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“Throwing Robots in the Ocean:
An Overview of Current Research Projects Using
Robotic Platforms and Sensing”



Wednesday, December 18, 2013
12:00 – 1:30pm
Barus and Holley Room 190

Robotic systems are changing oceanography. Robotic vehicles and tools can now collect data that was not previously available with very high levels of precision. This talk will discuss some current projects underway at the Graduate School of Oceanography related to sea floor mapping and water column sensing. Our research group has developed new tools for mapping the sea floor at high resolution and combining different sensors to create hybrid data products. We have also built new platforms to collect water column data in novel ways. The common threads to this work are image processing, navigation estimation, data visualization and novel control design. Topic areas will include: millimeter level mapping of underwater archaeological sites, laser detection of sea floor hydrothermal venting, sea floor imaging with drift cameras for fisheries management, tools for the identification of oceanographic fronts and patchy plankton aggregations, and the emerging concept of remote oceanography and robot interaction.

Chris Roman specializes in underwater imaging and mapping systems. His research group works with multibeam sonars, cameras and novel vehicle platforms to document the sea floor and water column. The focus of this work is to develop new techniques to obtain sub centimeter resolution maps over large areas using multiple sensing modalities. The data products Chris and his students produce are used for marine geology, biology and archaeology. As part of this research Chris frequently participates in oceanographic research cruises around the world. He is also a founding member of the Nautilus Exploration Program (www.Nautiluslive.org), which links oceanographic research, remote telepresence and public outreach.

This presentation is part of the HCRI's Multidisciplinary Speaker Series that showcases diverse and groundbreaking research undertaken by leaders in science, technology, design, and impact of robotics on society.