



SACRAMENTO STATE

Department of Physics & Astronomy Spring 2009

## ***Physics Colloquium Series***

### ***“Magnetism and Optical Properties of Doped Semiconductors”***

*I will be discussing two topics of research with which I am involved; materials science research of magnetic semiconductors and terahertz (THz) spectroscopy. The overarching theme is a study of dopants in semiconductors. The classic example of a semiconductor is silicon, but silicon on its own is a boring material. When you intentionally add a small number of other atoms to Si, this is called doping it. These dopants can dramatically alter the material's optical, electronic and magnetic properties. I will discuss how we approach the problem of making a semiconductor "magnetic" and why this is an exciting current field of research. Furthermore I will discuss THz spectroscopy methods which are used to study the unique electrodynamical properties of doped semiconductors.*

***Erik Helgren***

***CSU East Bay, Department of Physics***

**Thursday, March 19, 2009**

**4:00-5:20 PM - MND 1015**

**Open & Free to all Students, Faculty & Public**