Molecular Neurodegeneration
14-18 January 2019

Wellcome Genome Campus, Hinxton, Cambridge, UK

Lectures and discussion sessions to be held in the Rosalind Franklin Pavilion
Breakfast, Lunch and Dinner will be served in Hinxton Hall’s Restaurant (unless stated)
Posters sessions will be held in the Conference Centre Forum

Draft Course Programme

Monday, 14 January 2019

12:00-13:00  Registration with buffet lunch
Wellcome Genome Campus Conference Centre Forum

13:30-14:00  Welcome and Course Introductions
Scientific Programme Committee

14:00-15:00  Group Icebreakers
Small group discussions of delegate areas of interest and course objectives

15:00-15:30  Afternoon Tea

15:30-17:30  Session 1: Clinical aspects of neurodegenerative disease
Huw Morris, UCL, UK
- Clinical assessment of neurological disease patients
- Autosomal dominant families as models for sporadic neurodegenerative disease
- Developing biomarkers for diagnosis and disease tracking

17:30-18:00  Discussion Session

18:00-19:30  Poster Session 1 with Drinks reception
Participants with surnames A-M will present to small groups in order to introduce themselves and their research interests

Bell every 5 minutes to move to another poster

19:30 prompt  Dinner

19:30-23:00  Cash Bar
Tuesday, 15 January 2019

07:30-09:00  Breakfast

09:00-10:30  Session 2: Genome wide association studies
Nick Wood, UCL, UK
- General principles and impact of GWAS data
- Insights of genetics in a complex neurodegenerative disease – using PD as an exemplar
- Novel developments on the ‘post-GWAS’ era

10:30-11.00 Morning Coffee

11:00-11:30 Session 2 continued: Genome wide association studies

11:30-12:00 Discussion Session

12.00-13:00 Lunch

13:00-15:00 Session 3: Parkinson’s disease mechanisms
Valina Dawson, Johns Hopkins University, USA
- Neurotoxic Signaling Cascade and Interventions
- Alpha-Synuclein Strains, Seeding and Transmission
- Microglial and Astrocyte Activation

15:00-15:30 Discussion Session:

15:30-16:00 Afternoon Tea

16:00-18:00 Session 4: Cerebrovascular regulation
Constantino Iadecola, Weill Cornell Medical College, USA
- Fundamentals of cerebrovascular structure and function
- Molecular pathology of cerebral ischemic injury
- Overlapping roles of vascular risk factors and neurodegeneration in cognitive impairment

18:00-18:30 Discussion Session

18:30-19:30 Poster Session 2 with Drinks reception
Participants with surnames A-M will present to small groups in order to introduce themselves and their research interests

Bell every 5 minutes to move to another poster

19:00 prompt Dinner

19:00 Cash Bar
Wednesday, 16 January 2019

07:30-09:00 Breakfast

09:00-10:30 Session 5: Modelling neurodegeneration using iPSC
Selina Wray, University College London, UK
- Generating disease-relevant cell types from iPSC in vitro
- Examples of successful use of iPSC to model neurodegeneration
- Advantages and Disadvantages of iPSC models

10:30-11.00 Morning Coffee

11:00-11:30 Session 5 continued: Modelling neurodegeneration using iPSC

11:30-12:00 Discussion Session:
Challenges of iPSC work and considerations when designing iPSC experiments

12:00-13:00 Lunch

13.00-15:00 Session 6: Fragile X and FXTAS
David Nelson, Baylor College of Medicine, USA
- Peculiar genetics and unstable repeats
- Mechanisms of repeat expansion diseases
- Animal models and human therapy

15:00-15:30 Discussion Session

15:30-16:00 Afternoon Tea

16:00-18:00 Session 7: Huntington’s disease mechanisms and therapeutics
Beverly Davidson, Children’s Hospital of Philadelphia & The University of Pennsylvania, USA, USA
- Mechanisms of pathogenesis
- Models of disease
- HD therapeutics and biomarkers

18:00-18:30 Discussion Session

19:00 prompt Dinner

19:00-23:00 Cash Bar

20:30 Quiz Night
Thursday, 17 January 2019

07:30-09:00  Breakfast

09:00-10:30  Session 8: Mechanisms of neurodegeneration in ALS  
*Rita Sattler, Barrow Neurological Institute, USA*  
- Mechanisms of disease pathogenesis  
- Modeling ALS  
- ALS therapeutics and biomarkers

10:30-11.00  Morning Coffee

11:00-11:30  Session 8 continued: Cerebrovascular regulation

11:30-12:00  Discussion Session

12:00-13:00  Lunch

13.00-15:00  Session 9: Alzheimer’s disease mechanisms  
*Karen Duff, Columbia University, USA*  
- Alzheimer’s disease  
- Tauopathies  
- Tau biology

15:00-15:30  Discussion Session

15:30-16:00  Afternoon Tea

16:00-18:00  Session 10: Role of autophagy in neurodegeneration  
*Nancy Bonini, University of Pennsylvania, USA*  
- Stress pathways  
- Stress granules  
- Aging

18:00-18:30  Discussion Session:

18:30 – 19:30  Pre Dinner Drinks  
Hinxton Hall

19:40 prompt  Course Dinner

19:40-23:00  Cash Bar
Friday, 18 January 2019

07:30-09:00  Breakfast and check-out

09:00-10:30  Session 11: RNA Genomics and Bioinformatics
Yi Xing, Children’s Hospital of Philadelphia, USA
- RNA-seq for transcriptome analysis
- Post-transcriptional RNA processing and regulation
- Splicing quantitative train loci (sQTL) analysis to interpret GWAS signals

10:30-11:00  Discussion Session

11:00-11.30  Morning Coffee

11:30-13:30  Session 12: Mechanisms of Spinocerebellar Ataxia and therapeutics
Alexandra Durr, Pitie-Salpetriere University Hospital, France
- Genetic and phenotypic heterogeneity of cerebella ataxias
- Repeat expansions diseases among cerebellar ataxias
- What did we learn from the presymptomatic phase and natural history of dominantly inherited ataxias in order to prepare therapeutic trials in rare disease

13:30-14:00  Discussion Session

14:00  Grab bag Lunch

14:15 prompt  Coaches depart to Cambridge train station and town centre