

Exploring and Celebrating Neuroscience

7th-10th April 2013 The Barbican Centre, London, UK

Programme Summary (subject to revision)

PLENARY SPEAKERS

Karen Steel (Cambridge)

Karl Deisseroth (Stanford, USA)

Irene Tracey (Oxford)

David Attwell (UCL)

Yves Agid (Paris)

sponsored by The Physiological Society

sponsored by Association of British Neurologists

Uta Frith (UCL)

Michael White (Manchester)

Tim Bliss (NIMR)

sponsored by Society for Endocrinology

SYMPOSIA AND WORKSHOPS

DEVELOPMENT

- Development of the nervous system: From molecular pattern to circuit formation
- Early life stress and its long-term effects - experimental studies
- The development of hippocampal circuits
- The development of self-regulation

MOLECULAR, CELLULAR AND SYNAPTIC MECHANISMS

- Axonal injury and functional repair: basic mechanisms
- Do glial cells regulate the balance between inhibition and excitation?
- Epigenetics in neuroscience: Neuroepigenetics - from development to disease
- GABAergic neurotransmission in the human cerebral cortex: same rules apply?
- Hormonal regulation of synaptic function in health and disease
- LTP: Still exciting neuroscience after 40 years
- Molecules and mechanisms of the insect brain
- Somato-axonal computation of neurotransmitter release
- The multi-faceted NMDA receptor: From cradle to grave

SENSORY AND MOTOR SYSTEMS

- Auditory controls
- Cerebellar contributions to motor, cognitive and emotional behaviour
- Computational audition
- From mice to men: Mechanisms of neuronal adaptation in the mammalian visual system
- Heterogeneity of dopamine neurons: What do they do and how do they do it?
- Pain
- Re-engineering and repairing the damaged spinal cord: Much more than 'walking again'
- The Brain Machine Interface: a tool for patients and basic neuroscience
- Visual ecology
- Visual processing of dynamic natural scenes: A cross disciplinary perspective

COGNITION

- Choosing and Doing: The neuroscience of voluntary action
- Improving cognitive functions in normal ageing
- Impulsivity, compulsivity and habit formation
- The neural basis of social behaviour
- The plasticity of the self
- The pre-frontal cortex and decision making

- The re-emergence of schemas in memory research

CIRCADIAN, HOMEOSTATIC AND NEUROENDOCRINE MECHANISMS

- How the brain controls appetite
- Pharmacology of sleep and its circadian organisation: From cells to behaviour
- Timing in neuroendocrinology

NERVOUS SYSTEM DISORDERS

- Brain tumours: a complex, challenging and under-recognised area of neuroscience
- CNS and immune system interactions: Novel GPCR functions
- Emerging therapeutic targets for neurodegeneration
- Epilepsy
- Huntington's disease
- Molecular pathology of neurodegenerative disease and aging
- Neuro-oncology: Cell signalling and therapeutic targets
- Neuropsychiatry research in the 21st Century
- Pathways to Neurodegeneration: Deciphering early mechanisms for early intervention
- Stroke and inflammation
- The contribution of inflammation to the pathogenesis of neurological disease
- The neuroscience of bipolar disorder: Inositol phosphates and phosphoinositides in pathology and treatment
- Treating depression with antidepressants: Where are we now and where are we going?

METHODS AND TECHNIQUES

- Beyond the diffusion tensor: Non-invasive insights into macro- and micro-structure of brain white matter
- Human-induced pluripotent stem cells for nervous system disease modelling and development of new therapeutics
- New analysis tools in human neuroimaging
- Opening up the 'Black Box' of neuroscience disease to deliver new medicines
- Filling the systems neuroscience gap in translational neuroscience
- Stem cells as therapies for the neurosciences and tools for pharmacology and toxicology
- Transcranial stimulation of the conscious brain
- Ultra-High Field MRI - State of the art

PUBLIC AWARENESS AND SOCIETAL IMPACTS

- Drugs and Society: The neuroethics of enhancing or erasing memories
- Neuroscience and society: opportunities, challenges and policy