

96th WPI IIS Seminar

Optogenetic dissection of hypothalamic control of sleep-wake states

Sleep-wake states correlates with the cellular activity in circuits a distributed throughout the brain. Based on correlation studies, optogenetic studies have identified neural populations in subcortical structures that are causally involved in arousal, non-rapid eye movement (NREM) and REM sleep control. In this lecture, I will summarize our work on the dissection of lateral hypothalamic (LH) control of arousal and emphasize the role of inhibitory feedforward synaptic pathway between LH and thalamic structures in driving arousal from NREM, but not REM, sleep. Selective silencing of this circuit increased the duration of NREM sleep and amplitude of delta (1-4 Hz) oscillations. Collectively, these results demonstrate that TRN cells integrate subcortical arousal inputs selectively during NREM sleep and may participate in sleep homeostasis.



Speaker:

Dr. Antoine Adamantidis

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Date: Tuesday, December 13, 2016

Time: 12:00 - 12:30

**Venue: 1F Auditorium, IIS Building
University of Tsukuba**

★ Light refreshments will be served



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