

McGill University- NIPS Joint Symposium

New horizons in life science research using cutting-edge methodology

Date: March 4- 5, 2024

Venue: Meeting room in NIPS (Myodaiji), Okazaki, Japan

Organizers:

Keith Murai (MU), Derek Bowie (MU), Yoshihiro Kubo (NIPS)

MU: McGill University

NIPS: National Institute for Physiological Sciences

Support:

International Network-type Research Acceleration Project of NIPS in NINS

Integrated Program in Neuroscience, McGill University

Graduate and Postdoctoral Studies, McGill University

Fonds de recherche du Québec – Santé (FRQS) Dual Chair in AI and Brain Health

Host: NIPS

Secretariat:

Tomomi Okayasu (NIPS), Yoshihiro Kubo (NIPS)

Schedule at a glance

Mar 4 (Mon)

AM 9:00- AM 9:10	Opening remarks
AM 9:10- AM 11:50	Regular session (R1)
AM 11:50- AM 12:00	Group photo
AM 12:00- PM 13:00	Lunch for discussion
PM 13:00- PM 14:15	Early career researchers & PhD students session (E1)
PM 14:30- PM 17:10	Regular session (R2)
PM 17:30- PM 19:30	Dinner for information exchange

Mar 5 (Tue)

AM 9:00- AM 11:40	Regular session (R3)
AM 11:40- PM 12:45	Lunch for discussion
PM 12:45- PM 14:00	Early career researchers & PhD students session (E2)
PM 14:00- PM 17:00	NIPS labs/ facilities tour
PM 17:00- PM 17:50	Special lecture session (S1)
PM 17:50- PM 18:00	Closing remarks
PM 18:45- PM 20:30	Dinner for interaction planning

Workshop for MU students

Mar 6 (Wed) - Mar 8 (Fri)	Cryo EM (Dr Murata)
Mar 11 (Mon) - Mar 15 (Fri)	Volume EM (Dr Kubota, Dr Ohno)

Program

[[[Mar 4 (Mon)]]]

AM 9:00- AM 9:10

Opening remarks

Professor Junichi Nabekura (NIPS, Director General)

Professor Keith Murai (MU)

AM 9:10- AM 11:50

Regular session (R1) (MU: 25 min + 10 min Q; NIPS: 18 min + 7 min Q)

Chair:

Jesper Sjöström

Department of Neurology & Neurosurgery, MU

2-Photon optogenetic mapping of visual cortex microcircuits

Hiroaki Wake

Division of Multicellular Circuit Dynamics, NIPS

Multi-cellular dynamics and their manipulation

(AM 10:10- AM 10:25: physiological break)

Keith Murai

Department of Neurology & Neurosurgery, MU

Molecular and structural analysis of astrocytic complexity in the CNS

Saeka Tomatsu

Division of Behavioral Development, NIPS

Action in unison as real-time social interactions in macaque monkeys

Keiichi Kitajo

Division of Neural Dynamic, NIPS

Data-driven approaches to metastable synchrony networks in the human brain

AM 11:50- 12:00

Group photo

AM 12:00- 13:00

Lunch for discussion

PM 13:00- PM 14:15

Early career researchers & PhD students session (E1) (10 min + 5 min Q)

Chair:

Christa Hercher

McGill Group for Suicide Studies, Douglas Mental Health University Institute, MU

Characterization of cerebellar astrocytes in health and mental illness

Sylvie C. Lahaie

Centre for Research in Neurosci, Brain Repair and Integrative Neurosci Program, MU

Characterization of astrocytic primary cilia in central nervous system health and disease

Takahiko Egawa

Division of Membrane Physiology, NIPS

Identification of physiological substrates for depalmitoylating enzyme ABHD17 in neurons

Megan Ng

Quantitative Life Sciences Program, MU

Investigation of cortical glycogen distribution in a mouse model of Alzheimer's disease using light and electron microscopy

Daiki Taguma

Division of Sensory and Cognitive Brain Mapping, NIPS

Assessing the impact of denoising on diffusion-weighted MRI data on tractometry analysis for the optic tract of glaucoma patients

(PM 14:15- 14:30: physiological break)

PM 14:30- PM 17:10

Regular session (R2) (MU: 25 min + 10 min Q; NIPS: 18 min + 7 min Q)

Chair:

Derek Bowie

Department of Pharmacology and Therapeutics, MU

Re-imagining the role of AMPA receptors in glutamatergic synapses

Yumiko Yoshimura

Division of Visual Information Processing, NIPS

Experience-dependent functional plasticity and visual response selectivity of layer 6b neurons in mouse visual cortex

(PM 15:30 - 15:45: physiological break)

Aparna Suvrathan

Centre for Research in Neuroscience, MU

Synaptic heterogeneity diversifies Purkinje cell timing

Ryosuku Enoki

Biophotonics Research Group, ExCELLS, NIPS

Circadian clock under extreme cold environment

Kunio Kondoh

Division of Endocrinology and Metabolism, NIPS

Regulation of inflammatory responses in adipose tissue by the ventromedial hypothalamus

PM 17:30- PM 19:30

Dinner for information exchange

[[[Mar 5 (Thu)]]]

AM 9:00- AM 11:40

Regular session (R3) (MU: 25 min + 10 min Q; NIPS: 18 min + 7 min Q)

Chair:

Tomoko Ohyama

Department of Biology, MU

Circuit mechanisms underlying the action selections in *Drosophila* larva

Takaaki Sokabe

Division of Cell Signaling, NIPS; Thermal Biology Group, ExCELLS

Elucidation of functional linkages between sensory receptors and membrane lipids

(AM 10:00- 10:15: physiological break)

Kaleem Siddiqi

Centre for Intelligent Machines and School of Computer Science, MU

Cardiomyocyte orientation recovery at the micrometer scale

Yoshiyuki Kubota

Section of Electron Microscopy, NIPS

Large volume EM with high-throughput imaging system - a trial study for marmoset cortex neural wiring

Rie Hasebe

Division of Molecular Neuroimmunology, NIPS

The Gateway Reflex: a novel mechanism for neuro-immune interaction regulating tissue specific inflammatory diseases

AM 11:40- PM 12:45

Lunch for discussion

PM 12:45- PM 14:00

Early career researchers & PhD students session (E2) (15 min including 5 min Q)

Chair:

Liu Chang

Div of Biophys and Neurobiol, NIPS

Structural determinants of the direct inhibition of GIRK channels by Sigma-1 receptor antagonist

Sabrina Romanelli

Department of Pharmacology and Therapeutics, MU

Determining the role of TOM7 in the stabilization of PINK1 on damaged mitochondria

Jing Lei

Div Cell Signal, NIPS, Thermal Biol, ExCELLS

Temperature detection by TRPV3 in skin keratinocytes and its regulation by TMEM79

Jean-Christophe Boivin

Department of Biology, MU

Heightened response to noxious cues following development in a noxious environment

Raymond Burton-Smith

Material/Life Boundary Research Group, ExCELLS, NIPS

Post-acquisition super resolution for cryo-EM

PM 14:00- PM 17:00

NIPS labs/facilities tour

(Myodaiji area)

MRI (Dr Fukunaga)

Cryo-EM (Dr Murata)

Two photon microscope etc (D. Murakoshi, Dr Horiuchi (Wake lab))

(Yamate area)

Super resolution microscope (Dr Tsutsumi (Nemoto lab))

Volume-EM (Dr. Kubota, Dr Furuse)

PM 17:00- PM 17:50

Special lecture session (S1) (40 min + 10 min Q)

Chair:

Yugo Fukazawa

Division of Brain Structure and Function, Faculty of Medical Sciences, University of Fukui

**Quantitative and high spatial resolution localization of membrane molecules
by SDS-digested Freeze-fracture Replica Labeling (SDS-FRL)**

PM 17:50- PM 18:00

Closing Remarks

Professor Derek Bowie (MU)

Professor Yoshihiro Kubo (NIPS, Vice Director General)

PM 18:45- 20:00

Dinner for future planning discussion

at restaurant "Uwokatsu" (<https://www.uwokatsu.com/>)

Workshop for MU students

Mar 6 (Wed) - Mar 8 (Fri) Cryo EM (Dr Murata)

Mar 11 (Mon) - Mar 15 (Fri) Volume EM (Dr Kubota, Dr Ohno)