



# PHYSICS AND ASTRONOMY COLLOQUIUM

**Dr. Jacob Levman**

University of Oxford

## **“MRI in Breast Cancer and Stroke”**

### Abstract

Breast cancer imaging plays an important role in the diagnosis, pre-operative planning, treatment monitoring and screening of the disease. This talk will discuss the role of magnetic resonance imaging (MRI) in breast cancer and its potential towards improving survival rates. Research avenues presented will include: acquiring measurements indicative of malignancy, contrast agent diffusion, evaluating disease detection technologies and machine learning. Research on imaging tissue acidity (pH) with MRI will be presented with a focus on its application in stroke, followed by a discussion of its potential in breast cancer imaging. Detection and characterization of pre-invasive cancers can lead to major improvements in survival as these tumours are typically treatable. The potential of several presented research avenues towards detecting and characterizing early stage pre-invasive cancers will be presented. Future directions in breast imaging research as well as the potential for translation of the presented technologies towards different types of cancer will also be addressed.

**Tuesday, February 25, 2014**

**2:30 p.m.**

**Engineering & Computer Science Building**

**Room 116**