This talk will be in English.

The 72nd Frontier Brain Science Seminar
Sponsored by Research Center for Idling Brain Science（RCIBS）

Memory relevant astrocyte ensembles

演 者： **長井　淳** 先生
国立研究開発法人理化学研究所脳神経科学研究センター
グリア-神経回路動態研究チーム　チームディレクター

日 時： 2026.**4**月**17**日 Fri. 16：30～18：00

場 所： 日医工オーディトリアム（医薬イノベーションセンター1F）

Jun Nagai, PhD is a leading researcher studying how memories are formed and stabilized in the brain, with a particular focus on interactions between neurons and glial cells. He is Team Director at the RIKEN Center for Brain Science, where he leads the Lab for Glia-Neuron Circuit Dynamics.

In this seminar, Dr. Nagai will introduce recent research revealing an important role of astrocytes—a type of glial cell—in long-term memory. While memory has traditionally been studied mainly from a neuronal perspective, his work shows that groups of astrocytes are also actively involved, especially during memory recall.

Using fear memory as a model, Dr. Nagai will explain how astrocytes in the amygdala respond to neuromodulators and regulate memory stability through specific molecular pathways. These findings provide a new, accessible view of how non-neuronal cells contribute to memory and emotion in the brain.

References

1 Dewa KI, Kaseda K, Kuwahara A, Kubotera H, Yamasaki A, Awata N, Komori A, Holtz MA, Kasai A, Skibbe H, Takata N, Yokoyama T, Tsuda M, Numata G, Nakamura S, Takimoto E, Sakamoto M, Ito M, Masuda T, Nagai J. The astrocytic ensemble acts as a multiday trace to stabilize memory. *Nature*. 2025 Dec;648(8092):146-156. doi: 10.1038/s41586-025-09619-2.

2 Nagai J, Yu X, Papouin T, Cheong E, Freeman MR, Monk KR, Hastings MH, Haydon PG, Rowitch D, Shaham S, Khakh BS. Behaviorally consequential astrocytic regulation of neural circuits. *Neuron*. 2021 Feb 17;109(4):576-596. doi: 10.1016/j.neuron.2020.12.008.

※ 本セミナーは、大学院博士課程授業「脳認知学序論」の一環です。履修者は、レポートの提出が必要です。また、大学院特別セミナーの単位認定の対象となります。

Sponsor：Research Center for Idling Brain Science（RCIBS）
Organizer：Masanori Nomoto（RCIBS/Dept. of Biochemistry）（Ext, 7228）