Center for Environmental & Applied Fluid Mechanics

Speaker: Dana Yoerger (Department of Applied Ocean Physics and Engineering Woods Hole Oceanographic Institution - WHOI)
Title: *"Applying Lessons from Hydrothermal Vent Exploration to the Deepwater Horizon Oil Spill"*

Date: Friday, August 26, 2011
Time: 11:00 a.m.
Location: Schaffer 301 (Special Location)

The Deepwater Horizon oil spill found much of industry and academia unprepared to stop the flow of oil, study its spread throughout the Gulf, or understand the fate of the oil and its effects on the environment. This talk presents some notable exceptions, where tools and techniques developed for the exploration and detailed study of hydrothermal vents were used to study the spill. Using an isobaric, gas-tight sampler developed for vent studies, researchers obtained samples of the leaking oil and gas directly from the source before it was altered by interaction with ambient seawater. In another related study, researchers used a cabled sampling and instrument package (CTD) and an autonomous underwater vehicle (AUV) equipped with in-situ mass spectrometers to map the extent and estimate the mass flux of a deep hydrocarbon plume emanating from the damaged well. Despite the need to mobilize these studies quickly, they produced high-quality results that appeared promptly in the peer-reviewed literature.

Dr. Dana Yoerger is a Senior Scientist at the Woods Hole Oceanographic Institution and a researcher in robotics and unmanned vehicles. He supervises the research and academic program of graduate students studying oceanographic engineering through the MIT/WHOI Joint Program in the areas of control, robotics, and design. Dr. Yoerger has been a key contributor to the remotely-operated vehicle JASON; to the Autonomous Benthic Explorer known as ABE; most recently, to the autonomous underwater vehicle, SENTRY; and the hybrid remotely operated vehicle, NEREUS. Dr. Yoerger has gone to sea on over 60 oceanographic expeditions exploring the Mid-Ocean Ridge, mapping underwater seamounts and volcanoes, surveying ancient and modern shipwrecks, and studying the environmental effects of the Deepwater Horizon oil spill. He was the 2009 recipient of the Lockheed Award for Ocean Science and Engineering.