Neuroscience seminar

【Date】 2013.5.8.（Wed）16:00-17:00

【Place】 Seminar room, Annex. Bldg.

【Speaker】 Dr. Takaki Komiyama
（NYSCF-Robertson Investigator, Assistant Professor, Silvio Varon Professor in Neuroregeneration, University of California, San Diego）

【Title】Imaging Neural Ensembles in Awake Mice

【Abstract】
How are sensory representations in the brain influenced by the state of an animal? We use chronic two-photon calcium imaging to explore how wakefulness and experience shape odor representations in the mouse olfactory bulb. Comparing the awake and anesthetized state, we show that wakefulness greatly enhances the activity of inhibitory granule cells and makes principal mitral cell odor responses more sparse and temporally dynamic. In awake mice, brief repeated odor experience leads to a gradual and long-lasting (months) weakening of mitral cell odor representations. This mitral cell plasticity is odor specific, recovers gradually over months, and can be repeated with different odors. Furthermore, the expression of this experience-dependent plasticity is prevented by anesthesia. Together, our results demonstrate the dynamic nature of mitral cell odor representations in awake animals, which is constantly shaped by recent odor experience.

Host: Fujio Murakami

Everyone is welcome to participate in this seminar. The talk will be given in English.