

Multi-disciplinary approach to understand neuronal network architecture for controlling motor actions

Venue: National Institute for Physiological Sciences [NIPS], Myodaiji building 1F (& Zoom)

March 17, Friday

12:00-	Registration open
<u>13:00-13:05</u>	<u>Opening remarks</u> Yoshihisa Tachibana (Kobe Univ)
<u>13:05-14:35</u>	<u>Session 1-1</u> (Chairperson: Jun Kunimatsu, Tsukuba Univ)
13:05-13:35	Ken-Ichiro Tsutsui (Tohoku Univ) <i>Roles of medial frontal cortex in the regulation of mood and motivation</i>
13:35-14:05	Shigehiro Miyachi (Kyoto Univ) <i>Multisynaptic neuronal connections of the frontal cortex and behavioral control</i>
14:05-14:35	Masaki Tanaka (Hokkaido Univ) <i>Temporal information processing in the cerebellum and basal ganglia</i>
14:35-14:55	Break
<u>14:55-16:25</u>	<u>Session 1-2</u> (Chairperson: Hiroshi Yamada, Tsukuba Univ)
14:55-15:25	Fumino Fujiyama (Hokkaido Univ) <i>Morphological re-evaluation of basal ganglia network</i>
15:25-15:55	Masayuki Matsumoto (Tsukuba Univ) <i>Cortical and subcortical contributions to different aspects of economic decision-making</i>
15:55-16:25	Takafumi Minamimoto (Natl Inst Quant Radiol Sci Tech) <i>Nonhuman Primate Chemogenetics: Current Status and Future Direction</i>
16:25-16:45	Break

16:45-17:30 **Special lecture 1 (Online)** (Chairperson: Atsushi Nambu, NIPS)
Jose Obeso (Univ San Pablo-CEU)
The subthalamic nucleus in Parkinson's disease: An option and opportunity to impact on disease evolution

17:30-17:45 Break

17:45-19:45 **Light meals & Poster session**

March 18, Saturday

09:00-10:00 **Session 2-1** (Chairperson: Masaharu Yasuda, Kansai Med Univ)

09:00-9:30 Kaoru Takakusaki (Asahikawa Med Univ)
Posture-gait control by the basal ganglia - brainstem system

09:30-10:00 Hirokazu Iwamuro (Juntendo Univ)
Clinical interest in the subthalamic nucleus

10:00-10:15 Break

10:15-11:00 **Special lecture 2** (Chairperson: Satomi Chiken, NIPS)

Thomas Wichmann (Emory Univ)
Neuroplasticity in Parkinsonism

11:00-11:15 Break

11:15-12:00 **Special lecture 3** (Chairperson: Yoshihisa Tachibana, Kobe Univ)

Thomas Boraud (Univ de Bordeaux)
The adaptive value of probability distortion and risk-seeking in macaques' decision-making

12:00-13:00 Lunch

13:00-14:30 **Session 2-2** (Chairperson: Yasuhiro Tanaka, Tamagawa Univ)

13:00-13:30 Makoto Osanai (Osaka Univ)
Multiscale multimodal analysis for unraveling brain function expression mechanisms

- 13:30-14:00 Yoshikazu Isomura (Tokyo Med Dent Univ)
The basal ganglia predicting and responding to action outcome
- 14:00-14:30 Kazuto Kobayashi (Fukushima Med Univ)
Roles of Thalamostriatal Neurons in Learning and Switching of Behavior in Rodents and Common Marmosets
- 14:30-14:50 Break
- 14:50-15:35** **Special lecture 4** (Chairperson: Masahiko Takada, Kyoto Univ)
Peter Strick (Univ of Pittsburgh)
The Neural Basis of the Brain-Body Connection
- 15:35-16:10 Group Photo & Break
- 16:10-17:10** **Prof. Nambu's retirement lecture** (Chairperson: Nobuhiko Hatanaka, NIPS)
Atsushi Nambu (Natl Inst Physiol Sci)
My life with the basal ganglia

March 19, Sunday

- 09:00-10:30** **Session 3-1** (Chairperson: Tomohiko Takei, Tamagawa Univ)
- 09:00-09:30 Kazuhiko Seki (Natl Ctr Neurol Psychiat)
A neural mechanism of sensorimotor transformation in the spinal cord and brainstem during voluntary movement
- 09:30-10:00 Yukio Nishimura (Tokyo Met Inst Med Sci)
Progress report to Prof. Nambu
- 10:00-10:30 Tadashi Isa (Kyoto Univ)
Global disinhibition and massive plasticity for recovery from serious neuronal injuries
- 10:30-10:50 Break
- 10:50-11:50** **Session 3-2** (Chairperson: Hiromi Sano, Fujita Health Univ)
- 10:50-11:20 Minoru Kimura (Tamagawa Univ)
Celebrating achievement in basal ganglia research by Atsushi Nambu

11:20-11:50 Masahiko Takada (Kyoto Univ)
Forty years together with Prof. Nambu (Nanchan)

11:50-12:00 Closing remarks
Atsushi Nambu

Poster Session

1. Kazuhiro Sakamoto (Tohoku Medical & Pharmaceutical University)
Higher brain function research needs good questions and theories
2. Yoshihisa Nakayama (Tokyo Metropolitan Institute of Medical Science)
Distinct populations of neurons in the primary motor cortex supplementary motor area, and caudal cingulate motor area of monkeys contribute to initiations of contralateral and ipsilateral hand movements
3. Tomohiko Takei (Brain Science Institute, Tamagawa University)
Contrasting roles of spinal and cortical premotor neurons in dexterous hand functions in primates
4. Hiromi Sano (Fujita Health University)
Activation of the PKA/Rap1 cascade ameliorates motor symptoms in a mouse model of Parkinson's disease
5. Michiaki Suzuki (Tokyo Metropolitan Institute of Medical Science)
Chemogenetic activation of convergent inputs to the cervical motoneurons enhances forelimb motor performance in monkeys
6. Takaaki Kaneko (Kyoto University)
A versatile tool for automated quantification of natural behavior in marmosets
7. Nobuhiko Hatanaka (National Institute for Physiological Sciences)
Somatotopic reorganization of the macaque sensorimotor cortex after accidental arm amputation
8. Kaede Abe (Hokkaido University)
Cerebellum monitors motor timing to predict reward likelihood
9. Hidetoshi Amita (Kyoto University)
Distinct patterns of dopamine and striatal responses to reward association in primate caudate nucleus and putamen

10. Satomi Kikuta (National Center of Neurology and Psychiatry)
Sensory gating of cortical area 3a and 3b during voluntary movement and action observation in macaque
11. Daisuke Koketsu (National Institute for Physiological Sciences)
Functional Mapping of the Marmoset Prefrontal Cortex
12. Satomi Chiken (National Institute for Physiological Sciences)
Application of optogenetics and chemogenetics to NHP using viral vectors