

106th WPI-IIIS Seminar

Balance between abstraction and detail in neural code in the prefrontal-entorhinal circuit

Many events in our lives resemble experiences we have had before, without being identical to them. Memories of these experiences may be grouped based on their commonality or separated based on their incidental, contextual details. In this talk, I will present evidence suggesting that these two styles of memory representations co-exist in the cortex. First, I will show that neural ensemble activity in the medial prefrontal cortex becomes more sensitive to relevant, associative information common across multiple experiences while apparently independently losing irrelevant, stimulus modality information unique to each experience. I will then contrast this observation with neuron ensemble activity in the lateral entorhinal cortex that differentiates multiple experiences by encoding their unique situational context with lasting stability. Based on these findings, I will discuss computations that these two regions may perform for building a generalizable abstraction of the world (“knowledge”) while maintaining accurate records of each experience (“episodic memory”).



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Date: **Wednesday March 1, 2017**

Time: **12:00 – 13:00**

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



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