



**Western**  
The Brain and  
Mind Institute

## Visiting Speaker

**JJ Orban de Xivry & Koen Vandevoorde**  
KU Leuven

### **“Motor adaption but not internal model recalibration declines with aging”**

It is well established that the rate of motor adaptation declines with aging and this decline has been attributed to loss of cerebellar neurons. Here, I will present the largest study ever conducted on the impact of aging on the different components of motor adaptation (N=140 over three experiments and two age groups: 18-30 and 60-75yrs old).

While we confirmed that motor adaptation declines with age, we found that the components of motor adaptation linked to internal model calibration (implicit component of motor adaptation) were larger in older participants than in young participants. In contrast, the explicit component of adaptation appeared to be smaller in old participants compared to the young ones. Finally, we did not find any differences in short-term retention of motor adaptation between the two age groups.

Altogether, these studies debunked the idea that deficits in internal model recalibration and degeneration of the cerebellum are primarily responsible for the decline in motor adaptation observed in elderly people. In contrast, the decline in motor adaptation is mostly due to a deficit in the explicit strategy, and, surprisingly, might be partially compensated by error-based learning and implicit adaptation.

**Date:** Wednesday, September 27, 2017

**Time:** 10:30 am

**Location:** Room 100,  
Physics and Astronomy

*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)*