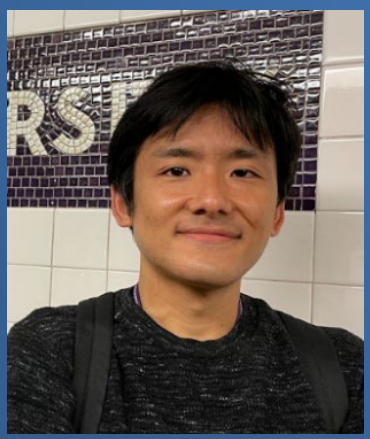
235th WPI-IIIS Seminar

Neuropeptide-dependent circuits in the hypothalamus underlie social behaviors in mice

In our world, animals including humans have their frequent opportunities to communicate with other conspecifics during their life. There are various types of social behaviors such as sexual behaviors, winning and losing for establishing social hierarchy, and mother-infant interaction for next generations. One of the neuromodulators, oxytocin (OXT), is well known for its positive effect on mother-infant interaction. However, its function during winning or losing remains incompletely understood. Although naïve mice are naturally attracted to any adult conspecifics, a single defeat experience could elicit social avoidance towards the aggressor for days. During my postdoctoral training in NYULMC, we identify oxytocin neurons in the retrochiasmatic supraoptic nucleus (SOR^{OXT}) and oxytocin receptor (OXTR) expressing cells in the anterior subdivision of ventromedial hypothalamus, ventrolateral part ($aVMHvl^{OXTR}$) as a key circuit motif for defeat-induced social avoidance learning (Osakada T. *et al., Nature*, 2024). In this seminar, I want to discuss unexplained functions of neuropeptides that control social behaviors etc. along with our preliminary analysis.



Dr. Takuya Osakada

School of Life Science and Technology

Institute of Science Tokyo

Date: **Tuesday, September 30, 2025**

Time: **14:00 – 15:00**

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

*On-site participation only

INTERNATIONAL INSTITUTE FOR INTEGRATIVE SLEEP MEDICINE

Contact: International Institute for Integrative Sleep Medicine, University of Tsukuba

029-853-5857 (ext.5857) | wpi-iiis-alliance@ml.cc.tsukuba.ac.jp