



GUEST SPEAKER:  
**PROFESSOR  
EMILY WEISS**

**NORTHWESTERN  
UNIVERSITY**

**DEPARTMENT OF  
CHEMISTRY**



# **CHEMISTRY COLLOQUIUM**

**WED., JANUARY 27, 2016, 12:00 PM**

**HUTCHISON HALL, ROOM 140, LANDER AUD.**

**University of Rochester**

**Title: Energy Transfer in Solution-Phase  
Quantum Dot-Molecule and Quantum Dot-  
Quantum Dot Assemblies**

**Abstract:** This talk will discuss strategies to study interfacial energy transfer processes in solution-phase assemblies of PbS quantum dots (QDs) and J-aggregates of cyanine dyes, and assemblies of multiple QDs, linked electrostatically or covalently. pH-dependent J-aggregate structure dictates the overlap in the spectra of the QDs and cyanines, and therefore the probability of energy transfer. QD-QD energy transfer can be accelerated (with time constants  $<200$  ps) by chemical cross-linking. The goal is to design a system where energy transfer out-competes biexciton decay and therefore achieve space-separated multiple exciton generation.

**Host: Professor Todd Krauss, email: tkrauss@UR.Rochester.edu**