

# GSTP

## Seminar Series

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University of Wisconsin–Madison  
Genomic Sciences Training Program

*Fostering new paradigms for the  
biological sciences*

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**Thursday, January 27<sup>th</sup>, 2005**

5:00 p.m.

Room 1360, Genetics/Biotechnology Center, 425 Henry Mall

## ***Luminescent Quantum Dot Bioconjugates and Microarray Assays***

### **Abstract:**

Luminescent semiconductor nanocrystals (quantum dots) provide a promising alternative to traditional fluorescent labels. Compared to organic dyes, quantum dots can be orders of magnitude brighter and completely resistant to fading. Dependent only on their physical size, quantum dots also exhibit narrow and symmetrical emission spectra that are excitable over a broad range of wavelengths. These novel optical properties render quantum dots ideal for use in a wide array of biotechnological applications. I will present some of my work on using quantum dots as ultra-sensitive reporters for microarray experiments. Results thus far indicate that production of optically pure, water-soluble, bioconjugated quantum dots is readily achievable. Preliminary experiments with microarray feature detection with streptavidin as a carrier protein are very promising.

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