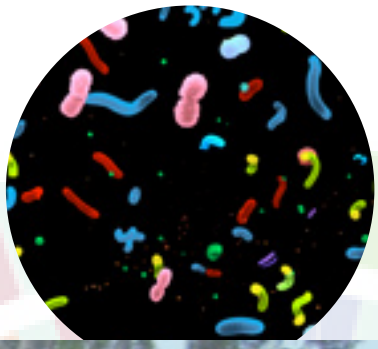
center for microbial oceanography: research and education

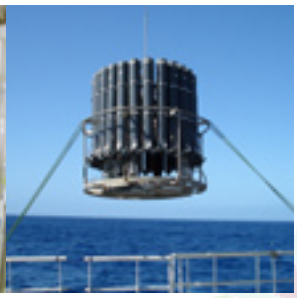
C·MORE

linking genomes to biomes



…access to the genome using modern instrumentation and research facilities.

…access to the biome using state-of-the-art research vessels.



A National Science Foundation–University of Hawai'i Partnership

Marine microorganisms dominate the ocean ecosystem and sustain planetary habitability. The scientists and educators on the C-MORE Team — women and men from around the world — are committed to a unique partnership aimed at exploring and understanding how the marine microbial world is structured and how it functions. The new knowledge that is gained will be used to improve our comprehension of the world we live in, to inform policy makers and to educate the public at large.

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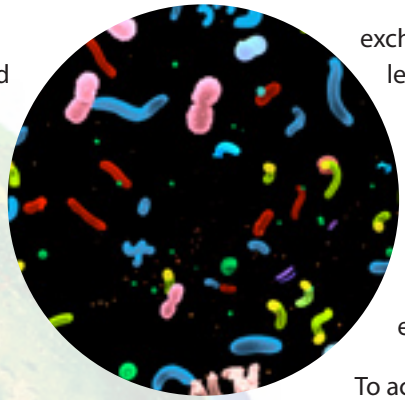
C·MORE *linking genomes to biomes*

Life on Earth originated as microbes in the sea. Over the past 3.5 to 4 billion years, microorganisms have shaped and defined Earth's biosphere, and created conditions that allowed the evolution of macroorganisms and complex biological communities including human societies.

Microorganisms are the foundation of life and are key to Earth's habitability and sustainability. In open ocean ecosystems, planktonic microbes dominate the living biomass, harvest light energy, produce organic matter and the oxygen we breathe, and facilitate the storage, transport, and turnover of key bio-elements. Their metabolic activities are responsible for the production and consumption of most of Earth's greenhouse gases. As microbiologist Louis Pasteur noted more than a century ago, "The very great is accomplished by the very small."

Recent advances in technology have revealed the vast and previously unknown genetic information contained in the contemporary marine microbial assemblage. Now there is a unique opportunity to achieve a comprehensive understanding of life in the sea and its susceptibility to environmental variability and human-induced climate change.

C-MORE Hale will become the international clearinghouse for knowledge of microbial life in the sea. It will house modern analytical instrumentation, support novel research programs, and provide a vehicle for education, outreach and knowledge exchange. Training of tomorrow's leaders in microbial oceanography and a diversification of the workforce in science, technology, engineering and mathematics — including Native Hawaiians and Pacific Islanders — are two major education goals.



To accomplish its mission, the Center brings together individuals who otherwise have little opportunity to interact. Headquartered at the University of Hawai'i at Mānoa, the interdisciplinary team includes scientists, engineers and educators from the Massachusetts Institute of Technology, Monterey Bay Aquarium Research Institute, Oregon State University, University of California - Santa Cruz, and Woods Hole Oceanographic Institution.

Funding for the Center is provided by NSF, the University of Hawai'i, the Gordon and Betty Moore Foundation, and the Agouron Institute.

cmore.soest.hawaii.edu

C-MORE is one of 17 National Science Foundation Science and Technology Centers (NSF-STC) across the nation, and the only one in Hawai'i. The NSF-STC program exists to create partnerships to study large, complex problems of great scientific and societal relevance. C-MORE's focus is on the key role that marine microorganisms play in sustaining a habitable planet from solar energy capture to food production to the sequestration of carbon dioxide.