

*Fall 2009 Bioengineering Seminar Series*

## **Development of Cyanobacterial Bioreporters to Assess Nutrient Availability in Aquatic Systems**

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Due to their ubiquity in aquatic environments and their contribution to total biomass, especially in oligotrophic systems, cyanobacteria can be viewed as a proxy for primary productivity (photosynthesis) in both marine and fresh waters. We describe the development and use of cyanobacterial bioreporters to measure the bioavailability of nutrients that may constrain total photosynthesis in both lacustrine and marine systems. Issues pertaining to bioreporter performance and field applications in Lake Superior and the open ocean are discussed. Specifically, luminescent *Synechococcus* spp. and *Synechocystis* spp. bioreporters are described that allow the bioavailability of phosphorus, nitrogen and iron to be accurately measured in environmental samples.

**Where:** SSOE Seminar Room, NI 1027

**When:** Friday, October 23, 2009

**Time:** Refreshments 11:45 – 12:00 noon,  
Seminar 12:00 – 1:00 pm