Symposium S1-A-1
Contribution of frontal pole cortex to primate cognition

**Chairpersons:**
- Keiji Tanaka, Cognitive Brain Mapping Laboratory, RIKEN Brain Science Institute
- Farshad A. Mansouri, Department of Physiology, Monash University

**S1-A-1-1** Organisation and connections of frontal pole areas in different primates
Marcello Rosa, Monash University

**S1-A-1-2** Frontal pole, executive control and human adaptive behavior
Etienne Koechlin, École Normale Supérieure / INSERM

**S1-A-1-3** The role of frontal pole cortex in primate goal-directed behaviour
Farshad Alizadeh Mansouri¹, Mark J Buckley², Keiji Tanaka³
¹Department of Physiology, Monash University, Melbourne, Australia  
²Department of Experimental Psychology, Oxford University, UK  
³Cognitive Brain Mapping laboratory, RIKEN Brain Science Institute, Japan

**S1-A-1-4** Behavioural deficits after frontopolar lesions in macaques
Mark Buckley, Oxford University

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Symposium S1-B-1
Joint Symposium by the Presidents of Japan Neuroscience Society and Japanese Society for Neurochemistry: Dynamic neural processes for whole-body multiorgan network as a complexity system

**Chairpersons:**
- Atsushi Iriki, President, The 39th Annual Meeting of the Japan Neuroscience Society
- Keiji Wada, Chair, The 59th Annual Meeting of the Japanese Society for Neurochemistry

**S1-B-1-1** Molecular mechanisms of neural network reorganization after the central nervous system injury
Tosihide Yamashita, Dept Mol Neurosci, Osaka Univ, Osaka, Japan

**S1-B-1-2** Role of the inter-organ neural network from the liver in systemic energy metabolism
Tetsuya Yamada, Hideki Katagiri, Dept of Metabolism and Diabetes, Tohoku Univ, Sendai, Japan

**S1-B-1-3** Emotional behavior and the common hepatic branch of the vagus nerve
Masayuki Sekiguchi¹, Daisuke Yamada¹, Peter Koppensteiner¹, Saoi Odagiri¹, Tetsuya Yamada²,³, Hideki Katagiri²,³, Keiji Wada¹,²,³
¹Dept Neurodegenerat Dis, Natl Inst Neurosci, NCNP, Tokyo, Japan  
²Japan Agency for Medical Research and Development (AMED/CREST), Tokyo, Japan  
³Dept Metab Diab, Grad Sch Med, Tohoku Univ, Sendai, Japan

**S1-B-1-4** Which Areas of the Cerebral Cortex Mediate the Top-Down Control of the Adrenal
Peter L Strick, University of Pittsburgh School of Medicine
Symposium S1-B-2 14:00 ~ 16:00 Room B (501)

Function and dysfunction of prefrontal-basal ganglia circuit in integration of value

ICP2016-related symposia

Saori C Tanaka, ATR Brain Information Communication Research Lab. Group

S1-B-2-1 Circuits of reward and decision-making: from monkey anatomy to human imaging.
Suzanne Haber
University of Rochester

S1-B-2-2 Value Coding in Monkey Prefrontal Network
Masamichi Sakagami, Shingo Tanaka
Brain Sci Inst, Tamagawa Univ, Tokyo

S1-B-2-3 Neural mechanisms underlying arbitration between model-based and model-free reinforcement-learning
John Odoherty
California Institute of Technology

S1-B-2-4 Cognitive control in obsessive compulsive disorder: findings from task-related and resting state functional magnetic resonance imaging analyses in OCD patients and unaffected relatives.
Stella J. de Wit1,4, Froukje E. de Vries1,5, Ysbrand D. van der Vlerk1,5, Danielle C. Cath1,4, Dick J. Veltman1,2, Odile A. van den Heuvel1,2,5
1VU University Medical Center, Amsterdam, the Netherlands
2Dept. Anatomy and Neuroscience, VU University Medical Center, Amsterdam, the Netherlands
3Albrecht Academic Anxiety center, Utrecht the Netherlands
4Dept. of Clinical and Health psychology, Utrecht University, Utrecht, the Netherlands
5Neuroscience Campus Amsterdam, the Netherlands

S1-B-2-5 Using advanced technologies to visualize circuit dynamics underlying OCD-like behaviors
Susanne E. Ahmari
University of Pittsburgh

Symposium S1-B-3 17:00 ~ 19:00 Room B (501)

Emerging genes for neurodegenerative diseases: a perspective on pathomechanisms

Chairpersons: Koji Yamanaka, Research Institute of Environmental Medicine, Nagoya University
Hideshi Kawakami, Research Institute for Radiation Biology and Medicine, Hiroshima University

S1-B-3-1 A mutation in CACNA1G causes autosomal dominant spinocerebellar ataxia
Hiroyuki Morino1, Yukiko Matsuda1, Keiko Muguruma2, Ryosuke Miyamoto3, Ryosuke Ohsawa1, Toshiyuki Ohtake4, Reiko Otobe5, Masahiko Watanabe6, Hirofumi Maruyama7, Kouichi Hashimoto8, Hideshi Kawakami1
1Dept Epidemiology RIRBM, Hiroshima Univ, Hiroshima, Japan
2Lab for Organogenesis and Neurogenesis, CDB RIKEN, Kobe, Japan
3Dept Clinical Neuroscience, Grad Sch Health and Biosci, Univ of Tokushima, Tokushima, Japan
4Neurology, Ebara Hospital, Tokyo, Japan
5Dept of Clinical and Molecular Genetics, Hiroshima University Hospital, Hiroshima, Japan
6Dept of Anatomy, Hokkaido University, Graduate School of Medicine, Sapporo, Japan
7Dept of Clinical Neuroscience and Therapeutics, Grad Sch Biomed Sci, Hiroshima Univ, Hiroshima, Japan
8Dept Neurophysiology, Grad Sch Biomed Sci, Hiroshima Univ, Hiroshima, Japan

S1-B-3-2 CHCHD2 is Novel Causative Gene for Autosomal Dominant Parkinson’s Disease
Manabu Funayama1,2,3, Nobutaka Hattori1,2,3
1Res Inst for Diseases of Old Age, Grad Sch Med, Juntendo Univ, Tokyo, Japan
2Dept Neurol, Juntendo Univ Sch Med, Tokyo, Japan
3Center for Genomic and Regenerative Med, Grad Sch Med, Juntendo Univ, Tokyo, Japan

S1-B-3-3 Collapse of mitochondria-associated membrane in amyotrophic lateral sclerosis
Seiji Watanabe
Research Institute of Environmental Medicine, Nagoya University, Nagoya, Japan
Symposium S1-C-1

Microendophenotypes in schizophrenia

Co-hosted by 'Microendophenotype of psychiatric disorders' Kakenhi Innovative Area

Chairperson: Tsuyoshi Miyakawa
Division of Systems Medical Science, Institute for Comprehensive Medical Science, Fujiita Health University

S1-C-1-1 Dysregulation of neuronal development by interneuron circuit-specific interaction with mental disorder risk factor
Hongjun Song
Johns Hopkins University School of Medicine

S1-C-1-2 Function of risk genes for mental disorders in neural development
Guo-Li Ming
Johns Hopkins University

S1-C-1-3 Investigating Bipolar Disorder neurons using iPSC technology
Jun Yao1, Jerome Mertens1,2, Qiuwen Wang1, John Kelsoe4, Fred Gage3
1Tsinghua University, 2School of Life Sciences, Tsinghua University, Beijing 100084, China
3The Salk Institute for Biological Studies, Laboratory of Genetics, La Jolla, California 92037, USA
4Department of Psychiatry, University of California San Diego, La Jolla, California, 92093, USA

S1-C-1-4 A genetic mouse model of GABAergic dysfunction in schizophrenia
Yuchio Yanagawa
Dept Genetic and Behavioral Neuroscience, Gunma Univ Grad Sch of Medicine

S1-C-1-5 Mice model can greatly mimic the behavioral and molecular characteristics of schizophrenia patients
Keizo Takao1,2
1Life Sci Res Ctr, Univ of Toyama, 2NIPS, Aichi, Japan

Symposium S1-C-2

Effects of developmental changes on diversity of the brain functions and disorders

Chairpersons: Itaru Imayoshi
The Hakubi Center, Institute for Virus Research, Kyoto University
Noriko Osumi
Department of Developmental Neuroscience, Tohoku University Graduate School of Medicine

S1-C-2-1 Paternal aging influences offspring’s behavior: its significance and possible underlying epigenetics
Noriko Osumi
Dept Devel Neurosci, Tohoku Univ Sch Med, Sendai, Japan

S1-C-2-2 Impairment of the hippocampal postnatal neurogenesis and its involvement in the neurodevelopmental disorder
Itaru Imayoshi1,2
1Institute for Virus Research, Kyoto University, Kyoto, Japan, 2JST PRESTO

S1-C-2-3 Mechanism of Rett syndrome pathogenesis
Kinichi Nakashima
Dept Stem Cell Biol Med, Kyushu Univ, Japan
Symposium S1-C-3  17:00 ~ 19:00  Room C (502)
Novel circuit mechanisms underlying learning and memory

Co-hosted by ‘Microendophenotype of psychiatric disorders’ Kakenhi Innovative Area
Chairpersons: Satoshi Kida, Thomas McHugh

S1-C-3-1  Information Storage in Memory Engrams
Tomás J Ryan
Howard Hughes Medical Institute (HHMI) and Massachusetts Institute of Technology (MIT)

S1-C-3-2  Corticoamygdala circuits regulating fear
Andrew Holmes
NIAAA

S1-C-3-3  Active transition of memory phases from fear to safety
Satoshi Kida
Dept Bioscience, Tokyo Univ of Agriculture, Tokyo, Japan

S1-C-3-4  Optical deconstruction of hippocampal circuits that control behavior
Mazen Kheirbek
University of California, San Francisco

S1-C-3-5  CA2 output regulates timing and excitability across the hippocampal circuit.
Thomas J McHugh
RIKEN

Symposium S1-D-1  9:00 ~ 11:00  Room D (503)
Dementia Research towards drug development

Chairpersons: Takeshi Iwatsubo, Takashi Saito, Takeshi Iwatsubo

S1-D-1-1  Understanding the catabolic mechanism of amyloid-β protein by astrocyte-derived protease
Taisuke Tomita
Lab Neuropath Neurosci, Grad Sch Pharm Sci, Univ of Tokyo, Tokyo, Japan

S1-D-1-2  Somatostatin receptors regulate brain Aβ levels via the modulation of neprilysin activity
Takashi Saito, Per Nilsson, Naomasa Kakiya, Takaomi C Saida
Lab. for Proteolytic Neuroscience, RIKEN BSI

S1-D-1-3  Prevention of dementia by rifampicin: its actions against amyloid oligomers
Takami Tomiyama
Department of Neuroscience, Osaka City University Graduate School of Medicine, Osaka, Japan

S1-D-1-4  Current Status and Future of Drug Development for Dementia: Aiming at Translation to Clinics
Takeshi Iwatsubo
Dept Neuropath, Univ of Tokyo, Tokyo, Japan
### Symposium S1-D-2
**New horizons in Ca²⁺ signaling research**

**Chairpersons:** Haruhiko Bito  Graduate School of Medicine, The University of Tokyo  Sayaka Takemoto-Kimura  Research Institute of Environmental Medicine, Nagoya University

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<td>Nanoscopy of Neuronal Calcium Signaling</td>
<td>Paul De Koninck  Université Laval</td>
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<td>S1-D-2-2</td>
<td>Development and imaging of new color indicators for Ca²⁺ signaling in living neurons.</td>
<td>Hajime Fuji, Masatoshi Inoue, Haruhiko Bito  Dept Neurochem, Grad Sch of Med, Univ Tokyo, Tokyo</td>
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<td>S1-D-2-3</td>
<td>Visualizing and Ablating Synapses in vivo Using Novel Recombinant Probes</td>
<td>Donald B Arnold  University of Southern California, Los Angeles, CA</td>
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<td>S1-D-2-4</td>
<td>Calcium signal modulation by direct activation of TRPC channels in neurons</td>
<td>Yasuo Mori, Seishiro Sawamura  Sch Engineering Kyoto Univ, Kyoto, Japan</td>
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### Symposium S1-D-3
**Pathogenetic mechanisms underlying Parkinson's disease -On the roles of alpha-synuclein, mitochondria and lysosomes-**

**Chairpersons:** Ryosuke Takahashi  Department of Neurology, Kyoto University Graduate School of Medicine  Masato Hasegawa  Tokyo Metropolitan Institute of Medical Science

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<td>Medaka fish model of Parkinson's disease</td>
<td>Ryosuke Takahashi  Dept Neurol, Kyoto Univ Grad Sch Med, Kyoto</td>
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<td>S1-D-3-2</td>
<td>Mitochondrial Degradation and Parkinson's Disease</td>
<td>Noriyuki Matsuda  Ubiquitin Project, TMIMS, Tokyo, Japan</td>
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<td>S1-D-3-3</td>
<td>The function of CHCHD2, the novel gene responsible for a familial form of Parkinson's disease</td>
<td>Nobutaka Hattori, Manabu Funayama, Yuzuru Imai, Shigeto Sato  Dept. of Neurology, Juntendo Univ</td>
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<td>S1-D-3-4</td>
<td>Pathogenic α-synuclein species in prion-like seeded aggregation</td>
<td>Airi Tarutani, Genjiro Suzuki, Aki Shimosawa, Shin-Ichi Hisanaga, Masato Hasegawa  Tokyo Met Inst Med Sci, Tokyo, Japan  Tokyo Metropolitan University, Tokyo, Japan</td>
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<td>S1-D-3-5</td>
<td>Dysfunctional lysosomes occur prior to any degenerative changes in the brains of patients with Parkinson's disease</td>
<td>Glenda Margaret Halliday, Karen Murphy  UNSW Australia</td>
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### Symposium S1-E-1
**The Japan-China Joint Symposium: Recent advances in the development of nonhuman primate models for brain disorders**

**Chairpersons:** Masahiko Takada  Primate Research Institute, Kyoto University  Zilong Qiu  Institute of Neuroscience, Chinese Academy of Sciences

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<td>Genetically modified marmoset models for brain disorders</td>
<td>Erika Sasaki  Central Institute for experimental animals, Kanagawa, Japan  Keio University, Advanced Research Centers, Tokyo, Japan</td>
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<td>S1-E-1-2</td>
<td>Genetically modified monkey models of human diseases</td>
<td>Xiao-Jiang Li, Zhuchi Tu, Weili Yang, Xudong Liu, Sen Yan, Shihua Li  Institute of Genetics and Developmental Biology, Chinese Academy of Sciences  Emory University School of Medicine, Atlanta, GA USA</td>
</tr>
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</table>
S1-E-1-3 Autism-like behaviors and germline transmission in transgenic monkeys overexpressing MeCP2
Zilong Qiu
Institute of Neuroscience, Chinese Academy of Sciences, China

S1-E-1-4 Disrupted brain connectomics of transgenic monkeys overexpressing MeCP2
Zheng Wang
Chinese Academy of Sciences

S1-E-1-5 Genetic and neuronal correlates of autistic behavior in the macaque
Masaki Isoda
Dept Physiol, Kansai Medical University, Osaka, Japan

S1-E-1-6 A naturally emerging primate model of multiple system atrophy
Taihei Ninomiya
Sys Neurosci. Primate Res Inst, Kyoto Univ, Aichi

Symposium S1-E-2 14:00 ~ 16:00 Room E (301)
Network dissection of hippocampal function
Chairpersons: Yoshiaki Shinohara Laboratory for Neuron-Glia Circuitry, RIKEN Brain Science Institute
Kenji Mizuseki Department of Physiology, Graduate School of Medicine, Osaka City University

S1-E-2-1 Hippocampal CA1 pyramidal cells form functionally distinct sublayers
Kenji Mizuseki
Dept Physiol, Osaka City Univ Grad Sch of Med, Osaka, Japan

S1-E-2-2 Hippocampal network activity during spatial working memory
Takuya Sasaki
Lab Chem Pharmacol, Grad Sch Pharma Sci, Univ of Tokyo, Tokyo

S1-E-2-3 Experience drives development of left-right asymmetrical gamma oscillations in rat hippocampus
Yoshiaki Shinohara
Neuron-Glia Circuitry Team, RIKEN Brain Science Institute

S1-E-2-4 Complementary roles of multiple medial entorhinal cortex inputs into hippocampus
Takaši Kitamura
RIKEN-MIT Center for Neural Circuit Genetics, MIT, USA

S1-E-2-5 Speed cells for spatial orientation based on self-motion cues
Emilio Kropff Causa
Leloir Institute - CONICET, Buenos Aires, Argentina

S1-E-2-6 Temporal spike coordination in the prefrontal-thalamo-hippocampal circuit during trajectory decisions
Hiroshi Ito1,2, Edvard I Moser2, May-Britt Moser2
1Max Planck Institute for Brain Research, Frankfurt am Main, Germany 2Kavli Institute for Systems Neuroscience, Trondheim, Norway

Symposium S1-E-3 17:00 ~ 19:00 Room E (301)
Positive- and negative-valenced associations; lessons from amygdala and mushroom body
Tetsuya Tabata Institute of Molecular and cellular Biosciences The University of Tokyo

S1-E-3-1 Principles of memory encoding revealed by neuronal circuit analysis in Drosophila.
Pierre-Yves Plaçais1, Michael John-Dolan2, Ghislain Belliard-Guerin1, Gregory Jefferis1, Thomas Preat1
1ESPCI, CNRS, Paris, France 2Laboratory of Molecular Biology, MRC, Cambridge

S1-E-3-2 The mode of dopamine signaling for reinforcement of sensory inputs association in the Drosophila mushroom bodies
Kohei Ueno
Learning & Memory Project, Tokyo Metropolitan Institute of Medical Science, Tokyo, Japan

S1-E-3-3 Bidirectional switch of disinhibition for differentiating positive and negative associations
Daisuke Yamazaki, Makoto Hiroi, Maki M Ohtsubo, Yuko Maeyama, Tetsuya Tabata
Lab of Neurosci, Inst of Mol Cell Biosci, Univ of Tokyo, Japan
S1-E-3-4 Visualization of neuronal activities for anxiety behavior in the bed nucleus of the stria terminalis
Hiroshi Nomura, Garret D Stuber
Dept Psychiatry, Univ of North Carolina at Chapel Hill, Chapel Hill, USA

S1-E-3-5 Regulation of fear memory via nociceptive amygdala
Ayako M Watabe, Fusao Kato
Dept Neurosci, Jikei Univ Sch Med

S1-E-3-6 Critical roles of CREB-Arc signaling in fear memory formation
Ryang Kim¹, Kazuki Sakai¹, Takashi Kawashima¹, Mio Nonaka¹, Manaka Goto¹, Hiroaki Koyama¹, Shigetaka Kobari¹, Itaru Imayoshi¹, Hiroyuki Okuno², Haruhiko Bito¹,²
¹Dept Neurochem, Grad Sch of Med, Univ Tokyo, Tokyo, Japan ²CREST, AMED, Chiyoda-ku, Tokyo, Japan

Symposium S1-F-1 9:00 ~ 11:00 Room F (302)
Regulation and function of neuronal activity-dependent gene expression

Chairpersons: Akiko Tabuchi University of Toyama, Graduate School of Medicine & Pharmaceutical Sciences
Nobuhiko Yamamoto Osaka University, Graduate School of Frontier Biosci.

S1-F-1-1 Activity-dependent regulation of neural enhancers
Tae-Kyung Kim
UT Southwestern Medical Center, Dallas, USA

S1-F-1-2 Roles of transcriptional cofactors for CREB and SRF in the regulation of neuronal plasticity-related gene expression
Akiko Tabuchi¹, Mamoru Fukuchi¹, Keietsu Kikuchi¹, Yukimi Kubo¹, Shizuku Shoji¹, Tomoyuki Hakamata¹, Takuro Tanaka¹, Natsumi Satou¹, Yuta Ishibashi¹, Hiroyuki Sakagami², Haruhiko Bito², Hiroyuki Okuno³, Toshihisa Tsuda³
¹Grad Sch of Med & Pharm Sci, Univ of Toyama, Toyama, Japan ²Med Innovation Center, Grad Sch of Med, Kyoto Univ, Kyoto, Japan ³Fac of Med/Grad Sch of Med, Univ of Yamanashi

S1-F-1-3 The NMDAR subunit GluN3A limits NMDAR-dependent activation of transcription in developing neurons
Anne E. West, Liang-Fu Chen, Michelle Lyons
Duke University

S1-F-1-4 Positive and negative regulation of activity-dependent thalamocortical axon branching
Nobuhiko Yamamoto
Graduate School of Frontier Biosciences, Osaka University, Suita, Japan

S1-F-1-5 Activity-dependent Arc expression: mechanism and applications
Haruhiko Bito¹,²
¹Dept Neurochemistry, Grad Sch of Med, Univ of Tokyo, Tokyo ²AMED-CREST, Tokyo, Japan

Symposium S1-F-2 14:00 ~ 16:00 Room F (302)
Advances in computational human neuroanatomy

Co-hosted by 'Understanding brain plasticity on body representations to promote their adaptive functions' Kakenhi Innovative Area
Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology

Chairpersons: Hiromasa Takemura Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology
Franco Pestilli Department of Psychological and Brain Sciences, Indiana University, USA

S1-F-2-1 Introduction to computational human neuroanatomy
Hiromasa Takemura¹,², Franco Pestilli³,⁴
¹CiNet, NICT and Osaka Univ, Osaka, Japan ²SPS, Tokyo, Japan ³Frontier Biosci., Osaka University, Osaka, Japan ⁴Dept Psych and Brain Sci, Indiana Univ, Bloomington, IN, USA ⁵Programs in Neurosci and Cogn Sci, Indiana Univ Network Sci Institute, Indiana Univ, Bloomington, IN, USA
### S1-F-2-2  New technologies for precision brain science: studying individuality and variability in large human populations

Franco Pestilli\(^1\), Cesar Caiafa\(^{1,2}\), Hiromasa Takemura\(^{3,4,5}\)

\(^1\)Indiana University, Bloomington, IN USA \(^2\)Istituto Argentino de Radioastronomia - CONICET- Argentina
\(^3\)Center for Information and Neural Networks (CiNet), National Institute of Information and Communications Technology, Japan
\(^4\)The Japan Society for the Promotion of Science, Japan \(^5\)Graduate School of Frontier Biosciences, Osaka University, Japan

### S1-F-2-3  Mapping white matter pathways in the living human brain: biodiversity & behaviour

Michel Thiebaut de Schotten

CNRS, Institut du Cerveau et de la Moelle Epinière

### S1-F-2-4  Computational MRI: from morphometry to in-vivo histology

Siawoosh Mohammadi\(^1\), Martina F. Callaghan\(^2\), Antoine Lutti\(^3\), Nikolaus Weiskopf\(^{2,4}\)

\(^1\)Department of Systems Neuroscience, Medical Center Hamburg-Eppendorf, Hamburg, Germany
\(^2\)Wellcome Trust Centre for Neuroimaging, UCL Institute of Neurology, University College London, London, UK.
\(^3\)UREN, Department of Clinical Neurosciences, CHUV, University of Lausanne, Lausanne, Switzerland
\(^4\)Department of Neurophysics, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

### S1-F-2-5  Ultra-high resolution imaging of 3D orientation of fibre tracts in the cerebral cortex, white matter and subcortical regions

Karl Zilles

Institute of Neuroscience and Medicine, Research Centre Juelich, Juelich, Germany

### Symposium S1-F-3  17:00 ~ 19:00  Room F (302)

**Linking neural-circuit dynamics to computation**

*This symposium is held as part of RIKEN symposium.

**Chairpersons:** Taro Toyoizumi \(\text{Brain Science Institute, RIKEN}\) Andrea Benucci \(\text{Brain Science Institute, RIKEN}\)

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<td>Predictive modeling using human neuroimaging data</td>
<td>Yukiyasu Kamitani(^{1,2}) (\text{Grad Sch of Info, Kyoto Univ, Kyoto}) ATR CNS, Kyoto, Japan</td>
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<td>S1-F-3-2</td>
<td>Discovering collective dynamics and computation in neural circuits</td>
<td>Maneesh Sahani (\text{University College London})</td>
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<td>S1-F-3-3</td>
<td>Neural substrate of dynamic Bayesian inference in posterior parietal cortex</td>
<td>Akihiro Funamizu(^1), Bernd Kuhn(^2), Kenji Doya(^1) (\text{Neural Computation Unit, Okinawa Institute of Science and Technology}) (\text{Optical Neuroimaging Unit, Okinawa Institute of Science and Technology})</td>
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<td>S1-F-3-4</td>
<td>Stability of discrete cortical representations in the presence of synaptic turnover</td>
<td>Matthias Kaschube(^1), Jens-Bastian Epple(^1), Dominik Aschauer(^1), Anna Chambers(^1), Simon Rumpel(^2) (\text{Frankfurt Institute for Advanced Studies, Frankfurt, Germany}) (\text{University of Mainz, Germany})</td>
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<td>S1-F-3-5</td>
<td>Spine-size fluctuations enable stable cell assembly learning in recurrent circuit models</td>
<td>James Humble(^1), Haruo Kasai(^2), Taro Toyoizumi(^1) (\text{RIKEN Brain Science Institute}) (\text{Graduate School of Medicine University of Tokyo})</td>
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<td>S1-F-3-6</td>
<td>Plasticity and fluctuations of dendritic spines in mice models of autism and schizophrenia.</td>
<td>Haruo Kasai (\text{Laboratory of Structural Physiology, Center for Disease Biology and Integrative Medicine, Faculty of Medicine, University of Tokyo})</td>
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Symposium

Day 2 - Thursday, July 21

Symposium S2-B-1  9:00 ~ 11:00  Room B (501)
New understanding of dopaminergic functions in health and disease

Co-hosted by 'Non-linear Neuro-oscillology: Towards Integrative Understanding of Human Nature' Grant-in-Aid for Scientific Research on Innovative Areas

Chairpersons:
Toshikuni Sasaoka  Niigata University Brain Research Institute
Atsushi Nambu  Division of System Neurophysiology, National Institute for Physiological Sciences

S2-B-1-1 Transient attention and definitive reward coding by the two phasic dopamine response components
Wolfram Schultz
University of Cambridge

S2-B-1-2 Distinct roles of the basal ganglia and the frontal cortex in cognitive control of action
Eiji Hoshi
Tokyo Metropolitan Institute of Medical Science

S2-B-1-3 Vulnerability of dopaminergic cells in Parkinson’s disease
José A. Obeso
Centro Integral de Neurociencias AC (CINAC), Fundacion HM-Hospitales de Madrid and Ciberned

S2-B-1-4 The monoamine neurons - its physiological role and related neuropsychological diseases
Hiroshi Ichinose
Grad Sch Biosci & Biotech, Tokyo Inst Tech, Yokohama, Japan

S2-B-1-5 Dopaminergic transmission maintains dynamic activity changes in the basal ganglia to appropriately control movements
Satomi Chiken1, Atsushi Nambu1,2
1Div System Neurophysiol, National Inst for Physiological Sci, Okazaki, Japan  2Dept Physiol Sci, SOKENDAI, Okazaki, Japan

Symposium S2-B-2  14:00 ~ 16:00  Room B (501)
Long range circuit interactions controlling learned behaviors

*This symposium is held as part of RIKEN symposium.

Chairpersons:
Joshua P. Johansen  RIKEN Brain Science Institute
Shigeyoshi Fujisawa  RIKEN Brain Science Institute

S2-B-2-1 Functional imaging cortical and subcortical inputs to the hippocampus in behaving mice
Attila Losonczy
Columbia University, Department of Neuroscience, New York, Unites States

S2-B-2-2 Long-range neuronal mechanisms of conditioned fear expression
Cyril Herry
NEUROCENTER MAGENDIE-INSERM U862

S2-B-2-3 Coordination of prefrontal-rhinal-hippocampal activity during temporal associative learning
Kaori Takehara-Nishiuchi
Dept Psych, Univ of Toronto, Toronto, Canada

S2-B-2-4 Hippocampal encoding of spatial information of self and other
Shigeyoshi Fujisawa
RIKEN Brain Science Institute, Saitama, Japan

S2-B-2-5 Functional specificity based on efferent connectivity in the locus coeruleus noradrenaline system
Joshua P. Johansen
RIKEN Brain Science Institute
Symposium S2-B-3 17:00 ~ 19:00  Room B (501)
Exploring causal machinery of inter-/intra-areal circuit for brain functions

Chairpersons: Masaki Takeda  Juntendo University School of Medicine
             Yoshikazu Isomura  Brain Science Institute, Tamagawa University

S2-B-3-1  Experience-dependent maturation of neural circuits and functions in the secondary visual cortex of rats
Yumiko Yoshimura$^{1,2}$
$^1$Nat Inst Physiol Sci, Okazaki, Japan  $^2$SOKENDAI, Okazaki, Japan

S2-B-3-2  Synchronized excitability in a network enables generation of internal neuronal sequences.
Eva Pastalkova$^1$, Yingxue Wang$^1$, Zachary Roth$^{1,2}$
$^1$HHMI  $^2$Department of Mathematics, University of Nebraska-Lincoln, Lincoln, NE, 68588, USA

S2-B-3-3  Cortical, striatal and hippocampal circuits for reward-based behaviors
Yoshikazu Isomura
Brain Sci Inst, Tamagawa Univ, Tokyo

S2-B-3-4  Brain mechanism for successful memory recall: layer specific inter-areal circuit in temporal cortex
Masaki Takeda$^{1,2}$
$^1$Juntendo University Graduate School of Medicine, Tokyo, Japan  $^2$Univ of Tokyo Graduate School of Medicine, Tokyo, Japan

S2-B-3-5  Control of visual processing through optogenetic and electrical stimulation in the non-human primate
David Sheinberg
Brown University

Symposium S2-C-1 9:00 ~ 11:00  Room C (502)
Genome editing in Neuroscience

Chairpersons: Hitoshi Okazawa  Medical Research Institute, Tokyo Medical and Dental University
             Kohichi Tanaka  Medical Research Institute, Tokyo Medical and Dental University

S2-C-1-1  High efficient CRISPR knock-in in mouse
Kohichi Tanaka$^{1,2}$, Tomomi Aida$^1$
$^1$Lab of Mol Neurosci, Medical Res Institute, Tokyo Medical & Dental Univ, Tokyo, Japan  $^2$CBIR, Tokyo Medical & Dental Univ, Tokyo, Japan

S2-C-1-2  Modeling Human Psychiatric/Neurological Disorders using Transgenic technologies and Genome-Editing in Non-human Primates.
Hideyuki Okano$^1$
$^1$Dept Physiol, Keio Univ Sch Med, Tokyo, Japan

S2-C-1-3  Gene modification of the adult mouse brain using viral vector-mediated genome editing
Hidenori Aizawa
Dept Neurobiol, Inst Biomed Health Sci, Hiroshima Univ

S2-C-1-4  Genome editing iP5 cells by CRISPR-Cas9 for Duchenne muscular dystrophy gene therapy
Akitsu Hotta
Center for iPS Cell Research and Application (CiRA), Kyoto University

S2-C-1-5  Optical control of the genome
Moritoshi Sato
Graduate School of Arts and Sciences, The University of Tokyo, Tokyo, Japan

Symposium S2-C-2 14:00 ~ 16:00  Room C (502)
Frontiers of advanced, high-resolution optical imaging for neuroscience

Sponsored by GORYO Chemical Inc.

Chairpersons: Yasushi Okada  RIKEN QBIC
             Hiromi Ueda  University of Tokyo/RIKEN QBIC

S2-C-2-1  High resolution imaging analysis of postsynaptic structure
Shigeo Okabe
Dept Cell Neurobiol, Univ of Tokyo, Tokyo, Japan
S2-C-2-2 Development and application of super-resolution live imaging and single-molecule imaging for the study of neurons
Yasushi Okada
Quantitative Biology Center, RIKEN, Osaka, Japan

S2-C-2-3 Correcting spherical aberration using a transmissive liquid crystal device in two-photon excitation laser scanning microscopy
Ayano Tanabe1,2, Terumasa Hibi1, Sari Ipponjima1,2, Kenji Matsumoto3, Masafumi Yokoyama1, Makoto Kurihara1, Nobuyuki Hashimoto1, Tomomi Nemoto1,2
1Grad. Sch. of Info Sci., and Tech., Hokkaido Univ., Hokkaido, Japan 2RIES., Hokkaido Univ., Hokkaido, Japan
3Citizen Holdings Co. LTD., Saitama, Japan

S2-C-2-4 Adaptive optical microscope for high resolution deep tissue fluorescence imaging
Kai Wang1, Wenzhi Sun1, Na Ji1, Eric Betzig2
1Institute of Neuroscience, SIBS, CAS 2Janelia Research Campus, HHWM

S2-C-2-5 Whole-body and Whole-organ Clearing and Imaging with Single-cell Resolution toward Organism-level Systems Biology in Mammals
Hiroki R. Ueda1,2
1The University of Tokyo 2RIKEN QBiC

Symposium S2-C-3
17:00 ~ 19:00 Room C (502)

Chronic pain as a "neuroplasticity disease"

Yu-Lin Dong  Department of Anatomy, The Fourth Military Medical University, Xi’an, China

S2-C-3-1 Role of the amygdala in early phase of the central pain chronification
Yukari Takahashi1,2, Yuta Miyazawa1,2, Yae K Sugimura1,2, Mariko Sugimoto1,2, Kei Shinohara1,2, Zahra Ghasemi1,2, Ayako M Watabe1,2, Fusao Kato1,2
1Dept Neurosci, Jikei Univ Sch Med, Tokyo, Japan 2Center for Neuroscience of Pain, Jikei Univ Sch Med, Tokyo, Japan

S2-C-3-2 Roles of paraventricular thalamus and central nucleus of amygdala in mechanical allodynia of neuropathic pain
Yu-Lin Dong  The Fourth Military Medical University

S2-C-3-3 Alterations of resting-state brain activity in central dysfunctional pain patients
Shigeyuki Kan1, Hironobu Uematsu1, Seiichi Osako2, Hisashi Tanaka1, Yoshiyuki Watanabe1, Masahito Shibata1
1Dept Pain Manag, Osaka Univ Grad School of Med, Osaka, Japan 2Dept Anesthesiol, Osaka Univ School of Med, Osaka, Japan

S2-C-3-4 Pathology and Pharmacology of Locus coeruleus in Chronic Pain
Ken-Ichiro Hayashida  Dept Neurophysiol, Akita Univ Sch Med, Akita

S2-C-3-5 Chronic pain induced long term synaptic plasticity in the anterior cingulate cortex
Kohei Koga1, Min Zhuo2
1Dept Neurophysiol, Hirosaki University, Aomori, Japan 2Dept Physiol, Graduate School of Med, Univ of Toronto, Toronto, Canada

Symposium S2-D-1
9:00 ~ 11:00 Room D (503)
The Japan-Canada Joint Symposium: Science of consciousness

JNS - organized symposia

Chairpersons: Ryota Kanai  Araya Brain Imaging KK
Anthony Phillips  University British Columbia

S2-D-1-1 What are the contents of consciousness that are generated by the ventral vs. the dorsal stream of visual processing?
Melvyn Alan Goodale  University of Western Ontario

S2-D-1-2 Can machines have consciousness?
Ryota Kanai  Araya Brain Imaging, Tokyo, Japan
### Symposium S2-D-2

**JNS-JSNP Joint Symposium: Translational researches for development of medicines for mental disorders**

**Chairpersons:**
- Norio Ozaki  
  Department of Psychiatry, Nagoya University Graduate School of Medicine
- Kazutaka Ikeda  
  Addictive Substance Project, Tokyo Metropolitan Institute of Medical Science

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<td>NMDA receptor channel GluN2D subunit as a target molecule for medicines for mental disorders</td>
<td>Kazutaka Ikeda, Yoko Hagino, Soichiro Ide</td>
<td>Addictive Substance Project, Tokyo Metropolitan Institute of Medical Science</td>
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<td>S2-D-2-2</td>
<td>R-ketamine as rapid onset antidepressant</td>
<td>Kenji Hashimoto</td>
<td>Dev Clin Neurosci, Chiba Univ, Chiba, Japan</td>
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<td>S2-D-2-3</td>
<td>Translational research in psychiatry</td>
<td>Ryota Hashimoto</td>
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 1.United Graduate School of Child Development, Osaka University, Osaka, Japan  
 2.Department of Psychiatry, Osaka University Graduate School of Medicine, Osaka, Japan |
| S2-D-2-4 | The significance of dopamine D2 receptor partial agonists as drugs of psychiatric disorders | Tetsuro Kikuchi | Qs' Research Institute, Otsuka Pharmaceutical Co., Ltd., Tokushima, Japan |

### Symposium S2-D-3

**Cortical development in health and diseases**

**Chairpersons:**
- Kozo Kaibuchi  
  Department of Molecular Genetics, Weizmann Institute of Science
- Orly Reiner  
  Department of Psychiatry, Nagoya University Graduate School of Medicine

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<td>S2-D-3-1</td>
<td>The dysfunction of neurodevelopmental genes, NDE1 and RELN in schizophrenia revealed by the common disease-rare variant hypothesis</td>
<td>Norio Ozaki</td>
<td>Department of Psychiatry, Nagoya University Graduate School of Medicine, Nagoya, Japan</td>
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<td>S2-D-3-2</td>
<td>A mechanism of autism-related cortical overgrowth at early postnatal stages</td>
<td>Yukiko Gotoh, Dennis O'leary, Daichi Kawaguchi</td>
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 1.Graduate School of Pharmaceutical Sciences, The University of Tokyo, Tokyo, Japan  
 2.The Salk Institute, USA |
| S2-D-3-3 | Cell-extrinsic and -intrinsic mechanisms that control the neuronal layer identity in the developing neocortex | Kazunori Nakajima | Dept Anat, Keio Univ, Tokyo, Japan |
| S2-D-3-4 | Unexpected Activities of the Complement Pathway in Migrating Neurons | Orly Reiner, Anna Gorelik, Tamar Sapiro, Rebecca Haffner-Krausz, Trent Woodruff |  
 1.Weizmann Institute of Science  
 2.School of Biomedical Sciences, University of Queensland, Brisbane, QLD 4072, Australia |
| S2-D-3-5 | Physiological and pathological analyses of a psychiatric disorder-related gene, AUTS2 | Mikio Hoshino, Taku Nagai, Shinichiro Taya, Kenji Sakimura, Kiyofumi Yamada, Kozo Kaibuchi, Kei Hori |  
 1.National Institute Neuroscience, NCNP, Tokyo, Japan  
 2.Nagoya University Graduate School of Medicine  
 3.Niigata Univ. BRL, Niigata |
Symposium S2-E-1

Newly-occurring knowledge of molecular mechanism concerning polarity formation of the myelinating nerve

Chairpersons: Junji Yamauchi  Department of Pharmacology, National Research Institute for Child Health and Development  Nobuhiko Ohno  Interdisciplinary Graduate School of Medicine and Engineering, University of Yamanashi

S2-E-1-1  Submembranous cytoskeleton in myelinating glia stabilizes nodes of Ranvier
Keiichiro Susuki  Dept Neurosci, Cell Biol & Physiol, Wright State Univ Sch of Med, Dayton, USA

S2-E-1-2  Tyro3 receptor and the binding partner Fyn promote PNS myelination
Junji Yamauchi, Yuki Miyamoto  NICHD of Japan

S2-E-1-3  Membrane Skeletal Protein Complex, 4.1G-MPP6-Src-CADM4, in Peripheral Nerve Schwann Cells
Nobuo Terada, Yurika Saitoh, Nobuhiko Ohno  Division of Health Sciences, Shinshu University Graduate School of Medicine

S2-E-1-4  Tuning of excitable axonal domains in central auditory neurons
Hiroshi Kuba  Dept Cell Physiol, Nagoya Univ Grad Sch Med, Japan

S2-E-1-5  Polarization of energy metabolism and mitochondrial behavior in myelinated axons
Nobuhiko Ohno  Dept Anat Mol Histol, Univ Yamanashi, Chuo, Japan

Symposium S2-E-2

Behavior directed toward others: Neural and endocrine regulation of brain and mind development

Chairpersons: Masaki Kakeyama  Waseda University Faculty of Human Sciences  Shinji Tsukahara  Graduate School of Science and Engineering, Saitama University

S2-E-2-1  Introduction of Symposium: Mouse social behavior, environmental and genetic factors
Masaki Kakeyama  Waseda University Faculty of Human Sciences

S2-E-2-2  Calcium-dependent phosphorylation signaling in emotional and social limbic circuits
Sayaka Takemoto-Kimura, Kanzo Suzuki, Toshihiro Endo, Ryang Kim, Hiroaki Koyama, Shin-Ichiro Horigane, Satoshi Kamijo, Hajime Fuji, Haruhiko Bito  Dept Neuroscience I, Research Institute of Environmental Medicine, Nagoya Univ, Nagoya, Japan

S2-E-2-3  Vasopressin and Oxytocin Receptor Genes AVPR1a and OXTR and Aggression in Children and Adolescents
Irwin Douglas Waldman, Devon Loparo, Courtney Lyding, Haase Walum, Ada Johansson, Pekka Santilla, Lars Westberg, Kimberly Kerley, Larry Young, Kerry Ressler  Emory University

S2-E-2-4  Gonadal steroid actions on sex-specific formation of the brain
Shinji Tsukahara  Grad Sch Sci Engin, Saitama Univ

S2-E-2-5  Hormonal influences on social brain: Modification of sex-typical social behaviors by hormonal and environmental factors
Sonoko Ogawa  Lab Behavioral Neuroendocrinology, Univ. of Tsukuba, Tsukuba, Japan
**Symposium S2-E-3**

**Action-perception coupling: neuroscientific approach**

Co-hosted by 'The Science of Mental Time' Kakenhi Innovative Area, 'Understanding brain plasticity on body representations to promote their adaptive functions' Kakenhi Innovative Area

**Chairpersons:** Nobuhiro Hagura CiNet, NICT, Tsuyoshi Ikegami CiNet, NICT

**S2-E-3-1** Action costs bias perceptual decisions
Nobuhiro Hagura1, Patrick Haggard2, Jorn Diedrichsen3,3
1CiNet, NICT, Osaka, Japan 2Institute of Cognitive Neuroscience, University College London, London, UK 3Univ. Western Ontario, London, Canada

**S2-E-3-2** Embodied decision-making during interactive behavior in a dynamic world
David Thura, Paul Cisek
Dept Neuroscience, Univ of Montreal, Montreal, Canada

**S2-E-3-3** Shared mechanism in the production of actions and the prediction of observed actions
Tsuyoshi Ikegami1, Ganesh Gowrishankar2,3
1Center for Information and Neural Networks(CiNet), National Institute of Information and Communications Technology, Osaka, Japan 2Centre national de la recherche scientifique, France 3National Institute of Advanced Industrial Science and Technology(AIST), Tsukuba, Japan

**S2-E-3-4** Action, Perception, and Decision Making: when are cognitive and perceptual processes 'embodied' in motor circuits?
Flavia Filimon
MAX PLANCK INSTITUTE FOR HUMAN DEVELOPMENT, BERLIN GERMANY

**S2-E-3-5** The cortical sensori-motor system investigated through touchscreen interactions
Arko Ghosh
University of Zurich

**Symposium S2-F-1**

**New probes and new light: Evolution of optogenetics for neuroscientific**

**Chairpersons:** Hiromu Yawo Dept.of Dev. Biol. and Neurosci., Tohoku Univ., Grad.Sch.of Life Sci. Ken Berglund Emory University School of Medicine

**S2-F-1-1** Super-duper bioluminescent proteins for optical imaging and control of biological functions
Takeharu Nagai
ISIR, Osaka Univ, Osaka, Japan

**S2-F-1-2** Luminopsins: Integration of Opto- and Chemogenetics by Using Physical and Biological Light Sources for Opsin Activation
Ken Berglund
Dept Neurosurgery, Emory Univ Sch of Med

**S2-F-1-3** Light-driven cation pump rhodopsins for optogenetics
Keiichi Inoue1,2
1Grad Sch Eng, Nagoya Inst of Tech, Nagoya, Japan 2JST PRESTO

**S2-F-1-4** Up-conversion optogenetic system using near-infrared (NIR) light
Hiromu Yawo1,2, Shoko Hososhima1, Mohammad Razuanul Hoque1, Hideya Yuasa3, Takayuki Yamashita1, Akihiro Yamanaka1, Toru Ishizuka1
1Department of Developmental Biology and Neurosciences, Graduate School of Life Science, Tohoku University, Miyagi, Japan 2Department of Neuroscience, Tohoku University Graduate School of Medicine, Sendai, Japan 3Department of Life Science, Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology, Yokohama, Japan
Symposium S2-F-2 14:00 ~ 16:00 Room F (302)
Mechanisms regulating prefrontal cortex maturation: Relevance to psychiatric disorders

Chairpersons: Hirofumi Morishita
Takeshi Sakurai
Department of Psychiatry & Neuroscience, Icahn School of Medicine at Mount Sinai
Medical Innovation Center, Kyoto University Graduate School of Medicine

S2-F-2-1 Development and function of mouse prefrontal cortex
Takeshi Sakurai
Medical Innovation Center, Kyoto Univ, Kyoto, Japan

S2-F-2-2 Molecular Control of Prefrontal Cortex Maturation for Establishing Attention
Hirofumi Morishita
Friedman Brian Institute, Icahn School of Medicine at Mount Sinai, USA

S2-F-2-3 Social experience-dependent glia development in the medial prefrontal cortex related to autism spectrum disorder
Manabu Makinodan1, Kazuhiko Yamamuro1, Hiroki Yoshino1, Daisuke Ikawa1, Yasunori Yamashita1, Yuki Miyamoto2, Junji Yamauchi2, Toshifumi Kishimoto1
1Department of Psychiatry, Nara Medical University School of Medicine, Kashihara, Nara, Japan
2Department of Pharmacology, National Research Institute for Child Health and Development, Setagaya, Tokyo, Japan

S2-F-2-4 Involvement of stress-associated pathways in the developmental trajectory of cortical maturation and behavior: relevance to major mental illness
Minae Niwa
Johns Hopkins University School of Medicine

S2-F-2-5 Role of redox regulation in prefrontal parvalbumine interneurons and myelin maturation
Kim Q. Do, Jan-Harry Cabungcal, Daniella Dwir, Pascal Steullet, Michel Cuenod
Lausanne University Hospital

Symposium S2-F-3 17:00 ~ 19:00 Room F (302)
No self-control; disturbed decision-making in psychiatric disorders

Chairpersons: Shigenobu Toda
Eisuke Koya
Department of Psychiatry, Kanazawa University Hospital
School of Psychology, University of Sussex

S2-F-3-1 The insular GABAergic system controls decision-making in drug dependent rats
Hiroayuki Mizoguchi1, Kiyofumi Yamada2
1Res. Inst. Environmental Med., Nagoya Univ., Nagoya, Japan

S2-F-3-2 Involvement of brainstem noradrenaline system in acute stress-induced enhancement of cocaine craving behavior
Katsuyuki Kaneda
Lab Mol Pharmacol, Kanazawa Univ, Kanazawa, Japan

S2-F-3-3 The intrinsic membrane excitability properties of orbitofrontal cortex and nucleus accumbens neurons activated by sucrose-associated cues
Eisuke Koya, Jospeh Ziminski, Sabine Hessler, Meike Sieburg, Gabriella Margetts-Smith
University of Sussex

S2-F-3-4 Identification of neuronal ensembles in the entire striatum that coincides with the transition period from goal-directed to habitual during instrumental learning in rats
Shigenobu Toda
Dept. of Psychiatry and Neurobiology, Kanazawa University School of Medicine, Ishikawa, Japan

S2-F-3-5 Neural mechanisms for delay discounting in psychiatric disorders
Saori C Tanaka-Kawawaki
ATR CNS, Kyoto, Japan
Symposium S3-A-1 17:00 ~ 19:00 Room A (Main Hall)

Behavioural disruption and brain networks of psychiatric disease

Chairpersons: Mitsuo Kawato Advanced Telecommunications Research Institute International
Ben Seymour Cambridge University / Center for Information and Neural Networks (CiNet), NICT

S3-A-1-1 Impulsivity and compulsivity: Neural substrates and neuropsychiatric implications
Trevor Robbins
University of Cambridge

S3-A-1-2 Flexible modulation of risk attitude during decision-making under quota and its impairments in gambling disorders
Hidehiko Takahashi
Dept Psychiatry, Kyoto Univ, Kyoto

S3-A-1-3 Connectomics in health and disease: graph theoretical analysis of brain networks
Edward T Bullmore1,2
1University of Cambridge 2GlaxoSmithKline, Immuno-Psychiatry, Academic Discovery Performance Unit, Cambridge UK

S3-A-1-4 Brain network models of chronic pain.
Wako Yoshida1,2
1ATR CNS, Kyoto, Japan 2NICT CiNet, Osaka, Japan

Symposium S3-B-1 9:00 ~ 11:00 Room B (501)

Neural mechanisms underlying social decision-making and communications

ICP2016-related symposia

Chairpersons: Hidehiko Takahashi Department of Psychiatry, Kyoto University Graduate School of Medicine
Yosuke Morishima University Hospital of Psychiatry, University of Bern

S3-B-1-1 The neural mechanisms underlying interpersonal blink synchrony
Tamami Nakano1,2
1Grad Sch Front Bio, Osaka Univ, Osaka 2Dept Brain Physiol, Grad Sch Med, Osaka Univ, Osaka, Japan

S3-B-1-2 Functional architecture of brain networks reveals (mal)adaptive processing of social information
Yosuke Morishima1,2
1University of Bern, University of Bern 2JST PRESTO

S3-B-1-3 Neural substrates of face-to-face communication through eyes: an approach with hyperscanning fMRI
Norihiro Sadato
Dep Cereb Res, NIPS, Okazaki, Japan

S3-B-1-4 Neural Circuitry of Iterated Strategic Thinking
Colin Camerer
California Institute of Technology
Symposium S3-B-2 14:00 ~ 16:00 Room B (501)
Symposium on Industry-Academia Collaboration: Human resource development for applied neuroscience
*In Japanese

Chairperson: Manabu Honda National Center of Neurology and Psychiatry/Industry-Academia Partnership Committee, Japan Neuroscience Society

S3-B-2-1 Symposium on Industry-Academia Collaboration: Human resource development for applied neuroscience
Manabu Honda¹, Yasuharu Koike², Tetsuto Minami³, Rieko Osu⁴, Takuya Ibaraki⁵, Ippei Hagiwara⁵
¹Dept Functional Brain Res, NCNP, Tokyo, Japan ²Tokyo Institute of Technology, Kanagawa, Japan ³TOYOHASHI University of Technology, Aichi, Japan ⁴The Nielsen Company Japan, Tokyo, Japan ⁵NTT DATA INSTITUTE OF MANAGEMENT CONSULTING, Inc., Tokyo, Japan

Symposium S3-B-3 17:00 ~ 19:00 Room B (501)
Data-driven approaches to complex brain functions

ICP2016-related symposia

Co-hosted by ‘Innovative SHITSUKAN Science and Technology’ Grant-in-Aid for Scientific Research on Innovative Areas

Chairpersons: Shin’ya Nishida NTT Communication Science Labs
Yukiyasu Kamitani Graduate School of Informatics, Kyoto University

S3-B-3-1 Brain decoding via deep neural network feature representation
Tomoyasu Horikawa ATR CNS, Kyoto, Japan

S3-B-3-2 Human computation: how we can harness the power of human intelligence
Yukino Baba Dept. of Intelligence Science and Technology, Kyoto University, Kyoto, Japan

S3-B-3-3 New Models of Human Auditory Cortex via Deep Learning
Josh McDermott, Alex Kell, Sam Norman-Haignere, Dan Yamins MIT

S3-B-3-4 Utility of Deep Neural Network (DNN) for Neuroscientists
Izumi Ohzawa¹,²
¹Graduate School of Frontier Biosciences, Osaka University ²Center for Information and Neural Networks (CiNet), Osaka, Japan

Symposium S3-C-1 9:00 ~ 11:00 Room C (502)
Leading edge of viral vectors that visualize / manipulate a specific network in the CNS

Chairpersons: Hirokazu Hirai Department of Neurophysiology & Neural Repair, Gunma University Graduate School of Medicine
Hiroyuki Nakai Oregon Health & Science University School of Medicine

S3-C-1-1 Neural Circuit Tracing with Glycoprotein-Deleted Rabies Viruses
Fumitaka Osakada¹,²,³
¹Lab Cell Pharmcol, Nagoya Univ, Japan ²Lab Neural Info Process, Nagoya Univ, Japan ³PRESTO JST Systems Neurobiol Lab, Salk Inst, USA

S3-C-1-2 Dissecting higher olfactory neural circuits by projection-based viral and genetic technology in mice
Kazunari Miyamichi¹,², Kentato Ishii¹,², Kazushige Touhara¹,²
¹Dept Appt Biol Chem, the Grad School of Agri Life Sci, Univ of Tokyo, Tokyo, Japan ²JST ERATO Touhara Chemosensory Signal Project

S3-C-1-3 AAV Barcode-Seq: a novel high-throughput approach to develop the next generation AAV vectors for CNS gene therapy
Hiroyuki Nakai Dept Mol Med Genet, Oregon Health and Science University, Portland, OR, USA
S3-C-1-4  Development of viral vectors labeling a specific cell population in non-human primates and their
application to generation of a neurodegenerative disease model
Hirokazu Hirai1,2
1Dept Neurophysiol & Neural Repair, Gunma Univ, Gunma, Japan  2Gunma Univ, Initiative for Advanced Research, Gunma, Japan

Symposium S3-C-2  14:00 ~ 16:00  Room C (502)
Fiberphotometory-mediated cell-type specific recording from deep brain
structure in behaving animal

Chairpersons:  Akihiro Yamanaka
Kenji F. Tanaka

S3-C-2-1  In vivo recoding of activity of orexin neurons in the hypothalamus using fiber photometry
Akihiro Yamanaka, Ayumu Inutsuka, Akira Yamashita, Toru Taguchi
RIEM, Nagoya Univ, Aichi, Japan

S3-C-2-2  Ventral striatopallidal neurons govern motivated behaviors
Kenji Tanaka1, Hiroshi Nishida1, Iku Tsutsui-Kimura1, Akiyo Natsubori2
1Keio University School of Medicine  2Tokyo Metropolitan Institute for Medical Science

S3-C-2-3  Kinase imaging in freely moving animals by fiber-bundle type micro-endoscope
Kazuo Funabiki1,2
1Inst Biomedical Research Innovation, Kobe, Japan  2Riken Center for Life Science Technologies, Kobe, Japan

S3-C-2-4  Optical monitoring of the activity of ventromedial hypothalamic neurons of female mice during
sociosexual behavior
Kensaku Nomoto, Susana Q Lima
Champalimaud Neuroscience Programme, Lisbon, Portugal

Symposium S3-C-3  17:00 ~ 19:00  Room C (502)
Brain’s spark: Biophysics of neurotransmitter receptors and channels

Chairpersons:  Makoto Tominaga
Yasushi Okamura

S3-C-3-1  Homologous CALHM subunits assemble to form a novel voltage-gated ATP channel
Akiyuki Taruno1, Hiroaki Miyazaki1, Naomi Niisato1,3, Hongxin Sun1, Makiko Kashio1, Yoshinori Marunaka1,2
1Dept Mol Cell Physiol, Kyoto Pref Univ of Med  2Dept Bio-Ionomics, Kyoto Pref Univ of Med, Kyoto, Japan
3Health Sports Sci, Kyoto Gakuen Univ, Kyoto, Japan

S3-C-3-2  Molecular mechanism of the olfactory masking
Hiroko Takeuchi
Grad Sch Frontier Biosci, Osaka Univ, Toyonaka, Japan

S3-C-3-3  Molecular mechanism of novel channel and transporter
Osamu Nureki
Dept Biological Sciences, The Univ. of Tokyo, Tokyo

S3-C-3-4  Structural rearrangements of the ATP receptor channel P2X2 associated with voltage and ATP-
dependent gating of the pore
Yoshihiro Kubo1,2, Batu Keceli1, Rizki Andriani1,2
1Div Biophys and Neurobiol, Natl Inst Physiol Sci, Aichi, Japan  2Dept Physiol Sci, SOKENDAI, Kanagawa, Japan

S3-C-3-5  Single channel analysis of the thermosensitive TRP channels in planar lipid bilayers
Kunitoshi Uchida1, Eleonora Zakharian1, Makoto Tominaga1,2
1Div Cell Signaling, CIB (NIPS), Okazaki, Japan  2Dept Physiol Sci, SOKENDAI, Okazaki, Japan
3Dept of Cancer Biol and Pharmacol, Univ of Illinois Coll of Med, Peoria, USA

S3-C-3-6  How does voltage sensor domain regulate downstream effector?: lesson from voltage-sensor
domain proteins
Yasushi Okamura1, Souhei Sakata2, Akira Kawanabe1, Yuichiro Fujiiwara1, Yuka Jinno1
1Grad Sch Med, Osaka Univ, Suita  2Department of Physiology, Osaka Medical College
Symposium S3-D-1 9:00 ~ 11:00  Room D (503)

Coordinated regulation of neural network by inhibitory and excitatory neurons

Chairpersons:  Yumiko Yoshimura  National Institute for Physiological Sciences
              Mikio Hoshino  National Institute of Neuroscience, NCNP

S3-D-1-1  Generation of cerebellar neurons from human pluripotent stem cells
Keiko Muguruma  RIKEN Center for Developmental Biology

S3-D-1-2  The deficiency of DSCAML1, which is a mutant model with limbic-like seizures, induces the excitatory and inhibitory imbalance.
Shinichiro Taya¹, Yoneko Hayase¹, Mayumi Yamada¹, Toshihiko Momiyama², Takuma Nishijo³, Yoshiki Miura¹, Yukihiro Ohno¹, Takui Imaoku¹, Yuchio Yanagawa¹, Nobuo Ihara¹, Tadao Serikawa¹, Shigeru Amano², Mikio Hoshino¹

S3-D-1-3  Interaction between GABAergic cells and two types of target-specific pyramidal cells in layer 5 of the rat frontal cortex
Mieko Morishima¹, Yasuo Kawaguchi¹²
¹National Institute for Physiological Sciences, Aichi, Japan  ²SOKENDAI, Okazaki, Japan

S3-D-1-4  Experience-dependent maturation of inhibitory circuits in ocular dominance plasticity
Sayaka Sugiyama, Xubin Hou
Lab Neuro Dev, Grad Sch Med Dent Sci, Niigata Univ

S3-D-1-5  Beyond inhibition: stress-induced (meta)plasticity at hypothalamic GABA synapse
Wataru Inoue¹, Jaideep Bains²
¹Robarts Research Institute, Univ of Western Ontario, London, Canada

Symposium S3-D-2 14:00 ~ 16:00  Room D (503)

Biology of autism

*This symposium is held as part of RIKEN symposium.

Chairpersons:  Toru Takumi  RIKEN Brain Science Institute
              Katsuhiko Tabuchi  Shinshu University

S3-D-2-1  Modeling Autism
Toru Takumi  RIKEN BSI, Saitama, Japan

S3-D-2-2  Complement family proteins—complementary and essential synaptic organizers
Michisuke Yuzaki  Dept Physiol, Kielo Univ Sch of Med, Tokyo, Japan

S3-D-2-3  Visualization of altered dynamics of the dendritic spine in the rodent model of neuropsychiatric disorders
Akiko Hayashi-Takagi  Lab for Structural Physiology, Univ of Tokyo, Tokyo, Japan

S3-D-2-4  Coordinated spine pruning and maturation mediated by inter-spine competition for cadherin/catenin complexes
Xiang Yu, Wen-Jie Bian, Miao Wang, Wan-Ying Miao, Shu-Ji He, Zilong Qiu
Institute of Neuroscience, Chinese Academy of Sciences

S3-D-2-5  Modification of genes associated with synaptic functions in the subpopulation of neurons in mouse brains and the effects on pathophysiology of autism.
Katsuhiko Tabuchi  Dept Mol Cell Physiol, Shinshu Univ Sch Med, Matsumoto, Japan
Symposium S3-D-3 17:00 ~ 19:00 Room D (503)

Molecular dynamics driving neuronal morphogenesis

Chairpersons: Hiroyuki Kamiguchi RIKEN Brain Science Institute
Makoto Kinoshita Nagoya University Graduate School of Science

S3-D-3-1 Cytoskeletal control of dynamic motility of the nucleus during neuronal migration
Mineko Kengaku1 2, You K Wu1 2, Hiroki Umeshima1 2, 1Inst for Integrated Cell-Material Sci, Kyoto Univ. 2Dept Biostudies, Kyoto Univ, Kyoto, Japan

S3-D-3-2 Myosin Va-dependent membrane export for axon guidance
Fumitaka Wada, Hiroyuki Kamiguchi
Laboratory for Neuronal Growth Mechanisms, RIKEN Brain Science Institute, Satama

S3-D-3-3 Septins promote dendrite and axon development by negatively regulating microtubule stability via HDAC6-mediated deacetylation
Natsumi Ageta-Ishihara1, Takaki Miyata2, Masahiko Watanabe3, Haruhiko Bito4, Makoto Kinoshita1
1Dept Mol Biol, Grad Sch Sci, Nagoya Univ, Nagoya, Japan 2Dept Anatomy and Cell Biol, Grad Sch Med, Nagoya Univ, Nagoya, Japan 3Dept Anatomy, Grad Sch Med, Hokkaido Univ, Sapporo, Japan 4Dept Neurochem, Grad Sch Med, Univ Tokyo, Tokyo, Japan

S3-D-3-4 Long-distance membrane trafficking for neural network formation
Yoshio Goshima1, Naoya Yamashita1 2 1Dept Mol Pharmacol and Neurobiol, Grad Sch Med, Yokohama City Univ, Yokohama, Tokyo 2Department of Biology, Johns Hopkins University, Baltimore 21218, MD, 21218, USA

Symposium S3-E-1 9:00 ~ 11:00 Room E (301)

Novel mechanisms of the vesicular recycling in the presynaptic terminals

Chairperson: Michihiro Igarashi Dept Neurochem & Mol Cell Biol, Niigata Univ, Grad Sch Med Dent Sci

S3-E-1-1 Presynaptic CaMKII Regulates Short-term Plasticity through the Interaction with Syntaxin
Michihiro Igarashi
Dept Neurochem & Mol Cell Biol, Niigata Univ Grad Sch Med Dent Sci

S3-E-1-2 Phosphorylation of an active zone protein controls short-term plasticity
Sumiko Mochida
Dept Physiol, Tokyo Medical University, Tokyo, Japan

S3-E-1-3 Two-photon fluorescence lifetime imaging of primed SNARE complexes.
Noriko Takahashi1, Wakako Sawada1, Jun Noguchi1, Ucar Hasan1, Satoshi Watanabe1 2, Haruo Kasai1
1Dept Structural Physiol, Univ of Tokyo, Tokyo, Japan 2Dept Bioengineering Robotics, Tohoku University, Miyagi, Japan

S3-E-1-4 Regulation of synaptic vesicle exocytosis by nanoassembly of synaptic molecules
Shigueyi Namiki, Hirokazu Sakamoto, Tetsuro Ariyoshi, Kenzo Hirose
Dept Neurobiol, Grad Sch of Med, Univ of Tokyo, Tokyo, Japan

S3-E-1-5 Relation of Vesicle Positioning to Pool Identity and Exocytotic Fusion Mode: Insight from Real-time Three-dimensional Tracking of Single Synaptic Vesicles in Live Neurons
Hyokeun Park
Hong Kong University of Science and Technology

S3-E-1-6 Role of heparan sulfate in excitatory synapses
Yu Yamaguchi, Fumitoshi Irie
Sanford Burnham Peby Medical Discovery Institute

Symposium S3-E-2 14:00 ~ 16:00 Room E (301)

Exploring brain functions and connections using faster and more accurate MRI approaches

Chairpersons: Kang Cheng RIKEN Brain Science Institute
Tetsuya Matsuda Tamagawa University Brain Science Institute

S3-E-2-1 Multiband imaging for higher spatial and temporal resolutions for studying brain functions
Essa Yacoub
University of Minnesota
Symposium S3-E-3 17:00 ~ 19:00 Room E (301)
Exploring evolutionary roots of "Social Brain" with a comparative point of view

Co-hosted by 'Empathetic Systems' Grant-in-Aid for Scientific Research on Innovative Areas
The Japanese Association for Neuroethology

Chairpersons: Hideaki Takeuchi  Molecular Ethology Laboratory, Graduate School of Natural Science and Technology, Okayama University
Ei-Ichi Izawa  Department of Psychology, Keio University

S3-E-3-1 Neural mechanism of social behaviors mediated by individual recognition in medaka fish

S3-E-3-2 Physiological and psychological mechanisms for inter-individual social relationships in crows
Ei-Ichi Izawa  Dept Psychology, Keio Univ, Tokyo, Japan

S3-E-3-3 Neural mechanisms underlying social memory and social familiarity
Teruhiro Okuyama  Picower Inst. for Learning and Memory, MIT, Cambridge, USA

S3-E-3-4 Neuroimaging and social behavior in common marmosets
Chihiro Yokoyama  Func Arch Imag Unit, RIKEN CLST, Kobe, Japan

S3-E-3-5 Integrative Neuroscience of Social Competence
Hans A Hofmann  The University of Texas at Austin

Symposium S3-F-1 9:00 ~ 11:00 Room F (302)
Frontiers of consciousness studies in mice

Chairpersons: Katsuei Shibuki  Brain Res. Inst., Niigata Univ.
Christof Koch  Allen Institute for Brain Science

S3-F-1-1 Neural correlates of visual awareness organized by short-term memory in mice
Katsuei Shibuki1 2 1Dept Neurophysiol, Brain Res Inst, Niigata Univ, Niigata, Japan  CREST

S3-F-1-2 Gene codes for generating the complex neural networks in the brain
Takeshi Yagi  Grad Front Biosci, Osaka Univ, Osaka, Japan

S3-F-1-3 Physiological Roles of Top-Down Input in Behaviors
Masanori Murayama  Behavioral Neurophysiology Lab, Brain Science Institute, Riken

S3-F-1-4 The Why and How of Studying Consciousness in the Laboratory Mouse
Christof Koch  Allen Institute for Brain Science
Symposium S3-F-2 14:00 ~ 16:00 Room F (302)
Postmodern neuroscience: Deconstruction of the neuron central dogma

Chairpersons: Hiroaki Wake  Division of Homeostatic Development, National Institute of Physiological Sciences
Ko Matsui  Division of Interdisciplinary Medical Science, Tohoku University Graduate School of Medicine

S3-F-2-1 The role of microglia in learning during systemic inflammation
Hiroaki Wake
National Institute for Physiological Sciences, NINS, Okazaki, JAPAN

S3-F-2-2 Possibility of pathology control via manipulation of astrocyte function
Ko Matsui
Div of Interdisciplinary Med Sci, Tohoku Univ, Sendai, Japan

S3-F-2-3 Increased neuronal excitability by genetic manipulation of astrocytic Ca\(^{2+}\) signals
Eiji Shigetomi\(^1\), Yukiko Hirayama\(^1\), Schuichi Koizumi\(^1\), Fumikazu Sano\(^1,2\)
\(^1\)Dept Neuropharmacol, Univ Yamanashi, Yamanashi  \(^2\)Dept Pediatr, Univ Yamanashi, Yamanashi

S3-F-2-4 Thermal stimulation-induced activation of microglia in epilepsy
Ryuta Koyama, Yuji Ikegaya
Lab. Chem. Pharmacol., Grad. Sch. Pharmaceut. Sci., Univ. Tokyo, Tokyo, Japan

S3-F-2-5 Myelination: a new dimension for experience dependent brain maturation
Gabriel Corfas\(^1\), Manabu Makinodan\(^\ast\), Patrick Long\(^1\), Xiangying Meng\(^1\), Patrick Kanold\(^2\)
\(^1\)Kresge Hearing Research Institute, The University of Michigan  \(^2\)Nara Medical University, Kashihara, Nara 634-8522, Japan

Symposium S3-F-3 17:00 ~ 19:00 Room F (302)
Neuroinformatics for integration of multidimensional Neuroscience

Chairpersons: Yoko Yamaguchi  Neuroinformatics Japan Center
Teiichi Furuichi  Tokyo University of Science

S3-F-3-1 Enhancing Brain Transcriptome Database by Neural Gene Ontology
Teiichi Furuichi
Dept Appl Biol Sci, Fac Sci Tech, Tokyo Univ Sci, Chiba, Japan

S3-F-3-2 Improving reproducibility in neuroimaging and neuroscience: current challenges and future neuroinformatics solutions
Jean-Baptiste Poline
University of California at Berkeley, CA, USA

S3-F-3-3 Standardized Provenance for Reproducible Dataflows in Neuroscience
Satrajit S Ghosh\(^1,2\)
\(^1\)Massachusetts Institute of Technology  \(^2\)Department of Otolaryngology, Harvard Medical School, Boston, MA, USA

S3-F-3-4 Using the neuroimaging data model (NIDM) for databasing and querying complex data
David Bryant Keator
University of California, Irvine

S3-F-3-5 Toward biophysically-detailed and large-scale neural circuit simulation of insect brain
Tomoki Kazawa
RCAST, Univ of Tokyo, Tokyo

S3-F-3-6 Development of Neuroinformatics to Data Science through International Collaboration
Yoko Yamaguchi
Neuroinformatics Japan Center, RIKEN BSI

Symposium S3-G-1 9:00 ~ 11:00 Room G (303)
Brain mechanisms of decision timing

Chairpersons: Shogo Sakata  Department of Behavioral Sciences, Graduate School of Integrated Arts & Sciences, Hiroshima University
Catalin V Buhusi  Department of Psychology, Utah State University

S3-G-1-1 Emotion and Timing in the Brain
Catalin V Buhusi, Alexander R Matthews, Mona Buhusi
Utah State University
Symposium S3-G-2

Singapore-Japan 50 Neuroscience Symposium

14:00 ~ 16:00  Room G (303)

The President of the Annual Meeting - organized symposia

Chairpersons: Balázs Zoltán Gulyás  Lee Kong Chian School of Medicine, Imperial College London - Nanyang Technological University
Carlos Ibanez  National University of Singapore, Neurobiology Programme

S3-G-2-1 Direct induction and functional maturation of forebrain GABAergic neurons from human pluripotent stem cells.
Hyunsoo Shawn Je1,2, Alfred X Sun1,3, Qiang Yuan1,2
1Duke-NUS Medical School  2Department of Physiology Yong Loo Lin School of Medicine, National University of Singapore, Singapore  3National Neuroscience Institute

S3-G-2-2 Thalamo-cortical axons regulate the radial dispersion of neocortical GABAergic interneurons
Carlos Ibanez  National University of Singapore

S3-G-2-3 Roles of synaptic plasticity-related mechanisms in place cell activity in the hippocampus
Ayumu Tashiro1,2
1Warwick-NTU Neuroscience Programme, Sch Biol Sci, Nanyang Technological University, Singapore  2Warwick-NTU Neuroscience Programme, Sch Life Sci, University of Warwick, Coventry, UK

S3-G-2-4 Multifunctional nanoprobe for amyloid imaging
Yang Xia1, Parasuraman Padmanabhan1, Murukeshan Vadakke Matham2, Balázs Gulyás2
1Lee Kong Chian School of Medicine and School of Mechanical and Aerospace Engineering, Nanyang Technological University, Singapore  2Lee Kong Chian School of Medicine, Nanyang Technological University  3School of Mechanical and Aerospace Engineering, Nanyang Technological University