

# Tuesday 14<sup>th</sup> April 2015

## SYMPOSIA

08:30 - 10:30

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

### **Frontal lobe mechanisms of behavioural change**

*Convenor:* Matthew Rushworth (University of Oxford)

*Chaired by:* Matthew Rushworth (University of Oxford)

23.01 **Adjusting accordingly: prefrontal areas updating valuations for objects and actions**

Betsy Murray

*National Institute of Mental Health, Bethesda*

23.02 **Neuromodulation of human frontostriatal function**

Roshan Cools

*Radboud University Nijmegen*

23.03 **Bridging microscopic and macroscopic measures of value learning and choice**

Laurence Hunt

*University College London*

23.04 **Frontal cortical interactions during behavioural change and learning**

Matthew Rushworth

*University of Oxford*

08:30 - 10:30

24. Theme F: Nervous System Disorders Venue: Sidlaw

### **Normal ageing: Alzheimer's disease risk factor number one**

*Convenor:* Michael Coleman (The Babraham Institute, Cambridge)

*Chaired by:* Stephen Wharton (Sheffield Institute for Translational Neuroscience)

24.01 **Astrocyte pathology and oxidative damage in brain ageing: insights from population neuropathology studies**

Stephen Wharton

*Sheffield Institute for Translational Neuroscience*

24.02 **Neuroinflammation in ageing and Alzheimer's disease**

Delphine Boche

*University of Southampton*

24.03 **Axonal ageing and pathology**

Michael Coleman

*The Babraham Institute, Cambridge*

24.04 **Studying anatomical and molecular correlates of cognitive ageing in the Lothian Birth Cohort - extending deep-phenotyping to the level of the synapse**

Tara Spires-Jones

*University of Edinburgh*

08:30 - 10:30

25. Theme B: Molecular, Cellular and Synaptic Mechanisms Venue: Fintry

**Modelling human disease in a dish: implications for understanding neurodegeneration and for development of novel therapies**

*Convenor:* Maeve Caldwell (Bristol Medical School)

*Chaired by:* Maeve Caldwell (Bristol Medical School)

**25.01 Generation of disease relevant neuron subtypes from human Pluripotent Stem Cells for understanding neurological diseases**

Meng Li

*Cardiff University*

**25.02 Differentiation of human pluripotent stem cells to study Alzheimer's disease and related dementias**

Maeve Caldwell

*University of Bristol*

**25.03 Differentiation of clinical grade human pluripotent stem cells into midbrain dopaminergic neurons**

Tilo Kunath

*University of Edinburgh*

**25.04 Generation of authentic dopamine neurons for use in cell therapy for Parkinsons disease**

Malin Parmar

*Lund University*

This Symposium is sponsored by the **Biochemical Society**



08:30 - 10:30

26. Theme D: Learning, Memory and Cognition Venue: Lowther

**Sex differences in synaptic plasticity and memory**

*Convenor:* Karl Peter Giese (King's College London)

*Chaired by:* Karl Peter Giese (King's College London)

**26.01 Differences in the role of nitric oxide in synaptic plasticity in males and females**

Kevin Fox

*Cardiff University*

**26.02 Sex differences in gene transcription during memory consolidation**

Keiko Mizuno

*King's College London*

**26.03 Targeting fear memory *via* beta-adrenergic receptors differs in male and female mice**

Judith ter Horst

*University of Amsterdam*

**26.04 Sex differences in the behaviour of mouse models of Alzheimer's Disease**

Richard Brown

*Dalhousie University, Canada*

**08:30 - 10:30**

**27.** Theme F: Nervous System Disorders

**Venue: Menteith**

**Cannabinoids in psychiatric neuroscience: medicine or menace?**

*Convenor:* Val Curran (University College London)

*Chaired by:* Val Curran (University College London)

**27.01 Advances in basic & translational cannabinoid neuroscience**

Jose Crippa

*Universidade de São Paulo*

**27.02 Cannabinoids, endocannabinoids and psychosis**

Celia Morgan

*University of Exeter*

**27.03 Cannabis and addiction: cause, cure or both?**

Tom Freeman

*University College London*

**27.04 Pharmacological imaging of cannabinoids in human cognitive functions**

Matthijs Bossong

*Rudolf Magnus Institute of Neuroscience, Utrecht*

**08:30 - 10:30**

**28.** Theme A: Development

**Venue: Lammermuir 1**

**What can cognitive neuroscience tell us about development**

*Convenor:* Lisa Morrison Coulthard (British Psychological Society)

*Chaired by:* Catherine Sebastian (Royal Holloway, University of London,)

**28.01 Cognitive neuroscience approaches to adolescent emotion regulation**

Catherine Sebastian

*Royal Holloway, University of London,*

**28.02 Unique challenges to adolescent self-regulation: Lessons from the brain**

Leah Somerville

*Harvard University*

**28.03 Understanding the brain mechanisms that underpin performance in childhood using magnetoencephalography**

Duncan Astle

*MRC Cognition and Brain Sciences Unit, Cambridge*

**28.04 Scores 'in the normal range' can be deceptive: neural and cognitive underpinnings to behaviours in autism spectrum disorder and Williams syndrome**

Annette Karmiloff-Smith  
*Birkbeck, University of London,*

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



The British  
Psychological Society

**08:30 - 10:30**

**29.** Theme C: Sensory and Motor Systems

**Venue: Lammermuir 2**

**Neuroimaging and quantitative sensory testing: a new approach to translational pain studies in humans**

*Convenor:* Anne King (University of Leeds)

*Chaired by:* Anne King (University of Leeds)

**29.01 Altered function and connectivity in the spinal cord and brainstem of patients with neuropathic pain**

Jon Brooks  
*University of Bristol*

**29.02 The use of CHEPS and EEG analyses to assess spinothalamic tract functional integrity in spinal cord injury**

Armin Curt  
*University of Zurich*

**29.03 The quantification of changes in brain activity with altered physiological states such as anaesthesia and pain.**

Katie Warnaby  
*University of Oxford*

**29.04 Neurophysiology and psychophysics of ascending nociception and descending pain modulation in humans: physics vs. cognition**

Rony-Reuven Nir  
*Technion - Israel Institute of Technology*

This Symposium is sponsored by **Medoc Ltd**



**10:30 - 11:15**

**REFRESHMENTS AND TRADE EXHIBITION VIEWING**

**Venue: Lennox Suite**

**10:30 - 11:15**

Speed Dating for Careers in Science – Session 3

**Venue: Platform 5 Cafe**

## **PLENARY LECTURE**

**11.15 - 12:15**

**Lorraine Tyler (University of Cambridge)**

**Venue: Pentland**

*'From perception to conception: the evolution of meaning along the ventral stream'*

*Chaired by: Dorothy Miell (University of Edinburgh)*

**12:15 - 13:15**

**LUNCH**

**Venue: Lennox Suite**

**12:15 - 13:15**

**BNA AGM**

**Venue: Pentland**

**13:15 - 14:45**

**POSTER SESSION 3 AND TRADE EXHIBITION**

**Venue: Lennox Suite**

P3-A-001 to P3-A-021

P3-B-001 to P3-B-043

P3-C-001 to P3-C-030

P3-D-001 to P3-D-060

P3-E-001 to P3-E-017

P3-F-001 to P3-F-058

P3-G-001 to P3-G-014

## SYMPOSIA

14:45 - 16:45

30. Theme B: Molecular, Cellular and Synaptic Mechanisms **Venue: Pentland**

### **Molecular mechanisms of neurodegeneration and regeneration**

*Convenor:* Giovanna Mallucci (University of Cambridge)

*Chaired by:* Giovanna Mallucci (University of Cambridge)

**30.01 Synaptic regeneration in neurodegeneration**

Giovanna Mallucci

*University of Cambridge*

**30.02 APP metabolism regulates tau proteostasis in human cerebral cortex neurons**

Steven Moore

*University of Cambridge*

**30.03 RNA metabolism and ALS**

Pietro Fratta

*University College London*

**30.04 The regenerative medicine of multiple sclerosis**

Robin Franklin

*Wellcome Trust-MRC Cambridge Stem Cell Institute*

This Symposium is sponsored by the **Association of British Neurologists**



ASSOCIATION  
OF BRITISH  
NEUROLOGISTS

14:45 - 16:45

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

### **Cholinergic neuromodulation in the CNS: from single cells to networks**

*Convenor:* Mala Shah (University College London)

*Chaired by:* David Brown (University College London)

**31.01 Cholinergic interneurons: gatekeepers to striatal dopamine function?**

Stephanie Cragg

*University of Oxford*

**31.02 Cholinergic fiber activity-induced axonal ion channel plasticity**

Mala Shah

*University College London*

**31.03 Acetylcholine and the modulation of encoding and retrieval dynamics in cortical structures**

Michael Hasselmo

*Boston University*

**31.04 Cholinergic modulation of attentional signals in striate and extrastriate visual cortex**  
Alexander Thiele  
*Newcastle University*

**14:45 - 16:45**

**32.** Theme D: Learning, Memory and Cognition **Venue: Fintry**

**Neural mechanisms underlying emotion regulation and dysregulation**

*Convenor:* Angela Roberts (University of Cambridge)

*Chaired by:* Angela Roberts (University of Cambridge)

**32.01 Altered neural circuitry underlying the risk to develop Anxiety and Depression: Nonhuman primate translational studies**

Ned Kalin

*University of Wisconsin-Madison*

**32.02 The link between anxiety, motivation and energy metabolism in the nucleus accumbens**

Carmen Sandi

*Ecole Polytechnique Federale de Lausanne*

**32.03 Prefrontal/anterior cingulate cortex-amygdala connectivity in anxious humans**

Oliver Robinson

*University College London*

**32.04 Prefrontal regulation of negative emotion and its modulation by serotonin**

Angela Roberts

*University of Cambridge*

**14:45 - 16:45**

**33.** Theme F: Nervous System Disorders **Venue: Lowther**

**Mechanisms of reward-seeking**

*Convenor:* Andrew Lawrence (Florey Institute of Neuroscience & Mental Health, Australia)

*Chaired by:* David Belin (Cambridge University)

**33.01 Modelling the transition from impulsivity to compulsive drug-seeking**

Jeff Dalley

*Cambridge University*

**33.02 A common molecular mechanism for drug and natural reward-seeking**

Rainer Spanagel

*Central Institute of Mental Health, Mannheim*

**33.03 Ascending peptide systems & stress-induced reward-seeking**

Andrew Lawrence

*Florey Institute of Neuroscience & Mental Health, Australia*

**33.04 Social reward processing during adolescence**

Viviana Trezza

*University Roma Tre*

14:45 - 16:45

34. Theme G: Methods and Techniques

Venue: Menteith

**Beyond BOLD: advances in quantitative functional and metabolic imaging**

*Convenor:* Mitul Mehta (Institute of Psychiatry, King's College London)

*Chaired by:* Fernando Zelaya (Institute of Psychiatry, King's College London)

34.01 **Recent advances in non-invasive mapping of glucose metabolism**

Xavier Golay

*University College London*

34.02 **Quantitative mapping of oxygen metabolism and oxygen extraction fraction by MRI**

Richard Wise

*University of Cardiff*

34.03 **Functional magnetic resonance spectroscopy**

Paul Mullins

*Bangor University*

34.04 **Improving spatial and temporal resolution in FMRI**

Karla Miller

*University of Oxford*

This Symposium is sponsored by **Siemens**

The Siemens logo, consisting of the word "SIEMENS" in a bold, teal, sans-serif font.

14:45 - 16:45

35. Theme F: Nervous System Disorders

Venue: Lammermuir 1

**Metabolic and vascular contributors to dementia**

*Convenor:* Bettina Platt (University of Aberdeen)

*Chaired by:* Bettina Platt (University of Aberdeen)

35.01 **High-fat diet, diabetes and cognitive decline in transgenic dementia models**

Bettina Platt

*University of Aberdeen*

35.02 **Metabolic consequences of increased beta-secretase activity in neurons**

Michael Ashford

*University of Dundee*

35.03 **Mitochondrial dysfunction in Alzheimer's disease**

Frank Gunn-Moore

*University of St Andrews*

35.04 **Neurovascular contributions to cognitive impairment and dementia**

Karen Horsburgh

*University of Edinburgh*

This Symposium is sponsored by **Alzheimer's Research UK**



**14:45 - 16:45**

**36.** Theme F: Nervous System Disorders

**Venue: Lammermuir 2**

**The neuroimmunology of stroke: inflammation, immunosuppression, infection and injury**

*Convenor:* Barry McColl (University of Edinburgh)

*Chaired by:* Barry McColl (University of Edinburgh)

**36.01 Inflammation in stroke: promoting the good and inhibiting the bad**

Stuart Allan

*University of Manchester*

**36.02 Neutrophils in stroke**

Anna Planas

*Institute for Biomedical Research, Barcelona*

**36.03 Ischaemic stroke, B cells and susceptibility to infection**

Laura McCulloch

*University of Edinburgh*

**36.04 From ischaemic brain to lung infection and back**

Andreas Meisel

*Charite University Medicine Berlin*

**16:45 - 17:15**

**REFRESHMENTS AND TRADE EXHIBITION VIEWING**

**Venue: Lennox Suite**

**16:45 - 17:15**

Speed Dating for Careers in Science – Session 4

**Venue: Platform 5 Cafe**

**PLENARY LECTURE**

**17:15 - 18:15**

**Thomas Jessell (Columbia University)**

**Venue: Pentland**

*'Strategies and circuits for motor control'*

*Chaired by:* Narender Ramnani (Royal Holloway University of London)

## **PUBLIC LECTURE**

**19:00 - 20:15**

**Adrian Owen (University of Western Ontario, Canada)**

**Venue: Lennox Suite**

*'The search for consciousness: Detecting awareness in the vegetative state.'*

*Chaired by: Lord Robert Winston.*

In association with **Edinburgh International Science Festival** and the EICC's **InnovationNation** programme.

