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Invitation Letter

Dear Colleagues,

On behalf of the International Parkinson and Movement Disorder Society (MDS), we are pleased to formally invite you to attend the 21st International Congress of Parkinson’s Disease and Movement Disorders in Vancouver, BC, Canada from June 4-8, 2017.

The city of Vancouver is home to a vast multicultural population, endless activities, and amazing scenery. The city takes advantage of its great location, bordered by the Pacific Ocean and the Coastal mountain range, providing an amazing backdrop no matter where you look.

Each year, the International Congress attracts delegates from around the world who come to learn about the latest research and perspectives, to listen to world renowned speakers, and to be exposed to the most up-to-date information in the field of Movement Disorders.

We look forward to welcoming you to Vancouver and hope you will take advantage of the many exciting educational opportunities the 2017 International Congress offers.

With kind regards,

Oscar Gershanik  
President, International Parkinson and Movement Disorder Society, 2015-2017

Christine Klein  
Chair, Congress Scientific Program Committee, 2015-2017

A. Jon Stoessl  
Co-Chair, Congress Scientific Program Committee, 2017
About MDS

The International Parkinson and Movement Disorder Society (MDS) is a professional society of clinicians, scientists, and other healthcare professionals who are interested in Parkinson’s disease, related neurodegenerative and neurodevelopmental disorders, hyperkinetic movement disorders, and abnormalities in muscle tone and motor control.

Purpose, Mission and Goals

Purpose:
The objective and mission of the Society shall be to advance the neurological sciences pertaining to Movement Disorders; to improve the diagnosis and treatment of patients; to operate exclusively for scientific, scholarly and educational purposes; to encourage research; to provide forums, such as medical journals, scientific symposia and International Congresses, for sharing ideas and for advancing the related clinical and scientific disciplines; to encourage interest and participation in the activities of the Society among healthcare and allied professionals and scientists; and to collaborate with other related professional and lay organizations.

Mission and Goals:
To disseminate knowledge about Movement Disorders by:
• Providing educational programs for clinicians, scientists and the general public designed to advance scientific and clinical knowledge about Movement Disorders
• Sponsoring International Congresses and Symposia on Movement Disorders
• Collaborating with other international organizations and lay groups
• Publishing journals, videotapes and other collateral materials committed to high scientific standards and peer review

To promote research into causes, prevention and treatment of movement disorders by:
• Using the Society's influence and resources to enhance support for research
• Facilitating the dissemination of information about research
• Encouraging the training of basic and clinical scientists in Movement Disorders and related disorders

For the purposes of favorably affecting the care of patients with movement disorders, the Society will provide expertise, advice and guidance to:
• Regulatory agencies to assist them in the approval process of safe and effective therapeutic interventions
• The public (media) and patient support groups by informing them of new research and therapeutic advances
• Governments to assist them in the development of policies that affect support of research and patient care
• Educational efforts to assist in developing standards of training in the specialty
About MDS

MDS Officers (2015-2017)

President
Oscar Gershanik, Argentina

President-Elect
Christopher Goetz, USA

Secretary
Claudia Trenkwalder, Germany

Secretary-Elect
Susan Fox, Canada

Treasurer
David John Burn, United Kingdom

Treasurer-Elect
Victor Fung, Australia

Past-President
Matthew Stern, USA

MDS Officers (2015-2017)

Marie-Francoise Chesselet, USA
Carlo Cosolimo, Italy
Marina de Koning-Tijssen, Netherlands
Kelly Foote, USA
Steven Frucht, USA
Oscar Gershanik, Argentina
Christopher Goetz, USA
Günter Höglinger, Germany
Beomseok Jeon, Korea
Hyder Jinnah, USA
Micaela Morelli, Italy
Elena Moro, France
Alice Nieuwboer, Belgium
Stéphane Palfi, France
Irena Rektorova, Czech Republic
Raymond Rosales, Philippines
Eng-King Tan, Singapore
Philip Thompson, Australia
Lars Timmerman, Germany
Yoshikazu Ugawa, Japan
Miquel Vila, Spain

Past-President
2013-2015 Matthew Stern, USA
2011-2013 Günther Deuschl, Germany
2009-2011 Philip Thompson, Australia
2007-2009 Anthony Lang, Canada
2005-2006 Andrew Lees, United Kingdom
2003-2004 C. Warren Olanow, USA
2001-2002 Werner Poewe, Austria
1999-2000 Mark Hallett, USA
1997-1998 Eduardo Tolosa, Spain
1995-1996 Joseph Jankovic, USA
1991-1994 C. David Marsden, United Kingdom
1988-1991 Stanley Fahn, USA

International Executive Committee

Paolo Barone, Italy
Daniela Berg, Germany
Bastiaan Bloem, Netherlands
Carlos Cosentino, Peru
Beom Jeon, Korea
Jeffrey Kordower, USA
Michael Okun, USA
Ryosuke Takahashi, Japan
Louis Tan, Singapore
Mark Stacy, USA

International Congress Oversight Committee

Chair: Philip Thompson, Australia
David John Burn, United Kingdom
Günter Deuschl, Germany
Oscar Gershanik, Argentina
Christopher Goetz, USA
Christine Klein, Germany
Matthew Stern, USA
A. Jon Stoessl, Canada

Congress Scientific Program Committee

Chair: Christine Klein, Germany
Co-Chair: A. Jon Stoessl, Canada
Charles Adler, USA
Tim Anderson, New Zealand
Vincenzo Bonifati, Netherlands
K. Ray Chaudhuri, United Kingdom

MDS International Secretariat

International Parkinson and Movement Disorder Society
555 East Wells Street, Suite 1100
Milwaukee, WI 53202-3823 USA
Tel: +1 414-276-2145
Fax: +1 414-276-3349
E-mail: info@movementdisorders.org
Website: www.movementdisorders.org
International Congress Information

Dates
Sunday, June 4 through Thursday, June 8, 2017

Official Language
The official language of the International Congress is English.

Venue
Vancouver Convention Centre – WEST
1055 Canada Place
Vancouver, BC V6C 0C3
Canada

Exhibition
Manufacturers, distributors and suppliers of products and services for physicians and researchers involved with Movement Disorders are invited to participate in the International Congress exhibition. To receive a copy of the Exhibitor Prospectus, please contact the MDS International Secretariat at congress@movementdisorders.org or visit the International Congress section of the MDS website at www.mdscongress2017.org/Congress-2017/SponsorshipExhibit.htm. The exhibition is open to all registered delegates.

Abstract Poster Information
Poster Sessions will be featured Monday through Thursday during the International Congress to ensure delegates are given the opportunity to review as many abstracts as possible. Please visit www.mdscongress2017.org/Congress-2017/Abstracts.htm for a detailed poster schedule, including information about Guided Poster Tours.

Registration

Fees (in USD):

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<th></th>
<th>On or before April 3, 2017</th>
<th>From April 4 – May 2, 2017</th>
<th>From May 3 – June 8, 2017</th>
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<tbody>
<tr>
<td>MDS Member</td>
<td>$600</td>
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<tr>
<td>Non-member</td>
<td>$800</td>
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<td>Junior Member/Participant*</td>
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<td>Health Professional (Non-Physician)</td>
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Full registration includes:
• Access to all scientific sessions
• Access to poster sessions
• Access to the exhibition
• Delegate material
• Final Program
• Abstracts on USB
• Registration bag
• Entrance to Welcome Ceremony
• Entrance to MDS Video Challenge
• Daily morning coffee break

Note: Lunch is NOT provided as a part of the registration fees.

*Junior Members of MDS, those born after January 1, 1987, residents, fellows and those still in training. Please fax or e-mail a copy of an official document indicating age or a letter from your employer stating training status to be eligible for this discount. Without documentation, the delegate will be charged the non-member rate (Fax: +1 514-289-9844 or e-mail: mdscongress@showcare.com within one week of submitting registration).

Registration Confirmation
Attendees who register online will receive a confirmation message immediately. Please present this confirmation at the International Congress registration desk in Vancouver to receive your registration materials.

Cancellation/Refund Policy
All cancellations must be requested in writing.
Up to May 2, 2017 (final registration deadline): 100% refund, minus a $75 administrative charge
From May 3 to May 23, 2017: 50% refund
From May 24, 2017 onward: no refund
International Congress Information

**Group Registration**

Groups may be formed of six (6) or more delegates from the same company/travel agency.

Group leaders will be able to continually make changes to the group until the final pre-registration deadline of May 2, 2017.

**Registration Desk**

Name badges, scientific session tickets, Final Programs, USBs with the full abstract list, and International Congress bags can be collected at the International Congress Registration Area on Level 1 during the following hours*:

- Saturday, June 3 16:00 – 20:00
- Sunday, June 4 7:00 – 20:00
- Monday, June 5 7:00 – 18:00
- Tuesday, June 6 7:00 – 18:00
- Wednesday, June 7 7:00 – 18:00
- Thursday, June 8 7:00 – 16:00

*Please note that these hours are subject to change. Please watch for updated schedules at www.mdscongress2017.org and look for the schedule in the Final Program.

**Scientific Sessions**

The 2017 Scientific Program will incorporate Therapeutic Plenary Sessions, Plenary and Parallel Sessions, Teaching Courses, Video Sessions, Skills Workshops, Guided Poster Tours and Blue Ribbon Highlights.

Sessions will focus on the latest developments in:

- Pathophysiology of Basal Ganglia Disorders: From Cell to System to Patient
- Movement Disorder topics, including, but not limited to, ataxia, chorea, dystonia, myoclonus, Parkinson’s disease, restless legs syndrome, spasticity, stereotypies, tics and tremors
- Basic Science issues, including, but not limited to, genetics, neuroimaging, neuropharmacology, surgical therapy and transplantation
- Other less common clinical conditions

**Special Accessibility Needs**

Delegates requiring special arrangements in order to fully participate in the International Congress should provide a written description of such needs on their registration form or send an e-mail to congress@movementdisorders.org.

To ensure appropriate accommodations, all special needs should be addressed in advance with the MDS International Secretariat.

**Camera Policy**

Cameras are not permitted in any of the 21st International Congress educational sessions or in the poster areas.

**Weather**

The temperature in Vancouver in June averages 11-19 degrees Celsius (52-66 degrees Fahrenheit).
International Congress Events

Sunday, June 4, 2017

Welcome Ceremony
19:30 – 21:30
All International Congress attendees are warmly invited to attend the International Congress Welcome Ceremony at the Vancouver Convention Centre-West. This event is open to all registered delegates.

Wednesday, June 7, 2017

MDS Video Challenge
19:00 – 22:00
Please join Masters of Ceremony, Anthony Lang and Kapil Sethi, as they host a world-renowned panel of Movement Disorders experts in guiding participants through unique Movement Disorder cases. The cases will be presented by representatives from Movement Disorder Centers around the world and discussed by the Panel of Experts. Awards will be given for the most interesting and challenging cases. Country pride will add an enjoyable spirit of competition to this event. The goal of this session is for attendees to learn from a series of unusual, very interesting patients and see how senior experts approach these types of challenging cases.

The Panel of Experts are:
Kailash Bhatia, United Kingdom
Alberto Espay, United States
Jennifer Friedman, United States
Victor Fung, Australia
Claudia Trenkwalder, Germany

This event is open to all registered delegates. For more information about the MDS Video Challenge, please contact Sarah Smith at ssmith@movementdisorders.org.
CME Information

Purpose
The purpose of the 21st International Congress of Parkinson’s Disease and Movement Disorders is to offer a forum for clinical and basic discussion on a variety of movement disorder topics, including presentations of current research and available treatments.

Learning Objectives
Through state-of-the-art lectures, hot topic reviews, controversy debates, Teaching Courses, Skills Workshops and Video Sessions, participants will be better able to:

1. Describe the pathophysiology and neurobiology of Parkinson’s disease and other movement disorders;
2. Discuss the diagnostic approaches and tools available for Parkinson’s disease and other movement disorders;
3. Discuss the pharmacological and non-pharmacological treatment options available for Parkinson’s disease and other movement disorders.

Accreditation Statement
The International Parkinson and Movement Disorder Society is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation
The International Parkinson and Movement Disorder Society designates this live activity for a maximum of 35 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation in the activity.

Target Audience
The target audience of the 21st International Congress of Parkinson’s Disease and Movement Disorders includes clinicians, researchers, post-doctoral fellows, medical residents, medical students and other healthcare professionals with an interest in the current research and approaches for the diagnosis and treatment of movement disorders.
### Schedule-At-A-Glance

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Session Definitions

**Blue Ribbon Highlights**
This session will provide a critical review of the best poster presentations by a panel of experts, highlighting the relevance, novelty and quality of both clinical and basic research presented by the delegates.

**Controversies**
This Plenary Session is designed to involve all International Congress attendees. Content is prepared to stimulate interest and debate among a panel of experts. Views from several angles will be addressed as discussion of pre-selected "hot" topics will be open for debate among the panelists.

**Corporate Therapeutic Symposia**
These company-based informational sessions will provide attendees with non-CME educational opportunities to learn the latest in therapeutics.

**Guided Poster Tours**
Guided Poster Tours will give small groups of delegates an opportunity to hear discussion on a select group of abstracts in several sub-categories.

**Parallel Sessions**
These concurrent sessions provide an in-depth report of the latest research findings, state-of-the-art treatment options, as well as a discussion of future strategies. Parallel sessions will have evidence-based components and incorporate the "hot" issues in Parkinson's disease and other movement disorders.

**Plenary Sessions**
These sessions provide a broad overview of the latest clinical and basic science research findings and state-of-the-art information.

**Poster Sessions**
Poster sessions give each delegate an opportunity to view their colleagues’ posters on the most current research in the field of Movement Disorders. Authors will be present for 1.5 hours each day to explain their work and answer questions.

**Skills Workshops**
These clinic-based training sessions provide an educational illustration of clinical techniques and treatment procedures through demonstrations utilizing patient videotapes and proper equipment to further develop practitioners’ skills and knowledge within the field of treatment of movement disorders.

**Teaching Courses**
These educational programs provide up-to-date information focused on a single topic. The sessions highlight both the clinical and basic science of topics of relevance to Movement Disorder specialists. The sessions are unique in providing a syllabus that includes a review of the topic and the presentation slides. In addition, these programs provide ample time for questions and a discussion period at the conclusion of the presentations.

**Therapeutic Plenary Sessions**
These sessions provide the latest information regarding the scientific and clinical evidence supporting treatment options for Parkinson's disease and other movement disorders.

**Video Sessions**
Designed to provide a broad overview of related movement disorders, these sessions will focus on the phenomenology covering the many different kinds of movement disorders affecting the population today.

**International Congress Theme:**
At each annual International Congress, the Congress Scientific Program Committee selects a theme that is highlighted throughout the meeting. This year’s theme, Pathophysiology of Basal Ganglia Disorders: From Cell to System to Patient, will be showcased in two Plenary Sessions, nine Parallel Sessions, one Skills Workshop, and one Teaching Course. International experts will serve as faculty, and the meeting participants can elect to attend any or all of these sessions. Themed sessions are designated in the program with 🎫.
### Sunday, June 4, 2017

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8:00</td>
<td><strong>Therapeutic Plenary Session</strong></td>
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<td><strong>Treating Motor Complications of Parkinson’s Disease</strong></td>
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<td></td>
<td><strong>8:00 – 10:00</strong></td>
</tr>
<tr>
<td>Chairs</td>
<td>Steven Frucht</td>
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<td></td>
<td>New York, NY, USA</td>
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<td>Chairs</td>
<td>Oscar Gershanik</td>
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<td>Buenos Aires, Argentina</td>
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<td></td>
<td>Disease Related Motor Complications: Gait, Posture, Balance</td>
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<td>Bettina Debu</td>
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<td></td>
<td>Understanding Motor Fluctuations and Dyskinesias: Clinical Aspects,</td>
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<td>Pathophysiology, Risk Factors</td>
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<td>Han-Joon Kim</td>
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<td>Seoul, Korea</td>
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<td><strong>9:20</strong></td>
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<td></td>
<td>Prevention, Treatment and Management of Motor Fluctuations and</td>
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<td>Dyskinesias</td>
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<td>Jean-Christophe Corvol</td>
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<td><strong>Learning Objectives:</strong></td>
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<td></td>
<td>1. Identify and manage disease related motor complications</td>
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<td>2. Recognize medication induced motor complications and understand</td>
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<td>their pathophysiology and risk factors</td>
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<td>3. Apply preventive measures, and both conventional and novel</td>
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<td>therapeutic interventions, to manage levodopa-induced motor</td>
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<td><strong>Therapeutic Plenary Session</strong></td>
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<td><strong>Treatment of Dystonia</strong></td>
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<td>Chairs</td>
<td>Marina De Koning-Tijssen</td>
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<td>Groningen, Netherlands</td>
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<td>Assessment and Classification as the First Step in Expert</td>
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<td>Management</td>
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<td>Alberto Albanese</td>
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<td>Rozzano, Italy</td>
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<td>Medical Treatment (Including Botulinum Toxins)</td>
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<td>Mandar Jog</td>
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<td>Surgical Treatment (Including Deep Brain Stimulation)</td>
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<td>Joachim Krauss</td>
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<td>Hannover, Germany</td>
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<td><strong>Recommended Audience:</strong> Basic Scientists, Clinical Academicians,</td>
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<td>dystonia and implement the current classification system for the</td>
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<td>2. Recognize the issues involved in selecting the best options for</td>
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<td><strong>Therapeutic Plenary Session</strong></td>
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<td><strong>Update on the Treatment</strong></td>
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<td>of Hyperkinetic Movement Disorders**</td>
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<td>Chairs</td>
<td>Jonathan Mink</td>
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<td>Rochester, NY, USA</td>
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<td>Raymond Rosales</td>
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<td>Chorea in the Clinic: Which One and Which Treatment?</td>
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<td>Cleveland Heights, OH, USA</td>
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<td>Tic Disorders: Diagnosis and Treatment</td>
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<td>Jonathan Mink</td>
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<td></td>
<td>Myoclonus: Etiology, Pathophysiology and Treatment Insights</td>
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<td>Yoshikazu Ugawa</td>
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<td>Fukushima, Japan</td>
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<td></td>
<td>1. Describe non-invasive lesion therapies for movement disorders</td>
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<td>2. Recognize indications for the available ablative and neuromodulatory</td>
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<td>neurosurgical techniques in movement disorders</td>
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<td>3. Discuss recent technological advances in DBS for movement disorders</td>
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<td>such as directional stimulation and adaptive stimulation</td>
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<td><strong>Therapeutic Plenary Session</strong></td>
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<td></td>
<td><strong>Update on Neurosurgical Interventions for Movement Disorders</strong></td>
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<td>Chairs</td>
<td>Kelly Foote</td>
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<td>Gainesville, FL, USA</td>
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<td>Chairs</td>
<td>Elena Moro</td>
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<td>MRI-Guided Focal Ultrasound Lesions: Present and Future</td>
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<td>Binit Shah</td>
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<td>Charlottesville, VA, USA</td>
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<td>Updates on Gamma-Knife Treatment</td>
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<td>Jean Regis</td>
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<td>Emerging Interventions in Deep Brain Stimulation</td>
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<td>Peter Brown</td>
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<td>Oxfordshire, United Kingdom</td>
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<td><strong>Recommended Audience:</strong> Basic Scientists, Clinical Academicians,</td>
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<td>treating patients with dystonia syndromes</td>
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<td>3. Describe treatment principles for dystonia syndromes,</td>
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<td>including medical and surgical options</td>
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### Monday, June 5, 2017

#### 2101 Plenary Session

**Presidential Lectures**  
**8:00 – 10:00**

**Chairs:**  
Oscar Gershanik  
Buenos Aires, Argentina  
Christopher Goetz  
Chicago, IL, USA

- **8:00**  
  Stanley Fahn Lecture  
  Ali Rajput  
  Saskatoon, SK, Canada

- **8:30**  
  Junior Award Lectures  
  To be announced

- **9:30**  
  C. David Marsden Lecture  
  Glenda Halliday  
  Randwick, NSW, Australia

**Recommended Audience:** Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

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#### 2102 Plenary Session, cont.

**Learning Objectives:**

1. Describe functional alterations in brain circuitry and in disorders of the basal ganglia, and their modulation by pharmacologic and surgical treatment
2. Recognize changes in network expression and brain neurochemistry that may delay the onset and mitigate the expression of symptoms in subjects with basal ganglia disorders and how these mechanisms may also ultimately contribute to unwanted outcomes
3. Recognize the role of dopamine in learning, attribution of salience and decision making, and how both disease and its treatment can result in impaired learning, apathy and impulsivity

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#### 2103 Parallel Session

**Imaging in Model Systems of Basal Ganglia Function**  
**15:30 – 17:30**

**Chairs:**  
Bernd Pichler  
Tübingen, Germany  
Vesna Sossi  
Vancouver, BC, Canada

- **15:30**  
  Optogenetics: Enhancing our Understanding of Basal Ganglia Function  
  Nicole Calakos  
  Durham, NC, USA

- **16:10**  
  Astrocytes and Microglia Studied in Vivo: Imaging Disease Mechanisms  
  Brian MacVicar  
  Vancouver, BC, Canada

- **16:50**  
  Concurrent Multimodal Imaging  
  Bernd Pichler  
  Tübingen, Germany

**Recommended Audience:** Basic Scientists, Clinical Academicians, Practitioners, Students/Residents/Trainees

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#### 2204 Parallel Session

**Repeat Expansion Disorders: From Cell to System to Patient**  
**15:30 – 17:30**

**Chairs:**  
Alexis Brice  
Paris, France  
Luis Velázquez-Pérez  
Holguín, Cuba

15:30  
Repeat Expansion Disorders – Movement Disorders and More  
Alexis Brice  
Paris, France

16:10  
Spinocerebellar Ataxias (SCAs)  
Luis Velázquez-Pérez  
Holguín, Cuba

16:50  
Fragile X Tremor-Ataxia  
Deborah Hall  
Chicago, IL, USA

**Learning Objectives:**

1. Provide a perspective of the importance of triplet expansion disorders and discuss the broad phenotype, including combined neuromuscular and movement disorders
2. Describe the various subtypes of ataxia and mechanisms of pathogenesis associated with triplet repeat expansions
3. Describe the pleomorphic phenotypes and mechanisms of pathogenesis associated with abnormal expansions of the FMR1 gene

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#### 2205 Parallel Session

**Pediatric Movement Disorders**  
**15:30 – 17:30**

**Chairs:**  
Jonathan Mink  
Rochester, NY, USA  
Harvey Singer  
Baltimore, MD, USA

15:30  
Repetitive Movement Disorders in Children  
Harvey Singer  
Baltimore, MD, USA

16:10  
Metabolic Movement Disorders in Children  
Darius Ebrahimi-Fakhari  
Boston, MA, USA
Monday, June 5, 2017

2205 Parallel Session [TICKET], cont.

16:50 Crossing Barriers: A Multidisciplinary Team Approach to Young-Onset Movement Disorders
Martje van Egmond
Haren, Netherlands

Learning Objectives:
1. Identify the clinical characteristics and underlying neurobiology of repetitive movements in children
2. Diagnose metabolic diseases in children
3. Describe the problem of transition from pediatric into adult neurology

2206 Parallel Session [TICKET]

Movement Disorders in Paraneoplastic and Autoimmune Disease
15:30 – 17:30

Chairs: Sarosh Irani
Oxford, United Kingdom
Philip Thompson
Adelaide, SA, Australia

15:30 Autoimmune Encephalopathies
Sarosh Irani
Oxford, United Kingdom

16:10 Sydenham’s Chorea
Hilla Ben-Pazi
Jerusalem, Israel

16:50 Paraneoplastic Movement Disorders
Sean Pittack
Rochester, MN, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Recognize the mechanisms and treatment implications for unusual autoimmune encephalopathies affecting adults and children
2. Describe the role of immune modulation in the treatment of severely affected patients with Sydenham’s chorea
3. Understand recent advances in the diagnosis and management of cell mediated and humoral mediated paraneoplastic movement disorders

2207 Parallel Session [TICKET]

Monogenic Movement Disorders in the Next Generation Sequencing Era
15:30 – 17:30

Chairs: Thomas Bird
Seattle, WA, USA
Katja Lohmann
Lübeck, Germany

15:30 Finding Genes for Movement Disorders in the Next Generation Sequencing Era: Parkinsonism as Example
Enza Maria Valente
Rome, Italy

16:10 Genes Causing Isolated Dystonia – New Mutations and Pathogenetic Pathways
Katja Lohmann
Lübeck, Germany

16:50 Monogenic Hyperkinetic Disorders with Pleomorphic Phenotypes
Thomas Bird
Seattle, WA, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Discuss the new research strategies enabled by the NGS-technologies such as whole-exome and whole-genome sequencing, and the recently identified mutations associated with monogenic parkinsonism (including TMEM230, VPS13C, SYNJ1, and DNAJC6)
2. Discuss the recently identified genetic mutations causing isolated dystonia, and the implications for the understanding of the disease pathogenesis
3. Discuss the recently identified monogenic hyperkinetic disorders with pleomorphic phenotypes (including ADCYS, FOXG1, PDE10A, and ATP1A3)

2208 Parallel Session [TICKET]

Integrated Management of Movement Disorders: Is It Needed in All Stages?
15:30 – 17:30

Chairs: Bastiaan Bloem
Nijmegen, Netherlands
Daniel Corcos
Chicago, IL, USA

15:30 The Case for Integrated Care Management of Parkinson’s Disease: An Evidence-Based Perspective
Carsten Eggers
Cologne, Germany

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Identify MRI approaches to study structural brain connectivity and interpret results in movement disorder clinics and research
2. Describe principles of functional connectivity analysis and understand how functional MRI can be used to study neural correlates of brain pathology, compensation and treatment effects
3. Describe methods of molecular imaging to assess dopamine release, dopamine transporter activity and other neurotransmitter changes in the human striatum and cortex in movement disorders

2309 Teaching Course [TICKET]

Neuroimaging Techniques of Systems Neuroscience
15:30 – 17:30

Chairs: Paola Piccini
London, United Kingdom
Irena Rektorova
Brno, Czech Republic

15:30 Principles of Tractography
Federica Agosta
Milan, Italy

16:10 Imaging the Human Connectome
Shunsuke Kobayashi
Fukushima, Japan

16:50 Principles of Molecular Imaging
Paola Piccini
London, United Kingdom

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Identify MRI approaches to study structural brain connectivity and interpret results in movement disorder clinics and research
2. Describe principles of functional connectivity analysis and understand how functional MRI can be used to study neural correlates of brain pathology, compensation and treatment effects
3. Describe methods of molecular imaging to assess dopamine release, dopamine transporter activity and other neurotransmitter changes in the human striatum and cortex in movement disorders
Monday, June 5, 2017

2310 Teaching Course [TICKET]
Practical Management of Common Non-Motor Symptoms in Parkinson’s Disease
15:30 – 17:30

Chairs:
Paolo Barone
Naples, Italy
Pablo Martinez-Martín
Madrid, Spain

15:30 How to Evaluate and Treat Autonomic Dysfunction in Parkinson’s Disease
Christopher Mathias
London, United Kingdom

16:10 How to Evaluate and Treat Sleep Dysfunction in Parkinson’s Disease
Aleksandar Videnovic
Boston, MA, USA

16:50 How to Evaluate and Treat Cognitive and Psychiatric Disturbances in Parkinson’s Disease
Jennifer Goldman
Chicago, IL, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Describe the prevalence, pathophysiology, diagnosis, and management of constipation, urinary dysfunction, sexual dysfunction and orthostatic hypotension in Parkinson’s disease
2. Indicate the pathophysiology of sleep disorders in Parkinson’s disease as well as the evaluation and treatment of insomnia, somnolence, sleep apnea, and REM sleep behavior disorder in Parkinson’s disease
3. Recognize the key features for the recognition, diagnosis and treatment of depression, anxiety, hallucinations and psychotic disorders in Parkinson’s disease

2411 Skills Workshop [TICKET]
Functional Capacity in Parkinson’s Disease: How Can Practice Help?
18:00 – 19:30
Elke Heremans
Heverlee, Belgium
Ingrid Sturkenboom
Nijmegen, Netherlands

This interactive session will tackle what matters most to patients with Parkinson’s disease: the disease impact on daily function. This session will clarify how physiotherapy and occupational therapy can contribute to improving function and which training methods translate best into functional gains as supported by scientific evidence.

Recommended Audience: Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Describe the core components of functional disability in Parkinson’s disease
2. Identify which training approaches lead to direct benefits of activities of daily living
3. Distinguish between the specific roles of physical and occupational therapy to improve function

2412 Skills Workshop [TICKET]
Which Targeting Technique for Botulinum Toxin Injections?
18:00 – 19:30
Joseph Tsui
Vancouver, BC, Canada
Uwe Walter
Rostock, Germany

This interactive session is intended to provide the participant with a practical way to analyze simple and complex cases of dystonia and spasticity, and to select the best tools for muscle targeting during botulinum toxin treatment.

Recommended Audience: Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Discuss the pros and cons of EMG vs. anatomical landmarks to inject BoNT
2. Identify key muscles in the neck and limbs by sonoacoustic properties
3. Recognize the benefits and limitations of different targeting techniques to guide BoNT muscle injections

2413 Skills Workshop [TICKET]
Post-Surgical Management of Deep Brain Stimulation Therapies
18:00 – 19:30
Genko Oyama
Tokyo, Japan
Maria Rodríguez-Oroz
Pamplona, Spain

In this interactive session, the faculty will present tricks and skills for optimizing deep brain stimulation with respect to motor and non-motor effects.

Recommended Audience: Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Apply strategies to optimize motor effects in Parkinson’s disease
2. Employ programming tricks to avoid non-motor side effects of deep brain stimulation in Parkinson’s disease
3. Identify methods in adjusting Parkinson’s disease medication post-operatively with respect to motor and non-motor symptoms

2414 Skills Workshop [TICKET]
Lessons from My Patients
18:00 – 19:30
Susan Bressman
New York, NY, USA
Barry Snow
Auckland, New Zealand

In this interactive session, the faculty will present cases from their own practice and discuss the lessons learned when follow-up and critical reappraisal of clinical features has led to a revision of diagnosis and change in management.

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Recognize the value of critical review of cases where diagnosis and management have been revised
2. Identify common pitfalls in the evaluation of movement disorders
3. Recognize the merits of reassessing clinical features and management
Monday, June 5, 2017

**2415 Skills Workshop**

**The Challenge of Molecular Genetics for the Clinician**
18:00 – 19:30

Alexandra Durr
Paris, France
Marialuisa Quadri
Rotterdam, Netherlands

In this interactive session, the faculty will present opportunities and challenges of genetic testing in the “next-generation sequencing” era. The different types of testing will be discussed (e.g., mutations, genes, gene panels, gene filters, whole-exome and whole-genome sequencing), as well as the challenges in the interpretation of the results, and the ethical implications.

**Recommended Audience:** Basic Scientists, Clinical Academicians, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Discuss the “when,” “what,” and “how” of genetic testing (including mutations, genes, gene panels, gene filters, WES, WGS)
2. Discuss the challenges in the interpretation of the results of genetic testing (including pathogenicity of novel variants, variants of unknown significance)
3. Debate the ethical and emerging issues in genetic testing (including informed consent, ethical issues, secondary findings from WES or WGS; storage and re-analysis of NGS data)

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**2517 Video Session**

**Update on Paroxysmal Movement Disorders**
18:00 – 19:30

Roberto Erro
Verona, Italy
Jennifer Friedman
San Diego, CA, USA

In this interactive session, the faculty will explain how to recognize and clinically approach patients with paroxysmal movement disorders. Diagnostic strategies, including genetics, will be discussed, not only for classical forms, but also for the new variants of paroxysmal movement disorders.

**Recommended Audience:** Clinical Academicians, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Characterize paroxysmal disorders, both classical forms and new variants
2. Identify the diagnostic clues and treatment options in paroxysmal movement disorders
3. Identify the diagnostic strategies in paroxysmal movement disorders

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**2518 Video Session**

**Acquired Chorea: What is New?**
18:00 – 19:30

Kalyan Bhattacharyya
Kolkata, India
Kathleen Shannon
Madison, WI, USA

This video session will review and illustrate one of the most challenging aspects of movement disorders, i.e. choreas: its origins, its many-faceted clinical presentations, the complexity of differential diagnosis, and management strategies.

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Describe the different aspects of the etiology of acquired choreas
2. Recognize the phenomenology of acquired choreas as well as differential diagnosis with other movement disorders
3. Define the latest in management of acquired choreas
Tuesday, June 6, 2017

3101 Plenary Session

Disease Mechanisms of Parkinson's Disease: From Cell to System
8:00 – 10:00

Chairs: Marie-Francoise Chesselet
Los Angeles, CA, USA
Andrew West
Birmingham, AL, USA

8:00 Lysosomal Dysfunction and the Relevance of GBA Mutations to Parkinson's Disease
Anthony Schapira
London, United Kingdom

8:40 Axonal Transport and Membrane Sorting
Matthew Seaman
Cambridge, United Kingdom

9:20 Neuroinflammation
Andrew West
Birmingham, AL, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Describe the cell biological mechanism related to Parkinson's disease genetic and sporadic forms
2. Recognize how these cell biological changes influence cells in several organ systems
3. Recognize how cell disease mechanisms in Parkinson's disease can provide diverse and wide-spread changes and opportunities for biomarkers

3102 Plenary Session

Huntington's Disease: Molecular and Therapeutic Advances
11:00 – 12:30

Chairs: Christopher Goetz
Chicago, IL, USA
Werner Poewe
Innsbruck, Austria

11:00 The Huntington's Disease Gene and Its Modifiers
Jong-Min Lee
Boston, MA, USA

11:30 Molecular Imaging in Huntington's Disease - Recent Advances
Andrea Varrone
Stockholm, Sweden

12:00 Emerging Therapies in Huntington's Disease: Promises and Challenges
Blair Leavitt
Vancouver, BC, Canada

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Recognize recent developments in genetics of Huntington's disease including the impact of gene modifiers identified in GWAS
2. Identify a comprehensive view of molecular imaging biomarkers to study Huntington's disease including recent advances in the development of a Huntington's PET Tracer
3. Describe the emergent therapies in Huntington's disease and to recognize their potential strengths and limitations

3103 Parallel Session

Promises of Induced Pluripotent Stem Cells: From Modeling to Therapy
15:30 – 17:30

Chairs: Steven Finkbeiner
San Francisco, CA, USA
Miquel Vila
Barcelona, Spain

15:30 iPSC-Derived Neuronal Models for Basal Ganglia Diseases
Steven Finkbeiner
San Francisco, CA, USA

16:10 From Neurons to Brain Organoids
Nobutaka Hattori
Tokyo, Japan

16:50 Application of iPSC-Derived Models and Novel Therapeutic Approaches
Brent Ryan
Oxford, United Kingdom

Recommended Audience: Basic Scientists, Clinical Academicians, Students/Residents/Trainees

Learning Objectives:
1. Describe how iPSC-derived neuronal cultures can serve as a model for basal ganglia diseases
2. Identify how brain organoids can be generated from iPSC-derived neurons
3. Evaluate how iPSC-derived models can be employed to develop new therapeutic approaches

3204 Parallel Session

Imaging Genetics and Pathophysiology in Humans
15:30 – 17:30

Chairs: Doris Doudet
Vancouver, BC, Canada
Wayne Martin
Edmonton, AB, Canada

15:30 Neurotransmitter Studies in Genetic Disease and Prodromal Populations
Marios Politis
London, United Kingdom

16:10 Structural and Functional Connectivity
Hartwig Siebner
Hvidovre, Denmark

16:50 Imaging Pathology - Inflammation and Abnormal Protein
Vesna Sossi
Vancouver, BC, Canada

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Describe changes in monoamine and other neurotransmitters seen in prodromal stages of genetic Parkinson's disease and REM behavior disorder
2. Recognize changes in structural connectivity associated with prodromal and established Parkinson's disease and its complications
3. Assess the current status of tracers designed to assess disease pathology, including inflammation and abnormal protein accumulation

3205 Parallel Session

Breaking News in Movement Disorders
15:30 – 17:30

Chairs: Michael Schlossmacher
Ottawa, ON, Canada
Matthew Stern
Philadelphia, PA, USA

15:30 Imaging Pathology of Neurodegenerative Movement Disorders: Why is it Important and So Difficult?
Per Borghammer
Aarhus, Denmark

16:10 New Genes, New Mechanisms: Why Do We Care?
Niccolo Menacci
London, United Kingdom
Tuesday, June 6, 2017

3205 Parallel Session (TICKET), cont.
16:50 Biomarkers and Clinical Trials: Where are We?
Michael Schlossmacher
Ottawa, ON, Canada

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Describe the progress and challenges of brain imaging in neurodegenerative disorders
2. Identify recent progress in linking genetic information to disease mechanisms and their implication for translation to clinically meaningful outcomes
3. Recognize current efforts in developing clinical, genetic and other biomarkers and critique their use in clinical trials

3206 Parallel Session (TICKET)
Management of Common Axial Problems in Advanced Parkinson’s Disease
15:30 – 17:30

Chairs:
Yael Manor
Tel Aviv, Israel
Alice Nieuwboer
Heverlee, Belgium

15:30 Effective Pharmacological and Surgical Treatment Strategies for Common Late Stage Axial
Caroline Moreau
Marq en Barœul, France

16:10 Speech and Respiratory Therapy Options to Treat Hypophonic Dysarthria and Prevent Dysphagia
Yael Manor
Tel Aviv, Israel

16:50 When Recurrent Falls and Postural Instability are Prevalent, is Rehabilitation Too Late?
Colleen Canting
Sydney, NSW, Australia

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Identify the differences of apoptosis-inducing dopamine neuronal degeneration in humans and experimental animals
2. Assess pathogenic mechanisms of striatal transmission in Parkinson’s disease and in the long-term complications arising from dopaminergic therapy
3. Recognize how to manage complications related to aberrant synaptic plasticity

3207 Parallel Session (TICKET)
Function and Dysfunction of the Synapse
15:30 – 17:30

Chairs:
Micaela Morelli
Cagliari, Italy
Jose Obeso
Madrid, Spain

15:30 Modulation of the Synapse in the Normal and Denervated Striatum
Christian Pfifi
Wien, Austria

16:10 Therapeutic Complications Arising from Synaptic Dysfunction
Manolo Carta
Cagliari, Italy

16:50 Therapies Targeting Synaptic Plasticity
Per Svenningsson
Stockholm, Sweden

Recommended Audience: Basic Scientists, Clinical Academicians, Students/Residents/Trainees

Learning Objectives:
1. Apply the MDS-criteria for the diagnosis of Progressive Supranuclear Palsy
2. Identify the most appropriate imaging modalities for the diagnosis and progression measurement of Progressive Supranuclear Palsy
3. Recognize state of the art therapies for Progressive Supranuclear Palsy and understand concepts of current therapeutic trials

3208 Parallel Session (TICKET), cont.
16:50 Current and Future Therapies for Progressive Supranuclear Palsy
Adam Boxer
San Francisco, CA, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Perform examination techniques that help in the differential diagnosis of tremor
2. Utilize the examination of patients with parkinsonism to reveal signs that characterize different akinetic-rigid syndromes
3. Elicit and recognize examination features that characterize different hyperkinetic movement disorders
## Tuesday, June 6, 2017

### 3310 Teaching Course [TICKET]

**Classification, Pathogenesis, and Management of Dystonia**

*15:30 – 17:30*

**Chairs:**
- Petr Kanovsky
  Olomouc, Czech Republic
- Christine Klein
  Lübeck, Germany

**15:30** Applying the Dystonia Classification to Your Patient
- Petr Kanovsky
  Olomouc, Czech Republic

**16:10** Pathogenesis of Dystonia
- Aloysius Domingo
  Lübeck, Germany

**16:50** Current Treatments in Dystonia
- Takahiro Mezaki
  Tokamakura, Japan

**Recommended Audience:** Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Describe the classification and diagnosis of dystonia
2. Discuss the disease mechanisms and genetics underlying dystonia
3. Recognize the available medical and surgical treatments for dystonia including expected outcomes

### 3411 Skills Workshop [TICKET]

**How to Interpret Systems Neuroscience Findings**

*18:00 – 19:30*

- Rudi Balling
  Luxembourg, Germany
- Alfons Schnitzler
  Düsseldorf, Germany

*This interactive session will help participants to better navigate the growing field of important and complex discoveries in systems neurosciences related to basal ganglia function and dysfunction. Participants will learn how to select, analyze and implement the most relevant neuroscience findings from an integrative perspective.*

**Recommended Audience:** Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

### 3413 Skills Workshop [TICKET], cont.

**Honoring the MDS-UPDRS to Deal With Real-Life Challenges**

*18:00 – 19:30*

- Mayela Rodriguez Violante
  Mexico City, Mexico
- Glenn Stebbins
  Chicago, IL, USA

*This interactive session brings scale experts together with the participants to share practical approaches to utilizing the MDS-UPDRS in both clinical practice and research.*

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Apply arithmetic formulas to accommodate missing values in the MDS-UPDRS
2. Convert old UPDRS scores to MDS-UPDRS scores for continuity of longitudinal monitoring
3. Utilize the MDS-UPDRS in Parkinson’s disease patients with motor fluctuations

### 3412 Skills Workshop [TICKET]

**Telemedicine and Technology in Parkinson’s Disease Management: The Why, What and How**

*18:00 – 19:30*

- Esther Cubo Delgado
  Burgos, Spain
- Meredith Spindler
  Philadelphia, PA, USA

*In this interactive session, experts interact with participants to share the breadth of telemedicine options for clinical care and the practical points to allow telemedicine implementation.*

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. List available and in-development telemedicine options for health care access and management of movement disorders
2. Define the “minimal standard” of needed equipment to set up telemedicine services for patients with movement disorders
3. Apply practical knowledge on implementing and customizing telemedicine skills for movement disorders management

### 3414 Skills Workshop [TICKET]

**Colleague to Colleague: Recognizing and Managing Tardive Syndromes**

*18:00 – 19:30*

- Tove Henriksen
  Copenhagen, Denmark
- Daniel Tarsy
  Boston, MA, USA

*In this interactive session, clinical experts engage participants to outline the wide breadth of tardive syndromes, their temporal development in relation to causative drug exposure, and practical approaches to diagnosis and treatment.*

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Recognize the wide phenotypic variability of tardive syndromes in adults and children
2. Describe the time-frame and natural history of different tardive syndromes
3. Utilize diagnostic tools and management options to treat tardive syndromes
## Tuesday, June 6, 2017

### 3415 Skills Workshop [TICKET]

**Technology in Assessment of Parkinson’s Disease: How Does it Help?**
18:00 – 19:30

Fay Horak  
Portland, OR, USA  
Walter Maetzler  
Kiel, Germany

In this interactive session, the use of technology for actual clinical and patient-centered assessment will be discussed in all its facets. Although intuitively technology-based measurement is considered to be ‘objective,’ this session will heighten the awareness of the pitfalls and challenges for obtaining reliable data that are useful for the multidisciplinary team and most importantly for the patient himself.

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Appraise recent evidence on reliability of technology designed to assess gait and balance problems
2. Identify the benefits and pitfalls of smartphone apps for patients’ self-assessment of diverse clinical outcomes
3. Determine the potential of technology-based assessment for multidisciplinary patient management

### 3416 Skills Workshop [TICKET]

**Noninvasive Stimulation in Movement Disorders**
18:00 – 19:30

Robert Chen  
Toronto, ON, Canada  
Angelo Quartarone  
Messina, Italy

In this interactive session, faculty will provide a broad update about the current techniques of non-invasive brain stimulation used for research and clinical application, including mechanisms of action, limits, and future perspectives.

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Describe the different techniques of noninvasive brain stimulation
2. Describe the possible mechanisms of action of noninvasive brain stimulation
3. Identify the applications on noninvasive technique of brain stimulation in research and patient management

### 3517 Video Session [TICKET]

**Eye Movement Characteristics in Movement Disorders**
18:00 – 19:30

Adolfo Bronstein  
London, United Kingdom  
Aasef Shaikh  
Cleveland, OH, USA

In this interactive session, two experts will show the bedside examination of eye movements and how to recognize the oculomotor clues to common and not so common movement and ataxic disorders.

**Recommended Audience:** Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Identify the bedside oculomotor examination relevant to movement disorders
2. Identify typical eye movement abnormalities of fixation, saccades, pursuit, vergence and vestibular function
3. Recognize characteristic eye movement abnormalities across the common and uncommon hypokinetic, hyperkinetic and ataxic disorders

### 3518 Video Session [TICKET]

**Movement Disorders in Children**
18:00 – 19:30

Yoshiko Nomura  
Tokyo, Japan  
Toni Pearson  
St. Louis, MO, USA

In this interactive session, faculty will show the clinical approach to recognition, investigation and treatment of movement disorders in children.

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Recognize the specificity of pediatric movement disorders and their evolution in adulthood
2. Recognize the spectrum of metabolic and genetic movement disorders in children
3. Organize a clinical approach to the diagnosis of movement disorders in children
Wednesday, June 7, 2017

4101 Plenary Session
Challenges in Clinicogenetic Correlations: One Gene - Many Phenotypes; One Phenotype - Many Genes
8:00 – 9:30
Chairs: Kailash Bhatia
London, United Kingdom
Victor Fung
Sydney, NSW, Australia
8:00 One Gene – Many Phenotypes
Kailash Bhatia
London, United Kingdom
8:30 One Phenotype – Many Genes
Vincenzo Bonifati
Rotterdam, Netherlands
9:00 Clinical Implications – Diagnosis and Treatment
Hyder Jinnah
Atlanta, GA, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Recognize the sometimes different and complex phenotypes of monogenic mutations
2. Recognize similar clinical phenotypes resulting from different genetic mutations
3. Discuss the complexity of the evolving role of genetics in movement disorders

4102 Plenary Session, cont.
From Genes to Functional Pathways in Parkinsonism
15:00 – 17:00
Chairs: Vincenzo Bonifati
Rotterdam, Netherlands
Matthew LaVoie
Boston, MA, USA
15:00 Dominantly Inherited Parkinsonism: What are the Common Pathways?
Andreas Puschmann
Lund, Sweden
15:40 Linking Monogenic Parkinsonism to the Immune System
Matthew LaVoie
Boston, MA, USA
16:20 Retromer Dysfunction as a Common Pathway Underlying Parkinson’s Disease
Matthew Farrer
Vancouver, BC, Canada

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Discuss genetic features (mutations, penetrance, screening) of the dominant parkinsonisms, and their relevance for the etiologic landscape of Parkinson’s disease
2. Discuss recent findings linking the immune system and the pathogenesis of monogenic parkinsonism
3. Discuss the evidence supporting a role for retromer dysfunctions in the pathogenesis of Parkinson’s disease

4204 Parallel Session
Are all Neurodegenerative Diseases Prion Disorders?
15:00 – 17:00
Chairs: Glenda Halliday
Randwick, NSW, Australia
Mathias Jucker
Tübingen, Germany
15:00 Synucleinopathies
Seung-Jae Lee
Seoul, Korea
15:40 Amyloidopathies
Mathias Jucker
Tübingen, Germany
16:20 Tauopathies
John Trojanowski
Philadelphia, PA, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Recognize the evidence, knowledge gaps and potential therapeutic implications for prion-like cell-to-cell protein propagation in synucleinopathies
2. Recognize the evidence, knowledge gaps and potential therapeutic implications for prion-like cell-to-cell protein propagation in amyloidopathies
3. Recognize the evidence, knowledge gaps and potential therapeutic implications for prion-like cell-to-cell protein propagation in tauopathies

4205 Parallel Session
Food, Gut and Parkinson’s Disease: You Are What You Ingest
15:00 – 17:00
Chairs: Alberto Ascherio
Boston, MA, USA
Carlo Colosimo
Terni, Italy
15:00 The Gut Microbiome, Parkinson’s Disease and Motor, Non-Motor Clinical Subtypes
Filip Scheperjans
Hus, Finland
15:40 Caffeine, Uric Acid and Smoking
Alberto Ascherio
Boston, MA, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Discuss genetic features (mutations, penetrance, screening) of the dominant parkinsonisms, and their relevance for the etiologic landscape of Parkinson’s disease
Wednesday, June 7, 2017

4205 Parallel Session [TICKET], cont.

16:20  Does Vagotomy Have a Role in Parkinson's Disease Pathogenesis or Treatment?
Elisabeth Svensson
Aarhus, Denmark

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Describe the current role of the microbiome in the pathophysiology of Parkinson’s disease and clinical subtypes (motor and non-motor) of Parkinson’s disease
2. Recognize how caffeine, nicotine and uric acid may act as protective factors in the pathophysiology of Parkinson’s disease
3. Discuss the putative role of vagotomy in the preventive treatment of Parkinson’s disease

4206 Parallel Session [TICKET], cont.

James Parkinson’s 200 Years: The Non-Motor Parkinson’s New Visions
15:00 – 17:00

Chairs: K. Ray Chaudhuri
London, United Kingdom
Pablo Martinez-Martin
Madrid, Spain

Novel Ways of Grading Parkinson’s Disease Using Motor and Non-Motor Assessments: An Essential Clinical Paradigm
15:00
Pablo Martinez-Martin
Madrid, Spain

Motor and Non-Motor Endophenotypes of Parkinson’s Disease: Controversies and Clinical Description
15:40
Connie Marras
Toronto, ON, Canada

Ethnicity and Its Impact on Parkinson’s Disease: A Global View With a Non-Motor Perspective
16:20
Yoshio Tsuboi
Fukuoka, Japan

Recommended Audience: Basic Scientists, Clinical Academicians, Epidemiologists, General physicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

4206 Parallel Session [TICKET]

Learning Objectives:
1. Discuss new grading of Parkinson’s disease based on non-motor assessments and non-motor burden using validated tools
2. Discuss non-motor endophenotyping in Parkinson’s disease based on cluster, clinical and biomarker driven analysis and the possibility of subtype driven treatments
3. Discuss the expression of motor and non-motor symptoms variations across different ethnic groups in relation to Parkinson’s disease with a global perspective

4207 Parallel Session [TICKET]

From Fish to Primates: Genetic and Mechanistic Animal Models for Parkinson’s Disease
15:00 – 17:00

Chairs: Stéphane Païfi
Crestel, France
Ryosuke Takahashi
Kyoto, Japan

15:00 How do Fish Models Contribute to Understanding of Parkinson’s Disease?
Ryosuke Takahashi
Kyoto, Japan

15:40 Modeling Non-Motor Symptoms of Parkinson’s Disease in Rodents
Penelope Hallett
Belmont, MA, USA

16:20 Primate Models of Parkinson’s Disease: From MPTP to Synucleinopathy
Erwan Bezard
Bordeaux, France

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Students/Residents/Trainees

Learning Objectives:
1. Understand the advantages of fish models over other vertebrates in modeling Parkinson’s disease
2. Understand the advantages of reproducing non-motor symptoms including cognition and autonomic symptoms in Parkinson’s disease in rodents
3. Describe updates on genetic and alpha-synucleinopathy primate models of Parkinson’s disease

4208 Parallel Session [TICKET]

Basal Ganglia: Crossroads of Behavior and Motility
15:00 – 17:00

Chairs: Fumino Fujiyama
Kyoto, Japan
Mark Stacy
Durham, NC, USA

15:00 Basal Ganglia Circuits for Motor and Behavioral, Emotional Performances
Fumino Fujiyama
Kyoto, Japan

15:40 Behavioral and Motor Symptoms in Parkinson’s Disease and Other Movement Disorders
Kathy Dujardin
Lille, France

16:20 How to Treat Patients With Behavioral Disorders and Motor Symptoms
Louis Tan
Singapore

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

Learning Objectives:
1. Explain the mechanisms or circuits of basal ganglia responsible for motor function and behavioral performance
2. Describe the clinical features of behavioral disorders in relation to motor symptoms
3. Explain how to manage the behavioral and motor symptoms in basal ganglia disorders

4309 Teaching Course [TICKET]

Uncommon Treatable Movement Disorders Not to Be Missed
15:00 – 17:00

Chairs: Carlos Cosentino
Lima, Peru
Aurélie Meneret
Paris, France

15:00 Movement Disorder in Toxic and Infectious Diseases
Carlos Cosentino
Lima, Peru

15:40 Autoimmune Movement Disorders
Jessica Panzer
Philadelphia, PA, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Students/Residents/Trainees

Learning Objectives:
1. Understand the advantages of fish models over other vertebrates in modeling Parkinson’s disease
2. Understand the advantages of reproducing non-motor symptoms including cognition and autonomic symptoms in Parkinson’s disease in rodents
3. Describe updates on genetic and alpha-synucleinopathy primate models of Parkinson’s disease
### Wednesday, June 7, 2017

#### 4309 Teaching Course [TICKET] cont.

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<th>Recommended Audience</th>
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</table>
| 16:20 | Metabolic Diseases Presenting with Movement Disorders in Adults              | Aurole Meneret Paris, France       | Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees | 1. Improve recognition, diagnosis and treatment of toxic and infectious diseases causing movement disorders  
2. Discuss the diagnosis and treatment of autoimmune movement disorders  
3. Describe the diagnosis and treatment of metabolic diseases presenting with movement disorders in adulthood |

#### 4310 Teaching Course [TICKET]

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</table>
| 15:00 | Diagnosis and Management of Atypical Parkinsonian Syndromes                 | Andrew Lees London, United Kingdom | Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees | 1. Identify the neurophysiological basis of bladder and sexual dysfunction in Parkinson’s Disease  
2. Determine evidence-based and state-of-the-art management strategies of bladder and sexual dysfunction  
3. Recognize the impact of bladder and sexual dysfunction on quality of life for patient and partner |

#### 4411 Skills Workshop [TICKET]

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</table>
| 17:30 | Novel Insights Into Bladder and Sexual Dysfunction in Parkinson’s Disease   | Gila Bronner Ramat-Gan, Israel    | Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees | 1. Identify the limitations of current databases  
2. Use the MDSGene  
3. Recognize phenotype-genotype correlations and data gaps |

#### 4413 Skills Workshop [TICKET]

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<th>Learning Objectives</th>
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</table>
| 17:30 | How to Become a Successful Movement Disorder Specialist                      | Stanley Fahn New York, NY, USA    | Clinical Academicians                 | 1. Develop a clear view of the steps needed to pursue specialization in movement disorders  
2. Recognize the importance of searching for good mentors when pursuing specialization  
3. Identify essential aspects of becoming an effective leader |

#### 4412 Skills Workshop [TICKET]

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</table>
| 17:30 | From Phenotype to Genotype and Back: The MDSGene Database                   | Valerija Dobricic Belgrade, Serbia | Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees | 1. Identify the neurophysiological basis of bladder and sexual dysfunction in Parkinson’s Disease  
2. Determine evidence-based and state-of-the-art management strategies of bladder and sexual dysfunction  
3. Recognize the impact of bladder and sexual dysfunction on quality of life for patient and partner |

#### 4414 Skills Workshop [TICKET]

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<th>Recommended Audience</th>
<th>Learning Objectives</th>
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</table>
| 17:30 | New Molecular Techniques That are Changing the Clinical Landscape           | Richard Myers Boston, MA, USA     | Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees | 1. Identify emerging experimental methodologies, including next-generation sequencing, novel gene-editing techniques and iPSC cell development  
2. Identify potential applications of these techniques to the field of Movement Disorders  
3. Interpret the results obtained by the use of these techniques in the context of movement disorders |
### Wednesday, June 7, 2017

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<td><strong>4517</strong> Movement Disorder Emergencies</td>
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<td><strong>4518</strong> Recently Described Rare Disorders</td>
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#### 4515 Psychogenic Movement Disorders
**17:30 – 19:00**
Hubert Fernandez  
Cleveland, OH, USA  
Jon Stone  
Edinburgh, United Kingdom

This interactive session is designed to facilitate a clinician’s approach in answering those questions, considering the “mimics,” the psychological disturbances as they impact on the physical manifestations (i.e. movement disorders), and the challenge to sort out and manage accordingly.

**Recommended Audience:** Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Recognize, in a systematic way, the clinical profiles of hyperkinetic psychogenic movement disorders
2. Describe, in a methodological way, the clinical characteristics of psychogenic parkinsonism and other hypokinetic psychogenic movement disorders
3. Identify the common social, psychological, medical, and legal circumstances associated with the appearance of psychogenic movement disorders

#### 4516 Minerals in the Brain
**17:30 – 19:00**
Petr Dušek  
Prague, Czech Republic  
Susan Hayflick  
Portland, OR, USA

In this interactive session, experts will demonstrate clinical symptoms and characteristic CT/MRI changes of the most common diseases associated with mineral depositions in the brain, and they will describe treatment approaches.

**Recommended Audience:** Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Recognize clinical symptoms of patients with brain mineral (iron, calcium and manganese) deposition
2. Plan investigations and identify specific changes on brain CT/MRI for diagnostic purposes and for tracking disease progression and treatment effects
3. Describe the current status of management of the most common diseases associated with accumulation of minerals in the brain

#### 4517 Movement Disorder Emergencies
**17:30 – 19:00**
Roberto Ceravolo  
Pisa, Italy  
Sun Ju Chung  
Seoul, Korea

In this interactive session, experts will describe how to recognize common and unusual movement disorder emergencies, and how to effectively treat them.

**Recommended Audience:** Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Identify and manage Parkinson’s disease-related emergencies
2. Recognize common and uncommon hyperkinetic disorders, which may present at the emergency room
3. Manage emergencies related to Deep Brain Stimulation

#### 4518 Recently Described Rare Disorders
**17:30 – 19:00**
Victor Fung  
Sydney, NSW, Australia  
Dan Healy  
Dublin, Ireland

In recent years, many entirely new movement disorders have been described. Further, novel manifestations of previously described disorders have been discovered. This interactive session is intended to provide a survey of some of the most recently described disorders, some of which are treatable.

**Recommended Audience:** Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Recognize newly described hyperkinetic disorders
2. Recognize newly described hypokinetic disorders
3. Describe the diagnostic and therapeutic strategies for newly described disorders
## Thursday, June 8, 2017

### 5101 Plenary Session

**Development of Targeted Therapies for Parkinson’s Disease**

*8:00 – 9:30*

**Chairs:** Dimitri Krainc  
Charlestown, MA, USA  
Werner Poewe  
Innsbruck, Austria

**8:00** Novel Targeted Therapies for Parkinson’s Disease  
Werner Poewe  
Innsbruck, Austria

**8:30** Development of Small Molecule Activators for GBA1  
Dimitri Krainc  
Charlestown, MA, USA

**9:00** Translating LRRK2 Biology into Novel Therapies  
Mark Cookson  
Bethesda, MD, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Assess novel targeted therapeutic approaches for Parkinson’s disease
2. Recognize the potential of small molecules for the treatment of Parkinson’s disease
3. Clarify how Parkinson’s disease biology informs new treatment development

### 5102 Plenary Session, cont.

**10:45 ICD and Parkinson’s Disease: Drug or Disease? (Disease)**  
Thomas Munte  
Lübeck, Germany

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Recognize the immunization therapies proposed for proteinopathies
2. Identify the mechanisms for immunization therapies in proteinopathies
3. Determine whether immunization therapy for proteinopathies is expected to be effective as a disease-modifying treatment

**Topic 1:**
1. Recognize the spectrum of ICDs that occur in Parkinson’s disease
2. Identify the frequency of ICDs in Parkinson’s disease before and after treatment
3. Discuss whether ICDs in Parkinson’s disease are more likely due to the disease or the treatment

### 5103 Plenary Session

**Blue Ribbon Highlights**

*11:00 – 12:00*

**Chairs:** David John Burn  
Newcastle upon Tyne, United Kingdom  
Susan Fox  
Toronto, ON, Canada

This session will provide a critical review of the best poster presentations by a panel of experts, highlighting the relevance, novelty, and quality of both clinical and basic research presented by delegates.

- Paolo Calabresi  
Perugia, Italy
- Oksana Suchowersky  
Edmonton, AB, Canada

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Describe genotypes and phenotypes of dominant forms of hereditary spastic paraplegias
2. Describe genotypes and phenotypes of recessive and X-linked forms of hereditary spastic paraplegias
3. Discuss emerging pathogenetic pathways and implications for the development of rational therapies

### 5204 Parallel Session

**Hereditary Spastic Paraplegias: An Expanding and Challenging Field**

*15:00 – 17:00*

**Chairs:** Giovanni Stevanin  
Paris, France  
Carolyn Sue  
Sydney, NSW, Australia

**15:00** Autosomal Dominant Forms  
Toshitaka Kawarai  
Tokushima, Japan

**15:40** Autosomal Recessive and X-Linked Forms  
Giovanni Stevanin  
Paris, France

**16:20** Pathogenic Pathways and Therapeutic Insights  
John Fink  
Ann Arbor, MI, USA

Recommended Audience: Basic Scientists, Clinical Academicians, Practitioners, Students/Residents/Trainees

**Learning Objectives:**
1. Describe genotypes and phenotypes of dominant forms of hereditary spastic paraplegias
2. Describe genotypes and phenotypes of recessive and X-linked forms of hereditary spastic paraplegias
3. Discuss emerging pathogenetic pathways and implications for the development of rational therapies

### 5205 Parallel Session

**Novel Insights From Inherited Dyskinesias**

*15:00 – 17:00*

**Chairs:** Michael Okun  
Gainesville, FL, USA  
Zhi-Ying Wu  
Shanghai, People’s Republic of China

**15:00** Isolated Dystonias: From Gene to Network  
Brian Berman  
Aurora, CO, USA

**15:40** Paroxysmal Dyskinesias  
Toshitaka Kawarai  
Tokushima, Japan

**16:20** Basal Ganglia-Related Dystonias: XDP, DRD, and Others  
Alexander Münchau  
Hamburg, Germany

Recommended Audience: Basic Scientists, Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees
Learning Objectives:
1. Describe structural and functional imaging findings from patients with inherited and sporadic dystonias.
2. Summarize the varied clinical phenotypes of the paroxysmal dyskinesias and their genes.
3. Explain some of the biological mechanisms responsible for causing some types of dystonia.

**Clinical Role of Neuropathology**

15:00 – 17:00

**Chairs:** Ian MacKenzie

**Neuropathology for the Clinicians: The Nuts and Bolts**

Ian MacKenzie

15:00

**Vancouver, BC, Canada**

**Clinical Role of Neuropathology**

15:40 – 17:00

**Chairs:** Holly Shill

**Clino-Pathological Correlations of Neurodegenerative Diseases**

Holly Shill

15:40

**Phoenix, AZ, USA**

**Atypical Parkinsonism**

15:00 – 17:00

**Chairs:** Jeffrey Kordower

**Corticobasal Degeneration and Its Look-Alikes**

Jeffrey Kordower

15:00

**Chicago, IL, USA**

**Complementary and Alternative Medicine in Movement Disorders**

15:00 – 17:00

**Chairs:** Beomseok Jeon

**The Science of Placebo Effects and Complementary Medicine**

Beomseok Jeon

15:40

**Turin, Italy**

**The Ataxias: The Spinocerebellar Ataxias, Recessive Ataxias and Secondary Ataxias**

15:00 – 17:00

**Chairs:** Joaquim Ferreira

**Classification and Etiologies of Ataxias: A Clinical Approach**

Joaquim Ferreira

15:00

**Lisbon, Portugal**

**The Ataxias: The Spinocerebellar Ataxias, Recessive Ataxias and Secondary Ataxias**

15:40 – 17:00

**Chairs:** Stefan Pulst

**Genealogies**

Saskatoon, SK, Canada

15:40

**Genetic Testing in Spinocerebellar Ataxias in Clinics: Challenges and Limitations**

Saskatoon, SK, Canada

15:40

**Taipei, Taiwan**

**Clinical and Experimental Therapies in Ataxias**

16:20

**Stefan Pulst**

**Los Angeles, CA, USA**

**Ataxias in Clinics: Challenges and Limitations**

16:20

**Yih-Ru Wu**

**T aipei, T aïwan**

**Ataxias: A Clinical Approach**

16:20

**Helio Teive**

**Curitiba, Brazil**

**Complementary and Alternative Medicine in Movement Disorders**

15:00 – 17:00

**Chairs:** Benzi Kluger

**Incorporating Complementary Medicine into Movement Disorders Care**

Benzi Kluger

16:20

**Denver, CO, USA**

**The Ataxias: The Spinocerebellar Ataxias, Recessive Ataxias and Secondary Ataxias**

16:20

**Stefan Pulst**

**Los Angeles, CA, USA**
Thursday, June 8, 2017

**5310 Teaching Course**

**Ticket**

**Management of Advanced Parkinson's Disease**

15:00 – 17:00

Chairs: Nir Giladi  
Tel Aviv, Israel  
Lars Timmermann  
Cologne, Germany

**Learning Objectives:**
1. Recognize the current definition and classification of tremor and recognize new tremor entities, for example dystonic tremor and the ‘current’ concept of essential tremor.
2. Identify different examination techniques in patients with tremor that will lead to a structured clinical approach.
3. Discuss different therapeutic options for tremor including pharmacologic and surgical treatments.

**5311 Teaching Course**

**Ticket**

15:00 Pharmacological Strategies for Managing Motor Complications
Angelo Antonini  
Venice, Italy

15:40 Surgery and Other Invasive Therapies for Managing Motor Complications
Thomas Kimber  
Adelaide, SA, Australia

16:20 Management of Levodopa-Unresponsive Symptoms
Nir Giladi  
Tel Aviv, Israel

Recommended Audience: Clinical Academicians, Non-Physician Health Professionals, Practitioners, Students/Residents/Trainees

**5311 Teaching Course**

**Ticket**

Learning Objectives:
1. Describe the different oral medications and pharmacologic strategies that can be used to manage dyskinesias and motor fluctuations in advanced Parkinson's disease.
2. Recognize which patients with advanced Parkinson's disease need more invasive therapies, such as: Deep Brain Stimulation, continuous subcutaneous apomorphine and levodopa intestinal gel, including an assessment of the risks and benefits of each therapy for individual patients.
3. Discuss the treatment options for disabling levodopa-unresponsive symptoms in the advanced Parkinson's disease patient, including dysautonomia, dysphagia, dysarthria, and falls.

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2309

Albanese, Alberto
Rozzano, Italy
1102

Anderson, Tim
Christchurch, New Zealand
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Belvaux, Luxembourg
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5103

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Calakos, Nicole
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Cardoso, Francisco
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4517

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Corvol, Jean-Christophe
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De Koning-Tijssen, Marina
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4102

Fahn, Stanley
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4413

Farrer, Matthew
Vancouver, BC, Canada
4203

Fernandez, Hubert
Cleveland, OH, USA
4515

Ferreira, Joaquim
Torres Vedrins, Portugal
5209

Fink, John
Ann Arbor, MI, USA
5204
# Faculty Listing

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<td>Poewe, Werner</td>
<td>Innsbruck, Austria</td>
<td>3102, 5101</td>
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<td>Pulst, Stefan</td>
<td>Salt Lake City, UT, USA</td>
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## Faculty Listing

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PREScribing INFORMATION
Ongentys® Opicapone

Please refer to the SPC before prescribing. Presentation: Ongentys 50 mg hard capsules. Indication: Ongentys is indicated as adjunctive therapy to preparations of levodopa /DOPA decarboxylase inhibitors (DDCI) in adult patients with Parkinson’s disease and end-of-dose motor fluctuations who cannot be stabilised on those combinations. Posology and method of administration: The recommended dose of opicapone is 50 mg. Ongentys should be taken once-daily at bedtime at least one hour before or after levodopa combinations. Dose adjustments of antiparkinsonian therapy: Opicapone enhances the effects of levodopa. Hence, it is often necessary to adjust levodopa dosage within the first days to first weeks after initiating the treatment with Ongentys. Missed dose: If one dose is missed, the next dose should be taken as scheduled. The patient should not take an extra dose to make up for the missed dose. Elderly: No dose adjustment is needed for elderly patients. Cautions must be exercised in patients ≥ 85 years of age as there is limited experience in this age group. Renal impairment: No dose adjustment is necessary in patients with renal impairment, as opicapone is not excreted by the kidney. Hepatic impairment: No dose adjustment is necessary in patients with mild hepatic impairment (Child Pugh Class A). There is limited clinical experience in patients with moderate hepatic impairment (Child Pugh Class B). Caution must be exercised in patients with severe hepatic impairment (Child Pugh Class C), therefore, Ongentys is not recommended in these patients. Paediatric population: There is no relevant use of Ongentys in the paediatric population with Parkinson’s disease and motor fluctuations. Method of administration: Oral route. The capsules should be swallowed whole with water. Contraindications: Hypersensitivity to the active substance or to any of the excipients. Phaeochromocytoma, paraplegia, severe renal or liver impairment, severe peripheral vascular disease, recent neurosurgery or severe atrioventricular block. Increases in liver enzymes were reported in studies with nitrocatechol inhibitors of catechol-O-methyltransferase (COMT). For patients who experience progressive anorexia, asthenia and weight decrease within a relatively short period of time, a general medical evaluation including liver function should be considered. Intolerance to excipients: Ongentys contains lactose. Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take Ongentys. Medical products metabolised or other forms of interaction: Monoamine oxidase (MAO) inhibitors: Combination of opicapone and MAO inhibitors could result in inhibition of the majority of the pathways responsible for the metabolism of catecholamines. Because of this, concomitant use of opicapone with MAO inhibitors (e.g. phenelzine, tranylcypromine and moclobemide) other than those for the treatment of Parkinson’s disease is contraindicated. Special warnings and precautions for use: Dose adjustments of antiparkinsonian therapy: Ongentys is to be administered as an adjunct to levodopa treatment. Hence, the precautions valid for levodopa treatment should also be taken into account for Ongentys. Opicapone enhances the effects of levodopa. To reduce levodopa-related dopaminergic adverse reactions (e.g. dyskinesia, hallucinations, cause vomiting and orthostatic hypotension), it is often necessary to adjust the daily dose of levodopa by extending the dosage interval and/or reducing the amount of levodopa per dose within the first days to first weeks after initiating the treatment with Ongentys, according to the clinical condition of the patient. If Ongentys is discontinued it is necessary to adjust the dosing of the other antiparkinsonian treatments, especially levodopa, to achieve levodopa plasma levels. Health professionals and care-givers should be made aware that impulse control disorders including pathological gambling, increased libido, hypersexuality, compulsive spending or buying, binge eating and compulsive eating can occur in patients treated with dopamine agonists and other dopaminergic treatments. Patients should be monitored regularly for the development of impulse control disorders and review of treatment is recommended if such symptoms develop. Others: Increases in liver enzymes were reported in studies with nitrocatechol inhibitors of catechol-O-methyltransferase (COMT). For patients who experience progressive anorexia, asthenia and weight decrease within a relatively short period of time, a general medical evaluation including liver function should be considered. Medicinal products metabolised by COMT. Opicapone may interfere with the metabolism of medicinal products containing a catechol group that are metabolised by COMT, e.g. mirtazapine, irinotecan, alendronate, noradrenaline, dopamine, doxepine or sumatriptan, leading to potentiated effects of these medicinal products. Careful monitoring of patients being treated with these medicinal products is advised when opicapone is used. Triacylglycerides and nonsteroidal anti-inflammatory drugs: There is limited experience with opicapone when used concomitantly with triacylglycerides and nonsteroidal anti-inflammatory drugs (e.g. aspirin, naproxen and diclofenac). Their concomitant use should be considered with appropriate caution. Repaglinide: Opicapone is a weak inhibitor of CYP2C8. A study in healthy subjects using a dose of 25 mg, and a less than optimal formulation, showed an average increase of 30% in the rate, but not the extent, of exposure to repaglinide when co-administered (i.e. given at the same time) with opicapone most likely caused by an inhibition of CYP2C8. Thus, particular consideration should be given to medicinal products metabolised by CYP2C8 and their co-administration must be avoided. OATP1B1 substrates: Opicapone is a weak inhibitor of OATP1B1. There is no experience with opicapone when used concomitantly with OATP1B1 substrates. Thus, particular consideration should be given to medicinal products transported by OATP1B1 and their concomitant use should be considered with appropriate caution. Fertility, pregnancy and lactation: Pregnancy: There are no or limited amount of data from the use of opicapone in pregnant women. Animal studies are insufficient with respect to reproductive toxicity (see section 5.3). Ongentys is not recommended during pregnancy and breastfeeding in women of childbearing potential not using contraceptives. Breast-feeding: It is unknown whether opicapone or its metabolites are excreted in human milk. In the view of the risk/benefit ratio, breast-feeding should be discontinued during treatment with Ongentys. The effects of opicapone on fertility in humans have not been studied. Animal studies with opicapone do not indicate harmful effects with respect to fertility. Effects on ability to drive and use machines: Opicapone in association with levodopa may have major influence on the ability to drive and use machines. Ongentys may, together with levodopa, cause dizziness, somnolence and orthostatism. Therefore, caution should be exercised when driving or using machines. Undesirable effects: Summary of the safety profile: The most common adverse reactions reported were nervous system disorders. Dyskinesia was the most frequently reported treatment-emergent adverse reaction (17.7%). List of adverse reactions: Very common (≥ 1/10): Dyskinesia. Common (≥ 1/100 < 1/10): Abnormal dreams, Hallucinations, Hallucination visual, insomnia, Dizziness, Headache, Somnolence, Orthostatic Hypotension, Constipation, Dry mouth, Vomiting, Muscle spasms, Blood creatine phosphokinase increased. Uncommon (≥ 1/1000 to < 1/100): Decreased appetite, Hypertension, Anaesthesia, Anxiety, Depression, Hallucination auditory, Nightmares, Sleep disorder, Dysuria, Hypersensitivity, Syncope, Dry eye, Ear congection, Palpitations, Hypertension, Hypotension, Dyspnoea, Abdominal distention, Abdominal pain, Abdominal pain upper, Dyspepsia, Muscle twitching, Musculoskeletal stiffness, Myalgia, Pain in extremity, Cholecystitis, Nodularity, Weight loss. Changes reported in laboratory values: No relevant changes were seen. Reproductive system: There were no reports of testicular or cervical discase. Supportive treatment should be administered as appropriate. Removal of opicapone by gastric lavage and/or lavage by administering activated charcoal should be considered. PHARMACEUTICAL PARTICULARS: List of excipients: Capsule content: Lactose monohydrate, Sodium starch glycolate, Glycine, Magnesium stearate, Gelatin, Hydroxypropyl cellulose, Titanium dioxide (E171), Polyethylene glycol, Sorbitol, propylene glycol, aspartic acid, Sodium hydrogen carbonate, Calcium carbonate (E341), Gelatin. Nature and contents of container: OPA/AC/PVC/Al blisters containing 10, 30 or 90 capsules. MARKETING AUTHORIZATION HOLDER: Bial - Portela & Cª, S.A. A Av. da Sidérurgia Nacional, 4145-457, S. Mamede de Corrãodes, Portugal, Tel (+351) 22 866 61 00, Fax (+351) 22 866 21 80, e-mail info@bial.com. MARKETING AUTHORIZATION NUMBERS: EU/1/15/1066/002-004. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION: Date of first authorisation: 24th June 2016. OONOV16/G/028 OONDE216/G/032 Ongentys obtained Marketing Authorization Approval from the European Commission on 24th June 2016. Currently it’s not available in all European Union countries.
Acknowledgements

The International Congress Oversight Committee of the 21st International Congress of Parkinson’s Disease and Movement Disorders wishes to acknowledge and thank the following companies for their support:

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