Program

TUESDAY, OCTOBER 10, 2023

15:00–17:00 Registration

17:10–17:15 Opening Remarks: Shigeo OKABE

17:15–18:55 Plenary Lectures
Chair: Shigeo OKABE

17:15–18:05 [PL1]
The roles of glia and pericytes in early Alzheimer's disease ·····24
David ATTWELL
(University College London, UK)

18:05–18:55 [PL2]
Plasticity of myelin structure for experience-dependent optimization of conduction velocity ·····26
R. Douglas FIELDS
(National Institutes of Health, USA)

19:05–20:30 Welcome Reception

WEDNESDAY, OCTOBER 11, 2023

9:00–12:00 Session A
Glial Cell-Involved Cellular Interaction and Differentiation
Chairs: Kinichi NAKASHIMA
Benjamin DENEEN

9:00–9:30 [A-1]
Epigenetic rejuvenation overcomes myelinogenic barriers and stimulates myelin repair ·····28
Q. Richard LU
(Cincinnati Children's Hospital Medical Center, USA)

9:30–10:00 [A-2]
Astrocyte-neuron communication in the developing brain and functioning circuits ·····30
Benjamin DENEEN
(Baylor College of Medicine, USA)

10:00–10:30 [A-3]
Chromatin-level regulation of neural stem cell fate during mouse neocortical development ·····32
Yukiko GOTOH
(The University of Tokyo, Japan)

10:30–11:00 Coffee Break

11:00–11:30 [A-4]

Developing gliogenic neural progenitors from human induced pluripotent stem cells for spinal cord injury treatment ……34

Jun KOHYAMA

(Keio University School of Medicine, Japan)

11:30–12:00 [A-5]

Direct conversion of microglia into neurons and its therapeutic application to stroke ……36

Kinichi NAKASHIMA

(Graduate School of Medical Sciences, Kyushu University, Japan)

12:00–14:00 Lunch

14:00–17:00 Session B

Innovative Technologies in Glial Research

Chairs: Yuji IKEGAYA

Marco Rudolf PRINZ

14:00–14:30 [B-2]

Specification of CNS macrophage subsets occurs postnatally in defined niches ……44

Marco Rudolf PRINZ

(Institute of Neuropathology, Medical Center - University of Freiburg, Germany)

14:30–15:00 [B-3]

Optogenetic tools for chronic assessment of astrocyte-vascular functional relationship ……46

Hajime HIRASE

(University of Copenhagen, Denmark)

15:00–15:30 Coffee Break

15:30–16:00 [B-4]

Harnessing iPSC-microglia to deliver therapeutic proteins to the brain ……48

Matt BLURTON-JONES

(Department of Neurobiology and Behavior, University of California, Irvine, USA/Stem Cell Research Center, University of California, Irvine, USA)

16:00–16:30 [B-5]

Microglia in multi-sensory modality ……50

Hiroaki WAKE

(Nagoya University Graduate School of Medicine, Japan/ National Institute for Physiological Sciences, Japan)

16:30–17:15 Short Talk I

17:25–19:00 Dinner

19:00–21:00 Poster Session I (Odd Number Posters)

THURSDAY, OCTOBER 12, 2023

9:00–12:00 Session C

Glial Cells Governing Synaptic Function

Chairs: Junichi NABEKURA
Long-Jun WU

9:00–9:30 **[C-1]**
Dual synaptic plasticity differentially controlled by glia ····· **52**
Ko MATSUI
(Tohoku University, Japan)

9:30–10:00 **[C-2]**
Unmasking astrocyte biology in striatal neural circuits ····· **56**
Baljit Singh KHAKH
(University of California, Los Angeles, USA)

10:00–10:30 **[C-3]**
Active surveillance and remodelling of cortical circuits by microglia and astrocytes ····· **58**
Junichi NABEKURA
(National Institute for Physiological Sciences, Japan/Sokendai, Japan)

10:30–11:00 Coffee Break

11:00–11:30 **[C-4]**
Redefining synaptic dynamics: unveiling the role of glia in glioneuronal complexes through advanced culture systems and imaging techniques ····· **62**
Ryuta KOYAMA
(The University of Tokyo, Japan/Institute for AI and Beyond, Japan)

11:30–12:00 **[C-5]**
Microglia sense and regulate neuronal activity via norepinephrine signaling ····· **64**
Long-Jun WU
(Mayo Clinic, USA)

12:00–14:00 Lunch

14:00–17:00 Session D

Glial Cells Governing Neural Circuits

Chairs: Shigeo OKABE
Won-Suk CHUNG

14:00–14:30 [D-1]

Synaptic strength tuning in local circuits by astrocytes ……66

Yukiko GODA

(Okinawa Institute of Science and Technology, Japan)

14:30–15:00 [D-2]

Stress induces behavioral abnormalities by increasing expression of phagocytic receptor MERTK in astrocytes to promote synapse phagocytosis ……68

Won-Suk CHUNG

(Korea Advanced Institute of Science and Technology, Korea)

15:00–15:30 [D-3]

Imaging neuron-glia interactions ……70

Shigeo OKABE

(The University of Tokyo, Japan)

15:30–16:00 Coffee Break

16:00–16:30 [D-4]

Glial modulation of stress-coping behaviors via habenula ……72

Hidenori AIZAWA

(Graduate School of Biomedical and Health Sciences, Hiroshima University, Japan)

16:30–17:00 [D-5]

Rejuvenation of oligodendrocytes restores plasticity in the adult mouse brain ……74

Kenji TANAKA

(Keio University School of Medicine, Japan)

17:00–17:45 Short Talk II

1. Takahiro MASUDA (PS-52) ……155
2. Akari HASHIMOTO (PS-10) ……102
3. Kanae MATSUDA-ITO (PS-22) ……117

17:55–19:00 Dinner

19:00–21:00 Poster Session II (Even Number Posters)

FRIDAY, OCTOBER 13, 2023

9:00–11:45 Session E

Glial Cells as a Cause and Therapeutic Target for Brain Diseases

Chairs: Eiji SHIGETOMI
C. Justin LEE

9:00–9:30 [E-1]
Reactive astrocytes as the cause of Alzheimer's disease ·····**76**
C. Justin LEE
(Institute for Basic Science, Korea)

9:30–10:00 [E-2]
The operational principles of neuron-microglia circuits ·····**80**
Anne SCHAEFER
(Max Planck Institute for Biology of Ageing, Germany/Mount Sinai School of Medicine, USA)

10:00–10:30 [E-3]
New mechanism for pain chronicity revealed by microglial subset ·····**82**
Makoto TSUDA
(Kyushu University, Japan)

10:30–10:45 Coffee Break

10:45–11:15 [E-4]
Neuroinflammatory Mechanisms of Stress: Insights From a Mouse Model ·····**84**
Tomoyuki FURUYASHIKI
(Kobe University Graduate School of Medicine, Japan)

11:15–11:45 [E-5]
Neuronal hyper-excitability induced by an excitatory molecule derived from astrocytes ·····**106**
Eiji SHIGETOMI
(Yamanashi GLIA Center, Interdisciplinary Graduate School of Medicine, University of Yamanashi,Japan/ Department of Neuropharmacology, Interdisciplinary Graduate School of Medicine, University of Yamanashi, Japan/ Department of Pediatrics, Interdisciplinary Graduate School of Medicine, University of Yamanashi, Japan)

11:45–11:50 Information of Naito Grants

11:50–12:00 Announcement of Award Recipients

12:00–12:05 Closing Remarks: Shigeo OKABE

12:10–13:00 Lunch