MARINE BIOLOGY

The Marine Biology program provides students with a foundation in marine biological sciences that prepares them for marine biology–related careers in both the public and private sectors, and for graduate work in marine biology. Millersville University's affiliation with the Chincoteague Bay Field Station at Wallops Island, Virginia, gives students hands-on experience in marine and environmental sciences through intensive, field-based three-week summer courses and student-oriented research projects. Students participate in marine-related co-ops, internships or research experiences with faculty members to further develop their marine science skills.

DEGREES/CONCENTRATIONS

BACHELOR OF SCIENCE (B.S.)

Biology, Marine Biology Option – The Marine Biology option offers comprehensive classroom instruction and laboratory and field training in all aspects of marine biology, including the physical factors that drive ecosystems, the communities of organisms found in oceans around the world, and the biology of the fishes, invertebrates, algae and planktonic organisms that inhabit the world's oceans. On-campus courses are complemented by field courses offered at the Chincoteague Bay Field Station (CBFS) in Wallops Island, Virginia, and at other field stations throughout the world. Students are strongly encouraged and supported in completing an internship or research experience that matches their individual interests and career aspirations.

MINORS

Many students in the Marine Biology option take advantage of the opportunity to minor in Oceanography or double-major in environmental earth & ocean sciences. Additionally, many marine biology option students choose to complete a minor in chemistry or environmental chemistry.

OVERVIEW

The Marine Biology option is a challenging combination of field and lab-oriented courses in biology, marine biology and oceanography. The degree is a full B.S. in biology that includes foundation STEM courses in chemistry (at least four semesters), physics (at least two semesters) and mathematics (through calculus, plus statistics). In addition to being academically rigorous, this program includes unique and diverse hands-on learning opportunities. Field courses at CBFS engage students in a wide variety of skills and sampling techniques, including trawling, seining, collecting and identifying plankton, and deploying a CTD rosette to take water samples while recording salinity, temperature and depth.

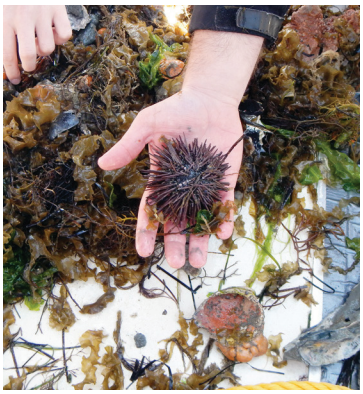
CO-OPS AND INTERNSHIPS

Students can also take advantage of the many co-ops and internships that provide them with real-world work experience in marine biological fields as well as opportunities to conduct independent research with their professors. Students who successfully complete this option are well prepared to compete for jobs and graduate school studies in all areas of biology as well as those specifically in marine biology. Students with an interest in the marine systems that support life in the oceans are encouraged to complete a minor in oceanography.

COURSES

Courses appropriate for this area can be found at www.millersville.edu/biologyhandbook.

Field courses offered at the CBFS can be found at www.cbfieldstation.org/university.



ABOUT OUR GRADUATES

At the successful completion of a B.S. in biology with the Marine Biology option, students will be capable of collecting and analyzing physical and biological marine data, set up and maintain marine aquariums, describe the key features of major marine communities, and recognize and identify common marine organisms. In addition, guided by individual interests, students will develop in-depth knowledge of one or more groups of marine organisms and key ecological processes within marine ecosystems.

PROGRAM HISTORY

Millersville University is widely recognized for its long-standing marine biology program. In 1968, together with two other PASSHE universities, MU founded what was to become the Chincoteague Bay Field Station in Wallops Island, Virginia, to support the hands-on education of marine biology students. Currently, the Marine Biology option attracts about 20 new students each year.

FACILITIES AND EQUIPMENT

Students benefit from participation in field trips and a diversity of field-intensive courses through our long-standing association with the Chincoteague Bay Field Station in Wallops Island, Virginia. The field station provides access to beaches, salt marshes, protected bays and the open ocean, as well as the use of inshore and offshore vessels; classrooms, laboratories and computer facilities; dormitories and a cafeteria.

FACULTY

Principal marine biology faculty at Millersville are world experts in their disciplines:

Dr. Dominique Didier (Biology) – ichthyologist specializing in the morphology, development and phylogeny of fish, particularly sharks and their relatives.

Dr. Carolyn Weaver (Biology) – coastal ecologist specializing in understanding how natural and anthropogenic disturbances alter coastal wetland systems.

Dr. Isaac Ligocki (Biology) - integrative behavioral biologist specializing in how environmental impacts influence social and reproductive behavior in fishes.

Oceanography faculty who work closely with marine biology students include the following:

Dr. Ajoy Kumar (Oceanography) - physical oceanographer specializing in remote sensing of the oceans and climate change.

Dr. Robert Vaillancourt (Oceanography) - biological oceanographer specializing in phytoplankton and ocean primary productivity and ocean observatories.

ALUMNI SPOTLIGHTS

Rachel Cashman '10
Assistant manager at Bimini Biological Field Station.

Marie Collins '05
Displays curator, SEA LIFE Aquarium at LEGOLAND California Resort.

Justin Hillyard '12
Manager of the Fish Room at That Fish Place, That Pet Place, the largest fish retailer in the U.S.

Cory Shank '05
Marine biologist and coral propagation specialist at That Fish Place, That Pet Place, the largest fish retailer in the U.S.

Johanna Holm '06
Recently completed her Ph.D. in marine environmental biology at the University of Southern California. Thesis title: "The microbiome of gorgonian octocorals, Muricea, with a description of a novel, photosynthetic protistan symbiont."

Lauren Albright '08
Education coordinator at the National Aquarium in Baltimore.