

## Genomics of Brain Disorders

Wellcome Genome Campus Conference Centre,  
Hinxton, Cambridge

23-25 April 2018

Lectures to be held in the Francis Crick Auditorium  
Breakfast, Lunch and dinner to be held in the Hall Restaurant  
Poster sessions to be held in the Conference Centre

**Spoken presentations** - If you are an invited speaker, or your abstract has been selected for a spoken presentation, please give an electronic version of your talk to the AV technician.

**Poster presentations** – If your abstract has been selected for a poster, please display this in the Conference Centre on arrival.

### Conference programme

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#### Monday, 23 April 2018

12:30-14:00	<b>Registration with Lunch</b>
14:00-14:10	<b>Welcome and Introductions</b> <i>Mike Owen, Cardiff University, UK</i>
14:10-15:00	<b>Keynote Lecture:</b> 'What's the future of treating brain disorders?' <i>Ruth McKernan</i> <i>Innovate UK, Swindon, UK</i>
15:00-16:00	<b>Session 1: Genetic Architecture</b> <i>Chair: Mike Owen, Cardiff University, UK</i>
	15:00 Embracing polygenicity <i>Naomi Wray</i> <i>The University of Queensland, Australia</i>
	15:30 Deciphering developmental disorders <i>Kaitlin Samocha</i> <i>Wellcome Sanger Institute, UK</i>
16:00-16:30	<b>Afternoon Tea</b>

- 16:30-17:30      **Session 1 continued:**
- 16:30 Novel genetic findings and their biological implications for brain-related traits  
*Danielle Posthuma*  
*VU University Amsterdam, The Netherlands*
- 17:00 Common genetic variation contributes to risk of rare developmental disorders  
*Mari Niemi*  
*Wellcome Sanger Institute, UK*
- 17:15 Exome sequencing of Huntington's disease patients identifies mismatch repair machinery and repeat structure as modifiers of disease onset  
*Branduff McAllister*  
*Cardiff University, UK*
- 17:30-18:00      **Lightning talks**  
*Chair: Alison Goate, Icahn School of Medicine, USA*
- 18:00-19:30      **Poster Session I (odd numbers) with Drinks Reception**
- 19:30              Dinner

**Tuesday, 24 April 2018**

- 09:00-10:45      **Session 2: Connecting genetics to biology**  
*Chair: John Hardy, University College London, UK*
- 09:00 The cellular phase of Alzheimer's disease  
*Bart De Strooper*  
*University College London, UK*
- 09:30 A genetic perspective on Huntington's disease pathogenesis  
*Lesley Jones*  
*Cardiff University, UK*
- 10:00 Genetic identification of brain cell types underlying schizophrenia  
*Nathan Skene*  
*Karolinska Institute, Sweden*
- 10:15 Shared and distinct associations underlying schizophrenia and bipolar disorder  
*Laura Huckins*  
*Icahn School of Medicine, USA*

10:30 Analysis of DNA methylation identifies new genomic regions associated with risk of Parkinson's disease and PD-related environmental factors  
*Costanza Ludovica Vallerger*  
*The University of Queensland, Australia*

10:45-11:15

**Morning Coffee**

11:15-13:00

**Session 3: Systems biology**

*Chair: Kristen Brennand, Icahn School of Medicine at Mount Sinai, USA*

11:15 A gene network view of epilepsy and drug discovery  
*Mike Johnson*  
*Imperial College London, UK*

11:45 Neurodegeneration: beyond the brain  
*Sarah Gagliano,*  
*University of Michigan, USA*

12:15 Elevated polygenic burden for autism is associated with differential DNA methylation at birth  
*Ellis Hannon*  
*University of Exeter, UK*

12:30 Evolutionary conservation of human brain co-expression networks  
*William Pembroke*  
*University of California Los Angeles, USA*

12:45 Genes regulated by SATB2 during neurodevelopment contribute to schizophrenia and educational attainment  
*Derek Morris*  
*NUIG, Ireland*

13:00-14:30

**Lunch**

14:30-16:00

**Session 4: Population studies**

*Chair: Paul O'Reilly, King's College London, UK*

14:30 New research questions addressed through genome studies in a biobank  
*Nancy Cox*  
*Vanderbilt University, USA*

15:00 Genetic predictors of cognitive decline in the Lothian Birth Cohort 1936  
*Stuart Ritchie*  
*The University of Edinburgh, UK*

15:30 A histone acetylome-wide association study of Alzheimer's disease: neuropathology-associated regulatory variation in the human entorhinal cortex  
*Jonathan Mill*  
*University of Exeter, UK*

15:45 Novel genetic associations with disrupted circadian rhythmicity in 71,500 individuals from UK Biobank, and polygenic association with mood instability  
*Amy Ferguson*  
*University of Glasgow, UK*

16:00-16:30

**Afternoon Tea**

16:30-18:00

**Session 5: Neuroimmunology**

*Chair: Alison Goate, Icahn School of Medicine, USA*

16:30 More than bystanders: microglia destruct synapses in Alzheimer's disease  
*Soyon Hong*  
*Harvard University, USA*

17:00 Innate immune activation in Alzheimer disease  
*Michael Heneka,*  
*University of Bonn, Germany*

17:30 Genetic risk for Alzheimer's disease is concentrated in specific macrophage and microglial transcriptional networks  
*Matthew Hill*  
*Cardiff University, UK*

17:45 Genetic predisposition in anti-LGI1 and anti-NMDA receptor encephalitis  
*Stefanie Mueller*  
*UKSH Kiel, Germany*

18:00- 18:30

**Lightning talks**

*Chair: Mike Owen, Cardiff University, UK*

18:30-20:00

**Poster Session II (even numbers) with drinks reception**

20:00

**Conference Dinner**

Wednesday, 25 April 2018

09:00-10:15

**Session 6: Modelling disease**

*Chair: John Hardy, University College London, UK*

09:00 Modelling the impact of common variants on schizophrenia risk using stem cells

*Kristen Brennand*

*Icahn School of Medicine at Mount Sinai, USA*

09:30 Insights into the cell and molecular biology of dementia from human stem cell systems

*Rick Livesey*

*University of Cambridge, UK*

10:00 Exploiting cellular heterogeneity through single cell sequencing reveals HDAC4 as a regulator of cellular phenotypes in Parkinson's dopamine neurons

*Caleb Webber*

*University of Oxford, UK*

10:15-10:45

**Morning Coffee**

10:45-12:15

**Session 7: Using genomics to drive precision medicine**

*Chair: John Hardy, University College London, UK*

10:45 Genetics of functions and dysfunctions of the brain

*Kári Stefánsson*

*deCODE genetics, Iceland*

11:15 Panel discussion on stratified medicine

12:15 Closing remarks:

*John Hardy*

*University College London, UK*

12:30 -13:30

**Lunch & depart**

13:30

**Coaches depart to Cambridge City Centre and Train Station, Heathrow Airport and Stansted Airport**