in Long Island Sound prompted creation of the Marine Disease Pathology and Research Consortium, a partnership between SoMAS, the New York State Sea Grant Institute, and the New York State Department of Environmental Conservation. SoMAS personnel provide diagnostic services for marine disease outbreaks, and the Consortium's Marine Animal Disease Laboratory is located here. Research currently underway at this lab includes gathering of real-time information on Long Island's lobster fishery, and studies of QPX (Quahog Parasite Unknown), a microscopic organism that causes disease in hard clams.

Ocean Instrument Laboratory

Provides engineering and technical support for our oceanographic research. Specific services include electronic repair, instrument and systems design, instrument calibration, and shipboard support.

IBM Supercomputer

The IBM Blue Gene supercomputer ranks among the top ten fastest computers in the world. Stony Brook's own Blue Gene—known as "New York Blue" and located at Brookhaven National Laboratory—is an incredible instrument that performs 100 trillion calculations per second. Faculty and students from our Institute for Terrestrial and Planetary Atmospheres use New York Blue for computer modeling of regional climate change.

Library Resources

Our Marine and Atmospheric Sciences Information Center is a branch of the campus library system, and offers print and electronic access to an extensive collection of materials.

SPECIAL INSTITUTES

SoMAS houses these mission-oriented institutes: the Institute for Terrestrial and Planetary Atmospheres, the Living Marine Resources Institute, the Long Island Groundwater Resource Institute, and the Waste Reduction and Management Institute.

PUBLIC SERVICE

Environmental decision-makers need the best scientific information and expertise available. SoMAS works closely with coastal businesses, elected officials at all levels of government, environmental groups, natural resource managers, and planners.

Educating the public about local marine environments is an important part of our mission. We conduct many public outreach programs, often in collaboration with schools and community organizations. Our students help organize and present such programs as the annual Ocean Science Bowl—a national competition that promotes ocean literacy in high schools—and its local counterpart, the Bay Scallop Bowl hosted each year by SoMAS.

FIND OUT MORE

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Stony Brook University

For more information about Stony Brook University's undergraduate programs and to apply online, visit www.stonybrook.edu/admissions

Stony Brook Southampton

To learn more about Stony Brook Southampton's undergraduate programs, visit www.stonybrook.edu/southampton or call (631) 632-5035.



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