A neural circuit approach to psychiatric illness

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At this unique and exciting time for psychiatry, novel therapies for individuals with mental illnesses seem just around the corner. In particular, recent technological advancements in the study of neural circuits provide reasons to be optimistic that the field is headed in the right direction. Nonetheless, maximizing the chances of translating these advancements into real improvements in patient care requires a carefully considered road map. In this context, I will discuss my laboratories’ work on understanding the neural circuit basis for psychiatrically relevant behaviors, as well as what neural circuit-based translational road map might look like.

Biography

Dr. Gordon’s research focuses on the analysis of neural activity in mice carrying mutations of relevance to psychiatric disease. His lab studied genetic models of these diseases from an integrative neuroscience perspective, focused on understanding how a given disease mutation leads to a behavioral phenotype across multiple levels of analysis. To this end, he employs a range of systems neuroscience techniques, including in vivo imaging, anesthetized and awake behavioral recordings, and optogenetics, which is the use of light to control neural activity. His research has direct relevance to schizophrenia, anxiety disorders, and depression.

Dr. Gordon’s work has been recognized by several prestigious awards, including the Brain and Behavior Research Foundation – NARSAD Young Investigator Award, the Rising Star Award from the International Mental Health Research Organization, the A.E. Bennett Research Award from the Society of Biological Psychiatry, and the Daniel H. Efron Research Award from the American College of Neuropsychopharmacology.

This annual lecture honours Dr. Bernice Grafstein. Dr. Grafstein received her B.A. in physiology at the University of Toronto and her Ph.D. in neurophysiology at McGill University in Montreal. As a graduate student she trained as an electrophysiologist, working on structure-function correlations in the cerebral cortex. Her thesis work was on the mechanism of cortical spreading depression, which appears as a wave of decreased electrical activity advancing slowly over the grey matter. This phenomenon has been recognized as playing an important role in migraine, stroke, and other cortical pathology. Her contributions established the role of the extracellular movement of potassium ions in propagation of spreading depression, and her work has become a classic in its field. She subsequently became interested in nervous system development and regeneration, and is known for her work on intracellular transport of protein in normal and regenerating neurons, as well as other forms of molecular signaling among various cell types in the brain. She was the first woman to become President of the Society of Neuroscience and is currently a Trustee and Vice-President of the Grass Foundation, which supports training and research in neuroscience. She is Professor of Physiology & Biophysics and the Vincent & Brooke Astor Distinguished Professor in Neuroscience at Weill Cornell Medicine in New York City.

3 - 5 pm Friday, November 10 2017
McIntyre Medical Building
R. Howard Palmer Amphitheatre (Entrance via the 5th or 6th floor)
3655 Promenade Sir William Osler
Montreal, Quebec
A reception will follow