

# High Intensity Light Sensing and Signal Transduction in Cyanobacteria

**Speaker: Dr. Lorraine G. van Waasbergen**  
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**Date: Friday, Sept 8, 2006, Time: 10 am - 12 noon**  
**Venue: WH 413 (CReWWMaN Lab)**

## **Abstract:**

Like all photosynthetic organisms, absorption of too much light energy, such as can occur at mid-day, can be extremely damaging to cyanobacteria. They have therefore developed a variety of acclimation mechanisms to help them cope with this stress, many of which necessitate changes in gene expression. The NbIS sensor kinase was identified by my lab as important in controlling gene expression in response to high light and related stresses in cyanobacteria. We recently identified the apparent cognate response regulator for NbIS as the response regulator RpaB. We are building a model where NbIS, in response to some aspect of light intensity, phosphorylates RpaB, which then binds to the HLR1 sequence in the promoter region of many high light regulated genes to modulate their expression.

## **Biography:**

Dr. Lorraine van Waasbergen is an Assistant Professor of Biology at the University of Texas at Arlington. Her research focuses on determining the molecular aspects involved in high intensity light stress signals and the regulation of gene expression in cyanobacteria (.blue-green algae.). She received a B.S. in Microbiology from Texas Tech University in 1987 and a Ph.D. in Marine Biology in 1993 from the Scripps Institution of Oceanography at the University of California, San Diego. She was a postdoctoral research associate at Oklahoma State University from 1993-1997 and an NSF postdoctoral research fellow at the Carnegie Institution of Washington, Dept. of Plant Biology, at Stanford from 1997-2000.