

140th WPI-IIIS Seminar

Hypothalamic control of mouse daily torpor / cell type-specific CRISPR gene editing in the adult brain

In this seminar, I will talk about two topics, the neuronal mechanism of daily torpor and CRISPR gene editing in the adult brain. Hibernators save energy by entering torpor, a state characterized by active hypometabolism and low body temperature, to survive harsh environmental conditions in winter. Torpor can be found in a wide variety of homeothermic animals including birds, rodents and primates. Laboratory mice go into short torpid state called daily torpor when they are fasted at cold ambient temperature. Although it is presumed that torpor is regulated by the central nervous system, the exact neuronal mechanism by which mice regulate daily torpor remains unclear. Our recent studies revealed that the activities of neurons in the medial preoptic hypothalamus and the dorsomedial hypothalamus are essential for the induction of torpor. Next, I will talk about our recent data showing the proof-of-principle that cell type-specific CRISPR gene editing in adult neurons can be used to interrogate gene function within genetically-defined neuronal circuitry associated with complex behaviors like sleep.



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Date: **Friday, December 7, 2018**

Time: **12:00 – 13:00**

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



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