



**Western**  
The Brain and  
Mind Institute

## Visiting Speaker

### **Michelle Moerel**

Maastricht Centre for System Biology

## “An ultra-high field fMRI exploration of the human auditory cortex”

The layers of the neocortex each have a unique anatomical connectivity and functional role. Their exploration in the human brain, however, has been severely restricted by the limited spatial resolution of non-invasive measurement techniques. We exploited the sensitivity and specificity of ultra-high field fMRI at 7 Tesla to investigate responses to natural sounds at deep, middle and superficial cortical depths of the human auditory cortex. We compared the performance of a T2\*w (GE-EPI) to a T2w (3D GRASE) fMRI dataset, and observed that while encoding and decoding analyses profited from the coverage and sensitivity of GE-EPI, the 3D GRASE dataset achieved higher specificity in topographic maps. We next examined sound processing throughout the depth of primary (PAC) and non-primary auditory cortex, and results suggest that a relevant transformation in sound processing takes place between middle and superficial PAC possibly serving as a first computational step towards sound abstraction.

**Date:** Monday, September 25, 2017

**Time:** 11:00 am

**Location:** Fisher Room,  
Robarts Research Institute

*If you require information in an alternate format or if any other arrangements can make this event accessible to you, please contact Denise Soanes at [dsoanes4@uwo.ca](mailto:dsoanes4@uwo.ca)*