

182nd WPI-IIIS Seminar

Network and cellular mechanisms for disruption of memories by sleep loss

Post-learning sleep plays an important role in hippocampal memory processing, including contextual fear memory (CFM) consolidation. Here, I will discuss recent work from our lab aimed at understanding the sleep-driven changes that occur in the hippocampus during memory consolidation, and how sleep disruption interferes with these changes. I will first describe our recent findings on the effects of sleep and sleep disruption on the activity of hippocampal interneurons, which actively gate post-learning information processing by principal neurons in the hippocampal dentate gyrus (DG).

I will then discuss our more recent work on the effects of sleep and sleep disruption on the offline reactivation of context-encoding DG engram neurons in the hours following contextual learning. Finally, I will discuss our use of hippocampal subregion-specific spatial profiling of transcripts and proteins, with the aim of identifying cellular pathways affected by learning and subsequent sleep or sleep disturbance across the hippocampal circuit. These data provide evidence for a number of cellular- and microcircuit-level mechanisms by which sleep loss can interfere with hippocampal memory consolidation mechanisms.



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Date: **Monday, July 24, 2023**

Time: **9:30 – 10:30**

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

*** On-site participation only**



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