University of Maryland Center for Environmental Science
Chesapeake Biological Laboratory

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1. UMCES Chesapeake Biological Laboratory

1.1 Research Programs

Founded in 1925, the Chesapeake Biological Laboratory has long been a national leader in fisheries, environmental chemistry and toxicology, and ecosystem science and restoration ecology. The breadth of expertise among CBL faculty opens the door for research that cuts across the boundaries of traditional scientific disciplines and fosters collaboration with leading researchers within the CBL community and beyond.

Ecosystem Studies & Restoration Science

Ecological research at CBL includes the study of molecular, organismal, community, and systems ecology. This hierarchical approach to research contributes to a greater understanding of the complex factors influencing the components of coastal and aquatic systems, the mechanisms of global diversity, and the responses of ecosystems to natural and man-made changes.

One of the strengths of the ecology group at CBL is its diversity. Faculty members hail from ecological, engineering, and oceanographic backgrounds. While some faculty are involved primarily in scientific discovery, others are addressing applied environmental issues.

Environmental Chemistry & Toxicology

Understanding the fate of pollutants and their effects on terrestrial and aquatic ecosystems is a major goal of environmental toxicology. Researchers at the Chesapeake Biological

1. Solomons House

2. Beaven Hall

3. Bernie Fowler Laboratory

Laboratory focus their work in two primary areas: aquatic toxicology and environmental organic chemistry.

Aquatic Toxicology

CBL's aquatic environmental toxicology faculty study issues that relate to the chemical characteristics and fate of contaminants. The ultimate fate of a released chemical is determined by a variety of abiotic and biotic processes.

CBL toxicologists play lead roles in investigating the effects of pesticides and industrial contaminants on reptiles, amphibians, fish, and mollusks within the Chesapeake Bay watershed and other areas of the United States. Globally, their efforts include assessing causes for the decline of coral reefs.

Possessing a broad base of expertise, including molecular and biochemical toxicology, immunotoxicology, and ecological toxicology, the faculty employs both traditional and molecular methods to identify the responses of aquatic species to excess nutrients, diseases, and chemical stressors. They also are furthering the use of molecular biomarkers as early warning signs of contaminant effects among aquatic life.

Environmental Organic Chemistry

With sensitive field sampling and laboratory analytical techniques, researchers measure the flows and levels of chemicals occurring in and between the atmosphere, surface waters, sediments, soils, and biota. Experiments under well-controlled laboratory conditions support in depth field studies, with process-based mathematical models integrating the findings.

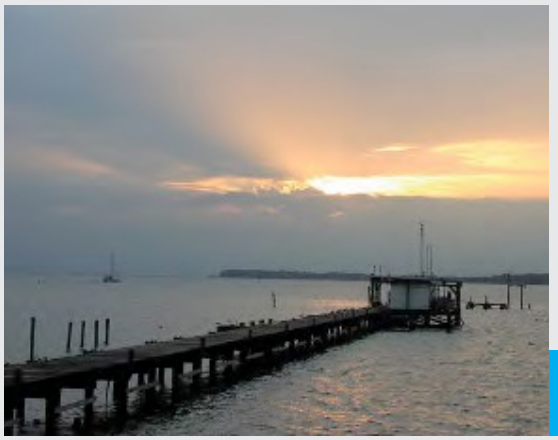
Fisheries Science

Fisheries science in Maryland began in the 1920s with pioneering oyster research by Professor R. Truitt, founder of Chesapeake Biological Laboratory (CBL). Since then, CBL fishery scientists have contributed significantly to knowledge of the Chesapeake Bay's fished species and of the habitats and ecosystems supporting them. Current endeavors continue to emphasize the Chesapeake Bay, which, as one of the world's most productive estuaries, also serves as a model for coastal and estuarine fisheries and ecosystems throughout the world.

CBL's fishery scientists apply an ecosystem-based approach to much of their research, recognizing that such considerations are vital to the sustainability of aquatic resources.

1. Saunders House


2. CBL Campus


3. Pump House on Research Pier

In addition, CBL is committed to interdisciplinary research that brings forth innovative approaches to issues facing marine fisheries.

1.2 Education & Service

CBL faculty members currently advise over 20 graduate students. The Laboratory offers tours, seminars on current research and graduate studies, and field-oriented activities for undergraduate classes.

Faculty members are dedicated to training a new generation of scientists who will continue CBL's legacy of excellence and service. Along with teaching, the faculty supervises the research of graduate students, who are supported by national fellowships, grants, and university fellowships.

CBL serves the people of Maryland with active involvement in a variety of outreach and public service programs dealing with coastal and watershed issues, regional fisheries information, and environmental planning and conservation. CBL also serves the local, state and federal legislators for the purpose of providing objective opinions and information concerning the environment. CBL's fisheries faculty is committed to using science to help solve pressing issues in fisheries management. Faculty members serve on numerous international, national, and regional advisory panels to help ensure the sustainability of the planet's aquatic resources.

1. Environmental Education Program

2. Aquatic Toxicology Research

3. Fisheries Research Center