

# 193<sup>rd</sup> WPI-IIIS Seminar

## Mechanisms for Balancing Sleep Need and Sleep

Sleep pressure, the process variable in sleep homeostasis, currently lacks a physical interpretation. Although prolonged waking leads to numerous changes in the brain, it remains generally indeterminable whether these changes are causes or consequences of a growing need for sleep. The only opportunity for separating causation from correlation exists in neurons with active roles in the induction and maintenance of sleep; in these cells, sleep's proximate (and maybe also its ultimate) causes must interlock directly with the processes that regulate spiking. Analyses of genes with differential expression in sleep-inducing neurons reveal traces of sleep loss in mitochondria and synapses. Functional data link these transcriptomic changes to biophysical mechanisms for balancing sleep need and sleep.



### Dr. Gero Miesenböck

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Date: **Wednesday, February 28, 2024**

Time: **10:00 – 11:00**

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

**\* On-site participation only**



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