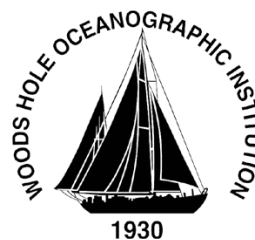


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Woods Hole Oceanographic Institution  
**Biology Department Seminar**



Monday, May 1, 2017  
Redfield Auditorium – 12:00 Noon

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**Novel insights into harmful algal bloom  
ecology through deployments of robotic  
in situ biosensors**

**Dr. Michael L. Brosnahan**

**Visiting Investigator, Biology Department,  
Woods Hole Oceanographic Institution**

Harmful algal blooms (HABs) have been studied intensively because they degrade marine habitats and produce dangerous toxins, yet basic ecological questions remain to be answered. In this presentation, I will describe my recent work examining blooms of *Alexandrium catenella*, one of the most widespread and intensively studied toxigenic HABs in the world. In situ robotic sampling has shown that cells divide, swim, produce toxin, and progress through their life cycle 2- to 4-fold more robustly than previously estimated from traditional field and laboratory approaches. These studies have also revealed novel, sexual stage-specific behaviors that promote dispersal during bloom termination. The implications of these findings are far-reaching: 1) culture-based assessments substantially underestimate key physiological rates of this and, presumably, many other HAB species; and 2) new in situ observational approaches are needed to accurately characterize the rates and behaviors that underlie bloom ecology and future negative impacts.