

CORE-CM SEMINAR
Michigan State University – Department of Chemistry
and Department of Physics and Astronomy

Jim Freericks
Professor of Physics and McDevitt Chair
Georgetown University

**Time-resolved photoemission spectroscopy in charge-density-
wave insulators and superconductors**

In this talk, I will develop the theory for describing ultrafast pump/probe photoelectron spectroscopy in the normal state and in ordered phases. Particular attention will be paid to understanding transient effects that appear in these systems such as the closing of a spectral gap in the presence of a large order parameter, or the excitation of Higgs mode oscillations via nonlinear coupling to a large electric field. Comparison of the theory to experiment will be made wherever possible. We will conclude with some interesting observations and new directions including questions related to how electrons in solids are excited during the pump and how they relax afterwards.

Thursday, Nov. 12, 2015
12:00 NOON
Room 1400 – Biomedical & Physical Sciences
Professor Phillip Duxbury – Host