

## MATERIALS SCIENCE COLLOQUIUM

SPEAKER: PAUL FUOSS  
Materials Science Division

TITLE: Reinventing X-Ray Science: New X-Ray Sources, Optics and Detectors

DATE: Thursday, May 3, 2007

TIME: 11:00 a.m.

PLACE: Building 212, Room A-157

HOST: Maria Iavarone

Refreshments will be available at 10:45 a.m.

### Abstract:

LCLS, the first hard x-ray free electron laser, is scheduled to start operation at the Stanford Linear Accelerator Center in the spring of 2009. LCLS will have an x-ray pulse length of less than 200 femtoseconds and a peak brightness that is eight orders of magnitude higher than the Advanced Photon Source. The LCLS will extend x-ray science into totally new regimes and successful experiments will require careful rethinking and often reinvention of current techniques. Using the Sub-Picosecond Photon Source at SLAC, we have been developing new x-ray techniques and instrumentation to support LCLS experiments. I will discuss our SPPS scientific results and technical developments, and how they can be extended to future LCLS experiments.