

DR. MARK BRANDON obtained his Ph.D. at Boston University and pursued his postdoctoral training at UCSD where he trained on methods to record and manipulate neural activity in freely behaving rats and mice. He joined the faculty at McGill University in 2015 and is now the Canada Research Chair in the Neural Circuits of Memory.



Dr. Mark Brandon

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McGill University

Friday, September 6th | 9:00 AM | EC 2300

Neural mechanisms of spatial cognition

ABSTRACT: My research focuses on uncovering the computational and neural mechanisms underlying memory encoding and retrieval, with a particular emphasis on spatial and episodic memory systems. My lab utilizes a multidisciplinary approach that combines cutting-edge neuroscience tools, such as in vivo electrophysiology, calcium imaging, and optogenetics, with advanced computational models to explore three core themes: (1) deciphering the neural code of head direction and spatial location, (2) providing computational insights into hippocampal function for memory and behavior, and (3) investigating the early effects of Alzheimer's disease on spatial memory networks. Our work aims to bridge the gap between molecular pathology and cognitive symptoms, providing new insights into the neural dynamics of memory and the early stages of Alzheimer's disease.



Through the generous support of the Wallace H. Coulter Foundation, the Department of Biomedical Engineering facilitates weekly lectures each year during academic terms. Experts in all areas of Biomedical Engineering are invited to provide a research seminar and to meet with faculty and students to discuss the latest developments and research in Biomedical Engineering.

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