

# Neurovascular Unit Conference 2023

## “US–Japan joint workshop on the Neurovascular Unit”

Jan. 6th (Fri.) – 9th (Mon.), 2023

Keio University Mita Campus, North Building (Conference Hall ⑩)

2–15–45 Mita, Minato-ku, Tokyo, Japan

Pre-registration required (Free)

### Schedule

#### Jan. 6th (Fri.)

- 3:00 pm - 5:00 pm Registration desk open  
5:00 pm - 7:00 pm Welcome reception (Faculty club in Keio Univ. Mita Campus, North Building)  
(5,000 yen/person)

#### Jan. 7th (Sat.)

- 8:30 am - Registration desk open  
8:55 am Opening remarks (Dr. Jin Nakahara)

#### ◆ Keynote Lecture 1

(Chair) Dr. Jin Nakahara, Keio University School of Medicine

- 9:00 am 「Identifying roles of bacterial and human genes in stroke」  
Dr. Masafumi Ihara, National Cerebral and Cardiovascular Center, Osaka, Japan

10:00 am Coffee break

#### ◆ Session 1: Fluid regulation

(Chairs) Dr. Harumi Hotta, Tokyo Metropolitan Institute for Geriatrics and Gerontology  
Dr. Nobuo Araki, Yomiuriland Keiyu Hospital

10:30 am 「TBA」  
Dr. Jeffrey J Iliff, University of Washington, WA, USA

11:00 am 「Promoting IPAD clearance to achieve effective  $A\beta$  immunotherapy」  
Dr. Satoshi Saito, National Cerebral and Cardiovascular Center, Osaka, Japan

11:30 am 「TBA」  
Dr. Yu Hayashi, Tokyo University, Tokyo, Japan

12:00 pm 「Non-invasive evaluation for interstitial fluid dynamics: Development of the diffusion tensor image analysis along the perivascular space (DTI-ALPS) method」  
Dr. Toshiaki Taoka, Nagoya University, Aichi, Japan

12:30 pm – 2:00 pm Lunch break & Poster viewing (at the North Building)  
(a sponsored lunch box will be provided at the South Building④ 4F College Cafeteria, Room B)

#### ◆ Session 2: Glia–BBB

(Chairs) Dr. Cesario Borlongan, University of South Florida  
Dr. Naruhiko Sahara, National Institutes for Quantum Science and Technology

2:00 pm 「TBA」  
Dr. Cassandra Kisler, University of Southern California, CA, USA

2:30 pm 「Blood brain barrier dysfunction in the pathogenesis of major depressive disorder」  
Dr. Kazuhiro Sohya, Saga University, Saga, Japan

- 3:00 pm 「TBA」  
Dr. Hiroaki Wake, Nagoya University, Aichi, Japan
- 3:30 pm Coffee break

❖ **Session 3: Glio-vasculature in health and diseases**

- (Chairs) Dr. Eng H. Lo, Massachusetts General Hospital/Harvard Medical School  
Dr. Katsuya Yamada, Hirosaki University Graduate School of Medicine
- 4:00 pm 「Effects of daily rhythm on brain-peripheral immune response after focal cerebral ischemia in mice」  
Dr. Elga Esposito, Massachusetts General Hospital/Harvard Medical School, MA, USA
- 4:30 pm 「Mechanisms underlying glia-mediated ischemic tolerance」  
Dr. Schuichi Koizumi, University of Yamanashi, Yamanashi, Japan
- 5:00 pm 「Neurovascular unit and glial cells: glutamate and dopamine」  
Dr. Shinichi Takahashi, Saitama Medical University International Medical Center,  
Saitama, Japan
- 5:30 pm Breakup

Jan. 8th (Sun.)

- 8:30 am - Registration desk open

❖ **Keynote Lecture 2**

- (Chair) Dr. Iwao Kanno, National Institutes for Quantum Science and Technology
- 9:00 am 「TBA」 (online)  
Dr. Eng H. Lo, Massachusetts General Hospital/Harvard Medical School, MA, USA
- 10:00 am Coffee break

❖ **Session 4: Experimental models & tools**

- (Chairs) Dr. Jeffrey J Iliff, University of Washington  
Dr. Masafumi Ihara, National Cerebral and Cardiovascular Center
- 10:30 am 「Type 2 diabetes affects cerebral vasculature and perfusion after stroke」 (online)  
Dr. Jialing Liu, University of California, San Francisco, CA, USA
- 11:00 am 「Chronic cerebral hypoperfusion: a representative model of vascular cognitive impairment」  
Dr. Yorito Hattori, National Cerebral and Cardiovascular Center, Osaka, Japan
- 11:30 am 「Optical manipulation of local cerebral blood flow in the deep brain of freely moving mice」  
Dr. Kenji Tanaka, Keio University School of Medicine, Tokyo, Japan

- 12:00 pm – 2:00 pm Lunch break & Poster viewing (at the North Building)  
(a sponsored lunch box will be provided at the South Building④ 4F College Cafeteria, Room B)

❖ **Early Career Investigator (ECI) session: selected from Poster presentation abstracts**

- (Chairs) Dr. Elga Esposito, Massachusetts General Hospital/Harvard Medical School  
Dr. Oltea Sampetean, Keio University School of Medicine  
Dr. Takashi Shichita, Tokyo Metropolitan Institute of Medical Science
- 2:00 pm 「Visualization of water dynamics in brain tissue using multiphoton multimodal imaging」  
Dr. Takanori Shinotsuka, Keio University School of Medicine

- 2:20 pm 「The glycosylation mediated by Radical fringe is involved in ligand-independent aggregation and JAG1-dependent accumulation of NOTCH3 CADASIL mutant protein」  
Mr. Shodai Suzuki, Chiba University
- 2:40 pm 「Optogenetic approach to clarify the causality between thalamic ischemia and consciousness」  
Dr. Manal S. Abdelaal, Keio University School of Medicine
- 3:00 pm Coffee break

❖ **Keynote Lecture 3**

- (Chair) Dr. Mayumi Kajimura, Keio University School of Medicine
- 3:15 pm 「Regulation of Neuronal Function by Extracellular Scaffold Proteins」  
Dr. Michisuke Yuzaki, Keio University School of Medicine, Tokyo, Japan
- 4:15 pm Coffee break

❖ **Session 5: Role of OPC-glia**

- (Chairs) Dr. Ken Arai, Massachusetts General Hospital/Harvard Medical School  
Dr. Shinichi Takahashi, Saitama Medical University International Medical Center
- 4:30 pm 「Substrate preference of fatty acid oxidation in murine cultured astrocytes」  
Ms. Laarni Grace Corales, Tohoku University, Miyagi, Japan
- 5:00 pm 「Finding overlooked players in neurodegenerative disease」  
Dr. Shinobu Kitazume, Fukushima Medical University, Fukushima, Japan
- 5:30 pm 「Heterogeneity of oligodendrocyte precursor cells in health and disease」  
Dr. Takakuni Maki, Kyoto University Graduate School of Medicine, Kyoto, Japan
- 6:00 pm Breakup

**Jan. 9th (Mon.)**

- 8:30 am - Registration desk open

❖ **Session 6: NVU Therapy**

- (Chairs) Dr. Cassandra Kisler, University of Southern California  
Dr. Yutaka Tomita, Tomita Hospital (online)
- 9:00 am 「TBA」  
Dr. Cesario Borlongan, University of South Florida, FL, USA
- 9:30 am 「Blood vessels as a scaffold for neuronal migration and regeneration」  
Dr. Kazunobu Sawamoto, Nagoya City University Graduate School of Medical Sciences, Aichi, Japan
- 10:00 am 「Stem cell therapy for stroke and Alzheimer's disease based on its mechanism of action」  
Dr. Akihiko Taguchi, Institute of Biomedical Research and Innovation at Kobe, Hyogo, Japan
- 10:30 am 「TBA」  
Dr. Osamu Onodera, Brain Research Institute, Niigata University, Niigata, Japan
- 11:00 am Coffee break

❖ **11:30 am - 12:30 pm General Discussion & Closing**

- Future perspectives on basic & clinical NVU
- Potential US-Japanese collaboration

◆ **Poster viewing:** Jan. 7th, 12:30 pm – 2:00 pm & Jan. 8th, 12:00 pm – 2:00 pm (Free discussion)

**P01: Visualization of water dynamics in brain tissue using multiphoton multimodal imaging**

Takanori Shinotsuka et al. (Keio University School of Medicine)

**P02: Development of the pericytes-specific optogenetic tool**

Chisato Iba et al. (Keio University School of Medicine)

**P03: Optogenetic approach to clarify the causality between thalamic ischemia and consciousness**

Manal S Abdelaal and Kenji F. Tanaka (Keio University School of Medicine)

**P04: The glycosylation mediated by radical fringe is involved in ligand-independent aggregation and JAG1-dependent accumulation of NOTCH3 CADASIL mutant protein**

Shodai Suzuki et al. (Chiba University)

**P05: Non-classical glycosylation determines intracellular trafficking of APP and A $\beta$  production**

Junko Iijima et al. (Fukushima Medical University)

**P06: Influence of amyloid  $\beta$  deposition around the pial artery on cerebral artery response during transient ischemia in Alzheimer's disease model mice**

Nobuhiro Watanabe et al. (Tokyo Metropolitan Institute of Gerontology)

**P07: A case report of reduced glymphatic drainage after multiple operation on scalp**

Man Wong Han et al. (Seoul National University)

**P08: Decreasing plasma mid-regional pro-adrenomedullin level as a predictor of the favorable neurological outcomes in acute ischemic stroke**

Yuma Shiomi et al. (National Cerebral and Cardiovascular Center)

**P09: High carrier frequency of *RNF213* p.R4810K variant among early-onset ischemic stroke patients**

Ryoma Inui et al. (National Cerebral and Cardiovascular Center)

**P10: Pro-hemorrhagic CADASIL caused by *NOTCH3* p.R75P mutation**

Hiroyuki Ishiyama et al. (National Cerebral and Cardiovascular Center)

**P11: Clinical features of intracerebral hemorrhages with or without cerebral microbleeds**

Takehito Kuroda et al. (National Cerebral and Cardiovascular Center)

**P12: Capillary diameter variabilities at rest and responses to functional and pathological activations in the mouse somatosensory cortex**

Hiroki Suzuki et al. (University of Electro-Communications)

**P13: Effects of environmental temperature on cognitive behavioral performance and cerebral hemodynamics**

Kanta Inoue et al. (University of Electro-Communications)

**P14: Capillary constriction enhances microcirculation embolism in the mouse cortex**

Yuya Kudo et al. (University of Electro-Communications)

**P15: Red blood cell flow dynamics at the bifurcation of capillaries under normal and dehydration conditions in the anesthetized rat cortex**

Maho Kotani et al. (University of Electro-Communications)