

Title: Astrocytes and Memory Engrams: Shining Light on Memory-Forming "Stars"

September 6th (Sunday), 12:30-14:25

Grand Ballroom (2nd Floor), Daejeon Convention Center, Daejeon, Korea

Registration KSBNS2026.org

Organizers



C. Justin Lee

Center for Memory and Glioscience,
Institute for Basic Science, Korea

He is a prominent neuroscientist renowned for pioneering the field of **glioscience**, which emphasizes the active roles of glial cells—particularly astrocytes—in brain function and neurological disorders.



Bong-Kiun Kaang

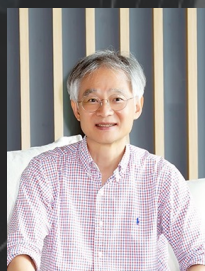
Center for Memory and Glioscience,
Institute for Basic Science, Korea

He is a renowned neuroscientist and a fellow of the National Academy of Sciences, Korea. His research has greatly broadened our understanding of the molecular mechanisms underlying learning and memory formation.

Recent research shows that neuronal ensembles, called engrams, become selectively reactivated during memory recall, supporting the idea that memory retrieval depends on the activation of the original engram. Astrocytes have been found to influence which neuronal ensembles become part of an engram by regulating calcium signaling and gliotransmitter release. Overall, the field now views memory formation as a coordinated process involving both specialized neuronal circuits and dynamic astrocyte–neuron interactions.

In this symposium, we invite renowned scientists from the field of astrocyte engram research to present their findings, followed by a panel discussion and debate about the central role of astrocyte activation in engram-associated memory recall.

Speakers



Bong-Kiun Kaang

Center for Memory and Glioscience, Institute for Basic Science, Korea
"Role of astrocytes in hippocampal memory formation"

He is renowned for pioneering research on the molecular mechanisms of learning and memory, particularly the signaling pathways that drive long-term memory formation. His discoveries have had a major impact on molecular and cellular neuroscience, earning him prestigious honors including the Ho-Am Prize in Science and election to the National Academy of Sciences of the Republic of Korea in 2025.



Marta Navarrete

Cajal Neuroscience Center-CSIC, Madrid, Spain
"Catching astrocyte ensembles in the nucleus accumbens: Key players in cue-motivated memory"

Her key findings have helped redefine astrocytes as active components of synaptic plasticity, learning, and memory. Her laboratory has established a circuit-level framework for astrocyte specialization in reward pathways, revealing how astrocyte ensembles contribute to memory recall and reward-guided behavior.



Benjamin Deneen

Baylor College of Medicine, Texas, USA
"Learning-associated astrocyte ensembles regulate memory recall"

His pioneering discoveries have revealed astrocytes as active regulators of brain development, neural circuits, and memory. His work transformed the understanding of glial cells from passive support cells to key drivers of brain function and disease. He is a Professor of Neurosurgery at Baylor College of Medicine and recipient of the 2024 O'Donnell Award in Medicine.



Inbal Goshen

Edmond and Lily Safra Center for Brain Sciences, The Hebrew University, Jerusalem, Israel
"Astrocytic activation completely corrects memory performance in an Alzheimer's Disease model"

She looks at astrocytes from a novel angle, as local neuromodulators, affecting neuronal activity, memory performance, and even the independent representation of multisensory stimuli. Her lab uses chemo- and opto- genetic tools to manipulate astrocytes, and 2-photon microscopy to image their activity.