manitoba neuroscience network

Input and target-selective plasticity in sensory neocortex during learning

SEMINAR & VISITING SPEAKER SERIES

WORLD WIDE NEURO PLATFORM

DATE

Monday, January 24, 2022
12:00 PM (noon) CST

WORLD WIDE NEURO LINK

https://www.crowdcast.io/e/mnn-seminar_24Jan2022_AB

MEETING ID & PASSCODE

None required

SPEAKER

Alison Barth, PhD

Maxwell H. and Gloria C. Connan Professor of the Life Sciences, Carnegie Mellon University

BIO

Alison Barth is the Maxwell H and Gloria C. Connan Professor of the Life Sciences at Carnegie Mellon University, where she studies the organization and plasticity of neocortical circuits in rodents. Her work centers on how synapses are altered by behavioral experience, where she uses neurophysiological recordings, transgenic mice, and fluorescence and electron microscopy to understand brain function. She has developed numerous tools for visualizing and perturbing brain function, including the fosGFP transgenic mouse and novel fluorescent markers for cell-type specific synaptic quantitation. Dr. Barth is the recipient of numerous awards, including the Research Award for Innovation in Neuroscience from the Society for Neuroscience, the McKnight Foundation, the Alexander von Humboldt Foundation, and has been a Leverhulme and Sloan Foundation fellow. She holds a patent for the fosGFP transgenic mouse, and is an inventor on multiple applications for other neuroscience-related methods and treatments.

RESEARCH

Behavioral experience shapes neural circuits, adding and subtracting connections between neurons that will ultimately control sensation and perception. We are using natural sensory experience to uncover basic principles of information processing in the cerebral cortex, with a focus on how sensory learning can selectively alter synaptic strength. I will discuss recent findings that differentiate reinforcement learning from sensory experience, showing rapid and selective plasticity of thalamic and inhibitory synapses within primary sensory cortex.

OBJECTIVES

1. To understand how cortical circuits receive and integrate sensory information

2. To define how synaptic plasticity is initiated and distributed across the cortical column during learning

3. To uncover the role of inhibition in gating long-lasting changes in output in sensory cortex

For more information:

T: 204-235-3939
E: info@manitobaneuroscience.ca

Health Sciences Centre Winnipeg

Hôpital St-Boniface Hospital RECHERCHE • RESEARCH

University of Manitoba