

BASIC SCIENCE PROGRAM

Wednesday, June 5, 2019



MORNING PLENARY > 9:30 – 11:30 AM

WPPL – PLENARY

Alpha-synuclein and Parkinson's

Co-Chair: Glenda Halliday (Australia)

Co-Chair: Serge Przedborski (USA)

Talk 1: What is alpha-synuclein – The biology

Speaker: Ronald Melki (France)

Talk 2: The pathology of alpha-synucleinopathies (brain donation)

Speaker: Shigeo Murayama (Japan)

Talk 3: Patients as living science: The importance of participating in clinical trials

Speaker: Soania Mathur (Canada)

Talk 4: Clinical trials and efficacy of clinical trials targeting alpha-synuclein

Speaker: Jesse Cedarbaum (USA)

Learning Objectives: 1. To be able to explain what is known and not known about the normal function of alpha-synuclein in the brain; 2. To understand what makes alpha synuclein pathological in certain conditions and what this looks like in the brains of patients dying with Parkinson's disease and related disorders; 3. To discuss the challenges of targeting alpha synuclein in clinical trials and where we are currently with such trials; 4. To explain the roles patients can play in clinical trials, beyond being in the trial itself.



LUNCH > 11:30 AM – 1:30 PM

JAMES PARKINSON SPECIAL LECTURE > 12:15 – 1:15 PM

WVSL – SPECIAL LECTURE

Mitochondrial energy crisis as a pathogenesis of Parkinson's disease

Introduction by: Roger Barker (UK)

Speaker: Yoshikuni Mizuno (Japan)



Session Levels

 Crosstalk – Minimal or no scientific background required

 Moderate-level scientific sessions

 High-level scientific sessions

Session Type

 Basic Science

 Clinical Science

 Comprehensive Care

BASIC SCIENCE PROGRAM

Wednesday, June 5, 2019

DAY
1

PARALLEL SESSION 1:30 – 3:00 PM	WORKSHOP 1:30 – 3:00 PM	PARALLEL SESSION 3:30 – 5:00 PM	WORKSHOP 3:30 – 5:00 PM
WP1 – STEM CELLS IN PARKINSON'S DISEASE  Co-Chair: Patrik Brundin (USA) Co-Chair: Hideki Mochizuki (Japan) Talk 1: Patient-derived cells to study Parkinson's disease <i>Speaker:</i> Laurent Roybon (Sweden) Talk 2: Making authentic midbrain dopamine neurons – The challenges <i>Speaker:</i> Agnete Kirkeby (Denmark) Talk 3: Translating a stem cell-derived dopamine cell to a clinical grafting trial for PD <i>Speaker:</i> Azuka Morizane (Japan) Learning Objectives: 1. Understand the basics of cellular reprogramming and in more detail how one can differentiate iPSCs into mid-brain dopamine neurons. Understand the features of iPSC-derived dopamine neurons that they must exhibit for them to be suitable for transplantation; 2. Be familiar with the potential advantages that iPSC-derived dopamine neurons that might have as disease models and obtain insight into some of the pitfalls of these models (e.g. great variation between cell lines and the need for isogenic controls for mutations in isogenic cells; young age of the cells so generated); 3. Understand the challenges of translating an experimental stem cell-based approach to a clinical therapy (e.g. identifying and producing the right type of dopamine neuron, upscaling production, surgical approach, immunosuppression, clinical trial design, imaging etc).	WW1 – SELECTIVE NEURONAL VULNERABILITY: WHAT WE CAN AND CANNOT LEARN ABOUT THE PATHOGENESIS OF PD USING DISEASE MODELS  Co-Chair: Etienne Hirsch (France) Co-Chair: Jeffrey Kordower (USA) Talk 1: The role of development in laying the foundation for the selective neuronal vulnerability of PD <i>Speaker:</i> Ernest Arenas (Sweden) Talk 2: The role of cellular thresholds in driving the selective neuronal vulnerability of PD <i>Speaker:</i> David Sulzer (USA) Talk 3: The role of neural circuits in PD <i>Speaker:</i> TBD Learning Objectives: 1. Survey and understand current modeling approaches to define selective molecular and cellular vulnerability of neuronal populations in Parkinson's disease; 2. Identify existing knowledge gaps in the selective neuronal vulnerability of PD; 3. Discuss application of current knowledge and updated modeling approaches to improve our knowledge and treatment for Parkinson's disease.	WP4 – LRRK2 AND ITS RELATIONSHIP TO ENDOSOMAL BIOLOGY  Co-Chair: Mark Cookson (USA) Co-Chair: Anthony Schapira (UK) Talk 1: New insights into the function of LRRK2 from a genetic point of view <i>Speaker:</i> Matt Farrer (Canada) Talk 2: LRRK2, the autophagy-lysosome system and PD <i>Speaker:</i> Jie Shen (USA) Talk 3: LRRK2 as a therapeutic target <i>Speaker:</i> Brian Fiske (USA) Learning Objectives: 1. To learn about the genetics of LRRK2 in PD and its role in vesicular trafficking; 2. To learn about the cellular function of LRRK2 and its relationship with other PD-linked proteins such as GBA, VPS35 and ATP13A2; 3. To learn about new models for LRRK2.	WW4 – TRANSCRANIAL MAGNETIC STIMULATION IN PARKINSON'S DISEASE: FROM BASIC TO CLINICAL RESEARCH  Co-Chair: Paolo Calabresi (Italy) Co-Chair: Stephane Lehericy (France) Talk 1: Deciphering transcranial magnetic stimulation mechanisms in early and late experimental parkinsonism <i>Speaker:</i> Veronica Ghiglieri (Italy) Talk 2: Combined pharmacotherapy and neuromodulation approaches to PD <i>Speaker:</i> John Rothwell (UK) Talk 3: Effectiveness and reliability of TMS treatment, new methods and future perspectives <i>Speaker:</i> Angelo Quartarone (Italy) Learning Objectives: 1. Understand the synaptic and non-synaptic mechanisms underlying the therapeutic effects of TMS in the cortex and basal ganglia; 2. Share new findings on functional markers of synaptic plasticity and its in clinical implications for TMS; 3. Developing a dialogue between basic and clinical research on methodological aspects of TMS as a necessary translational aspect of this treatment.

Session Levels

 Crosstalk – Minimal or no scientific background required

 Moderate-level scientific sessions

 High-level scientific sessions

Session Type

 Basic Science

 Clinical Science

 Comprehensive Care

BASIC SCIENCE PROGRAM

Thursday, June 6, 2019



MORNING PLENARY > 9:30 – 11:30 AM

TPL – PLENARY



Are we moving towards personalized medicine?

Co-Chair: Etienne Hirsch (France)

Co-Chair: Ryosuke Takahashi (Japan)

Talk 1: Heterogeneity of Parkinson's disease

Speaker: Connie Marras (Canada)

Talk 2: How are the genetics of Parkinson's disease influencing treatment development?

Speaker: Anthony Schapira (UK)

Talk 3: New trial approaches to treating Parkinson's disease

Speaker: Olivier Rascol (France)

Talk 4: What's it like to live with a gene for Parkinson's disease?

Speaker: Benjamin Stecher (Canada)

Learning Objectives: 1. To recognize that Parkinson's disease is not a single disorder but more a collection of similar conditions that can be defined clinically and genetically; 2. To understand our new emerging data relating to some aspects of the genetic basis of Parkinson's are being used in new trials to target only certain forms of the condition; 3. To show how researchers are designing new clinical trials in Parkinson's disease using subtypes of patients and better trial designs; 4. Explain what it is like to live with a gene for a neurological condition and how knowing this can help in making informed decisions about their daily living, clinical trial involvement, and long-term plans.

LUNCH/POSTER SESSION > 11:30 AM – 1:30 PM

Session Levels

 Crosstalk – Minimal or no scientific background required

 Moderate-level scientific sessions

 High-level scientific sessions

Session Type

 Basic Science

 Clinical Science

 Comprehensive Care

BASIC SCIENCE PROGRAM

Thursday, June 67, 2019

DAY
2

PARALLEL SESSION 1:30 – 3:00 PM	WORKSHOP 1:30 – 3:00 PM	PARALLEL SESSION 3:30 – 5:00 PM	WORKSHOP 3:30 – 5:00 PM
TP1 – BASAL GANGLIA OSCILLATIONS AND CIRCUITRY IN PARKINSON'S DISEASE   Co-Chair: Elena Moro (France) Co-Chair: Barbara Picconi (Italy) Talk 1: Oscillatory activities in cortico-basal ganglia networks in animal models of PD <i>Speaker:</i> Atsushi Nambu (Japan) Talk 2: Optogenetic modulation of basal ganglia activity in Parkinsonian models <i>Speaker:</i> Stella Papa (USA) Talk 3: Adaptive brain stimulation for the treatment of PD: Where are we with this? <i>Speaker:</i> Alberto Priori (Italy) Learning Objectives: 1. Understand how the cortico-basal ganglia-thalamocortical network is organized, and how oscillations can emerge and propagate within this network in animal models of PD; 2. Appreciate the link between specific oscillatory activities and different clinical states, and understand how deep-brain stimulation can reduce pathological oscillations in PD patients; 3. Gain awareness of ongoing efforts to develop adaptive deep-brain stimulation (DBS) for use in PD.	TW1 – THE ROLE OF INFLAMMATION AND THE IMMUNE SYSTEM IN PARKINSON'S DISEASE   Co-Chair: David Standaert (USA) Co-Chair: Caroline Williams-Gray (UK) Talk 1: Alpha-synuclein and the immune response in PD <i>Speaker:</i> Ashley Harms (USA) Talk 2: Enhancing clearance of a-syn by immune related cells for neuroprotection <i>Speaker:</i> Nadia Stefanova (Austria) Talk 3: LRRK2 in the Immune System <i>Speaker:</i> Nicolas Dzamco (Australia) Learning Objectives: 1. Parkinson's disease is a multisystem disease including involvement of the immune system; 2. The immune response drives some of the features of the disease; 3. How the immune system responds to alpha-synuclein and how can we use the immune system to protect neurons and slow disease progress.	TP5 – THE PROTEINOPATHY OF PARKINSON'S DISEASE AND ITS ROLE IN PATHOGENESIS   Co-Chair: Serge Przedborski (USA) Co-Chair: Ronald Melki (France) Talk 1: Synuclein and its role at the synapse <i>Speaker:</i> Robert Edwards (USA) Talk 2: The links between mitochondrial failure and lysosomal dysfunction with alpha-synuclein aggregation <i>Speaker:</i> Dimitri Krainc (USA) Talk 3: PINK1, Parkin and the ubiquitin system <i>Speaker:</i> Noriyuki Matsuda (Japan) Learning Objectives: 1. Gain an appreciation for factors that modulate cell-to-cell transmission of alpha-synuclein pathology; 2. To outline how cellular degradation and recycling pathways influence the distribution of pathology; 3. Understand the interactions between mitochondrial function and handling of misfolded proteins inside neurons.	TW4 – ADVANCING THE PHARMACOLOGY OF PARKINSON'S DISEASE   Co-Chair: TBD Co-Chair: Olivier Rascol (France) Talk 1: Experimental pharmacological treatments for Parkinson's disease <i>Speaker:</i> Jeff Conn (USA) Talk 2: New insights into L-Dopa induced dyskinesias <i>Speaker:</i> Barbara Picconi (Italy) Talk 3: Mechanisms underlying impulsive behaviors and addictions in Parkinson's disease <i>Speaker:</i> Christelle Baunez (France) Learning Objectives: 1. To review the current status of pharmacological targets for the motor and non-motor symptoms of Parkinson's disease; 2. The basis of L-dopa induced dyskinesias and how to treat them; 3. To review recent advances in the management of impulse control disorders and other non-motor aspects of PD.

Session Levels

 Crosstalk – Minimal or no scientific background required

 Moderate-level scientific sessions

 High-level scientific sessions

Session Type

 Basic Science

 Clinical Science

 Comprehensive Care

BASIC SCIENCE PROGRAM

Friday, June 7, 2019



MORNING PLENARY > 9:30 – 11:30 AM

FPL – PLENARY

The peripheral aspects of Parkinson's disease – It is not just a brain disease!

Co-Chair: Hideki Mochizuki (Japan)

Co-Chair: Patrik Brundin (USA)

Talk 1: PD is not just about the brain, trust me

Speaker: Heather Kennedy (USA)

Talk 2: Overview of peripheral (non-brain/CNS) abnormalities in PD

Speaker: Jeffrey Kordower (USA)

Talk 3: Does PD start outside the brain?

Speaker: Per Borghammer (Denmark)

Talk 4: Managing of the peripheral problems in PD

Speaker: Shen Yang Lim (Malaysia)

Learning Objectives: 1. To present the true extent of deficits in Parkinson's disease, including problems relating to pathology that exists outside the brain in this condition; 2. To summarize the current status of pathological changes that can be found outside the brain in Parkinson's disease; 3. To discuss the current therapeutic options for these non-CNS aspects of Parkinson's disease and how such treatments can work with drugs targeting the motor features of it; 4. To critically present and appraise the evidence that PD starts outside of the brain and then spreads to involve it.



LUNCH/POSTER SESSION > 11:30 AM – 1:30 PM

SPECIAL LECTURE > 12:15 – 1:15 PM

FSL – SPECIAL LECTURE

Cellular reprogramming – What does it mean for the future of medicine?

Introduction: Yoshikuni Mizuno (Japan)

Speaker: Shinya Yamanaka (Japan) – Recipient of the Nobel Prize, Physiology or Medicine, 2012



Session Levels

Crosstalk – Minimal or no scientific background required

Moderate-level scientific sessions

High-level scientific sessions

Session Type

Basic Science

Clinical Science

Comprehensive Care

BASIC SCIENCE PROGRAM

Friday, June 7, 2019

DAY
3

PARALLEL SESSION 1:30 – 3:00 PM	WORKSHOP 1:30 – 3:00 PM	PARALLEL SESSION 3:30 – 5:00 PM	WORKSHOP 3:30 – 5:00 PM
FP1 – THE GI TRACT, MICROBIOME AND PARKINSON'S Co-Chair: Malu Tansey (USA) Co-Chair: Pascal Derkinderen (France) Talk 1: Gut microbiota, 1013 new pieces in the Parkinson's disease puzzle <i>Speaker:</i> Filip Scheperjans (Finland) Talk 2: Parkinson's disease and Parkinson's disease medications have distinct signatures with respect to the gut microbiome <i>Speaker:</i> Haydeh Payami (USA) Talk 3: Measuring GI function in Parkinson's disease <i>Speaker:</i> Per Borghammer (Denmark) Learning Objectives: 1. To learn about the potential role of the gut microbiome in PD pathogenesis; 2. To learn about environmental factors that affect the gut microbiome in PD; 3. To learn about the latest technologies to measure gastrointestinal function in PD patients.	FW1 – THE ROLE OF AGING IN PARKINSON'S DISEASE Co-Chair: Glenda Halliday (Australia) Co-Chair: Maria Grazia Spillantini (UK) Talk 1: Aging of the immune system and relevance to brain health and disease <i>Speaker:</i> V. Wee Yong (Canada) Talk 2: Aging and proteostasis – Its implications for PD <i>Speaker:</i> Heath Ecroyd (Australia) Talk 3: Aging of mitochondrial function and bioenergetics – What does this mean for PD pathogenesis? <i>Speaker:</i> Carolyn Sue (USA) Learning Objectives: 1. To understand how the immune system impacts on the brain with age; 2. To understand how the biological pathways maintaining healthy proteins in cells changes with age and impacts on neurodegeneration; 3. To learn more about how cellular energy is maintained by mitochondria as we age, and the potential impact of age on these processes.	FP4 – METABOLISM, STRESS, AND PARKINSON'S DISEASE Co-Chair: Tom Foltynie (UK) Co-Chair: Marie-Françoise Chesselet (USA) Talk 1: The role of mitochondrial dysfunction and energy failure in PD <i>Speaker:</i> Ted Dawson (USA) Talk 2: Insulin resistance, diabetes and Parkinson's disease – How do they link together? <i>Speaker:</i> Dilan Athauda (UK) Talk 3: Physiological stress and its role in the pathogenesis of PD <i>Speaker:</i> Speaker: Stéphane Hunot (France) Learning Objectives: 1. To understand the role of mitochondria in Parkinson's disease and related disorders; 2. To describe the pathogenic link between diabetes and Parkinson's disease and pharmacological strategies that use this information; 3. To understand the role of physiological stress in Parkinson's disease.	FW4 – NEUROGENETICS IN PARKINSON'S DISEASE: FROM MONOGENIC FORMS OF PD TO SUSCEPTIBLE GENES FOR SPORADIC FORMS OF THE DISEASE Co-Chair: Matt Farrer (Canada) Co-Chair: Nobutaka Hattori (Japan) Talk 1: New causative genes for PD <i>Speaker:</i> Alexis Brice (France) Talk 2: Next generation sequencing strategies and its role in identifying in genetic risk factors for Parkinson's disease <i>Speaker:</i> Tatsushi Toda (Japan) Talk 3: The challenge of disease classification in PD – What does it look like and what does it mean <i>Speaker:</i> Rejko Krüger (Luxembourg) Learning Objectives: 1. To learn about the new genes identified as causing familial PD; 2. To understand the susceptible genes for "sporadic" PD and its potential roles in PD pathogenesis; 3. To recognize the clinical phenotypes of familial PD that link to different causative gene mutations.

Session Levels

 Crosstalk – Minimal or no scientific background required

 Moderate-level scientific sessions

 High-level scientific sessions

Session Type

 Basic Science

 Clinical Science

 Comprehensive Care