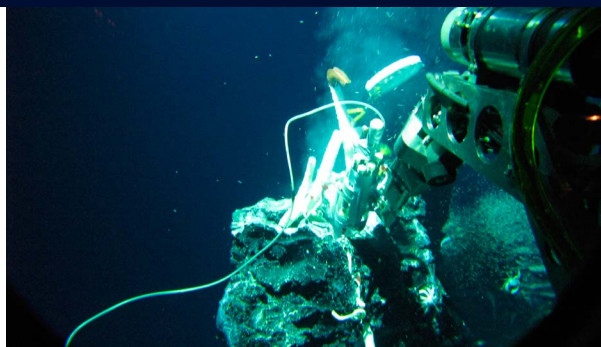


Marine Biotechnology

at Woods Hole Oceanographic Institution

Basic research at WHOI encompasses all aspects of ocean science and engineering. Our work seeks to gain a better understanding of how the ocean's physical, chemical, geological, and biological processes interact and how these processes interact with the land, atmosphere and human society. This mission includes high-level research into fundamental physiological and biochemical mechanisms of marine organisms.



Core areas of interest for WHOI at the BioMarine Conference include: pharmaceuticals, ocean energy, biofuels, cosmetics, sustainable aquaculture, ocean observing technology, and environmental monitoring.

Our understanding of the underlying properties and mechanisms of ocean biology and our long track record of working in and with the ocean gives us insights into how useful products might be developed from marine sources or how marine products might help improving the efficiency of new and existing processes in an environmentally sound and financially prudent manner.

Our scientists are currently developing materials, processes, and techniques that may have wide-ranging biotechnological applications; our engineers are constantly designing and deploying new technologies to characterize and monitor biological and biogeochemical processes in the ocean and laboratory. This marriage of basic knowledge and proven application has led to the spin-off of 14 private technology companies producing a range of engineering and biotech products, as well as more than 50 institutional partnerships worldwide. We are interested in developing new relationships with academic and commercial partners that may wish to learn more about our research, discoveries, methods, and technologies—and the opportunities that these present.

Right: WHOI has a long and proven track record of going to the bottom of the ocean to the ends of the earth to sample and study previously unknown microbes and ecosystems, including at deep-sea hydrothermal vents (top) and in Antarctica (second from top). Based on our ability to culture a wide variety of microbes and extract and analyze microbial enzymes and metabolites, WHOI researchers are also developing extensive capabilities to create new products, such as marine-derived biofuels (second from bottom) and other co-products from marine algae (bottom), as well as monitor the state of ecosystems and processes.



www.whoi.edu/biotech

About Woods Hole Oceanographic Institution

The Woods Hole Oceanographic Institution (WHOI) is a private, nonprofit institution dedicated to research and education in the ocean sciences and engineering. Founded in 1930, WHOI today has a staff of 1,000 and an operating budget of \$170 million. Its operations are funded by the U.S. Government, foundations, industry and private donations.

WHOI is distinguished by its singular focus on ocean science and by the independence with which its scientists and engineers pursue their research. This focus allows WHOI to maintain an unparalleled depth and breadth of scientific and technical talent in oceanographic research and education as well as a reputation for objective, unbiased scientific research. The Institution combines a unique complement of assets including scientists who study many of the most pressing and complex questions about the relationship between humans and the ocean, engineers who invent and deploy new tools and technology, and research vessels, deep-submergence vehicles, and instruments that provide unparalleled access to the sea.

WHOI's preeminence spans the traditional disciplines of

ocean physics, chemistry, biology, engineering, and geophysics. The Institution also operates several interdisciplinary units that focus on issues of societal concern, including climate, the coasts, marine biology and conservation science, deep ocean exploration, human health, marine policy, and fisheries.

WHOI's engineering and seagoing capabilities have historically presented unmatched tools and methods facilitating ocean science research. Today, the Institution operates three ocean-going research vessels, the R/V *Atlantis*, *Knorr*, and *Oceanus*, as part of the University-National Oceanographic Laboratory System (UNOLS) and the coastal research vessel R/V *Tioga*. WHOI is also home to the National Deep Submergence Facility (NDSF), which operates deep-sea exploration vehicles for the benefit of the entire U.S. oceanographic community and includes the U.S. Navy-owned Deep Submergence Vehicle (DSV) *Alvin* and the remotely operated vehicle (ROV) *Jason*. In addition, WHOI has developed and operates a wide range of next-generation vehicles such as the autonomous underwater vehicles (AUV) *Sentry* and *Remus*.

WHOI occupies more than 50

buildings on two campuses in the Woods Hole village of Falmouth, Massachusetts. The Village Campus houses laboratories, shops and marine facilities, including nearly 700 feet of deep-water berthing. The Quissett Campus is a major complex of laboratories and administrative offices that house such world-leading assets as the National Ocean Sciences Accelerator Mass Spectrometry Facility, the Northeast National Ion Microprobe Facility, a dedicated computed tomography (CT) scanning facility for marine mammal research, and a deep-sea sediment core repository. WHOI also hosts extensive on-site capability for the design, fabrication, and testing of oceanographic instrumentation.

As part of its educational mission, WHOI conducts a joint graduate program with the Massachusetts Institute of Technology, conferring degrees in oceanography and applied ocean science and engineering. Alumni of the MIT-WHOI Joint Program have gone on to become international leaders in oceanography and regularly return to campus as visiting scholars or for international symposia and colloquia.



Woods Hole
Oceanographic
INSTITUTION

266 Woods Hole Road, Woods Hole, MA 02543 USA
www.whoiedu/biotech

Susan K. Avery savery@whoiedu
President and Director +1 508-289-2500

Laurence P. Madin lmadin@whoiedu
Director of Research +1 508-289-2515

Christopher J. Winslow cwinslow@whoiedu
Chief Financial Officer +1 508-289-2325