Molecular Neurodegeneration
2-6 December 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, 2 December 2019

12:00-13:30 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: Cerebrovascular regulation in stroke and dementia
Costantino Iadecola, Weill Cornell Medical College, USA
- Fundamentals of cerebrovascular structure and function
- Molecular pathology of cerebral ischemic injury
- Neurovascular dysfunction and neurodegeneration: vascular effects of neurodegeneration-associated proteins and their contribution to cognitive impairment

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, 3 December 2019

07:30-09:00  Breakfast

09:00-10:30  Session 2: Clinical aspects of neurodegenerative disease  
**Jon Rohrer, University College London, UK**  
- Clinical assessment of neurological disease patients  
- Autosomal dominant families as models for sporadic neurodegenerative disease  
- Developing biomarkers for diagnosis and disease tracking

10:30-11:00  Morning Coffee

11:00-11:30  Session 2 continued: Clinical aspects of neurodegenerative disease

11:30-12:00  Discussion Session

12:00-13:00  Lunch

13:00-15:00  Session 3: Parkinson’s disease mechanisms  
**Tim Greenamyre, University of Pittsburgh, USA**  
- 20 Years of Modeling Parkinson’s disease: A Personal Perspective  
- Gene-Environment Interactions in Parkinson’s Pathogenesis  
- Gene Therapy Approaches for Disease Modification in Parkinson’s Disease

15:00-15:30  Discussion Session

15:30-16:00  Afternoon Tea

16:00-18:00  Session 4: 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

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  Dinner

19:00  Cash Bar
Wednesday, 4 December 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: Mechanisms of neurodegeneration in ALS  
Rita Sattler, Barrow Neurological Institute, USA  
- Mechanisms of disease pathogenesis  
- Modeling ALS  
- ALS therapeutics and biomarkers

18:00-18:30 Discussion Session

19:00 prompt Dinner

19:00-23:00 Cash Bar

20:30 Quiz Night
Thursday, 5 December 2019

07:30-09:00  Breakfast

09:00-10:30  Session 8: Huntington’s disease mechanisms and therapeutics
  Gillian Bates, UCL, UK
  - Mechanisms of pathogenesis
  - Models of disease
  - HD therapeutics and biomarkers

10:30-11.00  Morning Coffee

11:00-11:30  Session 8 continued: Huntington’s disease mechanisms and therapeutics

11:30-12:00  Discussion Session

12:00-13:00  Lunch

13.00-15:00  Session 9: Alzheimer’s disease mechanisms
  Frances Edwards, UCL, UK
  - Alzheimer’s disease and other Tauopathies
  - Contributions of Amyloid Beta and Tau
  - Gene expression and the immune system

15:00-15:30  Discussion Session

15:30-16:00  Afternoon Tea

16:00-18:00  Session 10: Role of autophagy in neurodegeneration
  Helene Plun-Favreau, UCL, UK
  - Different forms of autophagy
  - Autophagy in neurodegeneration
  - PD and mitophagy as an example

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, 6 December 2019

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

09:00-10:30  Session 11: RNA Genomics and Bioinformatics in neurodegeneration
Yi Xing, Children’s Hospital of Philadelphia, USA (confirmed)
- 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: 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

13:30-14:00  Discussion Session

14:00  Grab bag Lunch

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