Jim Bellingham

Woods Hole Oceanographic Institution

"Exploring the Hidden Planet"

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CIT 368

Abstract: For decades scientists have studied the ocean by going to sea on ships. Today we increasing see the ocean through the senses of our robots. Ocean science is in the midst of a revolution. We have been, at best, occasional visitors to the largest and most complex habitat on the planet. However, developments in diverse fields of technology are converging to enable a permanent presence in the ocean, not by humans, but by our robotic proxies. Mobile robotic vehicles are a reality, and are taking a variety of forms and shapes. They map the deep seafloor, find lost aircraft, make measurements beneath sea-ice in the Arctic, and patrol our coastal waters. Early successes are leading to widespread adoption. While early marine robots were tied to support ships, newer systems can operate on their own. Future systems will work in robotic teams. We are not far from a future where global networks of robots make the hidden ocean visible.

Jim Bellingham is a pioneer in the development of autonomous marine robots. He has led and participated in research expeditions around the world from the Arctic to the Antarctic. He is the founding Director of the Center of Marine Robotics at the Woods Hole Oceanographic Institution, founded the Autonomous Underwater Vehicles Laboratory at MIT, and co-founded Bluefin Robotics. He serves on numerous advisory committees and boards, including the Secretary of the Navy Advisory Panel and several National Academies studies . He Chairs the Naval Research Advisory Committee, which advises the Secretary of the Navy. Jim's awards include the Lockheed Martin Award for Ocean Science and Engineering, and the MIT Fourteenth Robert Bruce Wallace lecturer. Jim received S.B., S.M., and Ph.D. degrees in physics from the Massachusetts Institute of Technology.

Host: Michael Littman/HCRI