K-Brain 2026

한국뇌신경과학회
The Korean Society for Brain and Neural Sciences

Symposium 07

Title: Connectomics for Mapping Circuit Structure to Function

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

Room 105-106, Daejeon Convention Center, Daejeon, Korea

Registration KSBNS2026.org

Organizer

Anmo Kim

Department of Brain and Cognitive Sciences, KAIST, Korea

Anmo Kim seeks to reverse-engineer the Drosophila brain. By combining precise genetic tools with whole-brain connectome maps in this numerically tractable model organism, his lab investigates how visually guided behaviors emerge from feedforward and feedback circuits—and builds connectome-constrained agent models to test these circuit-level mechanisms computationally.

Speakers

Axel J Bae

Department of Biological Sciences, KAIST, Korea
"Comparative connectomics reveals neural circuits underlying stage-specific behaviors"

Alexander Bae is an early-career neuroscientist in connectomics who utilizes high-resolution 3D imaging and AI to reconstruct synaptic-level neural circuits, seeking to understand the neural circuit structure underlying brain function. His work employs comparative connectomics to identify neural circuit structures for specific functions, and to reveal how these structures are disrupted in models with functional impairments.

Hyeyoung Shin

School of Biological Sciences, Seoul National University, Korea
"Distance, synaptic in-degree and out-degree govern higher-order connectivity and neocortical dynamics"

Hyeyoung Shin's research aims to understand the cortical mechanisms of perceptual inference. Her lab employs an interdisciplinary approach, primarily leveraging techniques from systems neuroscience (e.g., two-photon imaging, two-photon holographic optogenetics, extracellular electrophysiology) and computational neuroscience (e.g., machine learning decoding of neural population activity, network simulation).

Jinseop S. Kim

Department of Biological Sciences, Sungkyunkwan University, Korea
"Neural circuits of multi-sensory integration for feeding behavior in Drosophila"

Jinsep Kim is a theoretical neuroscientist who studies how neural circuits give rise to brain function and behavior, using connectomics and computational approaches. He has worked with large-scale EM reconstructions to map synaptic connectivity, quantify circuit motifs, and link wiring patterns to mechanistic models that yield experimentally-testable theories and interpretable explanations of circuit functions.

Sung Soo Kim

University of California, Santa Barbara, CA, USA
"Vector coordinate transformation in the fly navigation system"

Sung Soo Kim studies the neural basis of complex behaviors in fruit flies. Using high-precision genetic tools, his research has provided key evidence for computational models explaining how animals map their surroundings and how they maintain and update their sense of direction.