

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

## Prefrontal circuits for memory-guided behavior

The prefrontal cortex (PFC) is known to play a pivotal role in maintaining the upcoming task information without the sensory input, but the underlying mechanism is poorly understood. Using calcium imaging and optogenetic manipulation in mice performing a working memory task, we show that delay activity of pyramidal neurons in the dorsomedial PFC (dmPFC) is crucial for task performance. Optogenetic activation of vasoactive intestinal peptide (VIP)-positive interneurons can enhance the neuronal coding of the task information and improve the animal's memory retention. The results suggest that dmPFC is a critical component of the working memory circuit and that VIP neurons dynamically regulate the functional gain of pyramidal neurons.



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Date: **Friday, July 28, 2017**

Time: **15:00 – 16:00**

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



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