97th WPI IIIS Seminar

Active maintenance by anterior piriform cortex in olfactory working memory

Working memory (WM) is a critical ability of the brain to actively maintain and manipulate information over a delay period of several seconds. Sensory regions exhibit delay-period activity that can code for maintained information. Furthermore, perturbation of neural activity in sensory areas can impair WM performance. However it is unclear whether delay-period activity of sensory regions is actively maintaining information or passively reflecting top-down inputs. A key argument against active maintenance is that, when successfully ignoring distractors delay, delay-period activity of sensory regions was shown to degrade whereas that in frontoparietal cortices remains robust, in the presence of distractors without changing behavioral performance. We tackled this problem in anterior piriform cortex (APC), combining optogenetics and electrophysiological recordings. We found that sensory cortex is not only important for immediate sensory processing but also critical for active maintenance in WM.

Speaker:

Dr. Chengyu Li

Institute of Neurosicence,

Shanghai Institutes for Biological Sciences,

Chinese Academy of Sciences

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Venue: 1F Auditorium, IIIS Building

University of Tsukuba

IIIS

INTERNATIONAL INSTITUTE FOR INTEGRATIVE SLEEP MEDICINE

wpi

Contact: International Institute for Integrative Sleep Medicine

Phone: 029-853-8080 (ext. 8080)