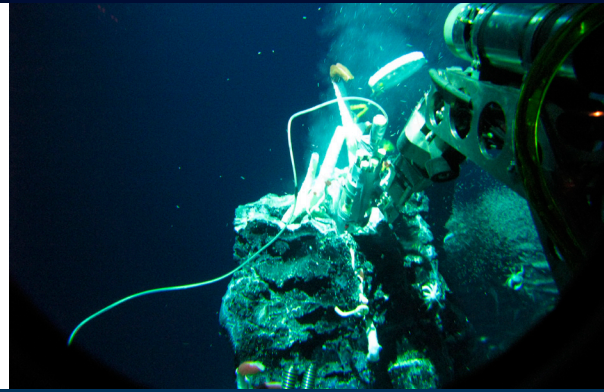


# Marine Biotechnology

## 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 affect the land, atmosphere and human society. This mission includes high-level research into the following themes.



Exploring the untapped biological and chemical diversity of Earth's final frontier: the ocean.

- Providing the pharmaceutical industry with access to novel chemicals and exotic ocean species.
- Developing science and engineering solutions for natural products discovery, biofuel production, and sustainable aquaculture.
- Investigating the open-ocean and deep-sea with the world's most comprehensive and sophisticated suite of research vehicles.
- Building the future of ocean observation systems as an Implementing Organization of the Ocean Observatories Initiative.
- Fostering spin-out ocean biotechnology and engineering companies and catalyzing exchange between academia and industry.
- Training the next generations of ocean scientists and engineers through the MIT/WHOI Joint Program since 1968.



*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](http://www.whoi.edu/biotech)

# About Woods Hole Oceanographic Institution

The Woods Hole Oceanographic Institution (WHOI) is a private, non-profit 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 \$200+ 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 creates an extraordinary depth and breadth

of knowledge and capability in oceanographic research and education along with a reputation for objective, unbiased scientific research. The Institution combines scientists studying complex questions about how ocean systems work and relate to human society, engineers who invent and deploy new tools and technology, and research vessels and undersea vehicles that provide unparalleled access to the sea.

WHOI's engineering and seagoing capabilities have historically presented innovative tools and methods for ocean science research.

The Institution operates two ocean-going research vessels, the R/V *Atlantis* and *Knorr*, and the coastal research vessel R/V *Tioga*. WHOI also operates deep-sea exploration vehicles for the U.S. oceanographic community, including the Deep Submergence Vehicle *Alvin*, the remotely operated vehicle *Jason*, and the autonomous vehicle *Sentry*.

WHOI conducts a joint PhD degree program with the Massachusetts Institute of Technology. Alumni of the MIT-WHOI Joint Program have gone on to become international leaders in oceanography.



**Woods Hole**  
**Oceanographic**  
INSTITUTION

266 Woods Hole Road, Woods Hole, MA 02543 USA

**Susan K. Avery** [savery@whoi.edu](mailto:savery@whoi.edu)  
President and Director +1 508-289-2500

**Laurence P. Madin** [lmadin@whoi.edu](mailto:lmadin@whoi.edu)  
Director of Research +1 508-289-2515

[www.whoi.edu/biotech](http://www.whoi.edu/biotech)