



Tuesday, December 12, 2023, 15:15 hrs
C402 and via Zoom
(Zoom login see email invitation)

Guest Lecture

Dr Nicolás Gravel

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Neural Dynamics of Visual Cognition

Linking Structure-Function Relationships in Human Visual Cortex through Computational Neuroimaging and Electrophysiology

Scrutiny of the cortical neuronal circuits underlying human visual perception typically involves the summarization of large-scale recordings of brain activity under different perceptual states, with the combination of various measurement modalities and modeling techniques being critical in revealing organizing principles. In this seminar, we'll delve into the relationship between anatomical structure and evolving patterns of neuronal *functional* connectivity across the early visual foveal cluster (V1-V2-V3). I will show how we can inform our understanding of visual perception through different recording modalities, combining high-resolution fMRI and laminar electrophysiology with computational modeling. I will present key findings on task-dependent modulation of directed interactions across visual cortical areas in humans and laminar distinctions in visual processing in Macaque, as well as touch on preliminary validation work. Finally, I look forward to discussing new advancements and techniques and to providing a clearer picture of neuronal circuit dynamics at the mesoscopic level.