Woods Hole Oceanographic Institution
Biology Department Seminar

Thursday, March 17, 2016
Redfield Auditorium – 12:00 Noon

Phytoplankton Modeling in the Western Gulf of Mexico: Taking Advantage of an Imaging FlowCytobot

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A ~8-year time series of hourly phytoplankton abundance has been collected using an Imaging FlowCytobot (IFCB) deployed at Port Aransas, Texas. The IFCB captures images of phytoplankton cells (10-100 µm) and the high temporal sampling frequency has permitted us to use the data in a variety of ways: early warning of HAB events, development of an individual-based model (IBM) of phytoplankton, and as a guide for metatranscriptomic analyses. Recent work has focused on bloom origins and environmental factors involved in bloom formation for *Karenia brevis*, a major HAB species for the Gulf of Mexico, and *Prorocentrum texanum*, a dinoflagellate co-occurring with another HAB species (*Dinophysis ovum*) in Texas. IBM results indicate blooms of *K. brevis* originate in the southern Gulf of Mexico while blooms of *P. texanum* originate near the coast of Louisiana. The eventual goal is to consolidate the various approaches to provide a predictive model of bloom formation for different species in the western Gulf of Mexico.