

# 194<sup>th</sup> WPI-IIIS Seminar

## The effects of stress on memory and engram formation in mice

Understanding how the brain uses information is a fundamental goal of neuroscience. Several human disorders (ranging from autism spectrum disorder to PTSD to Alzheimer's disease) may stem from disrupted information processing. Therefore, this basic knowledge is not only critical for understanding normal brain function, but also vital for the development of new treatment strategies for these disorders. Memory may be defined as the retention over time of internal representations gained through experience, and the capacity to reconstruct these representations at later times. Long-lasting physical brain changes ('engrams') are thought to encode these internal representations. The concept of a physical memory trace likely originated in ancient Greece, although it wasn't until 1904 that Richard Semon first coined the term 'engram'. Despite its long history, finding a specific engram has been challenging, likely because an engram is encoded at multiple levels (epigenetic, synaptic, cell assembly). My lab is interested in understanding how specific neurons are recruited or allocated to an engram, and how neuronal membership in an engram may change over time or with new experience. Here I will describe data in our efforts to understand memories in mice.



## Dr. Sheena Josselyn

Departments of Psychology and Physiology,  
University of Toronto / Hospital for Sick Children

Date: **Wednesday, February 28, 2024**

Time: **11:00 – 12:00**

Venue: **1F Auditorium, IIIS Building**

**\* On-site participation only**



Contact: International Institute for Integrative Sleep Medicine, University of Tsukuba  
029-853-5857 (ext.5857) | [wpi-iiis-alliance@ml.cc.tsukuba.ac.jp](mailto:wpi-iiis-alliance@ml.cc.tsukuba.ac.jp)