Oceans and Human Health Center
University of Miami • Rosenstiel School

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"Population shifts and adaptation in marine picocyanobacteria"

Abstract:

Changes in the natural light field – both in terms of photon flux density and light quality - are a common occurrence in the marine environment. Marine picocyanobacteria possess a wide range of photosynthetic pigments that harvest different wavelengths of light. Such pigment variation provides an opportunity for the community to adapt to changes in spectral composition of the natural light field through micro-evolutionary processes in which the relative abundance of strains, genotypes, or species with different pigments changes in response to changes in light quality. This would lead to a dynamic equilibrium between strains and could partially explain the apparently high genetic diversity of many phytoplankton taxa. Alternatively, such adaptation could involve physiological mechanisms that do not require changes in relative genotype frequency. In this talk, I will explore this topic as a model for understanding the mechanisms of adaptation/acclimation in phytoplankton by showing evidence that light quality is a strong selective pressure acting on the spectral signature, or spectral phenotype, of marine picocyanobacteria and then by examining data collected with my students and collaborators to explore the molecular mechanisms of adaptation/acclimation in phycoerythrin-containing picoyanobacteria and their close phylogenetic relatives.

Date: **Friday, March 28, 2008**
Time: **Noon – 1:00pm**
Location: **RSMAS SLAB Seminar Room # 103**

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