



**BME** PARIS  
BioMedical Engineering  
MASTER'S PROGRAM

# RYTHMS OF ATTENTION

Open Your Mind Seminar

**Friday, Nov 6 2020**  
**1.30 pm – 3 pm**

Online (Microsoft TEAMS)

## **A multimodal neuroimaging approach to the study of attention in human**

Our brain cannot process all the information coming through our eyes, due to bioenergetic constraints. Attention prioritizes the processing of information according to relevance. For instance, when we drive a car, we must attend not only to the road signs and other cars, but also to unexpected events such as pedestrians crossing. Attention is a fundamental brain function underlying human behavior. Knowledge of attention can help further our understanding of how the brain controls human behavior. My research aims to investigate the neural mechanisms underlying attentional selection and facilitation, as well as the way it translates in behavioral trade-offs. I tackle this question using a multimodal approach including psychophysics (behavior), functional neuroimaging and computational modeling, thus linking cognitive psychology and neuroscience. Specifically, I test the hypothesis that brain oscillations modulate attentional performance periodically in time. I will show evidence that oscillations create periodic windows of excitability, with more or less favorable periods recurring at particular phases of the oscillations. I will also present more recent work investigating the joint effect of temporal and spatial dimensions of brain oscillations in attention in human.

**Laura DUGUE**

Université de Paris, CNRS(INCC) & Institut  
Universitaire de France, Paris, France

