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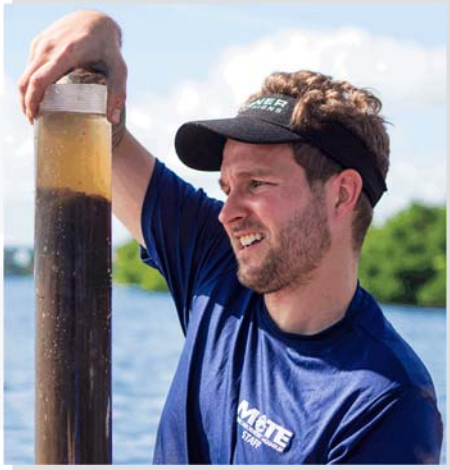
Proudly Presents

Remote monitoring of the biogeochemistry of the West Florida Shelf



Jordan Beckler, Ph.D.

Program Manager for the Ocean Technology Research Program

Mote Marine Lab
Sarasota, FL.

March 10, 2017
2:00 p.m. – 3:00 p.m.
Harbor Branch Oceanographic Institute (HBOI) - LE 247

Will be video conferenced to
Boca campus: EE 303 & OE 187
Sea Tech campus ST 250

For additional information about this lecture, please contact:
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This talk will give an overview of the activities of the Ocean Technology Program at Mote Marine Lab, with special emphasis on our efforts to adapt analytical chemistry techniques for in situ use to improve the cost and the spatial and temporal resolution of oceanographic observations and applying these techniques to better understand elemental cycling such as those for carbon and macro- and micronutrients. I will highlight several main projects: 1) Optical Phytoplankton Discriminators (OPD) are in situ visible spectrophotometers with a unique ability to filter water samples repeatedly prior to introduction into a long-pathlength absorption cell. While OPDs have been employed on Autonomous Underwater Vehicle (AUV) gliders for over a decade, recent efforts have focused on enhancing the ability of the instruments to decompose Inherent Optical Properties (IOP) from the combined absorption signal as well as their ability to perform in situ colorimetric analyses; 2) We have recently began development of appropriate analytical chemistry techniques to be employed by an in situ High Performance Liquid Chromatograph (HPLC) to fingerprint and quantify red tide toxins in situ; and 3) Elucidating the physical and biogeochemical controls on soluble organic-iron(III) and nutrient fluxes from estuarine sediments using in situ voltammetric techniques and their potential role in contributing to harmful algae blooms.

Speaker

Dr. Beckler is currently the program manager for the Ocean Technology Research Program at Mote Marine Laboratory in Sarasota, FL. He joined Mote in 2015 after completing a Ph.D. in chemical oceanography with a minor in inorganic chemistry at the Georgia Institute of Technology in 2014. His dissertation research focused on the study of metal and sulfur cycling in redox environments through both field and laboratory research, including elucidating the biogeochemical origin of soluble, organically-complexed iron (III) in sediments. At Mote, Dr. Beckler is currently working to a) understand the role of sediment-derived iron in serving as a nutrient source to Florida red tides and in enhancing the degradation of hydrocarbons; b) improve efforts to understand harmful algae bloom formation by developing optical techniques and autonomous measurement platforms; and c) develop in situ chromatographic techniques for remote detection of harmful algae bloom toxins. His oceanographic field efforts have included numerous research cruises in the Atlantic, Pacific, and Gulf of Mexico, as well as opportunities to explore hydrothermal vents at the East Pacific Rise using DSV ALVIN, and cold seeps in the Congo River deep-sea fan with a remotely operated underwater vehicle. Dr. Beckler combines his broad experience and his lab's novel technology to bring engaging, hands-on oceanographic experience to high school students and teachers through an advanced "Ocean Technology Club" in which club members design and build their own oceanographic sensors and share data in real-time on the web. Dr. Beckler was recently selected as a National of Academies Gulf Research Program fellow for his dedication to enhancing Gulf of Mexico community health through his work with harmful algae blooms.