

Scientific Programme

From Synapses to Cognition: Emerging Frontiers in Memory Research

08:00–08:50 Registration

08:50–09:00 Opening Remarks Prof. Lim Kah-Leong · NTU, Singapore

Session I · Synaptic Plasticity, Associative Memory & Memory Engrams

09:00 – 10:30

- **Prof. Timothy W. Bredy** *The University of Queensland, Australia*
A mobile circular DNA element drives memory-related processes in mice
- **Dr. Jai Polepalli** *NUS, Singapore*
Transcriptional evolution of memory traces
- **Dr. Jun Nishiyama** *Duke-NUS, Singapore*
Cell-type-resolved synaptic protein networks in memory
- **Prof. George Augustine** *Temasek Life Sciences Laboratory, Singapore*
A bottom-up approach to understanding the claustrum
- **Selected Trainee Talk**
Presented by a symposium delegate

10:30–11:00 Coffee Break & Networking

Session II · Neural Circuits, Neural Stem Cells & Neuromodulation

11:00 – 12:30

- **Prof. Nils Brose** *Max Planck Institute for Multidisciplinary Sciences, Göttingen, Germany* **EMBO SPEAKER**
Synaptic vesicle priming as a key determinant of presynaptic plasticity
- **Dr. John Chua** *NUS, Singapore*
Elucidating the role of autophagy in human brain development
- **Dr. Camilo David Libedinsky** *NUS, Singapore*
Reevaluating the role of short-term plasticity: from working memory to passive short-term memory
- **Prof. Shawn Je** *Duke-NUS, Singapore*
Human midbrain organoids in Parkinson's disease
- **Prof. Sue Jones** *University of Cambridge, UK* **EMBO SPEAKER**
Neuronal plasticity at puberty in hypothalamic Kiss1 neurons
- **Selected Trainee Talk**
Presented by a symposium delegate

12:35–13:30 Lunch & Networking

Session III · Memory Dysfunction in Ageing & Neurodegenerative Diseases

13:30 – 15:00

- **Prof. Martin Korte** *Technische Universität Braunschweig, Germany* **EMBO SPEAKER**
Neuroinflammation and neurodegeneration: what is the relationship?
- **Prof. Tuck-Wah Soong** *NUS, Singapore*
RNA editing loss in memory function
- **Prof. Fengwei Yu** *Temasek Life Sciences Laboratory, Singapore*
Neuronal pruning and neurodevelopmental disorders
- **Prof. Shuo-Chien Ling** *NUS, Singapore*
Deciphering TDP-43 function and neuronal-glial crosstalk
- **Selected Trainee Talk**
Presented by a symposium delegate

15:00–15:30 Coffee Break & Networking

Session IV · Artificial Intelligence, Computational Neuroscience & Future Brain Technologies

15:30 – 17:00

- **Prof. Helen Zhou** *NUS, Singapore*
Brain foundation models for neurology and psychiatry
- **Dr. Aditya Nair** *NTU, Singapore*
AI and neural dynamics of emotion and social intelligence
- **Dr. James Chelliah** *University of Exeter, UK*
Trio heterozygous mutation leads to hyperexcitability and altered GluA2 expression and function during development in the Trio+/- mouse model
- **Selected Trainee Talk**
Presented by a symposium delegate

SPECIAL LECTURE · 17:00–17:30

Prof. Denise Manahan-Vaughan **EMBO SPEAKER**
Ruhr University Bochum, Germany
From Synapses to Cognition: How Long-Term Potentiation Shapes Memory

17:30–17:35 Closing Remarks Prof. Hongyan Wang · Duke-NUS, Singapore

17:35–20:30 Dinner & Networking

Join us in bringing world-leading neuroscience to Singapore
and fostering discoveries that will impact human health.