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# GRAND CHALLENGES IN PARKINSON'S DISEASE

GENES & PATHWAYS | VAN ANDEL RESEARCH INSTITUTE

September 26-27, 2016



[www.grandchallengesinpd.org](http://www.grandchallengesinpd.org)

## Monday, September 26, 2016

- 7:30 a.m. Continental breakfast
- WELCOME AND JAY VAN ANDEL AWARD ADDRESS**
- 8:30 a.m. Peter Jones, Ph.D., D.Sc.–Van Andel Research Institute, USA  
*Introduction of honoree Dr. Stanley Fahn*
- 8:40 a.m. Stanley Fahn, M.D.–Columbia University, USA  
Jay Van Andel Award for Outstanding Achievement in Parkinson's Disease Research  
*The revolutionary Rx for PD that almost got away: the levodopa story*
- 9:40 a.m. Discussion
- 9:55 a.m. Break

### GENE IDENTIFICATION: NOMINATING PATHWAYS AND MECHANISMS

#### SESSION CHAIR: Darren Moore, Ph.D.—Van Andel Research Institute

- 10:15 a.m. John Hardy, Ph.D., FMedSci, FRS–University College London, UK  
*Genetic risk for idiopathic PD: nominating pathways*
- 10:45 a.m. Coro Paisàn-Ruiz, Ph.D.–Icahn School of Medicine at Mount Sinai, USA  
*Monogenic PD/Parkinsonism: new genes and pathways*
- 11:15 a.m. Asa Abeliovich, M.D., Ph.D.–Columbia University, USA  
*Functional studies of Parkinson's disease risk factors*
- 11:45 a.m. Haydeh Payami, Ph.D.–University of Alabama at Birmingham, USA  
*Gene-environment risk interactions in Parkinson's disease*
- 12:15 p.m. Discussion
- 12:30 p.m. Lunch

### ALPHA-SYNUCLEIN: BIOLOGY AND PATHOPHYSIOLOGY

#### SESSION CHAIR: Patrik Brundin, M.D., Ph.D.—Van Andel Research Institute

- 1:45 p.m. Abstract selected talk  
Maxime W.C. Rousseaux, Ph.D.–Baylor College of Medicine, USA  
*TRIM28 regulates the nuclear accumulation and toxicity of both alpha-synuclein and tau*
- 2:00 p.m. Subhojit Roy, M.D., Ph.D.–University of Wisconsin, USA  
*Synaptic function and dysfunction of alpha-synuclein*
- 2:30 p.m. Chris Dobson, FRS, FMedSci–University of Cambridge, UK  
*The molecular basis of Parkinson's disease and its therapeutic significance*
- 3:00 p.m. Break
- 3:15 p.m. Kelvin Luk, Ph.D.–Perelman School of Medicine, University of Pennsylvania, USA  
*Molecular and biological determinants of alpha-synuclein seeding and transmission*
- 3:45 p.m. Aaron Gitler, Ph.D.–Stanford School of Medicine, USA  
*Toxic mechanisms of alpha-synuclein in Parkinson's disease*
- 4:15 p.m. Abstract selected talk  
Nolwen Rey, Ph.D.–Van Andel Research Institute, USA  
*Widespread transneuronal propagation of alpha-synuclein triggered in the olfactory bulb mimics prodromal Parkinson's disease*
- 4:30 p.m. Discussion
- 5:00 p.m. Poster session
- 7:15 p.m. Scientific networking dinner  
*Please note, attendees must be registered.*

## Tuesday, September 27, 2016

- 7:30 a.m. Continental breakfast
- LRRK2: FUNCTION AND NEUROTOXIC MECHANISMS**
- SESSION CHAIR: Jeremy Van Raamsdonk, Ph.D.—Van Andel Research Institute**
- 8:30 a.m. Mark Cookson, Ph.D.–National Institute on Aging, National Institutes of Health, USA  
*Functional studies of LRRK2 activity, interactors and substrates*
- 9:00 a.m. Andrew West, Ph.D.–University of Alabama at Birmingham, USA  
*Interplay between LRRK2 and alpha-synuclein*
- 9:30 a.m. Jie Shen, Ph.D.–Harvard Medical School, USA  
*LRRK2 loss of function in Parkinson's disease*
- 10:00 a.m. Darren Moore, Ph.D.–Van Andel Research Institute, USA  
*Mechanisms of LRRK2-dependent neurotoxicity in Parkinson's disease*
- 10:30 a.m. Discussion
- 10:45 a.m. Break

### MITOCHONDRIAL QUALITY CONTROL

#### SESSION CHAIR: Viviane Labrie, Ph.D.—Van Andel Research Institute

- 11:00 a.m. Wolfdieter Springer, Ph.D.–Mayo Clinic, USA  
*Parkin structure and activity*
- 11:30 a.m. Edward (Ted) Fon, M.D., FRCP(C)–McGill University, Canada  
*Function of PINK1 and Parkin in mitochondrial control*
- 12:00 p.m. Richard Youle, Ph.D.–National Institutes of Health, USA  
*Damage control: function of genes mutated in familial Parkinson's disease in mitochondrial maintenance*
- 12:30 p.m. Discussion
- 12:45 p.m. Lunch
- 1:45 p.m. Report from Rallying to the Challenge
- 2:15 p.m. Brian Fiske, Ph.D.–The Michael J. Fox Foundation for Parkinson's Research, USA  
*Translating Parkinson's genetics into therapies for patients: a funder's perspective*

### VESICULAR TRAFFICKING AND TURNOVER

#### SESSION CHAIR: Jijan Ma, Ph.D.—Van Andel Research Institute

- 2:45 p.m. Abstract selected talk  
John Sanderson, B.A.–Harvard Medical School, USA  
*Characterization of soluble disease-associated alpha-synuclein species isolated from human brain tissue*
- 3:00 p.m. Ellen Sidransky, M.D.–National Institutes of Health, USA  
*The lysosome and Parkinsonism: the glucocerebrosidase story*
- 3:30 p.m. Zhenyu Yue, Ph.D.–Icahn School of Medicine at Mount Sinai, USA  
*Synaptic vesicle trafficking in PD*
- 4:00 p.m. Matthew Seaman, Ph.D.–University of Cambridge, UK  
*Modulation of retromer function to rescue the PD-causing mutation*
- 4:30 p.m. Abstract selected talk  
William P. Flavin–Loyola University Chicago, USA  
*Endocytic vesicle rupture is a conserved mechanism of cellular invasion by amyloid proteins*
- 4:45 p.m. Discussion
- 5:00 p.m. Closing remarks