



## Hyperspectral Target Detection Enhancement Through Radiometric Signature Modeling

**Michael T. Eismann**

Hyperspectral imaging is an emerging remote sensing technology with widespread civilian, commercial, and defense applications. The central attribute of hyperspectral imaging is the ability to detect, classify, and identify materials in a remote scene based on their material composition through unique spectral reflectance, transmission, and emissivity features. Unfortunately, the performance of algorithms to perform these functions is often limited by the variability of remotely sensed target signatures due to uncertainties in atmospheric and environmental influences, and the difficulty in compensating for these effects. This seminar explores how radiometric models can be used to accommodate this inherent signature variability to enhance target detection and change detection performance. The seminar begins with an examination of the reflective imaging geometry in the visible through shortwave infrared spectral band, but ultimately focuses on the standoff, emissive imaging geometry in the longwave infrared band.

**4PM, WEDNESDAY, APRIL 9, 2014**

**Carlson Auditorium, Center for Imaging Science (Bldg. 76)**