

TOHOKU Brain Science Symposium

in collaboration with **University of Oxford,**
University College London, and University of Zurich

19th - 21st January 2015

at Sensyokan Hotel, Nakayamadaira, Naruko, Miyagi, Japan

Program



TOHOKU Brain Science Symposium Organizing Committee

Toshio Iijima (Director of Tohoku University BSC, Tohoku University)

Mark Buckley (University of Oxford)

Philippe Tobler (University of Zurich)

Ken-Ichiro Tsutsui (Tohoku University)

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Monday, 19th January 2015

- 16:15 – 16:30 Welcome Speech
Toshio Iijima
Director of Tohoku University Brain Science Center
- 16:30 – 17:00 Further information:
Aim of the symposium, introduction of participants



Kokeshi

A traditional wooden doll produced in this Naruko district

Tuesday, 20th January 2015

Learning, Memory, and Emotion

08:45 – 08:50 Opening remarks of the day

08:50 - 09:35 Everything you ever wanted to know about the hippocampus but were afraid to ask!*

David Bannerman

Department of Experimental Psychology, University of Oxford

09:35 - 10:00 Hippocampal-medial temporal circuit investigated by neurotracing technique using virus vectors

Shinya Ohara

Graduate School of Life Sciences, Tohoku University

(Coffee break 15 min)

10:15 - 11:00 Separating reward from attention in the brain*

Philippe Tobler

Department of Economics, University of Zurich

11:00 - 11:35 Risk coding properties of single neurons in the frontal cortex

Martin O'Neill

Department of Experimental Psychology, University of Oxford

11:35 - 12:00 Contrasting the function of anterior insular and orbitofrontal cortex in risky decision making

Hironori Ishii

Graduate School of Life Sciences, Tohoku University

(Lunch break 60 min)

13:00 – 14:30 Short presentations

**Juri Fujiwara, Kazuhiro Sakamoto, Rie Ryoke,
Kei Oyama, Shizu Hidema, Akira Shimizu,
Yasushi Yabuki, Sho Sato, Yukina Tateyama**

(Coffee break 15 min)

- 14:45 - 15:20 Mesolimbic dopamine: reward prediction in action
Mark Walton
Department of Experimental Psychology, University of Oxford
- 15:20 - 15:50 Self: from perspective of functional brain mapping
Motoaki Sugiura
Institute of Development, Aging and Cancer, Tohoku University

(Coffee break 15 min)

- 16:05 – 16:50 Stress response and brain-gut interactions in normal and pathological conditions*
Shin Fukudo
Graduate School of Medicine, Tohoku University
- 16:50 – 17:25 The role of dopamine and serotonin in motivation in normal and disease state
Takafumi Minamimoto
National Institute of Radiological Sciences
- 17:25 – 17:30 Closing remarks of the day

* These talks include 10 minutes of basic educational content on the topic in the beginning.

Chairpersons

Morning Session: David Bannerman

Short presentations session: Ken-Ichiro Tsutsui

Afternoon Session: Philippe Tobler

Wednesday, 21st January 2015

Higher Cognitive Control

- 08:55 – 09:00 Opening remarks of the day
- 09:00 - 09:45 Performance monitoring and behavioral adjustment in the medial frontal areas*
Hajime Mushiake
Graduate School of Medicine, Tohoku University
- 09:45 – 10:30 The essential contribution of primate frontopolar cortex to cognition*
Mark Buckley
Department of Experimental Psychology, University of Oxford

(Coffee break 15 min)

- 10:45 - 11:20 Organization of the prefrontal cortex in humans and macaques
Jerome Sallet
Department of Experimental Psychology, University of Oxford
- 11:20 - 11:45 Differential role of prefrontal, posterior parietal, and premotor cortices in the delayed response task revealed by on-line rTMS
Shinya Nakamura
Graduate School of Life Sciences, Tohoku University
- 11:45 – 12:20 Remembering delayed intentions: Distinct roles of medial and lateral prefrontal regions
Sam Gilbert
Institute of Cognitive Neuroscience, University College London

(Lunch break 60 min)

- 13:20 – 13:50 Role of the primate medial prefrontal cortex in the guidance of action under the presence of multiple response tactics
Yoshiya Matsuzaka
Graduate School of Medicine, Tohoku University

13:50 - 14:25 Non-invasive measurement of population dynamics during
computation of choice
Miriam Klein-Flügge
Department of Experimental Psychology, University of Oxford

(Coffee break 15 min)

14:40 – 15:15 Bridging microscopic and macroscopic choice dynamics in prefrontal
cortex
Laurence Hunt
Wellcome Trust Centre for Neuroimaging, University College London

15:15 – 15:45 Representation of functional category and its integration with context
information for behavioral selection within the prefrontal cortex
Takayuki Hosokawa
Graduate School of Life Sciences, Tohoku University

15:45 – 15:50 Closing remarks of the day

* These talks include 10 minutes of basic educational content on the topic in the
beginning.

Chairpersons

Morning Session: Masataka Watanabe

Afternoon Session: Mark Buckley