115th Meeting of the British Neuropathological Society
Institute of Child Health, London

PROGRAMME

WEDNESDAY, 5th MARCH 2014

SYMPOSIUM: CHRONIC TRAUMATIC ENCEPHALOPATHY AND THE LONG TERM CONSEQUENCES OF BRAIN INJURY

*Chair: Dr Willie Stewart, Southern General Hospital, Glasgow*

13:15  Registration

14:00  Welcome and introduction – Willie Stewart (Southern General Hospital, Glasgow, UK)

14:15  Chris Nowinski - Boston, USA
       Forgotten syndrome to front page news: bringing CTE to the 21st century

14:45  Barry Jordan - New York, USA
       The long term consequences of sport-related traumatic brain injury

15:15  Willie Stewart - Glasgow, UK
       The polypathologies of TBI survival: substrates of neurodegenerative disease?

15:45  Coffee break

16:15  David Loane - Baltimore, USA
       The role of neuroinflammation in post TBI pathology

16:45  Dave Sharp - London, UK
       Imaging neurodegeneration after brain injury

17:15  Coffee break

17:30  Dorothy Russell Memorial Lecture

       Doug Smith - Philadelphia, USA
       Tackling Concussion: Neuromechanics and Neuropathology

18:30  RECEPTION
THURSDAY 6th MARCH 2013

08:00 - Registration

08:50 - Opening of meeting – Professor Seth Love, BNS President

09:00 - 10:30  FIRST SCIENTIFIC SESSION – Parkinson’s Disease

Chair: Professor Paul Ince and Professor Johannes Attems

9:00  M.I. Swirski, J.S. Miners, R. de Silva, S. Love
Aβ-induced phosphorylation of α-synuclein at serine 129  

How do G51D SNCA mutation cases compare clinically and neuropathologically to SNCA duplication and H50Q SNCA mutation?  

9:30  S. McParland, A. Thomas, J. Attems
Cingulate and parietal Lewy pathology are associated with neuropsychiatric features of dementia with Lewy bodies  

9:45  C. E. Murray, S.N. Pressey, S.M. Gentleman, J.L. Holton, S. Gandhi, T. Revesz
Alpha-synuclein expression in early stage post-mortem Parkinson’s disease brain  

10:00  H. Ling, A. Lees, E. Kara, R. de Silva, A. Li, A. Kiely, R. Courtney, G. Xiromerisiou, J.L. Holton, H. Houlden, J. Hardy, T. Revesz
Slowly progressive L-dopa responsive parkinsonism with neurofibrillary tangle pathology: A new clinicopathological entity?  

Perturbed glucose metabolism in Parkinson’s disease  

10:30 – 11:00  Coffee break

11:00 - 12:30  SECOND SCIENTIFIC SESSION – Pathology of Skeletal Muscle

Chair: Professor Caroline Sewry and Dr Janice Holton

11:00  S. Marino, X. Zhang, L.G. Robson, V. Di Foggia
Bmi1 protects satellite cells against oxidative stress induced DNA damage  

Evaluation of classical and novel histopathological features in the diagnosis of inclusion body myositis  

11:30  C.A Sewry, R. Phadke, I. Zaharieva, L. Feng, A. Manzur, G. Ravenscroft, N. Laing, F. Muntoni
Pathological markers that can help direct molecular diagnosis of nemaline myopathy
The confounding effect of age in the use of subsarcolemmal mitochondrial aggregates (SSMA) as a diagnostic muscle biopsy marker in paediatric mitochondrial disease  O10

Distinctive muscle pathology in patients with mutations in the Cathepsin D gene  O11

12:15  R. Charlton, J. Hudson, K. Bushby, R. Barresi
The National Diagnostic and Advisory Service for Limb-Girdle Muscular Dystrophies in Newcastle  O12

12:30 - Lunch

13:00 - POSTER DISCUSSION

14:00-15:00  THIRD SCIENTIFIC SESSION – Neuropathology of Epilepsy

Chairs: Dr Maria Thom and Dr Thomas Jacques

Understanding the molecular pathology underlying paediatric Focal Cortical Dysplasia  O13

Quantification of white matter neurons in epilepsy using three quantitative systems  O14

14:30  K. Michalak, M. Thom, S. Sisodiya
Neuroinflammatory processes and blood brain barrier in SUDEP  O15

Novel pathology features in MRI negative cortical dysplasia in frontal lobe epilepsy  O16

15:00-16:00  FOURTH SCIENTIFIC SESSION – Experimental Neuropathology

Chair: Dr Rina Bandopadhyay and Dr Delphine Boche

15:00  A. Manousopoulou, T. Roumeliotis, C. Hawkes, R.O. Weller, S.D. Garbis, R.O. Carare
Phenotypic effects to the mouse brain cortex after in utero exposure to high-fat diet: A case for quantitative proteomics  O17

15:15  J. Brelstaff, A. Mamais, T. Revesz, R. Bandopadhyay
Experimental evidence links FTLD-FUS aggregate proteins to stress granules  O18

15:30  Y. Dombrowski, P. Denver, C. Zhao, T. O’Hagan, R. Ingram, R.J.M. Franklin, D.C. Fitzgerald
Toxin-mediated foxp3+ cell depletion: impact on remyelination?  O19

15:45  T. Brannstrom, S. Sirkka
Induction of ubiquilin differs between different SOD1 transgenic strains  O20

16:00  Coffee break
FRIDAY 7th MARCH 2013

9:00 – 10:30  FIFTH SCIENTIFIC SESSION – Tumours of the Central Nervous System

Chairs: Professor Sebastian Brandner and Professor Tim Dawson

9:00  K. Gupta, W. Orisme, H.J. Harrel, I. Qaddoumi, T. Robertson, R.G. Tatevossian, D.W. Ellison
Infratentorial gangliogliomas form two distinct clinicopathological and molecular subgroups O21

9:15  J. Cryan, S. Ramkissoon
Clinical multiplexed exome sequencing distinguishes adult astrocytic neoplasms from oligodendroglial tumours O22

9:30  L. Cockbill, S. Love, K. Murk, J. Hanley
Control of astrocytic tumour cell motility and invasiveness by PICK1 O23

9:45  A. Merve, A. Dubuc, X. Zhang, M. Remke, P. Baxter, X. Li, M.D. Taylor, S. Marino
Polycomb group gene BMI1 controls invasion of medulloblastoma cells and inhibits BMP-regulated cell adhesion O24

The rapid diagnosis of gliomas via serum spectroscopy O25

Ligand-activated transcription factors PPARγ and PPARα expression in human glioma O26

10:30 – 11:00  Coffee break

11:00 – 12:00  SIXTH SCIENTIFIC SESSION – Traumatic Brain Injury

Chairs: Professor Steve Gentleman and Dr Daniel Duplessis

11:00  C. Troakes, R. Smyth, A. King, S. Al-Sarraj
ApolipoproteinJ (ApoJ) is over-expressed in acute head injury and is localised in astrocytes in old head injury and chronic traumatic encephalopathy O27

11:15  J. Hay, A.M.H. Young, V. Johnson, D.H. Smith, W. Stewart
Blood brain barrier disruption persists for years after a single traumatic brain injury in humans O28
11:30  

Integration of advanced imaging and histopathology to determine the neuroanatomic basis of traumatic coma and recovery of consciousness  

O29

11:45  

SNTF immunohistochemistry identifies a previously undetected population of degenerating axons following traumatic brain injury  

O30

12.00 - **DIAGNOSTIC SLIDE SESSION (INCORPORATING EQA)**

13:00 - **Lunch**

13:30 - **POSTER DISCUSSION**

14:30 – 16:15 **SEVENTH SCIENTIFIC SESSION – Neurodegenerative Diseases**

**Chairs:** Professor Seth Love and Dr Colin Smith

14:30  

Prevalent abnormal prion protein in human appendixes after bovine spongiform encephalopathy epizootic: a large scale survey  

O31

14:45  

Anatomy of a CJD incident and the disclosure dilemma  

O32

15:00  

Brain Tau in ischaemic injury and vascular dementia  

O33

15:15  
**J. Attems**, L. Walker, R. Santic, S.J. Colloby, A. Rijal Upadhaya, D.R. Thal, A. Schneeberger, M. Mandler

Pyroglutamylated amyloid-β is associated with hyperphosphorylated tau in human post mortem brains  

O34

15:30  

Cortical neurodegenerative pathology has an influence on white matter integrity  

O35

15:45  

A neuronal DNA damage response is detected at low Braak stages and correlates with cognitive impairment in the ageing brain  

O36

16.00  

Effect of active Aβ immunotherapy on neocortical neurons in Alzheimer’s disease  

O37

16:15  
Announcement of the poster prize winners and closure of the meeting
SYMPOSIUM: CHRONIC TRAUMATIC ENCEPHALOPATHY AND THE LONG TERM CONSEQUENCES OF BRAIN INJURY

Chris Nowinski – Boston, USA

Chris Nowinski is a co-director of the Boston University Center for the Study of Traumatic Encephalopathy and the co-founder and executive director of the Sports Legacy Institute, a non-profit organization dedicated to solving the sports concussion crisis through education, policy, and research.

A former Harvard football player and WWE professional wrestler, he is the author of Head Games, which was made into the 2013 documentary film Head Games: The International Concussion Crisis, directed by Steve James. He was named a 2011 Eisenhower Fellow and serves as an advisor to the NFL Players Association, The Ivy League, Major League Lacrosse, and South African Rugby Union.

Chris is a Ph.D. candidate in Behavioral Neuroscience at Boston University School of Medicine.

Barry D Jordan – New York, USA

Barry D. Jordan, M.D., M.P.H., is the assistant medical director of Burke Rehabilitation Hospital in White Plains, NY. He is also director of Burke’s Brain Injury Program and the Memory Evaluation Treatment Service (METS). Dr. Jordan is a board certified neurologist with specialized interests in sports neurology, Alzheimer's disease, and traumatic brain injury.

Dr. Jordan is currently the Chief Medical Officer of the New York State Athletic Commission and a team physician for U.S.A. Boxing. He is also an Associate Professor of Clinical Neurology at Weill Medical College of Cornell University.

Dr. Jordan graduated from the University of Pennsylvania with a B.A. in neurophysiology and obtained his M.D. degree from Harvard Medical School. Dr. Jordan completed an internship in internal medicine at U.C.L.A. Medical Center and performed his neurology residency training at the New York Hospital-Cornell Medical Center.

Dr. Jordan has completed several fellowships including: a fellowship in public health at Cornell University Medical College, a clinical neurology fellowship at the New York Hospital-Cornell Medical Center, a fellowship in sports neurology at the Hospital for Special Surgery, and a fellowship in behavioral neurology at U.C.L.A. Medical Center. He also completed his Masters of Public Health at Columbia University.

Willie Stewart – Glasgow, UK

Dr. Willie Stewart is Consultant and Lead Neuropathologist at the Southern General Hospital, Glasgow, and holds honorary Associate Professor status at the University of Glasgow (School of Medicine) and the University of Pennsylvania (Department of Neurosurgery).

He trained in Glasgow and has subspecialty diagnostic and research interests in forensic neuropathology, in particular traumatic brain injury, and neuro-oncology, with a focus on molecular sub-typing of adult high-grade gliomas.

His research in TBI describes the range of pathologies encountered in acute and long term survivors of head injury, with reference to the association between TBI and neurodegenerative disease. In particular, his work details the polypathology of TBI survival featuring pathologies in tau, amyloid beta, TDP-43, neuroinflammation and white matter degradation.

In more recent work, these observations on the pathology of survival from TBI form the core for his collaborative clinical and imaging studies on the Glasgow longitudinal cohorts of TBI survivors and in retired athletes; work supported by major national and international grants from the US National Institutes of Health, the US Department of Defense and the Chief Scientist’s Office in Scotland.

David Loane – Baltimore, USA

Dr. Loane is an Assistant Professor of Anesthesiology and Faculty Member at the Center for Shock, Trauma and Anesthesiology Research (STAR) at the University of Maryland School of Medicine, Baltimore, Maryland, USA.

Dr. Loane conducted his graduate studies at the Department of Pharmacology and MRC Center for Synaptic Plasticity, University of Bristol, England, and obtained his PhD in Neuroscience in 2005. He then pursued postdoctoral training with Dr. Marina Lynch at Trinity College Institute of Neuroscience, Trinity College Dublin, Ireland, where he studied neuroinflammatory changes in the aged and Alzheimer’s disease brain.

In 2007 Dr. Loane joined the Laboratory for CNS Injury (Director: Dr. Alan I. Faden) at the Department of Neuroscience, Georgetown University, Washington D.C., and developed a research program on experimental models of traumatic brain injury (TBI).
He joined the faculty of the University of Maryland School of Medicine in November 2009, and is currently Assistant Professor of Anesthesiology.

Dr. Loane’s research is focused on investigating the role of microglial activation phenotypes in response to TBI, with the aim of developing novel therapeutic strategies to modulate microglial form and function in the acute and chronic periods of recovery after TBI.

**David Sharp – London, UK**

David Sharp is a National Institute of Health Research Professor and consultant neurologist based at Computational, Cognitive and Clinical Neuroimaging Laboratory, Division of Brain Sciences, Imperial College London. He has a degree in Psychology, Physiology and Philosophy from the University of Oxford (1993), a degree in Medicine from the Universities of Oxford and London (1996), and a PhD from the University of London (2006).

He was appointed to an NIHR Professorship in 2012 and his programme of research aims to improve clinical outcome after traumatic brain injury. The work focuses on common cognitive impairments in domains such as memory and attention. These often limit recovery and are difficult to treat effectively. He uses advanced neuroimaging to diagnose the underlying cause of these cognitive problems, particularly focusing on the effect of brain injury on brain network function and the role of inflammation in brain repair.

His NIHR research programme will use changes in network function to guide the development of novel treatment strategies for cognitive impairment. He works with patients who have suffered various types of traumatic brain injury, and collaborates with The Royal Centre for Defence Medicine to study the effects of blast exposure in the soldiers returning from Afghanistan.

**Dorothy Russell Award Medal**

Dorothy Russell (1895-1983), one of the leading figures in the brief history of British neuropathology, is remembered by the Society in a biennial Memorial lecture. So rapid is progress in the Neurosciences and so short our memories, that for a younger generation of neuropathologists she is probably no more than a name associated with a large recently revised textbook on brain tumours. However, together with Godwin Greenfield, Dorothy Russell had a profound and lasting influence on the development and practice of Neuropathology throughout the world.


This lecture is delivered every second year by a distinguished speaker, invited to present the lecture at one of the annual meetings of the Society.
Douglas H Smith – Philadelphia, USA

Prof. Douglas H. Smith, M.D. serves as Director of the Center for Brain Injury and Repair (CBIR) and is the Robert A. Groff Endowed Professor and Vice Chairman for Research and Education in Neurosurgery at the University of Pennsylvania. Penn's multidisciplinary CBIR includes over twenty-five principal investigators and their laboratory staff collectively studying mechanisms, diagnosis and potential treatments of traumatic brain injury (TBI).

Dr. Smith is also director of a multi-center U.S. National Institutes of Health (NIH) program grant on mild traumatic brain injury as well as director of multi-investigator NIH and U.S. Department of Defense grants on TBI and neurodegeneration. Demonstrating his dedication to teaching, Dr. Smith additionally oversees an NIH training grant to support post- and pre-doctoral fellows studying brain injury.

The research of his individual laboratory has primarily focused on the effects of mechanical stretch of axons that results in either damage or growth.

They have found fundamental mechanical mechanisms that underlie selective injury to axons in the white matter during TBI. His group has also identified the aberrant genesis and accumulation of proteins in the damaged axons after TBI that can lead to neurodegenerative changes similar to those found in Alzheimer’s disease.

In addition, Dr. Smith’s laboratory has also recently discovered that slow continuous stretching of axon tracts in culture can stimulate enormous growth, creating transplantable living nervous tissue constructs. These tissue engineered constructs have shown promise for repairing large lesions in the nervous system. These collective efforts have resulted in over 160 published reports.
POSTERS

Ageing and Neurodegeneration

P01
J. Andoh, L.R. Bridges, A.J. Lawrence, M.M. Esiri, H.S. Markus, A. Hainsworth
Neuropathological markers of blood-brain barrier dysfunction in cerebral small vessel disease

P02
S.A. Al-Mashhadi, J.E. Simpson, P.R. Heath, M.J. Dickman, P.G. Ince, S.B. Wharton
Oxidative stress and DNA damage in cerebral white matter lesions of the ageing human brain

P03
Maternal high fat diet alters the neurovascular unit and clearance of b-amyloid in adult offspring

P04
L.I. Sinclair, S. Love
Post-synaptic proteins increased in vascular dementia

P05
K.A. Jellinger, L. Walker, J. Attems
Olfactory neurodegenerative pathology in neurodegenerative diseases

P06
A. King, I. Bodi, C. Troakes, S. Maekawa, S. Al-Sarraj
An investigation into the symmetry/asymmetry of immunohistochemical staining for tau between the cerebral hemispheres

P07
T Lashley, J.D. Rohrer, C. Mahoney, E. Gordon, J. Beck, S. Mead, J. Warren, M. Rossor, T. Revesz
A pathogenic progranulin mutation and C9orf72 repeat expansion in a family with frontotemporal dementia

P08
S. Hokkanen, S. Hunter, T. Polvikoski, H. Keage, T. Minett, C. Brayne
Old-age hippocampal sclerosis is consistently associated with TDP-43-positive inclusions but not with granulovacuolar degeneration, Alzheimer's disease or vascular pathology

P09
Microglial activation in multiple system atrophy

P10
A.K.L. Liu, R.K.B. Pearce, S.M. Gentleman
Assessing cortical cholinergic projections in Lewy body disorders using M2 muscarinic receptor immunohistochemistry

P11
M. Johnson, E.K. Perry, C. Baker, J. Attems
Neurogenic marker alterations in the hippocampus in relation to cholinergic therapy in Lewy Body dementia
P12  
_B. Patel_, F. Roncaroli, S.M. Gentleman  
*A comparative analysis of novel α-synuclein antibodies in the pathological diagnosis of Parkinson’s disease*

P13  
_P. Gami_, T. Lashley, N. Valizadeh, T. Revesz, R. Balazs  
*DNA methylation in Alzheimer’s disease*

P14  
_S. Vivekanantham_, S.M. Gentleman, R.K.B. Pearce, D. Nandi  
*Challenges in histological identification of the pedunculopontine nucleus*

P15  
_A.W. Morris_, C. Hawkes, S. Schreiber, H-J. Heinze, R.O. Carare  
*Hypertension results in changes in the perivascular drainage channels in the brain: Implications for the pathogenesis of Alzheimer’s disease*

P16  
*Concomitant progressive supranuclear palsy and chronic traumatic encephalopathy in a boxer*

P17  
*Investigating the relationship between cerebral Aβ40 and systemic hypertension*

Pathology of Skeletal Muscle and Nerves

P18  
_V.L.H. Roberts_, D. Fews, J.M. McNamara, S. Love  
*Is headshaking in horses, like trigeminal neuralgia in people, caused by trigeminal nerve root demyelination?*

P19  
*Congenital myasthenic syndromes: epidemiology, clinical phenotyping and aids to diagnosis in the neuromuscular clinic*

P20  
_R. Charlton_, J. Hudson, K. Bushby, R. Barresi  
*The National Diagnostic and Advisory Service for Limb-Girdle Muscular Dystrophies in Newcastle*

P21  
*Myalgia and weakness: Also think of sarcoidosis*

P22  
_M. Shastri_, J.E. Martin  
*Intra-oral glycogenesis: Analysis of the key synthetic enzymes in human tongue, in health and denervation atrophy*
P23

L. Feng, A. Matthews, M. Scoto, D. Chambers, A. Manzur, F. Muntoni, R. Phadke, C. Sewry

The expression of embryonic and foetal myosin heavy chain isoforms in human muscle are useful indicators of abnormality in muscle biopsies

Neuropathology of Epilepsy

P24

I. Bodi, O. Curran, R. Laxton, S. Al-Sarraj, M. Honavar

Two cases of multinodular and vacuolating neuronal tumour

P25

C. Reeves, J. Liu, Z. Michalak, A. Coppola, B. Diehl, S. Sisodiya, M. Thom

Evidence for mTOR pathway activation in a spectrum of epilepsy-associated pathologies

P26

N. Cohen, M. Marchionni, P. Gallagher, D. Sandeman, K. Sieradzan

Case report: Sudden arrhythmogenic cardiac death following a monitored in-hospital epileptic seizure

Tumours of the Central Nervous System

P27


Interaction between microglia and stem cells correlates with tumour proliferation and outcome in human astrocytic tumours

P28

M. Aizpurua, A.P. King, R. Laxton, L. Doey, I. Bodi

Recurrent spinal oligodendroglioma with neurocytic differentiation and 1p/19q co-deletion

P29

H.R. Haynes, C. Crosby, H. Williams, P. White, K. Hopkins, M. Williams, K.M. Kurian

MGMT promoter methylation is present in low grade glioma (WHO Grade II/III) and glioblastoma multiforme in the absence of IDH mutations

P30

S. Nagaraju, M. Marchionni, S. Milicic, M. Carey

Malignant pleural mesothelioma metastatic to the brain

P31

S. Nagaraju

Cellular haemangioblastoma: A rarer histological subtype

P32


EZH2 expression in paediatric posterior fossa ependymoma
P33
R. Laxton, L. Doey, I. Bodi, A. King, C. Chandler, R. Bhangoo, R. Beaney, L. Brazil, K. Ashkan, S. Al-Sarraj
Quantitative MGMT methylation analysis by pyrosequencing reveals a strong correlation between 1p/19q codeletion and high-level methylation

P34
U. Pohl, I. Said, I.H.L. Low
Long-term natural course of cutaneous adenoid cystic carcinoma metastatic to brain

P35
M. Moreno, M. Biscuola, R. Ávila, F. Carmona, E. Rivas, E. De Álava
STAT6 and GRIA2 immunoexpression in meningeal haemangiopericytoma

P36
M. Arora, L. Shaw, J. Alder, C. Lawrence, T. Dawson, G. Hall, C. Davis
Target identification of glioma specific aptamers

P37
G. Krite, P.F. Durrenberger, F. Calboli, J. Varley, F.E. Turkheimer, A. Gerhard, F. Roncaroli
Parkinson’s disease and glioblastoma multiforme: An inverse comorbidity?

P38
U. Pohl, K. Teo, J. Gutmann, S. Chawda, I.H.L. Low
Extra-axial supratentorial ependymosarcoma-like glioma mimicking metastasis

P39
S.H. Torp, J.N. Mørk, M.O. Torp, A.J. Skjulsvik
The use of Ki-67/MIB-1 immunostaining in human gliomas

P40
EGFR and EGFRvIII detection in glioblastoma: Methods to select patients for novel individualised therapies

Miscellaneous

P41
C. Keohane, S. Allen, M. Bolster, N. Bermingham.
Central nervous system infections in brains referred to Cork University Hospital

P42
H. Kennedy, N. Cohen, W. Stewart, D. Boche, J. Nicoll
Progenitor cells in the dentate gyrus after cardiorespiratory arrest in humans

P43
S. Al-Sarraj, A. Fegan-Earl, O. Biedrzycki, N. Hunt, R. Chapman, S. Hamilton, P. Jerreat, S. Poole, B. Swift, F. Hollingbury, G. Rutty, N. Cary
Traumatic axonal damage (TAI) in the brain and medulla is common in patients with traumatic basal subarachnoid haemorrhage (tSAH)
P44
V. Ahluwalia, N. Cohen
Creutzfeldt-Jakob Disease (CJD): just how effective are diagnostic criteria at establishing a clinical diagnosis?

P45
E. Jack, T. Haddix, N.K. Fennelly
The inflammatory cellular constituents of foetal and infant leptomeninges: A survey of hospital-based autopsies without trauma

P46
Microcephalin (MCPH1) in human cortical development

P47
Perinatal lethal Gaucher disease: diagnosis by mass spectrometry in a fetal case

P48
H. Cottom, A. Chakrabarty.
An audit examining the processing times and reporting of neurosurgical biopsy specimens received by Leeds St James’s University Hospital neuropathology department.

P49
E. J. Browne, R.M. Schalks, R. Reynolds
The role of lymphotoxin-alpha and CXCL13 in grey matter pathology in multiple sclerosis

P50
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