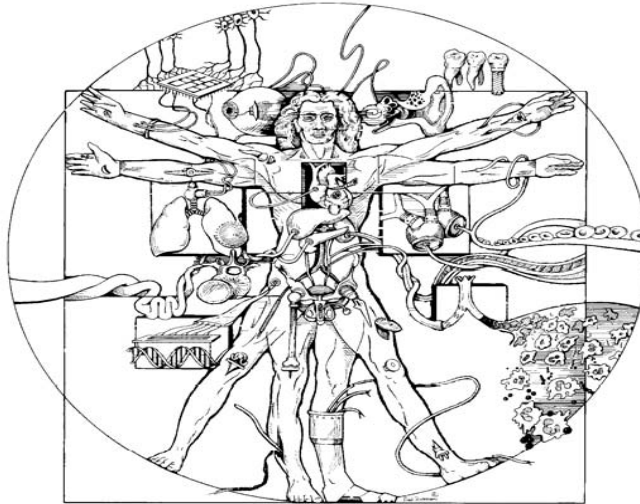


# Biomedical Engineering Seminar



**Biomedical Engineering is proud to announce the  
Doctoral Defense of  
Edward DeHoog  
The University of Arizona**

## “Design of Multi Modality Fundus Cameras”

**Abstract:** A fundus camera a complex optical system that makes use of the principle of reflex free indirect ophthalmoscopy to image the retina. Despite being in existence as early as 1900's, little has changed in the design of a fundus camera and there is minimal information about the design principles utilized. Parameters and specifications involved in the design of fundus camera are determined and their affect on system performance are discussed. Fundus cameras incorporating different design forms are modeled and evaluated based on design parameters to determine the effectiveness of each design strategy. By determining the design principles involved in the fundus camera, new cameras can be designed to include specific imaging modalities such as optical coherence tomography, imaging spectroscopy and imaging polarimetry to gather additional information about properties and structure of the retina. Design principles utilized to incorporate such modalities into fundus camera systems are discussed. The design, implementation and testing of a snapshot polarimeter fundus camera is demonstrated.

**Thursday, December 4th, 2008**

**10:00 am**

**Keating 103**

Host: James Schwiegerling (621-8688)

*Persons with a disability may request a reasonable accommodation by contacting the Disability Resource Center at 621-3268 (V/TTY). Requests should be made as early as possible to allow time to arrange the accommodation*