NECTAR-INTR 2021 will be at the Royal College of Physicians Edinburgh hosted by Dr Tilo Kunath, The University of Edinburgh.

Organizing Committee – Tilo Kunath, Jeff Kordower, Emma Lane, Michael Lane, Simon Stott, Viviane Tabar, Lachlan Thompson, Rebecca Matsas

Project Manager – Saule Zubyte

For information, including registration, Google “NECTAR 2021”.
Registration and Abstract Submissions

This meeting will be a hybrid conference and all times are GMT. Virtual-only attendance registration Register here.

Registration fees

- Virtual-only – Standard £100
- Virtual-only – Student £50

Deadlines
To register for virtual meeting – 5th November 2021, 17:00 GMT

Information for virtual delegates
The Royal College of Physicians of Edinburgh will support and deliver the virtual component of the conference using WebEx and the Q&A will be on Slido.com by using the hashtag #NECTAR2021.

Conference Recordings
All talks will be recorded and available for viewing by both in-person and virtual-only delegates from 15th – 21st November 2021.

COVID-safe measures
In-person spaces at this conference will be limited to 135, which will allow for 1m social distancing within the venue. Face-coverings are required within the venue unless eating, drinking, or presenting a talk. Non-UK in-person delegates will be provided with COVID-19 rapid lateral flow testing (LFT) kits, and are strongly encouraged to self-test each day of the conference. UK delegates are encouraged to obtain LFT kits (https://www.gov.uk/order-coronavirus-rapid-lateral-flow-tests) and self-test daily.
The 31st NECTAR/16th INTR meeting organizers would like to thank the following companies and organizations for their generosity in supporting our 2021 meeting.

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Monday, 8 November, 2021

08:30  Arrival, registration, tea/coffee
09:25  Welcome: Conor Maguire & Tilo Kunath

Session 1

09:35  Roger Barker, University of Cambridge  
Lessons learnt from TRANSEURO to date
09:55  Jun Takahashi, CiRA, Kyoto University  
Kyoto clinical trial for Parkinson’s disease cell replacement therapy
10:15  Malin Parmar, Lund University  
Developing a stem cell based therapy for Parkinson’s disease – STEM-PD
10:35  Emma Lane, University of Cardiff  
Where old meets new – the effect of drugs on transplants for Parkinson’s disease
10:55  Coffee/tea break, posters

Session 2

11:25  Claire Durrant, University of Edinburgh  
Targeting tau in Alzheimer’s disease: opportunities and challenges
11:45  Daišuke Doi, CiRA, Kyoto University  
Transplantation of brain organoids for treating cerebral stroke
12:05  David Rowitch, University of Cambridge  
Cell-based therapy, patient models and new treatments for Pelizaeus-Merzbacher Disease
12:25  Lorenz Studer, Memorial Sloan Kettering Cancer Center, New York  
Repair of the “second brain” – towards a human PSC-based cell therapy for Hirschsprung’s disease
12:45  Lunch, posters

Session 3

13:50  Su-Chun Zhang, University of Wisconsin  
Cell therapy in preclinical Parkinson’s disease models
14:10  Viviane Tabar, Memorial Sloan Kettering Cancer Center, New York  
Phase I trial of MSK-DA01 intrastratal grafts in patients with Parkinson’s disease – A Roadmap
14:30  Jeff Kordower, Arizona State University  
Stem cells for Parkinson’s disease – the Fujifilm-CDI experience
14:50  Data Blitz 1 (6 talks)
15:20  Coffee/tea break, posters

Session 4 – Future of Cell & Gene Therapy for CNS disorders

16:00  Brendon Boot, BlueRock Therapeutics
16:10  Kevin Bruce, RoslinCT
16:20  Nicolaj Strøyer Christophersen, Novo Nordisk
16:30  Chad Koonce & Virginia Mattis, Fujifilm Cellular Dynamics
16:40  Jacqueline Barry, Cell and Gene Therapy Catapult  
Panel discussion: Chaired by Anders Björklund and Stephen Dunnett

17:10  Drinks reception, posters
17:45  Data Blitz 2 (9 talks)
18:30 – 19:30  Drinks reception, posters
Tuesday, 9 November, 2021

08:30  Arrival, registration, tea/coffee

Session 5

09:30  **Catherina Becker**, Center for Regenerative Therapies Dresden, TU Dresden  
*Regenerative neurogenesis in the Zebrafish spinal cord*

09:50  **Hideyuki Okano**, Keio University, Tokyo  
iPSCs-based regenerative medicine for spinal cord injury

10:10  **Nisha Iyer**, Wisconsin Institute for Discovery  
*Investigating phenotypic diversity of human spinal neurons using hPSCs and single-cell sequencing*

10:30  **Victoria Moreno-Manzano**, Centro de Investigación Príncipe Felipe, Valencia  
*Cell therapy modulation for spinal cord injury treatment*

10:50  Coffee/tea break, posters

Session 6

11:30  **Alasdair Coles**, University of Cambridge  
*Promoting endogenous brain repair in multiple sclerosis with an intolerable drug*

11:50  **Sarah Jaekel**, Institute for Stroke and Dementia Research, LMU Hospital, München  
*Oligodendrocyte heterogeneity and neurodegeneration: is there a link?*

12:10  **Bernhard Landwehrmeyer**, Ulm University  
*Approaches to modifying the progression of Huntington’s disease*

12:30  **Data Blitz 3** (6 talks)

13:00  Lunch, posters

Session 7

14:00  **Stuart Cobb**, University of Edinburgh  
*Progress in AAV-delivered genetic therapies for Rett syndrome*

14:20  **Krystof Bankiewicz**, Ohio State University  
*Clinical experience with AAV2-GDNF gene therapy for Parkinson’s disease and multiple system atrophy*

14:40  **Mart Saarma**, Institute of Biotechnology, University of Helsinki  
*CDNF protects and repairs dopamine neurons by a novel mechanism*

15:00  **José Obeso**, CINAC, Madrid  
*Focus Ultrasound in Parkinson’s disease – From symptomatic to neurorestorative therapy*

15:20  Coffee/tea break, posters

Session 8

15:50  **Ernest Arenas**, Karolinska Institutet, Stockholm  
*Regenerative strategies for Parkinson’s disease*

16:10  **Mati Karelson**, University of Tartu, Estonia  
*Novel compounds regulating mRNA methylation protect and repair dopamine neurons*

16:30  **Lyandysha Zholudeva**, Gladstone Institutes, San Francisco  
*Engineering human spinal interneurons for spinal cord repair*

16:50  **Data Blitz 4** (4 talks)

20:00  **Conference dinner** *(An informal dinner & drinks catered by Pinkerton’s in the Royal College of Physicians Edinburgh.)*
Wednesday, 10 November, 2021

08:30  Arrival, registration, tea/coffee

Session 9

09:30 Asuka Morizane, Kobe City Medical Center General Hospital
  *Immune modulation and immune matching in cell therapies for Parkinson’s disease*

09:50 Akitsu Hotta, CiRA, Kyoto University
  *Escaping from allogenic immunity by CRISPR genome editing*

10:10 Andras Nagy, University of Toronto
  *The Universal Cell: Making the Unsafe Safe*

10:30 Data Blitz 5 (6 talks)

11:00 Coffee/tea break, posters

Session 10

11:40 Clare Parish, University of Melbourne
  *A Failsafe suicide gene-based system to improve the safety and standardisation of neural grafts*

12:00 Craig van Horne, University of Kentucky
  *Clinical trial summary of autologous peripheral nerve tissue grafts targeting Parkinson’s disease modification using the DBS PLUS approach*

12:20 Sally Temple, Neural Stem Cell Institute, New York
  *Adult human retinal pigment epithelium stem cells – from discovery to translation*

12:40 Lunch and depart
Data Blitz Sessions

Data Blitz 1
Monday 8th November 2021, 15:00 – 15:30

14:50 Cheney Drew, Cardiff University
The LEARN Study: Listening to the experience of participants in neurosurgical trials

14:55 Alrik Schörling, Lund University
Identification of a novel cell surface marker with improved specificity towards ventral midbrain dopaminergic progenitor cells

15:00 Nicola Drummond, University of Edinburgh
Non-invasive monitoring of midbrain dopaminergic progenitor cell differentiation

15:05 Osama Elabi, Lund University
Human α-synuclein overexpression in a mouse model of Parkinson’s disease leads to vascular pathology, blood brain barrier leakage and pericyte activation

15:10 Charlotte Lee-Reeves, Imperial College London
Dural extracellular matrix hydrogels for enhanced stem cell delivery after traumatic brain injury (TBI)

15:15 Thea Pinholt Lilletorth, Aarhus University
Longitudinal in vivo PET Imaging of human ESC-derived dopamine neurons in minipig

Data Blitz 2
Monday 8th November 2021, 17:45 – 18:25

17:45 Benjamin Newland, Cardiff University
Why do most cells not survive the transplantation process? Is there a lack of basic nutrients at the graft core?

17:50 Amalie Holm, University of Copenhagen
In vitro characterization of hESC-derived vascular leptomeningeal cells in neuronal cultures

17:55 Charlotte Bridge, Cardiff University
Can viral-mediated dopamine synthesis improve non-motor impairments?

18:00 Theresa Mader, Biolamina
Biosilk is a biocompatible spider silk mesh that provides 3D fiber scaffold to cells

18:05 Edoardo Sozzi, Lund University
Developing silk scaffold-based platform to generate functional and reproducible human bioengineered organoids

18:10 Fredrik Nilsson, Lund University
Evaluating the use of alpha synuclein deletion as a universal strategy for preventing disease associated pathology in cell-replacement therapy in Parkinson’s disease

18:15 Nicolas Marichal, King’s College London
Inducing fast-spiking neurons from glia in the postnatal cerebral cortex

18:20 Patrick Aldrin-Kirk, University of Copenhagen
Purification of specific neural progenitor populations from hESCs using cell surface proteins identified through scRNAseq of a model of the early human neural tube

18:25 Rachel Kelly, NUI Galway
The small molecule α-synuclein aggregator, FN075, enhances serine-129 phosphorylation and aggregation of α-synuclein in AAV rat models, but does not precipitate nigrostriatal degeneration
Data Blitz Sessions

Data Blitz 3
Tuesday 9th November 2021, 12:30 – 13:00

12:30 Christina-Anastasia Stamouli, Lund University
Optimization and validation of new mouse model of in vivo reprogramming of NG2 glia

12:35 Charlie Arber, University College London
iPSC-derived astrocytes for cell replacement therapy in Alzheimer’s disease

12:40 Patricia Garcia Jareño, Cardiff University
Investigation of the functional integration and efficacy of hESC-derived grafts in a model of Huntington’s disease

12:45 Feras Sharouf, Cardiff University
Mock cell transplantation surgery produces an amplified pro-inflammatory response in two Huntington’s disease mouse models

12:50 Adina MacMahon Copas, Trinity College Dublin
Peripheral immune cells induce reactive astrocyte phenotype in human iPSC-derived astrocytes

12:55 Maëlig Patrigeon, University of Poitiers
Host-to-graft propagation of alpha-synuclein in Parkinson’s disease: intra-nigral versus intra-striatal transplantation

Data Blitz 4
Tuesday 9th November 2021, 16:50 – 17:10

16:50 Francesco Gubinelli, Lund University
Drug-free behavioural tests of lateralized deficits in the AAV-vector alpha-synuclein overexpression model of Parkinson’s disease

16:55 Nuria Antolín, Novo Nordisk
Generation of ventral spinal motor interneurons from human embryonic stem cells

17:00 Kayla Schardien, Drexel University
Locomotor training to promote respiratory plasticity and recovery following mid-cervical spinal cord injury (SCI)

17:05 Tara Fortino, Drexel University
Tailoring neural transplants for repair of the injured cervical spinal cord

Data Blitz 5
Wednesday 10th November 2021, 10:30 – 11:00

10:30 Harry Bulstrode, The Francis Crick Institute
Zika in human developing brain and glioblastoma: Lessons in microenvironment control of stem cell virus targeting

10:35 Jens Bager Christensen, University of Copenhagen
Generating appetite-regulating neuronal subpopulations of the hypothalamus using human embryonic stem cells

10:40 Matilde Negrini, Lund University
Sequential or simultaneous injection of preformed fibrils and AAV-mediated overexpression of alpha-synuclein results in relevant pathology in the rat brain

10:45 Nasia Antoniou, Hellenic Pasteur Institute
High-content screening and proteomic analysis identify a kinase inhibitor that rescues pathological phenotypes in a patient-derived model of Parkinson’s disease

10:50 Cameron Hunt, The Florey Institute
Using human pluripotent stem cells to understand and model specification of the human ganglionic eminences

10:55 Niamh Moriarty, The Florey Institute
A combined cell and gene therapy approach for homotopic reconstruction of midbrain dopamine pathways using human pluripotent stem cells
Virtual and in-person Posters

**Alessia Niceforo**, Drexel University  
*Astrocyte-to-neuron reprogramming for spinal cord repair*

**Elissavet-Kalliopi Akrioti**, Hellenic Pasteur Institute  
*Investigation of p.A53T-αSynuclein mediated synaptic dysfunction*

**Florentia Papastefanaki**, Hellenic Pasteur Institute  
*Generation of midbrain-patterned astrocytes from Parkinson’s disease patients using iPSC technology*

**Georgia Kouroupi**, Hellenic Pasteur Institute  
*Development of a human 3D iPSC-based model of p.A53T-synucleinopathy to monitor disease initiation and progression*

**Luca Peruzzotti-Jametti**, University of Cambridge  
*Directly induced Neural Stem Cell (iNSC) grafts remyelinate the chronically demyelinated spinal cord*

**Noelia Morales Prieto**, University College Cork  
*Characterisation of the effects of AAV-BMP2 on behavioural outcomes in the rat AAV-αSynuclein model of Parkinson’s disease*

**Patricia Garcia Jareño**, Cardiff University  
*Striatal quinolinic acid lesions: the need for vigilance in when using established animal models*

**Sebastiano Antonio Rizzo**, Cardiff University  
*Glucose-delivering materials to rescue cell viability in oxygen-glucose deprivation: a strategy to improve cell transplantation?*

**Sébastien Brot**, University of Poitiers  
*Potential of dopamine neurons derived from human induced pluripotent stem cells reprogrammed by mRNA for Parkinson’s disease*

**Valentina Grespi**, Santa Maria Hospital Terni  
*Pharmaceutical methodology to isolate, expand and characterize human neural stem cell lines*

**Zehra Abay-Nørgaard**, University of Copenhagen  
*Generating human stem cell-derived hypocretin neurons for the treatment of narcolepsy*