

# **Hippocampal Circuit Dynamics and Memory Processing**

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The hippocampus is a brain circuit that plays a critical role in memory formation. Hippocampal activity during awake behavior and REM sleep is characterized by the presence of theta oscillations, while activity in quiet wakefulness and slow-wave sleep is associated with ripples—high frequency oscillations associated with population bursts. This talk will describe the organization of theta oscillations across the hippocampal circuit, and experiments aimed at understanding the mechanisms underlying ripple bursts and their functional role in memory processing.