

Wednesday 15th April 2015

SYMPOSIA

08:30 - 10:30

37. Theme D: Learning, Memory and Cognition Venue: Pentland

Memory consolidation: an interdisciplinary approach

Convenor: Lisa Morrison Coulthard (British Psychological Society)

Chaired by: Sergio Della Sala (University of Edinburgh)

37.01 **Effects of wakeful rest on early memory consolidation and forgetting**

Michaela Dewar

Heriot Watt University

37.02 **Accelerated long-term forgetting: a case for pathological consolidation?**

Adam Zeman

University of Exeter

37.03 **Hippocampal inhibitory networks in Alzheimer's disease pathology**

Iris Oren

University of Edinburgh

37.04 **Memory Consolidation by Replay**

Nikolai Axmacher

University of Bonn

37.05 **Acetylcholine and consolidation**

Michael Hasselmo

Boston University

This Symposium is sponsored by the **British Psychological Society**



The British
Psychological Society

08:30 - 10:30

38. Theme B: Molecular, Cellular and Synaptic Mechanisms Venue: Sidlaw

Microglia and neuronal function

Convenor: Marina Lynch (Trinity College Dublin)

Chaired by: Marina Lynch (Trinity College Dublin)

38.01 **The impact of microglial phenotype on neuronal function**

Marina Lynch

Trinity College Dublin

38.02 **Innate immune responses in the brain following neuronal injury**

Stuart Allan

University of Manchester

38.03 Systemic inflammation and neural function in health and disease

Jessica Teeling
Southampton General Hospital

38.04 New roles for proinflammatory cytokines in Alzheimer's Disease pathogenesis

Kerry O'Bannion
University of Rochester Medical Center

08:30 - 10:30

39. Theme A: Development

Venue: Fintry

Molecular mechanisms of neurodevelopment and links to later-life neurological disorders

Convenor: Kevin Mitchell (Trinity College Dublin)
Chaired by: Kevin Mitchell (Trinity College Dublin)

39.01 Mouse models to elucidate the contribution of genes to neurodevelopmental defects and the emergence of pathophysiology.

Kevin Mitchell
Trinity College Dublin

39.02 The brain-gut-microbiome and its influence on neurodevelopment

Gerald Clarke
University College Cork

39.03 Investigating the role of endoplasmic reticulum proteins in motor neuron degeneration

Niamh O'Sullivan
University College Dublin

39.04 Cellular and molecular mechanisms controlling the development and maturation of neural networks

Beatriz Rico
King's College London

This Symposium is sponsored by **Neuroscience Ireland**



08:30 - 10:30

40. Theme E: Sleep, Circadian and Neuroendocrine Mechanisms

Venue: Lowther

Sleep, Brain State and Sensory Processing

Convenor: Vladyslav Vyazovskiy (University of Oxford)
Chaired by: Kenneth Harris (University College London)

40.01 Cortical mechanisms of sleep regulation

Vladyslav Vyazovskiy
University of Oxford

- 40.02 Functional scaling of synaptic inputs during cortical rhythmic activity**
 Maria Sanchez-Vives
University of Barcelona
- 40.03 Neuromodulation of attentional signals in macaque frontal cortex**
 Alexander Thiele
University of Newcastle
- 40.04 Wakefulness, locomotion, and navigation: a view from visual cortex**
 Kenneth Harris
University College London

This Symposium is sponsored by the **Sleep and Circadian Neuroscience institute**



08:30 - 10:30

41. Theme G: Methods and Techniques **Venue: Menteith**

Non-invasive brain stimulation: from neuroenhancement to neurorehabilitation

Convenor: John Rothwell (UCL Institute of Neurology)
Chaired by: John Rothwell (UCL Institute on Neurology)

- 41.01 Computational neurostimulation**
 Sven Bestmann
UCL Institute of Neurology
- 41.02 Controlling brain rhythms with brain stimulation**
 Gregor Thut
University of Glasgow
- 41.03 Harnessing brain rhythms to control tremors**
 John S. Brittain
John Radcliff University Hospital Oxford
- 41.04 Improving rehabilitation of stroke patients with transcranial direct current stimulation**
 Jacinta O'Shea
University of Oxford

This Symposium is sponsored by **Magstim**



08:30 - 10:30

42. Theme F: Nervous System Disorders Venue: Lammermuir 1

Complex genetics of neurodegeneration

Convenor: Julie Williams (Cardiff University)

Chaired by: Julie Williams (Cardiff University)

42.01 **Exome sequencing in neurodegenerative diseases - more than a family business**

Rita Guerreiro

UCL Institute of Neurology

42.02 **Genetics of Dementia with Lewy bodies**

Jose Bras

UCL Institute of Neurology

42.03 **The genetics and cell biology of FTD with a focus on C9orf72**

Stuart Pickering-Brown

University of Manchester

42.04 **Complex genetics of Alzheimer's disease neurodegeneration**

Rebecca Sims

Cardiff University School of Medicine

08:30 - 10:30

43. Theme G: Methods and Techniques Venue: Lammermuir 2

Enabling novel research in neuroscience through microfluidics

Convenor: Michele Zagnoni (University of Strathclyde)

Chaired by: Trevor Bushell (University of Strathclyde) and Michele Zagnoni (University of Strathclyde)

43.01 **Use of microfluidic devices to model and examine the molecular mechanisms of synaptic plasticity following injury in long projection excitatory neurons**

Anne Marion Taylor

University of North Carolina at Chapel Hill

43.02 **Interfacing of pre-patterned neuronal networks with electronic devices**

Andreas Offenhauser

Forschungszentrum Jülich GmbH

43.03 **Microfluidics and miniaturised electrophysiology for studying neuronal function in nematodes**

Lindy Holden-Dye

University of Southampton

43.04 **Investigating functional communication between neuronal networks using microfluidics**

Michele Zagnoni

University of Strathclyde

This Symposium is sponsored by **NC3Rs**



10:30 - 11:00

REFRESHMENTS

Venue: Lennox Suite

PLENARY LECTURE

11:00 - 11:55

Annette Dolphin (University College London)

Venue: Pentland

'Neuronal voltage-gated calcium channels: from channel trafficking to therapy for neuropathic pain'

Chaired by: John Isaac (Wellcome Trust)

11:55 - 12:30

LUNCH

Venue: Lennox Suite

12:30 - 13:25

**BNA 50th ANNIVERSARY LECTURE and 2015 WOLSTENCROFT
MEMORIAL AWARD LECTURE**

Venue: Pentland

John O'Keefe (University College London), Nobel Laureate for Physiology or Medicine 2014

'The journey to the hippocampal cognitive map'

13:25 - 14:00

REFRESHMENTS

Venue: Lennox Suite

SYMPOSIA

14:00 - 16:00

44. Theme B: Molecular, Cellular and Synaptic Mechanisms

Venue: Pentland

Role of a novel type of synaptogenesis in memory formation

Convenor: Michael Stewart (The Open University)

Chaired by: Michael Stewart (The Open University)

44.01 **Nitric oxide as a mediator of synaptic crosstalk and synapse formation**

Iryna Nikonenko

University of Geneva

44.02 **Morphological alterations in spines and synapse following behavioural and pharmacological manipulations in young and old mice**

Mike Stewart

The Open University

44.03 **The mechanism of memory formation when functional plasticity is impaired**

Kasia Radwanska

Nencki Institute, Warsaw

44.04 The impact of multiple innervated spine generation in hippocampal memory: molecular studies
Peter Giese
Institute of Psychiatry, King's College London

14:00 - 16:00

45. Theme F: Nervous System Disorders **Venue: Sidlaw**

Teasing out the mechanisms of depression

Convenor: Cynthia Joyce (MQ: Transforming Mental health)

Chaired by: Catherine Harmer (Oxford University)

45.01 Cognition, circuitry and depression

Jon Roiser

University College London

45.02 The search for biological and behavioural markers of depression

Ian Goodyer

Cambridge University

45.03 Imaging the social aspects of depression

Rebecca Elliott

University of Manchester

45.04 Trans-diagnostic considerations

Daniel Smith

University of Glasgow

This Symposium is sponsored by **MQ**



14:00 - 16:00

46. Theme A: Development **Venue: Fintry**

Exploring axonal development and connectivity

Convenor: Sarah Guthrie (King's College London)

Chaired by: Andrew Furley (University of Sheffield)

46.01 Mapping a sensory axonal projection and investigating its stability with Brainbow transgenic labels

Jean Livet

Ecole de Neurosciences, Paris

46.02 Spontaneous activity and integration of guidance cues in thalamocortical axon development

Anton Filipchuck

CSIC & Universidad Miguel Hernández, Alicante

46.03 Cadherins and spontaneous activity regulate the development of cranial motor neurons

Sarah Guthrie

King's College London

46.04 Role of chondrolectin in spinal motor axon guidance and spinal muscular atrophy
Catherina Becker
University of Edinburgh

14:00 - 16:00

47. Theme E: Sleep, Circadian and Neuroendocrine Mechanisms **Venue: Lowther**

Long term consequences of poor sleep on the brain

Convenor: Mary Morrell (Imperial College London)

Chaired by: Mary Morrell (Imperial College London)

47.01 Does sleep disruption predict neurodegeneration?

Paul Reading

James Cook University Hospital, Middlesbrough

47.02 The role of hypoxia in neurodegeneration associated with sleep apnoea

Luigi Ferini-Strambi

Università Vita-Salute San Raffaele, Milan

47.03 Should we be investigating neurodegeneration or ischaemic preconditioning in sleep apnoea?

Ivana Rosenzweig

King's College London

47.04 Biomarkers and clinical consequences of poor sleep

Renata Riha

University of Edinburgh

This Symposium is sponsored by **British Sleep Society and Sleepio**



British Sleep Society
UK Multidisciplinary Sleep Professionals



14:00 - 16:00

48. Theme D: Learning, Memory and Cognition **Venue: Menteith**

Metacognition and self-awareness

Convenor: Stephen Fleming (University of Oxford)

Chaired by: Stephen Fleming (University of Oxford)

48.01 Intentions and self-awareness: towards a model of metacognition

Lucie Charles

CEA-Saclay Center, Paris

48.02 Understanding the accuracy of self-knowledge: the contribution of human prefrontal cortex to metacognition

Stephen Fleming

University of Oxford

48.03 Metacognition of interoceptive states: How prediction of bodily condition underpins emotion and self

Anil Seth
University of Sussex

48.04 Metacognition: embedding the self in culture

Chris Frith
University College London

14:00 - 16:00

49. Theme F: Nervous System Disorders

Venue: Lammermuir 1

Thinking of multiple sclerosis neurodegenerative pathology in a regenerative way

Convenor: Anna Williams (University of Edinburgh)
Chaired by: Anna Williams (University of Edinburgh)

49.01 What goes wrong in white matter in MS?

Anna Williams
University of Edinburgh

49.02 What goes wrong in grey matter in MS?

Richard Reynolds
Imperial College London

49.03 What goes wrong in axons in MS?

Julia Edgar
University of Glasgow

49.04 What can we learn from NMO - another CNS demyelinating disease?

Christine Stadelmann-Nessler
Georg-August-Universität, Göttingen

This Symposium is sponsored by **British Neuropathological Society**



14:00 - 16:00

50. Theme D: Learning, Memory and Cognition

Venue: Lammermuir 2

Action and cognition in the human cortico-cerebellar system

Convenor: Narender Ramnani (Royal Holloway, University of London)
Chaired by: Marco Catani (King's College London)

50.01 Can tractography tell us something we don't know about human cerebellar connectivity?

Marco Catani
King's College London

- 50.02** **Motor and non-motor territories of the human dentate nucleus: Mapping the topographical connectivity of the cerebellar cortex with *in-vivo* sub-millimeter diffusion imaging**
Chris Steele
Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig
- 50.03** **Mapping human cortico-cerebellar functional connectivity & its behavioral associations**
Rachael Seidler
University of Michigan, Ann Arbor
- 50.04** **The cerebellar cognitive affective syndrome (CCAS): clinical manifestations of dysmetria of thought**
Jeremy Schmahmann
Massachusetts General Hospital and Harvard Medical School, Boston

16:30 - 16:40

POSTER AWARDS

Venue: Pentland

PLENARY LECTURE

16:40 - 17:40

Richard G M Morris (University of Edinburgh)

Venue: Pentland

'The making, keeping and losing of memory'
Chaired by: John Aggleton (Cardiff University)

Sponsored by **Lundbeck UK**



17:40 -17:45

CLOSING REMARKS

Venue: Pentland

John Aggleton (BNA President)