

# Early career and technologist (ECaT) day

## Monday 8 December

11:00 - 13:00	Registration, lunch & networking		
13:00 - 13:15	Welcome and introduction	Natalie Duggett Research Operations Division	
13:15 - 13:45 Exchange auditorium	UK DRI Platforms and technologies Chair: Natalie Duggett Research Operations Division	Emily Simmonds UK DRI at Cardiff	Human data mining hub
		Will McEwan UK DRI at Cambridge	Human tau assemblies platform
		Zane Jaunmuktane UCL & NHNN	Human nervous tissue hub
		Iraida Soria-Espinosa Research Operations Division	What B&I do and how they support researchers
		Dammy Shittu UK DRI Core Informatics	Neuromics Explorer: A visualisation dashboard in your toolbox
13:45 - 14:30 Exchange auditorium	ECaT day Keynote talk Chair: Dani Ruiz Gabarre Wardlaw lab, UK DRI at Edinburgh	Malcolm Macleod University of Edinburgh	Making research in the life sciences more useful
14:30 - 14:45	Transition time		
14:45 - 15:30	Parallel 1 - Integration in Action: Data, Software, and Omics AI Exchange auditorium		Parallel 2 - Human Insights: Bridging Biology, Data, and Experience Charter 4
15:30 - 16:00	Coffee break		
16:00 - 16:45	Parallel 3 - Risk, Diagnostics & Treatment Exchange auditorium		Parallel 4 - Models & Mechanisms Charter 4
16:45 - 17:00	Transition time		
17:00 - 18:00	Parallel 5 - Networking Exchange auditorium		Parallel 6 - Technologist careers Charter 4
18:00	Close		
19:00	ECaT Day Evening Social Boom Battle Bar Manchester (by registration only)		

14:45 - 15:30

Parallel 1 - Exchange auditorium:  
Integration in Action: Data, Software, and Omics AI    Chair: Amonida Zadissa, UK DRI Core Informatics

Aaron Pangilinan, UK DRI Core Informatics	Data harmonisation across UK DRI
Gabriel Mateus Bernado-Harrington, Webber lab, UK DRI at Cardiff	The replication situation
Charlotte Capitanchik, Ule lab, UK DRI at King’s	Flow.bio: Data infrastructure for building ‘omics AI

Parallel 2 - Charter 4:  
Human Insights: Bridging Biology, Data, and Experience    Chair: Nurun Fancy, UK DRI at Imperial

Lewis Taylor, Durrant lab, UK DRI at Edinburgh	Working with human tissue
Dervis Salih, Hardy lab, UK DRI at UCL	What can we learn from human data: genetics, transcriptomics and brain samples? Integration with other model data
Victoria Simpson, UK DRI Care Research & Technology	“Nothing About Us Without Us”: Putting lived experience at the heart of dementia research

16:00 - 16:45

Parallel 3 - Exchange auditorium:  
Risk, Diagnostics & Treatment    Chair: Deepak Khuperkar, UK DRI at King’s

Lorenzo Capitani, Carpanini lab, UK DRI at Cardiff	HLA typing using whole-exsome sequencing data implicates antigen presentation in the association of HLA with Alzheimer’s disease
Caleigh Lynch, Sharp lab, UK DRI Care Research & Technology	Mid-life brain health in former elite footballers
Anastasia Ilina, Sandor lab, UK DRI at Imperial	Fractal self-supervised learning for Parkinson’s disease diagnosis from wearable devices

Parallel 4 - Charter 4:  
Models & Mechanisms    Chair: Marcus Keatinge, UK DRI at Edinburgh

Georg Meisl, Klenerman lab, UK DRI at Cambridge	From molecular mechanisms to brain tissue aggregate patterns – In silico models of neurodegeneration
Joseph Stone, Massey lab, UK DRI at Cardiff	The role of PMS1 in somatic CAG repeat expansion in iPSC and cortical neuron models of Huntington’s disease
Eugenia Carraro, Serio lab, UK DRI at King’s	Engineering disease-relevant 3D skeletal muscle using shape-tuneable on-demand printed scaffolds

17:00 - 18:00

Parallel 5 - Exchange auditorium:  
Careers    Chair: Afra Aabdien, UK DRI at King’s

Emma Williams, EJW Solutions	Making connections that count: An engaging networking session for researchers - why it matters, how to connect authentically, and how to manage those trickier power dynamics that come up in research environments
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Parallel 6 - Charter 4:  
Technologist careers    Chair: Matthew Harrison, UK DRI Care Research & Technology

Sarah Allen, UK Institute for Technical Skills and Strategy	ITSS – Learning & Development and Career Pathways: How the UK Institute for Technical Skills & Strategy is supporting career development for technical staff
Samantha Ahern, Society for Research Software Engineering	All the acronyms but what do they mean for me?: An introduction to the Society of Research Software Engineering (RSE), the current landscape, new developments and how the RSE can support community building and individual professional growth

# Day 1 - Tuesday 9 December

09:00 - 11:15 Exchange auditorium	Welcome and introduction		Siddharthan Chandran UK DRI Director	Welcome and introduction
			Stéphanie Debette Paris Brain Institute	Catalyzing collaborative dementia research in Europe: the CureND Alliance seen through the Parisian lens
	Lived experience keynote	Rory Cellan-Jones Movers and Shakers podcast		In conversation: From tech correspondent to Parkinson's advocate
		Miratul Muqit Parkinson's Research Centre		Decoding mitochondrial mechanisms in Parkinson's disease
Presentation of the PhD prize and the Discovery prize				
11:15 - 11:45	Coffee break			
11:45 - 12:45 Exchange auditorium	Keynote talk Chair: Jernej Ule UK DRI at King's	Erin Schuman Max Planck Institute of Biochemistry		Feeding the beast: the messages and machines that supply proteins to neuronal synapses
		Presentation of the science imaging prize and the Innovation prize		
12:45 - 13:45	Lunch and networking			
13:45 - 15:00	Parallel 1 - Disease heterogeneity Exchange auditorium		Parallel 2 - Data and digital Exchange 8-10	
15:00 - 15:30	Coffee break			
15:30 - 16:30 Exchange auditorium	Introducing the BHF-UK DRI Centre for Vascular Dementia Research  Chair: David Attwell BHF-UK DRI CVDR	Rikesh Rajani BHF-UK DRI CVDR		Uncovering the role of oligodendrocytes in dementia
		Catherine Hall BHF-UK DRI CVDR		Does an altered oxygen supply to the brain promote dementia?
		Susanne Van Veluw BHF-UK DRI CVDR		Targeting vascular smooth muscle cell dysfunction in cerebral amyloid angiopathy
		Mootaz Salman BHF-UK DRI CVDR		From models to mechanisms: targeting BBB dysfunction in neurodegeneration
Presentation of the 3Rs prize and the Reproducibility prize				
16:30 - 18:30	Poster session			
20:00	Dinner Mercure Manchester Piccadilly Hotel (Portland St, Manchester M1 4PH)			

# Parallel talks

## Day 1 - Tuesday 9 December 13:45 - 15:00

### Parallel 1 - Exchange auditorium:

<b>Chairs: Wioleta Zelek</b> UK DRI at Cardiff and <b>David Hunt</b> UK DRI at Edinburgh	
<b>Amanda Heslegrave</b> , Biomarker Factory UK DRI at UCL	Fluid biomarkers – promise, pitfalls, and priorities
<b>Rebecca Sims</b> , Affiliate member, UK DRI at Cardiff	Genetic heterogeneity and cohort integration for subtype identification
<b>Raja Nirujogi</b> , UK DRI at Edinburgh, Chandran lab	Decoding dementia heterogeneity using proteomics
<b>Maura Malpetti</b> , UK DRI at Cambridge	Sex matters; biological drivers of gender diversity in dementia
<b>Zane Jaunmuktane</b> , UCL & NHNN	Bridging research and practice: Does disease heterogeneity impact anti-amyloid drug implementation?

## Parallel 2 - Exchange 8-10: Data and digital

<b>Chairs: Valentina Escott-Price</b> UK DRI at Cardiff and <b>Cynthia Sandor</b> UK DRI at Imperial	
<b>Amonida Zadissa</b> , UK DRI Core Informatics	The signal in the noise: Uncovering novel discoveries from complex dementia data
<b>Emily Simmonds</b> , Human Data Mining Hub, UK DRI at Cardiff	The UK DRI Human data mining hub: bridging your research with human data
<b>Magda Kolanko</b> , UK DRI at Imperial, Sharp lab	Home-based alerting system for early detection of acute respiratory infections and other adverse physiological events using passive digital technology and explainable machine learning algorithms
<b>Sonia Garcia Ruiz</b> , UK DRI at Cambridge, Ryten lab	Novel applications of spatial transcriptomics: subcellular localisation and neuropathology
<b>Mathieu Bourdenx</b> , UK DRI at UCL, Duff lab	IntroVerse v2: A comprehensive database of introns and alternative splicing events across human tissues, age and disease

# Day 2 - Wednesday 10 December

09:00 - 10:15	<b>Parallel 1 - Novel therapies</b> Exchange auditorium	<b>Parallel 2 - Sleep and environment</b> Exchange 8-10
10:15 - 12:00	<b>Poster session and coffee break</b>	
12:00 - 13:00 Exchange auditorium	<b>Keynote talk</b> Chair: Nick Fox UK DRI at UCL  Presentation of the Mentorship prize and the Engagement prize	<b>Christian Haass</b> Ludwig Maximillian University & DZNE  Therapeutic modulation of microglia – an innovative strategy or science fiction?
13:00 - 14:00	<b>Lunch and networking</b>	
14:00 - 16:00 Exchange auditorium	<b>Making an impact</b> Chair: Siddharthan Chandran UK DRI Director  <b>Lived experience keynote</b>	<b>Jon Schott</b> UK DRI at UCL  What can a birth cohort tell us about dementia?  <b>Suvankar Pal</b> UK DRI at Edinburgh  MND SMART - Delivering innovation, collaboration, and hope for people with MND  <b>Sarah Tabrizi</b> UK DRI at UCL  Topline Results from Pivotal Phase I/II Study of uniQure’s AMT-130, an Investigational Huntingtin-Lowering Gene Therapy Candidate  <b>Charles Sabine</b> Hidden No More Foundation
16:00	<b>Close</b>	

# Parallel talks

## Day 2 - Wednesday 10 December 09:00 - 10:15

### Parallel 1 - Exchange auditorium: Novel therapies

**Chairs:** Will McEwan UK DRI at Cambridge and Adrian Isaacs UK DRI at UCL

<b>Elizabeth Simzer</b> , UK DRI at Edinburgh, Spires-Jones lab	Investigating BIN1-tau accumulation within pre- and post-synapses in human Alzheimer’s disease
<b>Wioleta Zelek</b> , UK DRI at Cardiff	Targeting the complement system for the therapy of dementia
<b>Jasmine Donaldson</b> , UK DRI at UCL, Tabrizi lab	Antisense oligonucleotide-mediated MSH3 suppression reduces somatic CAG repeat expansion in Huntington’s disease iPSC-derived striatal neurons
<b>Shreya Das Sharma</b> , UK DRI at Edinburgh, Selvaraj lab	Using DPP6 as a novel therapeutic target for glutamate-mediated excitotoxicity in ALS

### Parallel 2 - Exchange 8-10: Sleep and environment

**Chairs:** Derk-Jan Dijk UK DRI Care Research & Technology and Marco Brancaccio UK DRI at Imperial

<b>Junheng Li</b> , Grossman & Dijk labs, UK DRI at Imperial & UK DRI Care Research & Technology	Falling asleep displays a predictable bifurcation dynamic
<b>Mathieu Nollet</b> , UK DRI at Imperial, Franks-Wisden lab	REM sleep impairment in aging mice: a role for amyloid-triggered dysfunction of cholinergic medial septal neurons
<b>Sarah Marzi</b> , UK DRI at King’s	Gene regulation links pesticide exposure to Parkinson’s disease
<b>Anne Skeldon</b> , UK DRI Care Research & Technology, Dijk lab	Designing light and temperature environments to support healthy sleep in people living with dementia

# Day 1 - Flash talks

## Exchange auditorium: Disease heterogeneity

- 37
- ABCA7 risk variant drives larger, diffuse amyloid plaques through impaired microglial response in humans  
[Marianna Papageorgopoulou \(Matthews lab, UK DRI at Imperial\)](#)
- 41
- C9orf72- derived polyGR polypeptides disrupt passive nucleocytoplasmic transport by tuning protein affinity for the nuclear pore barrier  
[Daniel Solomon \(Mizielinska & Ruepp lab, UK DRI at King's\)](#)
- 63
- Integrated multiplexed imaging and transcriptomics reveals determinants of selective neuronal vulnerability in the Alzheimer's disease entorhinal cortex  
[Sam Boulger \(Matthews lab, UK DRI at Imperial\)](#)
- 89
- RNA-binding protein ARPP21 drives TDP-43 proteinopathy in models of ALS in vitro and in vivo  
[Afra Aabdien \(Clayton, Mizielinska, Shaw lab, UK DRI at King's\)](#)
- 95
- TDP-43 loss of function drives aberrant splicing in Parkinson's disease  
[Jonathan Brenton \(Ryten lab, UK DRI at Cambridge\)](#)
- 187
- Not all plaques are the same: Axonal spheroids as emerging contributors to Alzheimer's disease  
[George Sideris-Lampretsas \(Attwell lab, BHF-UK DRI Centre for Vascular Dementia Research\)](#)
- 231
- Lifespan-dependent epigenomic reprogramming in microglia links ageing to Alzheimer's disease risk  
[Reuben Mangi Yaa \(Nott lab, UK DRI at Imperial\)](#)
- 247
- Ontogeny dictates myeloid cell regional composition and survival following ischaemic stroke  
[Gaia Brezzo \(McColl lab, UK DRI at Edinburgh\)](#)
- 251
- Profiling complement dysregulation in frontotemporal dementia using cerebrospinal fluid, plasma, and exosomes  
[Lewis Watkins \(Zelek & Morgan lab, UK DRI at Cardiff\)](#)
- 263
- Targeted ablation of brain pericytes reveals critical Insights Into pericyte-endothelial crosstalk  
[Dorota Stefancova \(Montagne lab, UK DRI at Edinburgh\)](#)

## Exchange 8-10: Data and digital

- 29
- Tau propagation is 1000-fold faster than spontaneous aggregation in the PSP Brain  
[Shih-Huan Huang \(Klenerman lab, UK DRI at Cambridge\)](#)
- 57
- Genetic basis of cognitive/psychiatric/behavioural phenotypes in Huntington's disease  
[Christopher Wills \(Holmans lab, UK DRI at Cardiff\)](#)
- 97
- Targeting 98 genes in Parkinson's risk networks using siRNA knockdowns and deep single-cell transcriptomics in human iPSC-derived dopaminergic neurons  
[Viola Volpato \(Webber lab, UK DRI at Cardiff\)](#)
- 103
- Unravel the molecular links between ACE and Alzheimer's disease  
[Xinzhu \(Elodie\) Yu \(Elliott lab, UK DRI at Imperial\)](#)
- 109
- Acoustic speech analysis and machine learning in the diagnosis and monitoring of neurodegenerative disorders  
[Johnny Tam \(Pal lab, UK DRI at Edinburgh\)](#)
- 119
- EEG slowing predicts accelerated aging, frailty and multimorbidity in humans: A 15-year population-based, multi-cohort study  
[Abidemi Otaiku \(Sharp lab, UK DRI Care Research & Technology\)](#)
- 121
- Eight decades of follow-up link life course exposures to proteomic organ ageing and longevity  
[James Groves \(Schott lab, UK DRI at UCL\)](#)
- 127
- Giovanna: Advancing large language models for neuroscience research institutions  
[Ivan Savchuk \(Barnaghi lab, UK DRI Care Research & Technology\)](#)
- 161
- When accuracy fails: Exploring early predictive signals in misclassified dementia MRI scans  
[Anastasia Gailly de Taurines \(Barnaghi lab, UK DRI Care Research & Technology\)](#)
- 259
- Systematic identification of drug transcriptional responses associated with AD genetic risk in iPSC-microglia  
[Jimena Monzon Sandoval \(Webber lab, UK DRI at Cardiff\)](#)

# Day 2 - Flash talks

## Exchange auditorium: Novel therapies

- 2
- Alpha-synuclein mutations mislocalize cytoplasmic p300 compromising autophagy, which is rescued by ACLY inhibition  
[Sungmin Son \(Rubinsztein lab, UK DRI at Cambridge\)](#)
- 24
- Rerouting amyloid precursor protein to the endoplasmic reticulum reduce brain amyloid plaque formation  
[Karnika Gupta \(Avezov lab, UK DRI at Cambridge\)](#)
- 44
- Cas9 nickase-mediated contraction of CAG/CTG repeats in vivo and improvement of Huntington's disease pathology  
[Alvaro Murillo \(Dion lab, UK DRI at Cardiff\)](#)
- 76
- Mechanisms of disrupted nuclear pore condensation in ALS/FTD  
[Ines Lourenco Cabaco \(Ruepp lab, UK DRI at King's\)](#)
- 214
- Deciphering the mechanisms of photobiomodulation on the blood-brain barrier function in health and disease  
[Mirriam Domocos \(Salman lab, BHF-UK DRI Centre for Vascular Dementia Research\)](#)
- 242
- Non-invasive modulation of microglia by focused ultrasound: Exploring a potential therapeutic pathway for Alzheimer's disease  
[Parisa Abbasi Jamaati \(Attwell lab, UK DRI at UCL\)](#)

## Exchange 8-10: Sleep and environment

- 112
- Associations between sleep posture and physiology in older adults and people living with Alzheimer's  
[Marta Messina Pineda \(Dijk lab, UK DRI Care Research & Technology\)](#)
- 130
- Indoor air pollution and accelerated cognitive impairment in older adults : mediating effects of sleep disturbance - An IoT based pilot study  
[Sutong Li \(Wingfield & Sharp lab, UK DRI Care Research & Technology\)](#)
- 148
- Proteomic insights into connections between sleep and neurodegeneration  
[Marirena Bafaloukou \(Sandor lab, UK DRI at Imperial\)](#)
- 150
- Remote detection of preclinical Alzheimer's disease pathology using a digital sleep and circadian biomarker: an InSleep46 study.  
[Josh King-Robson \(Schott lab, UK DRI at UCL\)](#)
- 162
- The role of the basal ganglia in sleep/wake regulation  
[Sara Wong \(Wisden lab, UK DRI at Imperial\)](#)
- 164
- Astrocyte-neuron interactions are protective against synapse loss in an ex vivo model of early-stage of Alzheimer's disease  
[Francesco Gobbo \(Spires-Jones lab, UK DRI at Edinburgh\)](#)
- 168
- Dissecting novel object exploration: a fully automated homecage-based novel object recognition test  
[Hinze Ho \(Krupic lab, UK DRI at UCL\)](#)
- 170
- Impaired path integration is associated with early Tau pathology in the entorhinal-hippocampal neural networks  
[Pauline Kerekes \(Krupic lab, UK DRI at UCL\)](#)
- 194
- Visualisation and semi-quantitative assessment of glymphatic signal intensity in small vessel disease using gadolinium-enhanced MRI  
[Grant Kirkwood \(Wardlaw lab, UK DRI at Edinburgh\)](#)
- 216
- Diurnal variation and group differences in NULISA250-assessed (neuro)inflammatory proteins: A 24-hour time series in aging and dementia  
[Samuel Stagg \(Dijk lab, UK DRI Care Research & Technology\)](#)