

## MTOR AUTOPHAGY

**SESSION CHAIR: Judith A. Potashkin, Ph.D.—Rosalind Franklin University of Medicine and Science**

- 3:45 p.m. Wilma van de Berg, Ph.D.—VU University Medical Center  
*Changes in mTOR signaling in the Parkinsonian brain*
- 4:15 p.m. Julia Fuchs, M.D., Ph.D.—CIRB/INSERM U0150/Collège de France  
*Engrailed 1, mitochondrial function, oxidative stress and autophagy in dopamine neurons*
- 4:45 p.m. Discussion
- 5:00 p.m. Closing remarks

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# GRAND CHALLENGES IN PARKINSON'S DISEASE

THE ROLE OF ENERGY METABOLISM | VAN ANDEL RESEARCH INSTITUTE

September 27–28, 2017



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

## Wednesday, September 27, 2017

7:00 a.m. Continental breakfast

### WELCOME AND JAY VAN ANDEL AWARD ADDRESS

8:00 a.m. Peter Jones, Ph.D., D.Sc.–Van Andel Research Institute  
*Welcome and opening remarks*

8:05 a.m. Patrik Brundin, M.D., Ph.D.–Van Andel Research Institute  
*Introduction of honoree J. William Langston, M.D.*

8:10 a.m. J. William Langston, M.D.–Parkinson's Institute and Clinical Center  
Jay Van Andel Award for Outstanding Achievement in Parkinson's Disease Research  
*The MPTP story: How it changed Parkinson's disease research*

9:10 a.m. Discussion

9:25 a.m. Break

### DIABETES AND INFLAMMATION

**SESSION CHAIR: Timothy Greenamyre, M.D., Ph.D.—Pittsburgh Institute for Neurodegenerative Diseases**

9:40 a.m. Michele Tagliati, M.D.–Cedars-Sinai Medical Center  
*Impaired glucose tolerance in Parkinson's disease*

10:10 a.m. Judith A. Potashkin, Ph.D.–Rosalind Franklin University of Medicine and Science  
*Diabetes and inflammation in Parkinson's disease*

10:40 a.m. Abstract selected talk  
Maria Elizabeth de Sousa, Ph.D.–Emory University  
*Western diet and psychological stress are risk factors for insulin resistance in the brain and periphery: The role of soluble tumor necrosis factor*

10:55 a.m. Discussion

### PHYSICAL EXERCISE IN PD AND ANIMAL MODELS

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

11:10 a.m. Michael Jakowec, Ph.D.–University of Southern California  
*Effects of exercise in animal models of Parkinson's disease*

11:40 a.m. J. Eric Ahlskog, Ph.D., M.D.–Mayo Clinic  
*Vigorous exercise as a possible neuroprotective strategy in Parkinson's disease*

12:10 p.m. Discussion

12:25 p.m. Lunch

### ANTI-DIABETIC AGENTS/MITOCHONDRIAL ENHANCERS

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

1:30 p.m. Afternoon opening remarks

1:35 p.m. Tom Foltynie, B.Sc., MBBS, MRCP, Ph.D.–University College London  
*Exendin-4 treatment in Parkinson's disease*

2:05 p.m. Mark Mattson, Ph.D.–National Institute on Aging  
*Tapping adaptive mitochondrial stress response pathways for neuroprotection*

2:35 p.m. Discussion

2:50 p.m. Break

### MITOCHONDRIAL DYSFUNCTION

**SESSION CHAIR: Xinnan Wang, Ph.D.—Stanford University**

3:05 p.m. Timothy Greenamyre, M.D., Ph.D.–Pittsburgh Institute for Neurodegenerative Diseases  
*Mitochondria and LRRK2 in idiopathic PD*

3:35 p.m. Flint Beal, M.D.–Weill Cornell Medical College  
*Mitochondrial deficits in Parkinson's disease*

4:05 p.m. Abstract selected talk  
Anumantha Kanthasamy, Ph.D.–Iowa State University  
*Novel mitochondria-targeted drug induces pro-survival signaling and increases respiration to promote mitochondrial biogenesis against dopaminergic neurotoxicity*

4:20 p.m. Discussion

4:45 p.m. Poster session

7:00 p.m. Scientific networking dinner  
*Please note, attendees must have signed up during registration*

## Thursday, September 28, 2017

7:00 a.m. Continental breakfast

### DOPAMINE NEURONS/ENERGY REQUIREMENTS/CALCIUM HANDLING

**SESSION CHAIR: Michele Tagliati, M.D.—Cedars-Sinai Medical Center**

8:00 a.m. Paul Schumacker, Ph.D.–Feinberg School of Medicine, Northwestern University  
*Calcium entry and mitochondrial oxidant stress in Parkinson's disease*

8:30 a.m. Louis-Eric Trudeau, Ph.D.–Université de Montréal  
*The influence of bioenergetics and axonal arborization on dopamine neuron vulnerability in Parkinson's disease*

9:00 a.m. Discussion

### PGC1A

**SESSION CHAIR: Wilma van de Berg, Ph.D.—VU University Medical Center**

9:15 a.m. Ted Dawson, M.D., Ph.D.–Johns Hopkins University  
*PGC-1-alpha dysregulation in Parkinson's disease*

9:45 a.m. Clemens Scherzer, M.D.–Harvard Medical School  
*A genome-driven view: PGC-1-alpha and more*

10:15 a.m. Discussion

10:30 a.m. Break

### MITOPHAGY

**SESSION CHAIR: Shalini Padmanabhan, Ph.D.—The Michael J. Fox Foundation for Parkinson's Research**

10:45 a.m. Xinnan Wang, M.D., Ph.D.–Stanford University  
*Changes in Miro are coupled to perturbed mitophagy in Parkinson's disease*

11:15 a.m. Charleen T. Chu, M.D., Ph.D.–University of Pittsburgh Medical School  
*Mitochondrial mechanisms in Parkinson's disease: Mitophagy and beyond*

11:45 a.m. Discussion

12:00 p.m. Lunch

1:15 p.m. Shalini Padmanabhan, Ph.D.–The Michael J. Fox Foundation for Parkinson's Research  
*Mitochondria as a target for developing PD therapeutics and biomarkers*

1:30 p.m. Report from Rallying to the Challenge

### MITOCHONDRIAL BIOENERGETICS/OX STRESS

**SESSION CHAIR: Richard Wyse, Ph.D.—The Cure Parkinson's Trust**

2:00 p.m. Anatoly Starkov, Ph.D.–Weill Cornell Medical College  
*Nrf2 signaling and oxidative stress in Parkinson's disease*

2:30 p.m. Ann N. Murphy, Ph.D.–University of California, San Diego  
*The mitochondrial pyruvate carrier as a therapeutic target in neurodegenerative disease*

3:00 p.m. Abstract selected talk  
Sonia George, Ph.D.–Van Andel Research Institute  
*Mitochondrial pyruvate carrier regulates cellular metabolism and inflammation in experimental models of Parkinson's disease*

3:15 p.m. Discussion

3:30 p.m. Break