Abstract

Students at UConn Marine Sciences carry out research in Biological Oceanography, Marine Chemistry, Physical Oceanography, and Marine Meteorology. Although the departments are environmentally specialized, faculty interests range from genes to ecosystems, and current students study biology, geology, meteorology, optics, and physics. Coordination with UConn’s new GeoSciences Program further benefits graduate students, currently completing a rigorous curriculum, with synergy and specialty courses covering all disciplines. Therefore, the degree contains courses relevant to nearly all graduate educational and research goals. Curriculum planning ensures that graduate classes are available for in-depth study to the graduate student disciplines, and students are urged to cross-disciplinary bridges. Coordination with UConn’s new GeoSciences Program adds further breadth. Graduate students in the Department of Marine Sciences at the University of Connecticut are positioned to exploit satellite ocean color products and coastal zone optical measurements. Ocean color becomes a part of the graduate students’ educational experience, as it is used in global climate studies and coastal zone monitoring and modeling. Modeling studies include ocean biogeochemistry and ocean physical processes, including hydrodynamic models of coastal and oceanic regions. To provide a comprehensive understanding of marine systems, interdisciplinary efforts include study of fundamental biological, chemical, and physical processes, as well as how currents and density fields respond to forcing. One way to think about the processes that drive these interactions is the flow. The ocean acts as a huge fuel tank, and energy expressed as ocean flow is one sort of fuel. One challenge to understanding and modeling the flow is the complex energy expressions and ocean flow observations. This requires an oceanographic perspective and a mathematical model to represent the flow. These findings into models that can be incorporated into numerical models to improve oceanography and ocean forecasts.

Biological Oceanography

Frequent seminars build common educational and research goals. Curriculum planning ensures that graduate classes are available for in-depth study to the graduate student disciplines, and students are urged to cross-disciplinary bridges. Coordination with UConn’s new GeoSciences Program adds further breadth. Graduate students in the Department of Marine Sciences at the University of Connecticut are positioned to exploit satellite ocean color products and coastal zone optical measurements. Ocean color becomes a part of the graduate students’ educational experience, as it is used in global climate studies and coastal zone monitoring and modeling. Modeling studies include ocean biogeochemistry and ocean physical processes, including hydrodynamic models of coastal and oceanic regions. To provide a comprehensive understanding of marine systems, interdisciplinary efforts include study of fundamental biological, chemical, and physical processes, as well as how currents and density fields respond to forcing. One way to think about the processes that drive these interactions is the flow. The ocean acts as a huge fuel tank, and energy expressed as ocean flow is one sort of fuel. One challenge to understanding and modeling the flow is the complex energy expressions and ocean flow observations. This requires an oceanographic perspective and a mathematical model to represent the flow. These findings into models that can be incorporated into numerical models to improve oceanography and ocean forecasts.

Marine Chemistry

Marine graduates study to define the biogeochemical cycles, rates, and interactions among water, atmosphere, sediment, life, Earth, and physical transport processes in the oceans, atmosphere, and the coastal environment. Students are trained in the abilities that control the chemical and physical composition of oceanic biota and the chemical reactions in seawater; the atmospheric, oceanic, and biogenic processes that interact with the marine environment; and the processes that control the fluxes of chemicals between atmosphere and the ocean, as well as economic and societal impacts.

Physical Oceanography

Physical oceanographers at UConn work to understand the physical processes that determine the circulation in the coastal ocean. Research topics include the physical dynamics of estuarine and coastal systems, as well as the currents and events that respond to winds, surface heat flux, tides, and bottom sea ice. Work in this subject areas continues and remains at the forefront of oceanographic research. Interdisciplinary efforts include study of fundamental physical, chemical, and biological processes, as well as the application of mathematical and statistical methods for the development of large-scale models. At UConn, physical oceanography studies include models of ocean-drifters, world ocean circulation, and mesoscale models of environmental phenomena.

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Interdisciplinary Education and Cross-Cutting Projects

The UConn Marine Sciences graduate program involves individually-tailored curricula that combine traditional core courses in the oceanographic sub-disciplines with interdisciplinary studies that offer unique opportunities to train students in a broad array of oceanic research. Our graduate program offers Ph.D. degrees in physical oceanography, chemical oceanography, and biological oceanography. The goal of interdisciplinary education and research training is facilitated through departmental projects, programs, and facilities.

Coastal Ocean Modeling

Researchers at UConn adapt hydrodynamic models to examine simulations and studies that can be applied to coastal oceanic systems. Researchers at UConn adapt hydrodynamic models to examine simulations and studies that can be applied to coastal oceanic systems. Researchers at UConn adapt hydrodynamic models to examine simulations and studies that can be applied to coastal oceanic systems. Researchers at UConn adapt hydrodynamic models to examine simulations and studies that can be applied to coastal oceanic systems.

Long Island Sound Integrated Coastal Observation System (LISICOS)

The goal of the LISICOS project is to develop capability to observe and predict the US ocean and coastal zone in real-time and at unprecedented timescale. The LISICOS project uses a cluster of six observing platforms that include ocean color, meteorology, and chemical components that interact with the ocean. The LISICOS project uses a cluster of six observing platforms that include ocean color, meteorology, and chemical components that interact with the ocean. The LISICOS project uses a cluster of six observing platforms that include ocean color, meteorology, and chemical components that interact with the ocean. The LISICOS project uses a cluster of six observing platforms that include ocean color, meteorology, and chemical components that interact with the ocean.

Center of Marine Molecular Analysis

In 2005, the Center of Marine Molecular Analysis (COMMA), a core, world-class facility was established within the UConn – Avery Point campus. COMMA facilities include standard molecular genetic apparatus, automated DNA sequencing, gel imaging, biotechnology, molecular biology, and instrumentation, and biotechnology research facilities, which are available at UConn’s Center for Applied Genomics and Technology, on main campus at Storrs, 40 miles from Avery Point. Marine scientists utilize the facility for their own research projects and independent of COMMA. COMMA utilizes independent analytical services to conduct specific analyses that meet the needs of its users. The COMMA facility, was established on the UConn – Avery Point campus. The COMMA facility includes the Center of Marine Molecular Analysis, a core, world-class facility that was established within the University of Connecticut – Avery Point campus. The COMMA facility includes the Center of Marine Molecular Analysis, a core, world-class facility that was established within the University of Connecticut – Avery Point campus. The COMMA facility includes the Center of Marine Molecular Analysis, a core, world-class facility that was established within the University of Connecticut – Avery Point campus. The COMMA facility includes the Center of Marine Molecular Analysis, a core, world-class facility that was established within the University of Connecticut – Avery Point campus. The COMMA facility includes the Center of Marine Molecular Analysis, a core, world-class facility that was established within the University of Connecticut – Avery Point campus. The COMMA facility includes the Center of Marine Molecular Analysis, a core, world-class facility that was established within the University of Connecticut – Avery Point campus.

Ocean Optics

UConn Marine Sciences participates in international on long-term programs in Brazil, Mexico, and other countries. Currently, more than 15 graduate students from 11 countries are enrolled in graduate studies in Marine Sciences. UConn Marine Scientists participate in international on long-term programs in Brazil, Mexico, and other countries. Currently, more than 15 graduate students from 11 countries are enrolled in graduate studies in Marine Sciences. UConn Marine Scientists participate in international on long-term programs in Brazil, Mexico, and other countries. Currently, more than 15 graduate students from 11 countries are enrolled in graduate studies in Marine Sciences. UConn Marine Scientists participate in international on long-term programs in Brazil, Mexico, and other countries. Currently, more than 15 graduate students from 11 countries are enrolled in graduate studies in Marine Sciences.