Programme

Thursday 3 – Friday 4
October 2019
VOX Centre, Birmingham
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 10:30</td>
<td>Registration and bag drop</td>
</tr>
<tr>
<td>10:30 – 10:45</td>
<td>Welcome – Bart De Strooper and Adrian Ivinson</td>
</tr>
<tr>
<td>10:45 – 11:30</td>
<td>Keynote: Don Cleveland Designer DNA drug therapy for neurodegenerative disease</td>
</tr>
<tr>
<td>11:30 – 11:50</td>
<td>Break</td>
</tr>
<tr>
<td>11:50 – 12:10</td>
<td>Vincent Dion - Gene editing at expanded CAG/CTG repeats: making a long story short</td>
</tr>
<tr>
<td>12:10 – 12:30</td>
<td>Daniel Jutzi - Bipartite snRNA interactions at the core of FUS’ roles in splicing and neurodegeneration</td>
</tr>
<tr>
<td>12:30 – 12:50</td>
<td>Tommaso Vannoncci - New methodologies to understand the time dimension of oxidative stress</td>
</tr>
<tr>
<td>12:50 – 13:10</td>
<td>Josef Priller - Heterogeneity of human microglia in health and disease</td>
</tr>
<tr>
<td>13:10 – 13:30</td>
<td>Soyon Hong - More than bystanders in dementia – understanding what microglia do</td>
</tr>
<tr>
<td>13:30 – 14:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:30 – 15:00</td>
<td>Keynote: Dave Sharp - Care Research &amp; Technology Centre</td>
</tr>
<tr>
<td>15:00 – 15:20</td>
<td>Payam Barnaghi - Machine learning and connected sensors for dementia care</td>
</tr>
<tr>
<td>15:20 – 15:40</td>
<td>Viola Volpato - The first human single cell atlas of the substantia nigra reveals cell-type specific pathways associated with the genetic risks of Parkinson’s and other diseases</td>
</tr>
<tr>
<td>15:40 – 16:00</td>
<td>Nathan Skene - Genetic identification of cell types underlying brain disorders and cognitive traits</td>
</tr>
<tr>
<td>16:00 – 16:30</td>
<td>Break</td>
</tr>
<tr>
<td>16:30 – 17:00</td>
<td>Keynote: Karen Duff - Pathogenic mechanisms in the tauropathies</td>
</tr>
<tr>
<td>17:00 – 17:30</td>
<td>Poster blitz 1</td>
</tr>
<tr>
<td>17:30 – 19:00</td>
<td>Poster social</td>
</tr>
<tr>
<td>19:30 – 00:00</td>
<td>Reception &amp; Dinner</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>06:00 – 08:30</td>
<td>Breakfast and room check out</td>
</tr>
<tr>
<td>08:30 – 09:15</td>
<td>Keynote: <strong>Nick Fox</strong> - The many faces of Alzheimer’s disease: clinical features and heterogeneity</td>
</tr>
<tr>
<td>09:15 – 09:45</td>
<td>Poster blitz 2</td>
</tr>
<tr>
<td>09:45 – 11:15</td>
<td>Poster social</td>
</tr>
<tr>
<td>11:15 – 12:45</td>
<td><strong>Theme breakouts</strong></td>
</tr>
<tr>
<td></td>
<td>1. Neuroinflammation (Chair: Hugh Perry)</td>
</tr>
<tr>
<td></td>
<td>2. Vascular role in NDG (Chair: Joanna Wardlaw)</td>
</tr>
<tr>
<td></td>
<td>3. Genetic Therapies (Chairs: Chris Shaw &amp; Nick Fox)</td>
</tr>
<tr>
<td></td>
<td>4. Multiomics Brain Atlas (Chair: Paul Matthews)</td>
</tr>
<tr>
<td></td>
<td>5. Bioinformatics (Chairs: Caleb Webber &amp; Valentina Escott-Price)</td>
</tr>
<tr>
<td></td>
<td>6. Animal Models (Chair: Frances Wiseman)</td>
</tr>
<tr>
<td></td>
<td>7. Centre Managers (with HQ)</td>
</tr>
<tr>
<td>12:45 – 13:45</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:45 – 14:05</td>
<td><strong>David Rubinsztein</strong> - Nutrient regulation of autophagy</td>
</tr>
<tr>
<td>14:05 – 14:25</td>
<td><strong>Yu Ye</strong> - Untangling dementia with the proteasome system</td>
</tr>
<tr>
<td>14:25 – 14:45</td>
<td><strong>Heather Smith</strong> - The astrocytic unfolded protein response causes non-cell autonomous neuronal degeneration</td>
</tr>
<tr>
<td>14:45 – 15:15</td>
<td>Break</td>
</tr>
<tr>
<td>15:15 – 15:35</td>
<td><strong>Joanna Wardlaw</strong> - Cerebral small vessel disease is a relapsing and remitting neurodegenerative disorder</td>
</tr>
<tr>
<td>15:35 – 16:15</td>
<td>The Annual Director's Science Address - <strong>Bart De Strooper</strong></td>
</tr>
<tr>
<td>16:15 – 16:30</td>
<td>What’s next – <strong>Bart and Adrian</strong></td>
</tr>
</tbody>
</table>
Day 1
UK DRI at UCL

1 Physiological alpha-Synuclein multimers are decreased in cortical native brain tissue from DLB and sporadic PD patients
Laura de Boni, Elodie Martin, John Sanderson, Haiyang Jiang, Adam Cantlon, Matteo Flavia, Lei Liu, Aurelia Hays Watson, Mel Feany, Zane Jaunmuktane, Tammaryn Lashley, Ulf Dettmer, Tim Bartels

2 De-regulated Wnt signaling in AD via microglia-derived Dkk2 – a potential novel disease mechanism
Dominic Aghaizu

3 Developing sensitive bioassays to measure huntingtin protein species in Huntington’s disease
Christian Landles, Rebecca E. Milton, Akaterini S. Papadopoulou, Emma Armstrong, Anastasia Khvorova, Paul Whiting, Gillian P. Bates

4 MSH3 modifies somatic instability and disease severity in Huntington’s and myotonic dystrophy type 1
Michael Flower

5 Rab10 as a novel target to manipulate axonal transport of neurotrophic signalling endosomes
Oscar Marcelo Lazo, Giampietro Schiavo

6 Generation of C9orf72 DPR knock-in mouse models
Carmelo Milioto

7 Proteomic differences in FTLD pathologies
M.S. Foiani, Toormey C.E.I., Foti S., Hallqvist J., Mills K., Rohrer J.D., Zetterberg H., Lashley T

8 Proteomic differences across neurodegenerative diseases
C.E. Toormey, S. Foti, W. Heywood, K. Mills, S. Gandhi, H. Zetterberg, T. Lashley

9 Identifying molecular, structural, and genetic underpinnings of selective vulnerability and pathological heterogeneity in primary and secondary tauopathies
Sumi Bez

10 Transcriptomic signatures of cell-types that show differential vulnerability to tauopathy
Emir Turkes

UK DRI at Cambridge

11 Progressive formation of α-synuclein aggregates in iPSC-derived neurons from a patient with SNCA triplication and Parkinson’s disease
L. Calo, Y. Zuo, H. Henson, T. Fuchsberger, S. De, T. Kunath, O. Paulsen, D. Klenerman, M.G. Spillantini

12 The perk kinase insert loop is a novel target for selective modulation of perk signalling without systemic toxicity
Daniel Hughes

13 Endoplasmic reticulum shaping and neuropathology
Tasuku Konno

14 Single cell transcriptomic profiling of human a53t-pd ipsc derived dopamine neurons
Hugo Fernandes Riberio, Nikolaos Patikas, Stefanie Foskolou, Andrew Bassett, Emmanouil Metzakopian

15 Seeded aggregation of tau in mouse organotypic hippocampal slice cultures
Lauren Miller

16 Imaging the trans-cellular propagation of tau at a single aggregate resolution
Eleni Dimou, William McEwan, David Klenerman

17 Felodipine induces autophagy in mouse brains with pharmacokinetics amenable to repurposing
Farah H Siddiqi, David C. Rubinsztein

18 Exploring the roles of USP30 in Parkinson disease
Yu Sun, Nirav Patel, Paul Thompson, Torren Finkle, Simon David, Gabriel Balmus

19 Regulatory pathway of RMB3 induced neuroprotection
Diego Peretti
UK DRI Care Research & Technology at Imperial

20 Brain atrophy in Alzheimer’s disease and after TBI: a longitudinal cross-disease comparative study

21 CRISPR-Cas diagnostics for dementia
Michael A. Crone, Loren P. Cameron, Kirsten Jensen, Paul S.Freemont

22 Machine learning for risk analysis of Urinary Tract Infection in people with Dementia
Shrin Enshaifar, Payam Barnaghi

23 Embedding Human-Centred Design in Dementia Technology Research
Matthew Harrison, Pip Baty, Alice Blencowe, Sarah Daniels, Lenny Naar, Professor David Sharp

24 Social robotic support for dementia patients and carers in healthy environs
Dr Maitreyee Wairagkar, Maria Lima, Ravi Vaidyanathan

UK DRI at Kings

25 Pathological TDP-43-targeting antibody for FTD/ALS
Alina Fernandez

26 Soluble and liquid-liquid phase separated FUS have distinct interaction partners with implications for FUS function and toxicity
Anny Devoy

27 Single molecule nucleocytoplasmic transport dynamics in intact live cells
Seoungun Lee

28 Weakening of M1 muscarinic acetylcholine receptor underlies an early stage of Alzheimer’s disease pathophysiology
Saviana Barbati

29 Pathophysiological cytosolic FUS inclusions result in activity dependent synaptic dysfunction in the hippocampus
Scott Mitchell

30 Phase separation of nucleoporins in C9orf72-mediated ALS and FTD
Dan Solomon

Day 2

31 Investigating novel ANXA11 mutations in ALS patient derived motor neurons
Erin Hedges

32 Effects of commonly prescribed anti-psychotics on amyloid clearance through microglial phagocytosis
Mrityunjoy Mondal, Shiden Solomon, Ivo Carre

33 The effect of glycation on Abeta aggregation
Giulia Milordini

UK DRI at Cardiff

34 Synaptoneurosomes are susceptible to complement mediated lytic attack
Dr Sarah Carpanini

35 Modelling neuroinflammation with iPSC-derived microglia and single cell transcriptomics
Dr Jimena Monzon Sandoval

36 Whole-exome sequencing identifies novel modifiers of Huntington’s disease (HD)
Branduff McAllister

37 Retinal ganglion cell morphology in complement deficient mouse models of AD
Ryan Bevan

38 Investigating genetic modifiers of Huntington’s disease using Drosophila melanogaster
Freja Sadler

39 Contracting Trinucleotide Repeats using the CRISPR-Cas9 nickase
Dr Meghan Larin

40 Deconvoluting the dementia phenotype using functional computational approaches
Dr Dobril Ivanov

41 A combined analysis of RNAseq data for Alzheimer’s Disease subphenotypes in humans
Karen Crawford

42 Understanding the role of FTD/ALS gene TBK1 in cellular response to stress
Andrew Lloyd
UK DRI at Imperial

43 Single nucleus RNA sequencing of glia in Alzheimer’s disease post-mortem tissue
Amy Smith

44 How sleep-wake state determines diffusion in the brain
David Miao

45 Loss of network-wide homeostatic control with ageing
Carola Radulescu, Nazanin Doostdar

46 Viral targeting of microglia of the circadian master pacemaker
Renaud Bussiere

47 Non-invasive deep brain stimulation of human hippocampus via temporal interference of electric fields
Kety Alania

48 Boosting human cognitive processing by phase-locking information to endogenous brain rhythm
Matteo Vinao-Carl

49 Untargeted metabolomics to study gene mechanisms of Alzheimer’s and Parkinson’s diseases
Rui Climaco Pinto, Ibrahim Karaman

50 Uncovering the role of ceramides in Dementia through metabolomics
Brenan Durainayagam

51 Gut microbiota-derived tryptophan metabolites and cognitive function: findings from the CARDIA study
Adesola Bello

UK DRI at Edinburgh

52 Nanoscale changes to dysfunctional endothelial cells early in small vessel disease reveal routes to vascular dementia
Jon Moss

53 Understanding the contribution of TREM2 in an experimental model of chronic cerebral hypoperfusion
Stefan Szymkowiak

54 Targeting the role of innate immunity in cerebral small vessel disease
Sarah McGlasson, David Hunt

55 Modelling the neuro-gliovascular system to define neuroinflammatory cascades
Paul Baxter

56 The striatum, the hippocampus, and short-term memory binding: Volumetric analysis of the subcortical grey matter’s role in mild cognitive impairment
Stewart Wiseman

57 Impairments in metabolism and axonal homeostasis in C9orf72 motor neurons
Arpan Mehta

58 Astrocytes, amyloidopathy and array tomography
Monique Hooley

59 The lifespan synaptome architecture for the mouse brain
Ricky (Zhen) Qiu

60 Csf1r-dependency of cerebroventricular and choroid plexus macrophages
David Munro
We all have a story...

We can help tell yours...

Everyday you’re carrying out the most groundbreaking research in dementia and that deserves to be shouted about.

Let us know about your latest findings & publications and we’ll help bring them to life, ensuring that they reach the ears of the wider research community and beyond.

Bedside to bench...

As researchers it is easy to become detached from the people we are trying to help.

That’s why we recently set up a ‘Lived Experience Group’, so your science can benefit from the expertise of people affected by dementia. Keep an eye out for upcoming meeting announcements.

An expert opinion...

It is more important than ever that scientists provide reasoned argument and challenge the headlines. Effective communication of your research is also vital to gaining public support for dementia, and ultimately more funding.

We can help support your media interactions with training opportunities and 1 to 1 advice.

Stay in touch with the UK DRI communications team and don’t forget to explore our branded templates - available from your centre manager
Lucy Wilson, Senior Communications Officer, UK DRI HQ: lucywilson@ucl.ac.uk

Press | Social media | Branding | Website | Digital content | Newsletter | Public engagement events | Patient involvement | Public affairs