

The Brain Conferences

Learning, Memory and Synaptic Plasticity

23 – 26 April 2017

Rungstedgaard, Denmark

PROGRAMME

Sunday, 23 April 2017	
From 14:00	Arrival and registration
14:20-14:30	Welcome address from the Conference Chairs
<i>Session Moderator: Tim Bliss</i>	
14:30-15:10	Expressing LTP Graham Collingridge, University of Bristol (UK), University of Toronto & Lunenfeld-Tanenbaum Research Institute (CA)
15:10-15:50	Short-term potentiation in the CA1 area of the rat hippocampus Morten Skovgaard Jensen, Institut for Biomedicin, Aarhus Universitet (DK)
15:50-16:20	Afternoon Snack
16:20-17:00	The Minimum Requirements for AMPAR Synaptic Trafficking Roger Nicoll, University of California, San Francisco (USA)
17:00-17:40	Molecular mechanisms of AMPA receptor delivery during LTP Robert Malenka, Stanford University School of Medicine (USA)
17:40-18:00	Break
18:00-19:00	Plasticity, Fear, and the Amygdala: From Pavlov to PTSD Kerry Ressler, McLean Hospital & Harvard Medical School (USA)
19:00-21:30	Welcome Drink & Dinner

Monday, 24 April 2017

*Morning Session Moderator: **Robert Malenka***

09:00-09:40	Linking AMPA receptor nanoscale organisation and function at excitatory synapses Daniel Choquet, Interdisciplinary Institute for Neuroscience, UMR 5297 CNRS-Université de Bordeaux (FR)
09:40-10:20	Regulation of AMPA Receptors and Synaptic Plasticity in the Brain Richard Huganir, Johns Hopkins University School of Medicine (USA)
10:20-10:50	Group Picture and Coffee Break
10:50-11:30	NMDA receptor subunits in STP, LTP and LTD Arturas Volianskis, Barts and The London School of Medicine and Dentistry, Queen Mary University of London (UK)
11:30-11:50	The role of the protein phosphatase STEP in organising synaptic vs extra synaptic glutamate receptors Katherine Roche, National Institute of Neurological Disorders and Stroke, NIH/NINDS (USA)
11:50-12:10	The role of a unique synaptotagmin isoform in a post-synaptic 'forgetting' mechanism of synaptic plasticity Camín Dean, European Neuroscience Institute, Göttingen (DE)
12:10-12:30	Gamma oscillations organise top-down signalling to hypothalamus and enable food seeking Tatiana Korotkova, The Max Planck Institute for Metabolism Research (DE)
12:30-14:00	Lunch
<i>Afternoon Session Moderator: Kay Tye</i>	
14:00-14:40	Behavioural neuroscience: at a cross-road for the study of memory? Richard Morris, The University of Edinburgh (UK)
14:40-15:20	Synaptic cooperation and competition in the lateral amygdala (LA) Rosalina Fonseca, Instituto Gulbenkian de Ciência (PT)
15:20-15:35	Poster Spotlights I * (9 presentations, 90 seconds each)
15:35-17:05	Poster Session I with Afternoon Snack
17:05-17:45	LTP/LTD and memory mechanisms: convergent, divergent or parallel pathways Agnès Gruart, Universidad Pablo de Olavide, de Sevilla (ES)
17:45-18:30	Identification of the synapses involved in memory formation Haruo Kasai, Graduate School of Medicine, The University of Tokyo (JP)
18:30-19:00	End of the day: Group discussion on LTP mechanisms Robert Malenka (moderator)

19:00-19:45	Meet the Editors (Moderator: Alison Abbott , Nature; with Paul Bolam /EJN, Noah Gray / Nature, Gabriel Gasque /PLOS Biology, Peter Stern /Science, Katherine Whalley /Nature Reviews Neuroscience, Rebecca Wright /Nature Neuroscience)
20:00 - 21:30	Dinner

Tuesday, 25 April 2017	
<i>Morning Session Moderator: Richard Morris</i>	
09:00-09:40	Engram Cell Circuits for Memory Retention and Systems Consolidation of Memory Susumu Tonegawa, The Picower Institute for Learning and Memory, MIT (USA)
09:40-10:20	Making Memories Sheena Josselyn, Hospital for Sick Children and University of Toronto (CA)
10:20-10:40	Corticostriatal-like circuit in the amygdala for appetitive behaviours Xiangyu Zhang & Joshua Kim, Massachusetts Institute of Technology (USA)
10:40-11:00	Coffee break
11:15-15:15	Box Lunch, outing to Kronborg Castle
15:30-16:10	Neural Circuits Underlying Positive and Negative Valence Kay Tye, Massachusetts Institute of Technology (USA)
16:10-16:25	Poster Spotlights II ** (9 presentations, 90 seconds each)
16:25-18:00	Poster Session II with Afternoon Snack
<i>Afternoon Session Moderator: Daniel Choquet</i>	
18:00-18:40	Decoding distributed limbic-cortical assemblies in cognition, sleep and disease Matt Jones, University of Bristol (UK)
18:40-19:20	Neural ensemble dynamics underlying long-term associative memory Mark Schnitzer, Stanford University (USA)
19:20-19:40	Specification of a remote memory cell ensemble during cortical tagging through activity-dependent Arc signalling Haruhiko Bito, Graduate School of Medicine, The University of Tokyo (JP)
20:00-21:30	Dinner

Wednesday, 26 April 2017

Morning Session Moderator: Yadin Dudai

09:00-09:40	Molecular, cellular and circuit mechanisms that link memories across time Alcino Silva, Integrative Center for Learning and Memory Brain Research Institute, University of California, Los Angeles (USA)
09:40-10:20	How Plasticity within Primary Sensory Cortex Enables the Detection of Novelty Sam Cooke, King's College London (UK)
10:20-10:50	Coffee Break
10:50-11:30	Circuit mechanisms of associative fear in auditory cortex Johannes Letzkus, Max Planck Institute for Brain Research, Frankfurt (DE)
11:30-12:10	Food for thought: Leptin and synaptic function in health and disease Jenni Harvey, University of Dundee (UK)
12:10-14:00	Lunch
<i>Afternoon Session Moderator: Sheena Josselyn</i>	
14:00-14:40	A neuron-glia circuit for associative fear learning in the auditory cortex Arthur Konnerth, Institute of Neuroscience, Technical University of Munich (DE)
14:40-15:20	Neural Correlates of Spatial Memory Dysfunction in Alzheimer's Disease Abid Hussaini, The Taub Institute at Columbia University Medical Center (USA)
15:20-16:00	Inflammation triggers synaptic dysfunction in experimental autoimmune encephalomyelitis Robert Nisticò, European Brain Research Institute Rita-Levi Montalcini & University of Rome Tor Vergata (IT)
16:00-16:20	Coffee Break
16:20-16:40	Offline reactivation stabilizes recently formed hippocampal cell assembly patterns Gido van de Ven, University of Oxford (UK)
16:40-17:20	The Elusive Time Present: The Case for Cognitive Cascades Yadin Dudai, The Weizmann Institute of Science (IL) & New York University (USA)
17:20-18:00	Tying it all together: Group Discussion & Closing Remarks Richard Morris & Robert Malenka
19:00-22:00	Gala Dinner & Poster Awards

* Poster Spotlights I

Monday, 24 April 2017, 3:20-3:35 pm

1	Distinct action potential patterns and rhythms can induce different spike timing-dependent plasticity variants Elke Edelmann, Otto-von-Guericke University Magdeburg (DE)
2	Transporter-mediated regulation of extracellular glutamate and its role in synaptic plasticity Jocelyn Barnes, Memorial University of Newfoundland (CA)
3	Role of TRPC1 ion channel in hippocampal neurons Philippe Gailly, University of Louvain (BE)
4	Calcium binding of Copine-6 is essential for spine structure in vivo Diana Flores, University of Basel (CH)
5	Long term depression (LTD) requires JAK2/STAT3 signalling at adult temporoammonic (TA)-CA1 synapses Gemma McGregor, University of Dundee (UK)
6	Mechanisms of PDZ domain Scaffold Assembly Illuminated by Use of Supported Cell Membrane Sheets Kenneth Madsen, University of Copenhagen (DK)
7	Cortical plasticity induced by fear learning- ultrastructural changes in the barrel cortex Malgorzata Kossut, Nencki Institute (PL)
8	Substance P induces plasticity and synaptic tagging/capture in hippocampal area CA2 Ananya Dasgupta & Sreedharan Sajikumar, National University of Singapore (SG)
9	Serotonin regulates the firing of principal cells of the subiculum by inhibiting a T-type Ca ²⁺ current Jean-Francois Perrier, University of Copenhagen (DK)

**** Poster Spotlights II**

Tuesday, 25 April 2017, 4:10-4:25 pm

1	Parvalbumin hilar interneurons as a gating mechanism for contextual memories Jose Maria Carames Tejedor, Instituto de Neurociencias de Alicante (ES)
2	Time Units for Learning Involving Maintenance of System-wide cFos Expressing Neuronal Assemblies Ananya Chowdhury, Friedrich Miescher Institute for Biological Research (CH)
3	Functional segregation of hippocampal subdivisions in learning and memory Maria Lahr, Friedrich Miescher Institute for Biological Research (CH)
4	Distinct roles for cortico- and thalamostriatal projections in motor skill learning and execution Steffen Wolff, Harvard University (USA)
5	Critical role of ventral hippocampal parvalbumin interneurons in fear memory persistence: Insights into network mechanisms Gürsel Caliskan, Otto-von-Guericke University Magdeburg (DE)
6	Ketamine is effective in an animal model of treatment resistant depression Vitor Silva Pereira, Aarhus University (DK)
7	Modelling prion-like spread using induced Pluripotent Stem Cell-derived neurons from a Parkinson's Disease patient Helena Borland, H. Lundbeck A/S (DK)
8	Cell type-specific translation profiling reveals a novel strategy for treating fragile X syndrome Emily Osterweil, The University of Edinburgh (UK)
9	The effect of bacterial infection on molecular pathways of long-term potentiation in an APP/PS1 mouse model of Alzheimer Disease Camilla Thygesen, University of Southern Copenhagen (DK)