Advancing Science, Promoting Community, Inspiring Hope

June 4 – 7, 2019

Bringing the Parkinson’s Community Together!

FINAL PROGRAM

Advancing Science, Promoting Community, Inspiring Hope
Dear friends:

On behalf of the WPC 2019 Steering Committee and the Board of Directors of the World Parkinson Coalition®, we welcome you to the Fifth World Parkinson Congress and to Kyoto, Japan.

WPC 2019 will unite the global Parkinson community for a high-level, inspirational Congress where we will welcome registrants from 60 countries including people living with PD, care partners, neuroscientists, clinicians, nurses, rehabilitation specialists, policy makers and others. Our Organizational Partners from 46 countries have graciously endorsed the Congress and, by so doing have helped to ensure the success of the WPC 2019 and the diversity of our delegates.

Be sure to visit the exhibit area to view the 600 plus scientific and living-with-Parkinson posters and sign up for the evening poster tours right in the poster area. We encourage you also to visit our exhibitors, from around the world, representing both industry and non-profit organizations.

When in the exhibit hall, visit the Clinical Research Village, where science meets advocacy and where researchers and clinical trial participants will talk about clinical trials, why we need them, how you can help and what you need to know before signing up.

If you need a break from the science, visit the Wellness Way where you can find the Renewal Room to sign up for a session on yoga, dance, boxing, or singing. For our care partners, we invite you to visit the Care Partner Lounge to connect, learn, and relax throughout the Congress.

When walking the halls, be sure to check out the Art Walk, showcasing five art exhibits produced by people with Parkinson disease, highlighting the power of creativity as part of a wellness plan and the talented community in which we live.

The World Parkinson Congresses are the only global conferences that bring together the entire Parkinson community, including the dedicated researchers and health professionals who study the disease and care for those who live with it, alongside the people and care partners who live with PD day in and day out – the real experts. This is the fifth time the WPC has convened. We will continue to strive to build a stronger, more cohesive PD community with new scientific insights for a better understanding of PD, always looking forward to newer advances and moving closer to a cure. We are pleased you have decided to join us for this unique learning opportunity.

This is a meeting of hope. The hope for better quality of life for those touched by Parkinson disease and one day a cure. This is also a meeting of inspiration. A meeting where researchers and clinicians learn about the latest research to stimulate their own work and develop new collaborations, and where they also meet people with PD who inspire them to continue their work and to never give up. It’s also a place where people with PD and families meet others in the community who inspire them to power through their disease knowing they are part of a global Parkinson family that is working toward a common goal – to end PD once and for all.

We look forward to meeting many of you during the Congress.

Sincerely,

A. Jon Stoessl
C.M., M.D., FRCPC
WPC President

Marie-Françoise Chesselet
M.D., Ph.D.
WPC Vice President
Dear friends:

On behalf of the Program Committee, we thank you for your participation in the 5th World Parkinson Congress this week in Kyoto, Japan. The process of creating this program started almost three years ago with the selection of the outstanding members of the Program Committee who worked extensively to build the program you now hold in your hands.

Our goal was to create a vibrant and comprehensive program that would appeal to our diverse audience. We did this by first selecting the most important and exciting topics being discussed and researched today and then by inviting experts from the global community to share their knowledge and experience on these very topics. We not only wanted you to feel inspired by the research, and hopeful for where it will lead us, but also for you to learn valuable information to add to your PD Toolkit that you could start using as soon as you returned home.

Sessions were created for people with Parkinson’s and care partners, neuroscientists, clinicians and movement disorder specialists, nurses, rehabilitation specialists and others. The pre-congress day on June 4 offers five different courses followed by the opening ceremony and welcome reception. The next three days begin each morning with Hot Topics presentations at 8AM highlighting some of the outstanding abstracts we received this year followed by morning plenaries which have been structured for maximum cross-fertilization of the diverse delegate body. We invite you to join us for these morning sessions to hear great talks, and to show your support for the five award recipients we’ll honor who have been serving the global PD community for many years.

Over lunch each day we offer special talks by leaders in the clinical, advocacy, and scientific spaces. We are thrilled to welcome Nobel Laureate Dr. Shinya Yamanaka to the stage on Friday over lunch to discuss his seminal work on IPS cell and Parkinson’s. During lunch you can also visit our WPC World Café to discuss young onset Parkinson’s or the Clinical Research Village in the Exhibit Hall to learn about clinical trials and how to get more engaged. Each evening you may sign up to participate in poster tours or the daily wrap-sessions which will convene experts to help synthesize and highlight key take home points from the talks given throughout the day.

Each afternoon we have early and late afternoon tracks with large parallel sessions, interactive workshops, and intimate ‘meet the expert’ roundtables supported by poster presentations that build upon and explore the topics covered through the program and beyond.

When you need a break from it all, visit the Renewal Room for an exercise class, the table tennis room for a game or two, or the massage and reiki room for a short massage. Or you may wish to take a walk through the various art installations that make up the Art Walk. The WPC is like a Parkinson’s festival showcasing the best science, best treatment, and best care that exists today while reminding us of the things people with Parkinson’s CAN do while living with this disease.

We hope you join us each and every day and that you make the most of your time at the WPC 2019.

Warm regards,

Roger Barker, BS, MBBS, PhD FMed Sci
Chair, Program Committee

Anne Louise Lafontaine, MD
Co-Chair, Program Committee, Comprehensive Care

Etienne Hirsch, PhD
Co-Chair, Program Committee, Basic Science

Hideki Mochizuki, MD, PhD
Co-Chair, Program Committee, Basic Science

Atsushi Takeda, MD, PhD
Co-Chair, Program Committee, Clinical Science

Miho Murata (in memoriam), MD, PhD
Co-Chair, Program Committee, Comprehensive Care
Dear friends:

It has been nearly 14 years since the first World Parkinson Congress was launched in 2006 in Washington, D.C., and now here we are, welcoming you to the fifth iteration of this Congress. Amazing to see how the WPC has grown.

As WPC Ambassadors, we represent a global community of people with Parkinson’s. Because we know how important WPC 2019 can be, we took our role seriously and reached out to the world to invite neuroscientists and nurses; physiotherapists and physicians; those seeking a cure and those seeking to care. We invited you to Kyoto. You heard us, you responded, and here you are. Whatever your reason for coming, your presence is an inspiration to us, as well as to millions of others who gain hope and encouragement from your passion to help in the battle against Parkinson’s.

Parkinson’s is very complicated. We who live with it spend every second, every minute, every hour and every day of our lives trying to manage our symptoms. This is not an easy task and unfortunately most of us do this alone. None of us chose to have Parkinson’s. We are all aware of it not being just the old man’s portrait of shaky limbs and a stumbling gait. We know fatigue, balance, pain and loss of sleep are symptoms we have to deal with. We also know our medications don’t always work and we can go into on/off states so quickly with no control to stop it. The disease takes over the confidence we had prior to diagnosis which in turn affects our mood, our families and friends. It can be a very isolating and lonely disease, which is one reason we turn to the WPC.

The WPC changes how we live with Parkinson’s. For those attending their first congress get ready because you are going to leave with a life raft that is overflowing with support. The contacts that you are about to make along with the friendships and the knowledge will go with you when you return home. You will have them for the years to come.

To those who have so generously offered to speak and share your knowledge; We thank you from our hearts. Your work not only gives us a better quality of life, it gives us hope, inspiration, laughter and enthusiasm. We will remember you and your excitement when you talked about your research and new discoveries.

And so we welcome you, and sincerely thank you for making people with Parkinson’s your priority.

Sincerely,

WPC 2019 Ambassadors

Jillian Carson, Chair
Canada

Mike Atkinson
Australia

Alejandra Borunda
Mexico & USA

Meng Chuo Wong
Malaysia

Elisabeth Ildal
Denmark

Emma Lawton
United Kingdom

Andy McDowell
New Zealand

Cathy Molohan
Germany & Ireland

David Sangster
United Kingdom

Debbie Shapiro
Israel

Karyn Spilberg
Australia

Tan Tien Seng
Singapore

Rune Vethe
Norway

Cherry Vogt-Ward
Barbados & Switzerland

A.C. Woolnough
USA
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Hideki Mochizuki, MD, PhD
Miho Murata (in memoriam), MD, PhD
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Yoshiko Okada, MD
Satoshi Orimo, MD, PhD
Nobukatsu Sawamoto, MD, PhD
Yasushi Shimo, MD, PhD
Kazushi Takahashi, MD, PhD
Atsushi Takeda, MD, PhD
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Yoshio Tsuboi, MD, PhD
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* World Parkinson Coalition Board Member
概要

World Parkinson Coalition は3年に1度開かれる世界パーキンソン病学会 (WPC) の運営母体です。2004年の発足以来パーキンソン病コミュニティの主導的役割を果たしてきました。WPCは、それまでばたらばた活動していたパーキンソン病の研究者、臨床医、患者の支援者、すなわちパーキンソン病コミュニティの全構成員をつなぐ場として、立上げ直後からそのレーダーシップが注目されています。

世界パーキンソン病学会とは

世界パーキンソン病学会は、パーキンソン病に関連する最新の研究成果、治療実績、介護のあり方について話し合う国際会議です。会議には毎回、運動障害の専門家、内科医、神経科学者、神経科医、看護師、リハビリ専門家、介護者、患者の家族、そしてパーキンソン病患者が一堂に会し、この難病に対する治療法の発見を加速させ、最良の治療事例を発掘することを目的に協議を重ねています。

学会の対象者は？

パーキンソン病の研究者、患者の介護者、患者本人も含め、パーキンソン病に関わる全ての人が対象です。パーキンソン病コミュニティの変革のためには、関係各者が力を合わせることが必要です。WPCは、パーキンソン病界の世界的リーダーとの人脈を築く格好の機会となります。

WPCは患者参加型の会議です。毎回意思決定の場には必ず患者が立ち合い、神経科学者や臨床家と共にプログラムの作成や人選等に関わります。こうしたやり方を私たちが誇りにしています。

プログラム

WPCのプログラムでは、基礎研究、臨床ケア、パーキンソン病患者の生活など、幅広いトピックを扱います。セッションには様々な種類のものがあり、それぞれ対象者が異なりますが、参加者はどのセッションにも参加することができます。また、英語を苦手と感じられる日本人関係者のかたがおられても、できるだけ気軽にプログラムに参加することができますように、次の3通りの措置を講じます。

1. モーニングホットトピックス、表彰式、全体会議ではヘッドフォンを介した同時通訳を利用できるようにします。

2. 全国パーキンソン病友の会および現地関係者と協力し、6月5日、午後のセッションでは日本語で様々なトピックを取り上げます。

3. 高橋良輔、服部信孝両教授が共同委員長を務める国内組織委員会の協力を得て、できるだけ多くのパワーポイントスライドを日本語に翻訳し、大切なメッセージが参加者に伝わるようかります。
概要

展示会、特別イベント、ネットワーキング

参加者ならどなたでも展示会を見学することができます。関連製品やパーキンソン病研究の最前線に触れられるため、研究者から、技術とパーキンソン病をテーマとしたトーク、ビデコンペの入賞作の上映、Book Nookで取り扱う一部の書籍の著者を囲む会などを行います。

パークー

アライグマのパークーはWPCの公式マスコットです。登録期間中にパークーをお買い上げいただくと、その売り上げが、若手臨床医や研究者、パーキンソン病患者がWPCに参加するためのWPC旅費助成プログラムに活かされます。パークーの詳細についてはwww.WhereIsParky.orgをご覧ください。パークーが今どこにいるのか、またこれまでにどのような人々に迎えられたのかが分かります。日本でもパークーがたくさんのお家に迎えられ、日本のパーキンソン病コミュニティと世界のパーキンソン病コミュニティの関係強化に一役買うことを願っています。

ウェルネスウェイ

あらゆるWPC期間中、学術的な話題はひとまず忘れてリラックスできるように、会議場内の数か所にウェルネスウェイと名付けたオアシス空間をご用意します。このスペースでも、自分自身をもっと楽し、より良い生活を送るために必要なツールを提供します。

リニューアルルーム

交流型セッションを数多く盛り込んだプログラムを提供します。気分を一新し、楽しい時間をお過ごしください。太極拳、ヨガ、ダンスに加え、歌やドラマ演奏などの音楽を楽しむセッションがあります。

ケアパートナーラウンジ

介護者同士が交流するための安全なスペースです。支援団体の集まりの場としても、また介護者を対象とした日々の正常な話し合いの場としても利用できます。日本人介護者の皆さんにも利用していただけるように、日本語を話せる専門家を配置します。

クワイエットルーム

啞楽や瞑想のためのスペース。投薬効果が現れるまでの安静の場、あるいは礼拝の場などに最適です。快適な席席と水をご用意します。

ウェルネス・ウェイ（オアシス空間）

協賛：アコルダ・セラピューティクス社、バイオジェン社、大塚製薬株式会社

Wellness Wayは4つのプログラムからなりつています。1）運動プログラム、2）マッサージプログラム、3）休憩所、4）介護者交流プログラム。このウェルネス・ウェイ空間では、自分の身体向き合い、学ぶ事が出来る場所となっています。パーキンソン病患者、介護者、医療専門家に限らず、自分の身体に責任を持ちケアする必要があります。その手助けとなるように、WPCはこの4つのプログラムを用意しました。是非、このオアシス空間で身体を動かしたり、マッサージを受けたり、瞑想体験をしたり、またPDに関わる人々との新たな出会いをお楽しみください。
リニューアル・ルーム（運動プログラム）
身体を動かしたり大きな声を出したり出来る体験交流型の運動プログラムです。内容はヨガ、太極拳、アルゼンチンダンス、ダンス、ボーカルトレーニング、ボクシング、有酸素運動やPD運動など、様々なクラスに参加出来ます。人数制限がありますので、当日それぞれ興味のあるクラスに事前登録してください。

マッサージ＆レイキ（気功）ルーム
WPC参加者の皆様に15分ほどのマッサージやReikiの提供が可能になりました（無料です）。ご希望の方はルーム103でお申し込み下さい。

兵庫県療術師協会
藤原 幸子佐々木 和輝
山田 敏夫攻発未浦

株式会社フレアス
川上 詠昌中西 徹
奈良 香澄神田 浩士内田 朝美
神里子有賀広
宮崎 洋之木村 智

ヒーリングランドレイキ
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ムニカイ・ムハメド

荒矢診療所
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はりきゅう治療院 運蓬蓮
吉田 伸大

三瀬鍼灸院

訪問マッサージり・ふぁいん
横谷 泰利畑野 富美若林 裕亮

湯川鍼灸院
湯川 享和煦琉金山 昌子

ケアパートナー・ラウンジ（介護者交流の場）
介護者同士が安心して話合える場所になっています。介護者同士の新たな出会いや、悩みなどの相談も出来ます。常時日本人スタッフが配置されていますので、気軽にお立ちより下さい。

卓球ルーム
協賛：株式会社スヴェンソン
卓球ルームでは、身体を動かし、沢山の方と交流できます。卓球は、体の動きやバランス、反射などに効果的ですし、純粋に楽しい！参加お待ちしています。
### ウェルネス・ウェイ（オアシス空間）

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| 7:45 - 8:45 AM | ヨガ： "グラウンディング法" で落ち着いた心身の状態をつくる | アミンタ・セイント オンジ | 椅子ヨガのクラスでは"グラウンディング法"や呼吸法を紹介します。これらの方法は、気持ちを落ち着かせたり、自分の姿勢やバランス感覚を微細に調節することに気づかせてくれます。バランスが悪い時間
そつでしています。（フットローラーとスタン
ドは選択出来ます。） |
| 9:00 - 10:00 AM | ザ・ラウド・クラウド | ジェニファー・コーディー | グループで行う楽しくエネルギッシュなポイ
ストレーニングのクラスです。日々行えるスピーケアウトプログラムにご参加下さい。 |
| 10:30 - 11:30 AM | ロックステディ・ボクシング：パーキンソン病にパンチ！ | 坂井美穂 | アメリカ発！！10年の実績をもと、パーキンソン病を立て向かう為のボクシングエクササイズ（打ち合いはありません。）ストレッチ、筋力、持久力、反射やコガニサイズを含んだ楽しいグループプログラムです。体幹
と身体を一緒に楽しく盛り上がろう！！ |
| 11:45 AM - 12:45 PM | ドーパフィット：パーキンソン病の為の高負荷インタパル運動 (PHITT) プログラム | チャッド・モイヤー | ドーパフィット：パーキンソン病の特徴に配慮された高負荷（心拍数をあげる）インタパルトレーニング（PHITT）。アメリカ発パーキンソン病患者の為の運動プログラムです。ボクシング、筋力トレーニング、有酸素運動、間節運動などを含んでいます。その効果
は是非体験してください。 |
| 1:15 - 2:30 PM | ダンス・フォーPD | デイビッド・レベンサール | 世界的に有名なマークモリス・ダンスグループで優れた研究データに基づく国際的なダンスプログラム。パーキンソン病患者・家族が楽しみながら効果を実感出来る内容で
す。ダンス経験は必要ありません。初学者のデイビッド・レベンサール氏とスペシャルゲストを招いてのクラスは楽しく、創造的で刺激的。リフレッシュ出来る運動プログラムです。 |
| 3:00 - 4:00 PM | ザ・トライアド：発声、動きと認知機能 | ジョン・ディーン ジョセファ・ドミンゴス | ポイストレーニングとコゲニサイズを兼ね備えた運動プログラムになっています。 |
| 4:30 - 5:30 PM | アダプテッド・タンゴ クラス | マデレイン・ハックニー | アルゼンチンタンゴを通して「自分の身体の動きを知る」ことができ、気分転換にもなります。このクラスでは、全身ウォーミングアップからペアでの練習、リズムに合わせて簡単なタンゴステップを楽しむことが出来ます。1人でも参加出来ますので、パートナー
と一緒の必要はありません。 |
### 6月6日 木曜日

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<tr>
<td>8:30 – 9:30 AM</td>
<td>キープ・ムービング：パーキンソン病の為の太極拳</td>
<td>ミルコ・ローレンツ</td>
<td>パーキンソン病の方が続けることが出来るようにアレンジされた太極拳プログラムです。バランス改善、筋力強化、リラックス効果、集中力を養い、内面を落ち着かせることが有効です。</td>
</tr>
<tr>
<td>10:00 – 11:00 AM</td>
<td>マイディ・マエストロ</td>
<td>ジュディス・スベンサー</td>
<td>WPCコーラス担当のジェミニと一緒に歌いましょう！歌うことによりボイストレーニングや筋肉のストレッチを楽しみながら行えます！</td>
</tr>
<tr>
<td>11:30 AM – 12:30 PM</td>
<td>ブレイン・オン・ダンス</td>
<td>ジョセファ・ドミンゴス</td>
<td>ブレイン・ダンス・フォーPDではグローサイズ・やる気・楽しい活動を兼ね備えた運動プログラムです。ラテン音楽のリズムに合わせて楽しく動きます。</td>
</tr>
<tr>
<td>1:00 – 2:00 PM</td>
<td>PD ムーブメント・ラボ 協賛：大塚製薬</td>
<td>バラマ・クイン 通訳：高橋裕秀</td>
<td>希望のダンスの動き、素晴らしい音楽、そして実用的なクイーニング戦略を使って、私たちを体に挑戦し、私たちの期待に応じ、そして私たちの精神を高めます。</td>
</tr>
<tr>
<td>2:30 – 3:30 PM</td>
<td>PD フィットネス</td>
<td>布袋田 沙織</td>
<td>バランスと体幹コントロール、手足の動き、関節の可動域、筋肉への刺激、認知機能コントロールなどに重点を置いています。どなたでも参加できます。音楽あり、笑いありの楽しいプログラムです。</td>
</tr>
<tr>
<td>4:00 – 5:00 PM</td>
<td>ロックステディ・ボクシング:パーキンソン病にパンチ！</td>
<td>坂井 美穂</td>
<td>アメリカ発！10年の実績をもつ、パーキンソン病に立ち向かう為のボクシングエクササイズ（打ち合いはありません。）ストレッチ、筋力、持久力、反射やコグニサイズを含んだ楽しいグループプログラムです。仲間とともに楽しく盛り上がりましょう!!</td>
</tr>
</tbody>
</table>

### 6月7日 金曜日

<table>
<thead>
<tr>
<th>時間</th>
<th>活動項目</th>
<th>演者</th>
<th>説明</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:30 AM</td>
<td>パーキンソン病の為の太極拳</td>
<td>白井 宣子</td>
<td>太極拳の基礎を学び、自分の心と身体を知ることで日々の生活での動きを良くしましょう。</td>
</tr>
<tr>
<td>9:45 – 10:45 AM</td>
<td>PD ムーブメント・ラボ 協賛：大塚製薬</td>
<td>バラマ・クイン 通訳：高橋裕秀</td>
<td>ダンスや実用的で動きを用いることで、出来ないと思っていた動きが出来るようになります。ここでは心と身体に挑戦します。</td>
</tr>
<tr>
<td>11:15 AM – 12:15 PM</td>
<td>PD フィットネス</td>
<td>布袋田 沙織</td>
<td>バランスと体幹コントロール、手足の動き、関節の可動域、筋肉への刺激、認知機能コントロールなどを含むプログラムです。音楽あり、笑いありの楽しいプログラムです。</td>
</tr>
<tr>
<td>12:45 – 2:00 PM</td>
<td>ダンス・フォーPD</td>
<td>ディビット・レッサール</td>
<td>世界的に有名なマーク・モリス・ダンスグループでも絶賛された研究データに基づく国際的なダンスプログラム。パーキンソン病患者・家族が楽しみながら効果を実感出来る内容です。ダンス経験は必要ありません。創始者のディビット・レッサール氏とスペシャルゲストを招いてのクラスは楽しく、創造的で刺激的。リフレッシュ出来る運動プログラムです。</td>
</tr>
<tr>
<td>2:15 – 3:15 PM</td>
<td>ドーパフィット:パーキンソン病の為の高負荷インターバル運動（PHITT）プログラム</td>
<td>チャット・モイヤー</td>
<td>ドーパフィット:パーキンソン病の特徴に配慮された高負荷（心拍数をあげる）インターバルトレーニング（PHITT）。アメリカ発パーキンソン病患者の為の運動プログラムです。ボクシング、筋力トレーニング、有酸素運動、間節運動などを含んでいます。その効果を是非体験してください。</td>
</tr>
<tr>
<td>3:45 – 4:45 PM</td>
<td>ザ・トライアド: 発声、動きと認知機能</td>
<td>ジョン・ディーヴン  ジョセファ・ドミンゴス</td>
<td>ボイストレーニングとグローサイズを兼ね備えドバイオプログラムになっています。</td>
</tr>
</tbody>
</table>
介護者の為の憩いの場
協賛: アコルダ・セラピューティクス社、バイオジェン社、大塚製薬株式会社

このラウンジは、パーキンソン病患者の家族や介護者の皆様にご参加いただけます。毎日9AMから5PMの時間はどなたでもご自由にご利用いただけます。このスペースで他の方々と話ししたり、リラックスしたりと気軽にご利用下さい。日本人スタッフが居ます。

### 6月5日 水曜日

<table>
<thead>
<tr>
<th>時間</th>
<th>活動項目</th>
<th>演者</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 10:30 AM</td>
<td>若年性パーキンソン病患者の家族・介護者の会：</td>
<td>ケイト・マクドウェル (ニュージーランド) イレイン・ブック (カナダ)</td>
</tr>
<tr>
<td></td>
<td>(英語のみ)</td>
<td></td>
</tr>
<tr>
<td>11:00 AM – 12:00 PM</td>
<td>日本語サポートグループ：&quot;仲間を作ろう（自由参加）&quot;</td>
<td>棟竹 日奈 山本 澄子</td>
</tr>
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<td></td>
<td></td>
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<tr>
<td>12:30 – 1:30 PM</td>
<td>英語サポートグループ：&quot;仲間を作ろう―サポートグループ（自由参加）&quot;</td>
<td>イレイン・ブック (カナダ)</td>
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<td></td>
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</tr>
<tr>
<td>2:30 – 3:30 PM</td>
<td>無視するか、今後の計画を立てるのか…人生の分岐点での決断 (英語のみ)</td>
<td>リサ・カブスト (アメリカ)</td>
</tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>ビデオ鑑賞：介護者の日々（日本語字幕付き）</td>
<td></td>
</tr>
</tbody>
</table>

### 6月6日 木曜日

<table>
<thead>
<tr>
<th>時間</th>
<th>活動項目</th>
<th>演者</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 10:30 AM</td>
<td>診断されたばかりの介護者の会：</td>
<td>シェリー・ホーグ (カナダ) イレイン・ブック (カナダ)</td>
</tr>
<tr>
<td></td>
<td>(英語のみ)</td>
<td></td>
</tr>
<tr>
<td>11:00 AM – 12:00 PM</td>
<td>日本人の介護者カフェ</td>
<td>荻野 裕 花井 嶋紀子</td>
</tr>
<tr>
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<td></td>
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</tr>
<tr>
<td>12:30 – 1:30 PM</td>
<td>英語サポートグループ：&quot;仲間を作ろう―サポートグループ（自由参加）&quot;</td>
<td>リサ・カブスト (カナダ)</td>
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<tr>
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<td></td>
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</tr>
<tr>
<td>2:30 – 3:30 PM</td>
<td>日々のコミュニケーションの大切さ (英語のみ)</td>
<td>ゲイラ・ブラナー (イスラエル)</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>ビデオ鑑賞：介護者の日々（日本語字幕付き）</td>
<td></td>
</tr>
</tbody>
</table>

### 6月7日 金曜日

<table>
<thead>
<tr>
<th>時間</th>
<th>活動項目</th>
<th>演者</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 10:30 AM</td>
<td>後期パーキンソン病患者の会：</td>
<td>ジュリー・カーター (アメリカ)</td>
</tr>
<tr>
<td></td>
<td>(英語のみ)</td>
<td></td>
</tr>
<tr>
<td>12:00 – 1:30 PM</td>
<td>Poise(ポイズ)と共に: 介護者のための「心身をいたわり、整える方法」を伝えるセッションです。</td>
<td>英語： イレイン・ブック (カナダ) カブスト (アメリカ) 日本語： 棟竹 日奈</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>2:30 – 3:30 PM</td>
<td>不安、無関心、うつ病や認知問題などへの対応 (英語のみ)</td>
<td>ルーシー・ラチャンス (カナダ)</td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>ビデオ鑑賞：介護者の日々（日本語字幕付き）</td>
<td></td>
</tr>
</tbody>
</table>
Proud to partner in advocacy, education and research

Sunovion is a global biopharmaceutical company whose spirit of innovation is driven by the conviction that scientific excellence paired with meaningful advocacy and relevant education can improve lives. We are proud to sponsor the 2019 World Parkinson’s Congress to support innovation, education and advocacy for people living with Parkinson’s disease.

sunovion.com/littlebigthings.com
## プレコングレッス — コース Ⅰ

PC1 — PDの基礎：病気の流れ (CME)
場所：Annex 2

対象：PWP、介護人、パーキンソン病の介護の初心者

到着点：プログラムで詳述される重要な話題を参加者にしめつけてもらう。今後の予測とこの会を最大に活用する手段となるように。WPCの過去と同時にこの会の構成と成功に関わるPWPの役割を紹介する。

### 学習課題
1. パーキンソン病の基礎的な理解、原因、症状、治療の研究も含めて、2. PDと診断されたあとでのケアとリハビリの概要、3. PDの将来的治療の理解、4. WPCの経験を最大に生かす方法

### PROGRAM

<table>
<thead>
<tr>
<th>時間</th>
<th>イベント</th>
<th>司会</th>
<th>演者</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 AM</td>
<td>歓迎式典</td>
<td>A.C.ウールナフ (アメリカ)</td>
<td></td>
</tr>
<tr>
<td>9:05 AM</td>
<td>提唱ビラミッド：患者の束縛と交流</td>
<td>ソーニャ・マーサー (カナダ)</td>
<td></td>
</tr>
<tr>
<td>9:30 AM</td>
<td>PDの原因</td>
<td>パリー・スノー (ニュージーランド)</td>
<td></td>
</tr>
<tr>
<td>9:55 AM</td>
<td>PDの臨床症状</td>
<td>ジェン・ヤン・リン (マレーシア)</td>
<td></td>
</tr>
<tr>
<td>10:20 AM</td>
<td>演者との質疑応答</td>
<td>ソーニャ・マーサー (カナダ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>パネリスト：パリー・スノー (ニュージーランド)</td>
<td>ジェン・ヤン・リン (マレーシア)</td>
<td></td>
</tr>
<tr>
<td>10:35 AM</td>
<td>Pamelaと一緒に動こう</td>
<td>パメラ・クイン (アメリカ)</td>
<td></td>
</tr>
<tr>
<td>10:45 AM</td>
<td>休憩</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:15 AM</td>
<td>内服治療と外科治療のこれまで</td>
<td>大山 彰光 (日本)</td>
<td></td>
</tr>
<tr>
<td>11:40 AM</td>
<td>最新の研究</td>
<td>高橋 良輔 (日本)</td>
<td></td>
</tr>
<tr>
<td>12:05 PM</td>
<td>質疑応答</td>
<td>ジョン・スタンフォード (イギリス)</td>
<td></td>
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<tr>
<td></td>
<td>パネリスト：高橋 良輔 (日本)</td>
<td>大山 彰光 (日本)</td>
<td></td>
</tr>
<tr>
<td>12:20 PM</td>
<td>美穂と一緒に動こう</td>
<td>坂井 美穂</td>
<td></td>
</tr>
<tr>
<td>12:35 PM</td>
<td>餐食</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:45 PM</td>
<td>PDと生きるためのヒントとテクニック、内服治療のその先</td>
<td>A.C.ウールナフ (アメリカ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>演者：ハーネカ・カーフ (オランダ)</td>
<td>ハーネカ・カーフ (オランダ)</td>
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<tr>
<td></td>
<td>パネリスト：リン・ロチェスター (イギリス)</td>
<td>ローリー・ミシェリー (アメリカ)</td>
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<tr>
<td></td>
<td>会話と睡眠</td>
<td>リサ・カプスト (アメリカ)</td>
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<tr>
<td></td>
<td>バランスと歩行</td>
<td>ビクター・マコンペイ (オーストラリア)</td>
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<td></td>
<td>未覚と便秘</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>認知機能訓練、生活をよくする工夫と自己管理</td>
<td></td>
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<tr>
<td></td>
<td>障害と向き合い、逆境を克服する：家族、仕事、結婚</td>
<td></td>
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<tr>
<td>3:00 PM</td>
<td>休憩</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3:45 PM</td>
<td>診断を超えて立ち直る</td>
<td>キャット・ヒル (アメリカ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>演者：ナンシー・ビート (アメリカ)</td>
<td>ナンシー・ビート (アメリカ)</td>
<td></td>
</tr>
<tr>
<td>4:15 PM</td>
<td>WPC2019の最大活用</td>
<td>ジョン・スタンフォード (イギリス)</td>
<td></td>
</tr>
</tbody>
</table>

### 注記

- **開会式** > 5:45 — 6:45 PM (Main Hall)
- **歓迎会：ウェルカムレセプション** > 7:00 — 9:00 PM
プレコンGRESS — コース 5

WPC 2019
KYOTO, JAPAN

PC5 – 日本企業スポンサーセミナー（NON-CME）
場所：Room A

対象：医療関係者、このセッションはCME単位の対象にはなりません。

到達点：現在製薬業界で働いている人やそれに関係する人のためのパーキソン病の現状と科学、研究およびケアについてのフォーラム。

学習課題：1. 世界中で行われている最新の研究や治療法をさらに知る事でパーキソン病の理解をより深める；2. PD治療は複雑なため包括的なアプローチの必要性を理解し；3. パーキソン病の今後の治療法を理解する；4. パーキソン病患者の現状を知り今後更にどのような事が必要となるのかを明確にする。

<table>
<thead>
<tr>
<th>時間</th>
<th>プログラム</th>
<th>演者</th>
<th>共催</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:45 AM</td>
<td>エビデンスに基づくディレクショナルリークのプログラム/ 効率的なディレクショナルリークのプログラム</td>
<td>上利 崇 倉敷平成病院 ニューロモデュレーションセンター</td>
<td>アポロ社</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>休憩</td>
<td>Stefan J. Groiss デュッセルドルフ大学 脳神経内科</td>
<td></td>
</tr>
<tr>
<td>11:15 AM</td>
<td>超高齢社会におけるパーキソン病のマネジメントを考える</td>
<td>服部 信孝 順天堂大学大学院医学研究科 神経学 教授</td>
<td>野川 茂 東海大学医学部付属八王子病院 副院長 神経内科教授</td>
</tr>
<tr>
<td>12:15 AM</td>
<td>ランチ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00 PM</td>
<td>認知症と神経変性疾患</td>
<td>前田 哲也 岩手医科大学医学部内科学講座 神経内科・老年科分野教授</td>
<td>野川 茂 東海大学医学部付属八王子病院 副院長 神経内科教授</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>PDのリハビリテーション</td>
<td>菊地 誠志 京都大学大学院医学研究科 臨床神経学 教授</td>
<td>中馬 孝容 滋賀県立総合病院 リハビリテーション科 科長</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>休憩</td>
<td></td>
<td>濱田 晋輔 北栄会 神経内科病院 理事長</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>パーキソン病の症候とその背景にある 病態：in vivo imagingによる解明</td>
<td>澤本伸克 京都大学大学院医学研究科 人間健康科学系専攻 近未来型人間健康科学融合ユニット 教授</td>
<td></td>
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</tbody>
</table>

開会式 > 5:45 — 6:45 PM (Main Hall)

歓迎会：ウェルカムレセプション > 7:00 — 9:00 PM
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<th>12:00 – 1:00 PM</th>
<th>CORPORATE LUNCH SESSIONS</th>
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<tbody>
<tr>
<td>WSL – SPECIAL LECTURE</td>
<td>12:00 – 1:00 PM</td>
</tr>
<tr>
<td>場所：さくら</td>
<td>～自分でいかない生活を求めて～ 進行期パーキンソン病と共に</td>
</tr>
<tr>
<td>司会：ロジャー・バーカー （イギリス）</td>
<td>場所: Room A</td>
</tr>
<tr>
<td>日本のパーキンソン病研究の歴史：過去、現在、未来</td>
<td>司会：服部 信孝  演者：渡辺 宏久</td>
</tr>
<tr>
<td>演者：永津 嘉治 (日本)</td>
<td>医療関係者のみ一日語セッション</td>
</tr>
<tr>
<td>ミトコンドリア異常はパーキンソン病の病因なのか</td>
<td>Supported by Sumitomo Dainippon Pharma Co., Ltd.</td>
</tr>
<tr>
<td>演者：水野美邦 (日本)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>見て良く分かるMDS-PD診断基準2015</td>
</tr>
<tr>
<td></td>
<td>場所: Annex 2</td>
</tr>
<tr>
<td></td>
<td>パーキンソン病の患者さんのニーズにそったリハビリテーション</td>
</tr>
<tr>
<td></td>
<td>演者：中馬 孝容先生 (日本)</td>
</tr>
<tr>
<td></td>
<td>パーキンソン病のマネジメントとリハビリテーション ～音楽療法を含めて～</td>
</tr>
<tr>
<td></td>
<td>演者：林 明伸先生 (日本)</td>
</tr>
<tr>
<td></td>
<td>どなたでも参加可能一日語セッション</td>
</tr>
<tr>
<td></td>
<td>Supported by Takeda Pharmaceutical Company Limited, Japan Medical Office</td>
</tr>
</tbody>
</table>
日本語トラックプログラム
1:30 — 3:00 PM

JP1 – 場所：Room A
司会： 渡辺宏久（藤田医科大学医学部脳神経内科　主任教授）
司会： 大山彦光（順天堂大学 脳神経内科　准教授）
テーマ：最新のパーキンソン病の診断と治療
トーク1・・・パーキンソン病の新しい診断（20分）
演者： 滝本伸克（京都大学大学院医学研究科　教授）
トーク2・・・パーキンソン病の最新治療（20分）
演者： 下 泰司（順天堂大学脳神経内科）
質疑応答（5分）

WRT1 – 場所：Rooms I, J, K
アメリカン・パーキンソン病協会スパノサー
テーマ6到了遺伝的視点から見たパーキンソン病原因遺伝子LRKK2の機能に対する新たな見解
マット・ファラー（カナダ）
通訳：寺尾元
テーマ7：αスヌクレインとは何か—その生物学的特性
ロナルド・メルキ（フランス）
通訳：内藤淳
テーマ10：PDの為のヴィストレーニング
ゲーラ・フリーマン（アメリカ）
通訳：細江 弥生
テーマ12：患者と研究者二つの世界はどうすれば手を取り合えるか？
サイモン・スット（イギリス）
A.C.ウエルナ（アメリカ）
通訳：上戸歩

ラウンドディスカッション
1:30 — 3:00 PM

JP2 – 場所：Room A
テーマ：DBS及びdevice aided therapy
（パネルディスカッション）
司会： 水野敏樹（京都府立医科大学 神経内科教授）
服部信孝（順天堂大学脳神経内科　教授）
演者： 梅村淳（順天堂大学運動障害疾患病態研究治療講座）（15分）
戸田弘紀（福井県立病院脳神経内科）（15分）
木村浩子（横浜市立大学附属市民総合医療センター神経内科）（15分）
大山彦光（順天堂大学脳神経内科）（15分）
伊藤聡一郎（患者、全国パーキンソン病友会神奈川県支部）（5分）
伊藤克義（患者、全国パーキンソン病友会京都府支部・支部長）（5分）

ディスカッション（20分）

WRT2 – 場所：Rooms I, J, K
Adamasスパノサー
テーマ2：パーキンソン病の認知機能を守る治療プログラム
武田 謙（日本）
テーマ5：細胞移植治療の臨床応用
森実飛鳥（日本）
テーマ6：パーキンソン病（PD）での選択的な神経細胞死における細胞の間の役割
デイトッド サルザー（アメリカ合衆国）
通訳：山下真弥
テーマ9：パーキンソン病におけるAシンクレインとそれに関わる免疫反応について
アシリー・クムズ（アメリカ）
通訳：喜多村村平
テーマ12：ジスキャネリアへの対応
富山県

3:30 — 5:00 PM

WWU – パネリストによる本日のまとめ > 5:15 — 6:30 PM

場所：メインホール
演者： マイク・タグリティア（アメリカ）
パネリスト： ジェニファー・ゴールドマン（アメリカ）、 アンジェラ・チェンシーニャン（スウェーデン）、 サラ・リガー（スウェーデン）、 バロ・カラブレーシ（イタリア）、 高橋良輔（日本）

*マークには日本語でのサポートあり
## 最新トピック > 8:00 — 9:00 AM

場所: メインホール
未確定: 提出された要旨に基づく

アメリカン・パーキンソン病協会スポンサー

## 授賞式 > 9:00 — 9:30 AM

場所: メインホール
受賞者: TBA: 未確定

## モーニングセミナー > 9:30 — 11:30 AM

TPL – PLENARY
場所: メインホール

オーダーメイド医療へと向かっているのか？

司会: エディエン・ヒルシュ (フランス)
司会: 高橋良輔 (日本)

議題1: パーキンソン病の異質性について
演者: コニー・マラス (カナダ)

議題2: 遺伝性パーキンソン病において今後の治療にどう影響をもたらすのか？
演者: アンソニー・シャビラ (イギリス)

議題3: パーキンソン病治療のための新しい治験
演者: オリバー・ラスコー (フランス)

議題4: パーキンソン病遺伝子を持ちながら生きるとは？
演者: ベンジャミン・ステッチャー (カナダ)

コース目標: 1. 単独でのパーキンソン病バイオマーカーがないので、臨床分析や遺伝など様々な症状を認識する: 2. パーキンソン病特有の症状に作用する可能性のある、特定遺伝子による最新の研究を学ぶ: 3. 実用的な研究のためにパーキンソン病を楽に症状が進行し、運動症状、非運動症状、異常がメイシンに影響を及ぼす。若年性などグループ分けのできる特有の研究でその研究の方法を学ぶ: 4.神経疾患遺伝子を持つよう生きる事がどのような事なのか、その事実により今後のライフプランから日々の生活までどう影響するのか、臨床研究などに参加する事が今後の研究にどう役立つのかなどの説明

## 昼食・ポスターベスト > 11:30 AM — 1:30 PM

### 特別講演

**12:00 - 1:00 PM**

TSL – SPECIAL LECTURE
場所: さくら

パーキンソン病と上手に付き合う: その秘密は？

司会: ラジャ・バーナー (アメリカ)
パネリスト: オモト・トーマス (イギリス)
岡田 芳子 (日本)
エマ・ラートン (イギリス)
エリザベス・イリナ (デンマーク)
ペンジェミン・ステッチャー (カナダ)

### CORPORATE LUNCH SESSIONS

当セミナーは、HCP (医療従事者）とパーキンソン病患者さんのより良いコミュニケーションについてそれぞれの視点から議論する機会としています。

場所: Room A
司会: 柏原 健一
演者: 望月 秀樹、大江田 知子、鈴木 としのぶ、片山 靖浩

医療関係者のみ一日本語セッション
Supported by AbbVie GK

パーキンソン病におけるウェアラブルテクノロジーを用いた定量的評価

場所: Annex 2
司会: 宇川 義一
演者: ルルロン ビダヤシリ

医療関係者のみ一日本語セッション
Supported by Takeda Pharmaceutical Company Limited, Japan Medical Office
KYOTO, JAPAN

#WPC2019 @worldpdcongress

##ラウンドディスカッション > 1:30 — 3:00 PM

<table>
<thead>
<tr>
<th>TRT1-</th>
<th>場所: Rooms I, J, K</th>
</tr>
</thead>
<tbody>
<tr>
<td>テーブル1: 「若年発症性パーキンソン病との手手な付き合い方」</td>
<td>テーブル3: 「パーキンソン病は栄養素（食物のみならず環境、社会性を含む）で緩和される証拠はあるのか？」</td>
</tr>
<tr>
<td>チーム: ヘイグ(カナダ)</td>
<td>ロリー・ミッシャリー(アメリカ)</td>
</tr>
<tr>
<td>通訳: 平井将隆</td>
<td>通訳: 津野明美</td>
</tr>
</tbody>
</table>

##ラウンドディスカッション > 3:30 — 5:00 PM

<table>
<thead>
<tr>
<th>TRT2-</th>
<th>場所: Rooms I, J, K</th>
</tr>
</thead>
<tbody>
<tr>
<td>テーブル2: iPS細胞とパーキンソン病にとって2019年はどのように一年になるか</td>
<td>テーブル5: パーキンソン病における痛みに対する治療の探求と臨床試験</td>
</tr>
<tr>
<td>チーム: 高橋(日本)</td>
<td>オム・ジェワン(韓国)</td>
</tr>
<tr>
<td>通訳: 中西令</td>
<td></td>
</tr>
<tr>
<td>テーブル3: パーキンソン病になれる人を予測する</td>
<td>テーブル6: パーキンソン病の多様性—それが持つ意味と重要性—</td>
</tr>
<tr>
<td>チーム: イザベル・アルヌルフ (フランス)</td>
<td>コニー・マラス (カナダ)</td>
</tr>
<tr>
<td>通訳: 中川隆太郎</td>
<td></td>
</tr>
<tr>
<td>テーブル4: パーキンソンに注ぐ光：遺伝学による大脳基底部の活動制御</td>
<td>テーブル7: 若年性パーキンソン病と共に生きる～楽観的にバランスよく仕事・育てを乗り切る方法～</td>
</tr>
<tr>
<td>チーム: ステラ・ババ (アメリカ)</td>
<td>レベッカ・ミラー (アメリカ)</td>
</tr>
<tr>
<td>通訳: 岡本佳奈子</td>
<td></td>
</tr>
</tbody>
</table>

##TWU - パネリストによる本日のまとめ > 5:15 — 6:30 PM

場所: メインホール

演者: セルジ・ブレゾドスキー (アメリカ)

パネリスト: ティム・アンダーソン (ニュージーランド) 、ロジャー・バーカー (イギリス) 、ジュリー・カーター (アメリカ) 、アンソニー・シャピラ (イギリス) 、キャロライン・スー (オーストラリア)
最新トピック > 8:00 — 9:00 AM
場所：メインホール
未確定：提出された要旨に基づく

授賞式 > 9:00 — 9:30 AM
場所：メインホール
受賞者：未確定

モーニングセミナー > 9:30 — 11:30 AM
FPL - PLENARY
場所：メインホール
パーキンソン病はただの脳の病気だけではない！
司会：望月秀樹（日本）
司会：ロジャー・バーカー（イギリス）
議題1：新しい生き方：様々な問題に対してどのように工夫しながら対応していくか
演者：ヘザー・ケネディ（アメリカ）
議題2：パーキンソン病における非運動症状問題について
演者：ジェフリー・コードワー（アメリカ）
議題3：パーキンソン病は「脳」以外の場所から始まっている？
演者：パー・ボーガマー（デンマーク）
議題4：パーキンソン病で起こる非運動症状への対処法
演者：シェン・ヤン・リン（マレーシア）

昼食・ポスター発表 > 11:30 AM — 1:30 PM
特別講演 > 12:00 — 1:00 PM
12:00 — 1:00 PM
FSL - SPECIAL LECTURE
場所：メインホール
iPS細胞の現状と医療応用に向けた取り組み
司会：水野美邦（日本）
演者：山中伸弥（日本） — 2012年度のノーベル生理学・医学賞受賞者
## FINAL PROGRAM

### DAY 3

####ラウンドディスカッション > 1:30 — 3:00 PM

<table>
<thead>
<tr>
<th>テーブル4</th>
<th>臨床試験の代用としての診療データ活用</th>
</tr>
</thead>
<tbody>
<tr>
<td>テーブル5</td>
<td>パーキンソン病の発症原因解明に向けた幹細胞、オルガノイド（ミニ臓器）活用</td>
</tr>
<tr>
<td>テーブル7</td>
<td>一病態生理の更な理解を深めるために遺伝学が担う役割</td>
</tr>
</tbody>
</table>

### テーブル4:
パネリストによる本日のまとめ > 5:15 — 6:15 PM

<table>
<thead>
<tr>
<th>テーブル4</th>
<th>アーネスト・アレナス（スウェーデン）</th>
</tr>
</thead>
<tbody>
<tr>
<td>テーブル5</td>
<td>ホアキン・フェレイラ（ポルトガル）</td>
</tr>
<tr>
<td>テーブル7</td>
<td>ジョン・ハーディー（イギリス）</td>
</tr>
</tbody>
</table>

####ラウンドディスカッション > 3:30 — 5:00 PM

<table>
<thead>
<tr>
<th>テーブル1</th>
<th>パーキンソン病動物モデルでの大脳基底核ネットワークにおける電気信号異常について</th>
</tr>
</thead>
<tbody>
<tr>
<td>テーブル5</td>
<td>パーキンソン病有酸素運動は効果なのか？</td>
</tr>
<tr>
<td>テーブル7</td>
<td>免疫系の老化と、脳の健康及びパーキンソン病へのその関連</td>
</tr>
</tbody>
</table>

### テーブル1:
南部篤（日本）

### テーブル5:
テリー・エルリスト（アメリカ）

### テーブル7:
坂井 美穂（日本）

####ラウンドディスカッション > 1:30 — 3:00 PM

<table>
<thead>
<tr>
<th>テーブル10</th>
<th>PINK1, Parkin, およびユビキチンシステム</th>
</tr>
</thead>
<tbody>
<tr>
<td>テーブル12</td>
<td>パーキンソン病診断後も前向きであり続ける</td>
</tr>
</tbody>
</table>

#### テーブル10:
松田憲之（日本）

#### テーブル12:
キャリン・スピルバーグ（オーストラリア）

#### FWU – パネリストによる本日のまとめ > 5:15 — 6:15 PM

<table>
<thead>
<tr>
<th>場所: Annex 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>演者: ジョン・ストーシ（カナダ）</td>
</tr>
</tbody>
</table>

パネリスト: テッド・ダウソン（アメリカ）、ホアキン・フェレイラ（ポルトガル）
スザンヌ・シュナイダー（ドイツ）、アンネ・ハンド（イギリス）、服部信孝（日本）

#### 閉会式 > 6:15 — 7:15 PM

#### レセプション > 7:15 — 8:15 PM

#WPC2019 @worldpdcongress
GENERAL INFORMATION

BADGES
Delegates must wear their badge at all times in the Convention Center.

- Health Professionals
- Non-health Professionals
- Accompanying Person
- Media
- Exhibitor Staff (floor only)
- Volunteers/Registration Staff

BANKING AND EXCHANGE FACILITIES
For currency exchange you will need to have your passport. Generally, weekday hours for banks are 9:00 AM – 3:00 PM or 5:00 PM, closed Saturdays and Sundays. You can also change currency at Post Offices or in department stores such as Takashimaya or Daimaru (procedures are often less laborious than in banks).

DISCLAIMER
All best efforts will be made to present the program as printed. However, the Congress hosts and secretariat reserve the right to alter or cancel, without prior notice, any arrangements, timetables, plans or other items relating directly or indirectly to the Congress, for any cause beyond its reasonable control. The Congress hosts and secretariat are not liable for any loss or inconvenience caused as a result of such alteration. In the event of cancellation of the Congress all pre-paid fees will be refunded in full. However, the Congress hosts and its agents are not liable for any loss or inconvenience caused as a result of such cancellation. Delegates are advised to take out their own travel insurance and to extend their policy to cover personal possessions as the Congress does not cover individuals against cancellation of bookings or theft or damage to belongings.

DRESS CODE
You may dress informally for the congress. The dress code for the social program and special events is also informal.

ELECTRICITY
The voltage in Japan is 100 volts AC. There are two possible frequencies: 50 hertz in Eastern Japan and 60 hertz in Western Japan.

EMERGENCIES & FIRST AID
Severe Medical Emergency: In case of severe medical emergency (requiring an ambulance), call 119 immediately. Give them essential details, including location, condition, gender and any other information regarding the patient. Then contact the Security Center by calling the 075-705-1311 (ext. 2271) or by contacting the staff on site so that they can help to guide the ambulance.

Earthquake: In case of JMA seismic intensity of 5-upper or above, an emergency message will be broadcast. Please follow the indications given by the staff and the emergency message.

Fire: In case of fire, an emergency message will be broadcast. Please follow the indications given by the staff and the emergency message.

EXHIBITION
<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Tuesday, June 4</td>
<td>7:00 – 9:00 PM</td>
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<tr>
<td>Wednesday, June 5</td>
<td>11:00 AM – 6:45 PM</td>
</tr>
<tr>
<td>Thursday, June 6</td>
<td>11:00 AM – 6:45 PM</td>
</tr>
<tr>
<td>Friday, June 7</td>
<td>11:00 AM – 2:00 PM</td>
</tr>
</tbody>
</table>

Location: The WPC 2019 will offer space in two exhibit halls, the Event Hall, and the New Hall. See floor plan, list of exhibitors and details on pages 116–118.
GENERAL INFORMATION

EXHIBIT HALL PASSPORT

The WPC Passport sponsors invite you to visit their booths to discover their products and services and to get your passport stamped for the drawing. One lucky winner will walk away with ¥10,000 (USD$100) at the end of each day of the exhibition, three winners in all! Raffles take place in the WPC Theater (Event Hall) at 6:30 PM on Wednesday and Thursday and in the Plenary Room at 6:00 PM on Friday.

FOOD SERVICES

Daily boxed lunches as well as tea and coffee during the official afternoon breaks are included in your registration fee. There will be lunch tables in the two exhibition halls of the Kyoto International Conference Center (Event Hall and New Hall). Light food and drinks will be served during the Opening Reception on June 4, the Music & Movement evening activity on June 6 and the Closing Remarks on June 7.

ICONS

Session Levels

- Crosstalk – Minimal or no scientific background required
- Moderate-level scientific sessions
- High-level scientific sessions

Session Type

- Basic Science
- Clinical Science
- Comprehensive Care

Language

- Simultaneous interpretation from English to Japanese
- Japanese track
- Ticketed event

INTERNET ACCESS

Free Wi-Fi is offered at the Kyoto International Conference Center during the congress.

LANGUAGE

The official language of the World Parkinson Congress is English. Simultaneous interpretation from English to Japanese will be available for morning sessions and the program will also include a special Japanese-language track each afternoon.

MAKING KYOTO PARKINSON READY

Did you know that we trained city members throughout Kyoto to welcome you to the city? We trained front of house staff, the convention center staff, airport staff, tour guides, and others to better understand Parkinson’s. This training has been done at every WPC since 2010 and is designed to help them prepare for welcoming you, but it’s also part of the WPC Legacy, leaving our mark behind well after we are gone by educating these community members to better understand Parkinson’s.

MAPS & FLOOR PLANS


MOBILE APP

The free WPC 2019 mobile app allows you to carry the WPC details on your smartphone or tablet, including program, general information, side activities, list of participants and the opportunity to exchange messages with fellow delegates. To download visit any App Stores and look for World Parkinson Congress 2019.

MOBILE PHONES AND DEVICES

Mobile phones must be switched off or muted in the session meeting rooms.
GENERAL INFORMATION

PHOTOGRAPHY AND VIDEO TAPING
Photography and videotaping are not permitted in any of the oral or poster sessions without the express permission of the relevant oral presenter or poster authors.

An official photographer/videographer will be on site to capture the essence of the congress for the WPC website and records. These images may be used for promotion of the World Parkinson Coalition.

POSTERS
Posters will be displayed throughout the congress dates in the exhibition (Event Hall and New Hall). Official poster sessions are scheduled on Wednesday and Thursday from 11:30 AM to 1:30 PM, at which time poster presenters will be stationed by their poster to discuss with delegates. See the poster session program for details on when posters will be hosted.

Poster set-up time is Tuesday from 8:00 AM to 5:00 PM and Wednesday 8:00 to 10:30 AM. All posters must be taken down by 3:00 PM on Friday.

POSTER TOURS
Poster tours will be held from 5:15 to 6:30 PM on Wednesday and Thursday evenings, June 5 and 6, at which times a select number of posters will be hosted. Sign up for tours in the New Hall, at the table near the first row of posters at the back of the hall (rows for posters P01.01 – P02.09).

MEDITATION, PRAYER AND QUIET ROOM
This room (Location: C2) will be open daily from 9:00 AM – 6:00 PM for a quiet space for resting, napping on a futon, or just sitting quietly in meditation or prayer.

REGISTRATION HOURS

At the lobby of Hotel Vischio
- Sunday, June 2: 10:00 AM – 8:00 PM
- Monday, June 3: 8:00 AM – 6:00 PM

In the lobby of Event Hall of the Kyoto International Conference Center (KICC)
- Tuesday, June 4: 7:00 AM – 8:00 PM
- Wednesday, June 5: 7:00 AM – 6:30 PM
- Thursday, June 6: 7:00 AM – 6:30 PM
- Friday, June 7: 7:00 AM – 3:30 PM

SMOKING POLICY
Please do not smoke on streets and sidewalks. Only smoke in designated outdoor areas. All indoor areas of the Convention Center are non-smoking.

SOCIAL MEDIA
Connect with other delegates and Congress organizers using social media:

- Like us on Facebook @World Parkinson Congress.
- “Follow” World Parkinson Coalition.
- Follow us on Twitter @WorldPDCongress
  The hashtag is #wpc2019.
- See the WPC community on Instagram @worldpdcongress.
  Join our photo feed by using hashtag #wpc2019.
- The WPC YouTube channel is WorldPDCongress.
All invited speakers can go to the Speaker Ready Room 157 where computers are available to invited speakers wishing to review or modify their presentation.

**Speaker Ready Room Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, June 3</td>
<td>3:00 PM – 7:00 PM</td>
</tr>
<tr>
<td>Tuesday, June 4</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Wednesday, June 5</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Thursday, June 6</td>
<td>7:00 AM – 6:00 PM</td>
</tr>
<tr>
<td>Friday, June 7</td>
<td>7:00 AM – 5:00 PM</td>
</tr>
</tbody>
</table>

The bus networks in Kyoto work very well. Tickets can be bought on the bus, only by cash. It is best to prepare your change before boarding. One bus ticket is ¥230 ($2 US, €1.84) if you stay within the city fare zone. If you go outside of the city fare zone, you will pay according to the distance (you will have to take a numbered ticket when you get in and a screen in the bus will broadcast your number and your fare). The bus stop for the Kyoto International Conference Center is Kokusaikaikan-eki-mae stop on the Kyoto City Bus and Kyoto Bus lines. It is located five minutes walk from the Kyoto ICC.

Most major cities in Japan have a subway network. In Kyoto, a ticket costs range from ¥170 ($1.53 US, €1.40) for 1 to 6 km, ¥200 ($1.80 US, €1.70) for 7 to 11 km, etc. Rates vary according to the companies. The subway station for the Kyoto International Conference Center is Kokusaikaikan Station on the Karasuma Subway Line. Take the Exit 4-2. It is located five minutes walk from the Kyoto ICC.

Even if taxi drivers do not always speak English, they are very helpful in working out how to get you to where you need to go. The invoice is delivered by an electronic box. Depending on the time of year, coverage varies from ¥400–700 approximately ($3.59–6.29 US, €3.21–5.61); the meter then increases from 2 km. All taxis accept cash and some of them accept credit card. It is better to check with the driver if your credit card is accepted before boarding.

The WPC leadership thanks the many volunteers who donated their time to help welcome the thousands of delegates who traveled from around the world to attend the WPC 2019. More than 100 volunteers from 19 countries prepared to welcome and support you. Please thank a volunteer when you see them in their blue shirts. They improve the WPC experience!

The WPC Store is located in the lobby of the Main Building and is open from 11:30 AM – 5:00 PM Wednesday through Friday. Stop by to pick up a WPC t-shirt, baseball hat, your very own Parky the Raccoon, or a handmade bracelet. One hundred percent of the store profits go into the WPC Travel Grants program to support junior investigators, clinicians, and people with PD to attend the next WPC.
WELLNESS WAY
Supported by Acorda Therapeutics, Biogen and Otsuka Pharmaceutical Co., Ltd
Support for Japanese-speaking delegates will be available in each space

Wellness Way is made up of the areas at the Congress that focus on taking care of oneself. Whether a person with Parkinson’s, care partner, or health professional, we all need to engage in self-care to ensure we are living our best. To help delegates achieve this goal, we offer spaces at the WPC where people can try a variety of exercises, massage therapies, networking and just resting peacefully. Be sure to make time during the WPC to visit these spaces so you are working your body as much as you work your mind!

RENEWAL ROOM
Made possible with support from Otsuka Pharmaceutical Co., Ltd
A place to get the blood moving, the space will offer a variety of classes to move the body, voice, and mind. Participate daily in a wide range of classes including: Yoga, Tai chi, Dance, Vocal training, Boxing and more!

MASSAGE & REIKI ROOM
A place to relax and unwind, this room will offer short complimentary massage and Reiki treatments on massage tables or massage chairs. Participants remained fully clothed.

MEDITATION, PRAYER & QUIET ROOM
This room will be open daily for a quiet space for resting, napping on a futon, or just sitting quietly in meditation or prayer.

CARE PARTNER LOUNGE
Made possible with support from Acadia
Back by popular demand, this room offers a safe space for care partners to meet and greet each other. Care partners will enjoy both support group space during lunch time and have a formal roundtable talk each day geared to care partners.

TABLE TENNIS ROOM
Made possible with support from Svenson Holdings
Join us in the table tennis room for some exercise, wellness, and friendship. Table tennis helps with balance, mobility, reflexes and is just plain fun to do!
# WEDNESDAY, JUNE 5

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:45 – 8:45 AM</td>
<td>Yoga: ‘Grounding to Rise’ for Stability and Mind/Body Connection</td>
<td>Aminta St. Onge</td>
<td>This Chair Yoga Session will introduce breathing and ‘grounding’ technique allowing for calming and centering as well as bring awareness of how slight adjustments can help with stability and balance. Session will end with short meditation. (Foot rolling and standing are optional.)</td>
</tr>
<tr>
<td>9:00 – 10:00 AM</td>
<td>The LOUD Crowd*</td>
<td>Jennifer Cody</td>
<td>Practice your daily SPEAK OUT® exercises with us in this fun and energizing group speech practice session!</td>
</tr>
<tr>
<td>10:30 – 11:30 AM</td>
<td>Rock Steady Boxing – Fighting back against Parkinson’s disease</td>
<td>Miho Sakai</td>
<td>Rock Steady Boxing empowers people with Parkinson’s to “fight back.” We will introduce participants to non-contact boxing-inspired exercise program.</td>
</tr>
<tr>
<td>11:45 AM – 12:45 PM</td>
<td>DopaFit: Parkinson’s High Intensity Interval Training (PHIIT)</td>
<td>Chad Moir</td>
<td>Come learn the benefits of exercise and Parkinson’s with DopaFit: Parkinson’s High Intensity Interval Training (PHIIT), a Parkinson’s specific exercise program based in the USA which consists of boxing, strength training, aerobic and mobility exercises.</td>
</tr>
<tr>
<td>1:15 – 2:30 PM</td>
<td>Dance for PD®</td>
<td>David Leventhal</td>
<td>Dance for PD® is the Mark Morris Dance Group’s acclaimed, research-backed global program that invites people with Parkinson’s and their families to experience the joys and benefits of dance—no experience necessary. Join founding teacher David Leventhal and special guest teaching artists to explore movement and music in ways that are refreshing, stimulating, creative and fun.</td>
</tr>
<tr>
<td>3:00 – 4:00 PM</td>
<td>The TRIAD – Voice, Movement &amp; Cognition</td>
<td>John Dean</td>
<td>The Triad – Voice, Movement &amp; Cognition integrated exercise program.</td>
</tr>
<tr>
<td>4:30 – 5:30 PM</td>
<td>Adapted Tango Class</td>
<td>Madeleine Hackney</td>
<td>Improve motor cognitive and psychosocial function through Argentine Tango dance. This class will include a full body warm-up, partnering exercises, rhythmic entrainment, modified tango steps and lots of fun dancing to the music. A partner is not necessary but bring a friend if you can who is willing to participate.</td>
</tr>
</tbody>
</table>

Interpreter: Rika Kobayashi
## THURSDAY, JUNE 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:30 AM</td>
<td>Keep Moving: Tai Chi Training for People with Parkinson’s</td>
<td>Mirko Lorenz</td>
<td>Keep Moving is based on Chinese martial arts, Tai Chi and created for people with Parkinson’s. It is good for balance, strength, relaxation and concentration and inner silence.</td>
</tr>
<tr>
<td>10:00 – 11:00 AM</td>
<td>Mighty Maestro!</td>
<td>Judith Spencer</td>
<td>Come and sing with Judi, WPC Choir Director and the Mighty Maestro! Stretch those singing muscles and have fun!</td>
</tr>
<tr>
<td>11:30 AM – 12:30 PM</td>
<td>Brain on Dance</td>
<td>Josefa Domingos</td>
<td>Brain on dance for PD – Bringing cognition, motivation and fun into physical activity while immersed in Latin rhythms.</td>
</tr>
</tbody>
</table>
| 1:00 – 2:00 PM  | PD Movement Lab  
Supported by Otsuka Pharmaceutical Co., Ltd | Pamela Quinn  
Interpreter: Hirohide Takahashi | Using a wide range of dance movement, wonderful music and practical cueing strategies, we challenge the body, defy expectations, and uplift our spirits. |
| 2:30 – 3:30 PM  | PD Fitness                                                               | Saori Hoteida                | PD fitness focuses on stability and trunk control, limb control, range of motion, stimulation to the muscles, accuracy, and speed. Everyone can participate in this fun program with lots of laughter and music. |
| 4:00 – 5:00 PM  | Rock Steady Boxing – Fighting back against Parkinson’s disease          | Miho Sakai                   | See previous session description.                                                                                                        |

## FRIDAY, JUNE 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 – 9:30 AM</td>
<td>Tai Chi for People with Parkinson’s</td>
<td>Noriko Shirai</td>
<td>Learn basic exercises based on Tai Chi. It improves your daily movements and enhances your mind-body awareness.</td>
</tr>
</tbody>
</table>
| 9:45 – 10:45 AM | PD Movement Lab  
Supported by Otsuka Pharmaceutical Co., Ltd | Pamela Quinn  
Interpreter: Hirohide Takahashi | See previous session description.                                                                                                        |
| 11:15 AM – 12:15 PM| PD Fitness                                                              | Saori Hoteida                | See previous session description.                                                                                                        |
| 12:45 – 2:00 PM | Dance for PD®                                                            | David Leventhal              | See previous session description.                                                                                                        |
| 2:15 – 3:15 PM  | DopaFit: Parkinson’s High Intensity Interval Training (PHIIT)            | Chad Moir                    | See previous session description.                                                                                                        |
| 3:45 – 4:45 PM  | The TRIAD – Voice, Movement & Cognition                                  | John Dean Josefa Domingos    | See previous session description.                                                                                                        |
CARE PARTNER LOUNGE SCHEDULE

All care partners & caregivers are welcome to enter and enjoy this space. Even when sessions are being held in a different language, the room itself is open to caregivers daily from 9:00 AM – 5:00 PM. Please come and enjoy the space, relax and meet other caregivers and partners.

### WEDNESDAY, JUNE 5

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 10:30 AM</td>
<td>YOPD Care partner group discussion (English only)</td>
<td>Kate McDowell (New Zealand)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elaine Book (Canada)</td>
</tr>
<tr>
<td>11:00 AM – 12:00 PM</td>
<td>Japanese support group</td>
<td>Hina Uetake (Japan)</td>
</tr>
<tr>
<td></td>
<td>“Creating Connections – an open support group”</td>
<td>Sumiko Yamamoto (Japan)</td>
</tr>
<tr>
<td>12:30 – 1:30 PM</td>
<td>English support group</td>
<td>Elaine Book (Canada)</td>
</tr>
<tr>
<td></td>
<td>“Creating connections – an open support group”</td>
<td></td>
</tr>
<tr>
<td>2:30 – 3:30 PM</td>
<td>Making decisions at the crossroads of care…procrastinator or planner</td>
<td>Lissa Kapust (USA)</td>
</tr>
<tr>
<td></td>
<td>(English only)</td>
<td></td>
</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>Video – Caregiver Journey</td>
<td></td>
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### THURSDAY, JUNE 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 10:30 AM</td>
<td>New Diagnosis Care partner group discussion (English only)</td>
<td>Sheryl Hague (Canada)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elaine Book (Canada)</td>
</tr>
<tr>
<td>11:00 AM – 12:00 PM</td>
<td>Japanese Caregiver Café</td>
<td>Yutaka Ogino (Japan)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Akiko Hanai (Japan)</td>
</tr>
<tr>
<td>12:30 – 1:30 PM</td>
<td>English support group</td>
<td>Lissa Kapust (Canada)</td>
</tr>
<tr>
<td></td>
<td>“Creating connections – an open support group”</td>
<td></td>
</tr>
<tr>
<td>2:30 – 3:30 PM</td>
<td>Maintaining intimate communication (English only)</td>
<td>Gila Bronner (Israel)</td>
</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>Video – Caregiver Journey</td>
<td></td>
</tr>
</tbody>
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### FRIDAY, JUNE 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 10:30 AM</td>
<td>Late Stage Parkinson’s group discussion (English only)</td>
<td>Julie Carter (USA)</td>
</tr>
<tr>
<td>12:00 – 1:30 PM</td>
<td>Partnering with “Poise” – A Self Care Session for Care Partners</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12:00 – 2:00 PM Focus group</td>
<td>English:</td>
</tr>
<tr>
<td></td>
<td>INVITATION ONLY</td>
<td>Elaine Book (Canada)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lissa Kapust (USA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Japanese:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hina Uetake (Japan)</td>
</tr>
<tr>
<td>2:30 – 3:30 PM</td>
<td>Dealing with anxiety, apathy, depression and cognitive change</td>
<td>Lucie Lachance (Canada)</td>
</tr>
<tr>
<td></td>
<td>(English only)</td>
<td></td>
</tr>
<tr>
<td>4:00 – 4:30 PM</td>
<td>Video – Caregiver Journey</td>
<td></td>
</tr>
</tbody>
</table>
Table tennis, a popular sport worldwide, is great exercise for people with Parkinson’s and others. It helps increase your heart beat, while forcing participants to focus on balance, shifting from one leg to the other, all while working on eye-hand coordination to return the volley.

We invite you to this room to play a game of table tennis, challenge your doctor or physical therapist to a match or just have fun and give this exercise a try for the first time.

### WEDNESDAY, JUNE 5 & THURSDAY, JUNE 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 – 5:00 PM</td>
<td>Table tennis volleys and games</td>
<td>Masaaki Sano</td>
</tr>
</tbody>
</table>

### WPC THEATER

Open to all, the WPC Theater is a lively space for special performances and talks. When performances are not taking place, videos from the WPC Video Competition will run continuously on the screen for delegates’ viewing pleasure.

#### WEDNESDAY, JUNE 5

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 – 1:00 PM</td>
<td>Music &amp; Dance: Live performances</td>
<td>See details in theater</td>
</tr>
<tr>
<td>5:30 – 6:00 PM</td>
<td>Technology: How a wearable technology designed by Not Impossible could counter the symptoms of PD</td>
<td>Not Impossible Labs (USA)</td>
</tr>
</tbody>
</table>

#### THURSDAY, JUNE 6

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 – 1:00 PM</td>
<td>Music &amp; Dance: Live performances</td>
<td>See details in theater</td>
</tr>
<tr>
<td>5:30 – 6:30 PM</td>
<td>Movie: Kinetics</td>
<td>Ben Wylie (UK)</td>
</tr>
</tbody>
</table>

#### FRIDAY, JUNE 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter</th>
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</thead>
<tbody>
<tr>
<td>12:00 – 1:00 PM</td>
<td>Music &amp; Dance: Live performances</td>
<td>See details in theater</td>
</tr>
<tr>
<td>1:05 – 1:25 PM</td>
<td>Technology: TAT-ON: the solution for an objective evaluation of PD motor symptoms. A three-day real-time experience in Kyoto</td>
<td>Sense4Care (Spain)</td>
</tr>
</tbody>
</table>
We are pleased to thank the volunteer massage and Reiki masters who are donating their time to ensure the WPC delegates get the support they need during the WPC. Sign up for a short massage outside Room 103B. Thank you to the following companies and therapists:

**Hyogo Pref. Practitioner Assn.**
Sachiko Fujiwara  
Kazuteru Sasaki  
Toshio Yamada  
Miho Kihatsu

**Fureasu Co., Ltd.**
Eishou Kawakami  
Wosamu Nakanishi  
Kasumi Nara  
Hiroshi Kanda  
Asami Uchida  
Satoko Jinn  
Hiroshi Aruga  
Satoshi Miyazaki

**Hyougo Pref. Practitioner Assn.**
Hiroyuki Kainuma  
Satoshi Kimura

**Visiting Massage Re Fine**
Yasutoshi Yokotani  
Fumi Hatano  
Yusuke Wakabayashi

**Healing Land Reiki**
Lena Takahashi  
Muniqui Muhammad

**Araya Clinic**
Toshio Tanaka

**Mise Acupuncture**
Kouji Mise

**Yukawa Acupuncture**
Tohru Yukawa

**Wakuru Holistic Massage**
Masako Knayama

**A7 NeuroFit**
Sachiko Tanaka  
Hiroko Kayahashi  
Miwa Irie  
Kieko Nou

**Hourenka Acupuncture**
Nobuhiro Yoshida

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**DANCE for PD**

Fostering transformative dance experiences for people with Parkinson’s in 25 countries through global partnerships, training, and research.

For information, media resources, and class listings:  
www.danceforpd.org

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**Therapeutic Advances in Neurological Disorders**

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Impact Factor: 4.750
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Article Processing Charge: $2,000 USD

Contact the Managing Editor at neuro@sagepub.co.uk
Welcome to the WPC 2019 Art Walk. Creativity plays a major part in the world of Parkinson’s, from painting and singing, to dance, music and beyond. Creativity lifts spirits, inspires people and in some cases, helps soften or diminish symptoms, even if just temporarily. This is why we celebrate creativity at the WPC.

Please explore the art exhibits we have on display throughout the convention center. Stop by the WPC Theater to enjoy some live music and dance, view the photos from the Face of Parkinson’s photo exhibit, be mesmerized by the thousands of folded cranes carrying messages of hope. Don’t forget to add a poem or two to the Haiku display.

If you love ceramics, be sure to visit the Rigor Vitae exhibit. Pieces are for sale and half of all sales will go into the WPC Travel Grants program for the next WPC.

Let the art move you!

Designed and created by three people living with young onset Parkinson’s this visually stimulating and carefully created art installation really soars.

More than 500 volunteers worked 1,800 hours to fold and string 15,000 cranes to umbrellas. **Messages of hope and cranes** came from 39 countries and have raised awareness of Parkinson’s and inspired many people around the world to fold their first origami crane.

Haiku is an ancient form of poetry originating in Japan in the 17th century. Started by the poems submitted to the **WPC Haiku competition** in 2018, this project took on a life of its own. Help us grow this exhibit!

In your congress bag, or at the exhibit area, you’ll find cards and pens to write your own poem to add to the haiku exhibit. All languages welcome!
The tremendous fire of the kiln transforms clay into stone, making a flexible thing become firm, impervious to water, weather, and time.

Tina Gebhart is an accomplished potter who has Early Onset Parkinson’s. As she creates her work, the artist and the artwork begin to merge, both finding ways to be simultaneously fluid and rigid. Her pots reference wares of Mino (Japan), Koryo (Korea), Ironstone (USA), as well as Mashiko and Joman corded pottery (Japan).

The PD Crane Dance Project was inspired by the Soaring with Hope art installation. This project invited people from around the world to contribute creative movement pieces. With more than 50 dance groups from 17 countries with over 1700 dancers, it has become the world’s largest PD Dance Project.

The compilation video knits together over 153 two-minute dances inspired by origami cranes. These dances are very creative, inspirational and uplifting, giving one a sense of Hope through dance.

Started at the WPC 2016, this exhibit captures the images of 63 individuals from 15 countries who represent the members of the community. They are people with Parkinson’s, family members, caregivers, doctors, researchers, nurses, occupational therapists and more.

WPC was founded on the premise that we will succeed in finding better treatments and a cure when we sit together around a table rather than in silos. This photo exhibit captures faces of the community and inspires with stories about those who are part of the global Parkinson’s team.

Daily musical and movement performances can be found in the WPC Theater in the Event Hall.

Artists from around the world will be taking the stage to showcase the talent in the Parkinson’s community and the power of music, song, and movement.
The **WPC Award for Distinguished Contribution to the Parkinson Community** was created to honor those whose efforts best embody the goals of the World Parkinson Congress. While those being honored with this award each served the Parkinson’s community differently, they have all made great impact beyond their corner of the globe. Whether it was: to expand collaboration on basic and clinical research that engaged patients; to create new and innovative treatment options; to inspire community building and engagement by people with Parkinson’s and care partners; or to engage in specific advocacy efforts to impact the Parkinson community.

Winners of the **WPC Award for Distinguished Contribution to the Parkinson Community** in 2019 are Dr. Soania Mathur, Dr. Lorraine Ramig, and Ms. Susanna Lindvall.

**SOANIA MATHUR, BSC, MD, CCFP**

Dr. Soania Mathur is a family physician living outside of Toronto, Ontario, Canada who had to resign her practice as a result of her Young Onset Parkinson’s Disease a full twelve years after her diagnosis at age 27. Now she is a dedicated speaker, writer, educator and Parkinson’s advocate. She speaks passionately about the challenges of adjusting physically and emotionally and the coping strategies available to patients to take charge of their lives, to live well with Parkinson’s.

**LORRAINE (LORI) RAMIG, PhD, SLP-CCC**

Dr. Ramig is a Research Professor at the University of Colorado-Boulder, an Adjunct Professor at Columbia University-New York City and Chief Scientific Officer of LSVT Global-Tucson. For thirty years, Dr. Ramig has been leading the research team that pioneered LSVT LOUD, the first evidence-based speech treatment for Parkinson disease (PD). Dr. Ramig led the NIH-funded research team that pioneered LSVT LOUD, the first evidence-based speech treatment for Parkinson disease, currently being delivered in 60 countries.

**SUSANNA LINDVALL, BS Chem**

An organic chemist by profession, Ms. Lindvall has been the vice-president of the European Parkinson’s Disease Association (EPDA) since 2005 where she has been the driving force of the EPDA Awareness Campaign “Life with Parkinson’s.” Ms. Lindvall has always promoted the importance of research, and collaboration between patients, healthcare professionals, academia and industry in order to improve care and services for those living with Parkinson’s disease. She has served as president of both the Swedish Parkinson’s Disease Association, and the Swedish Parkinson Foundation, and is a co-founder of the Swedish Parkinson Academy.
WPC AWARDS

The **WPC Robin A. Elliott Award for Service to the Community** was created to honor the service of Robin A. Elliott who helped launch the World Parkinson Congresses in 2004. Robin’s 20 years of service to the community, as the head of the recently renamed Parkinson’s Foundation, and his commitment to supporting young researchers, clinicians, and people with Parkinson’s was evident in every decision he made. This award honors the work of individuals who aimed to better the lives of people with PD with their daily service and support that impacted their region of the world and profoundly improved, and continues to improve, the lives of the individuals they serve.

Winners of the **WPC Robin A. Elliott Award for Service to the Community Award** in 2019 are Sara Lew Lai Heong and Nancy Tingey.

**SARA LEW LAI HEONG**

Ms. Lew, President of the Malaysian Parkinson’s Disease Association (MPDA) has been serving the association for the past 24 years. Sara became involved in Parkinson’s work in 1995 because of her late father who had Parkinson’s disease for 21 years before he passed away in 2011. Her work to improve the lives of people with Parkinson’s includes securing more cost-affordable medications across Malaysia, getting Parkinson’s designated as a disability, which increased services and benefits from the government, and helping to secure funding to purchase a permanent a home for the organization’s members to be able to meet regularly and get the support they need.

**NANCY TINGEY, OAM, CF, MA, BA**

Ms. Tingey is a caregiver and art facilitator who, following her husband’s diagnosis with Parkinson’s, founded *Painting with Parkinson’s* in Canberra Australia, the longest running art program in the world designed specifically to address Parkinson’s symptoms and running continuously for nearly 25 years. She holds an Order of Australia Medal for services to community health.
WPC CLINICAL RESEARCH VILLAGE

Join us in the Clinical Research Village in the Exhibit Hall to learn about the clinical trial process. Panelists will include clinical trials participants, senior investigators, coordinators and others. Learn about your rights as a clinical trial participant, why you should participate, and what you should know before you sign on the dotted line.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td><strong>TUESDAY, JUNE 4</strong></td>
<td></td>
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<tr>
<td>7:15 – 9:15 PM</td>
<td>Hear from your Peers: Fellow members of the Parkinson’s community available to answer your questions around taking part in research, patient involvement in designing research</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Hear from your Peers (See Tuesday 7:15 PM)</td>
</tr>
<tr>
<td>12:00 – 1:00 PM</td>
<td>East Meets West understanding the differences of carrying out research in different territories</td>
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<tr>
<td>1:00 – 3:00 PM</td>
<td>Hear from your Peers (See Tuesday 7:15 PM)</td>
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<tr>
<td>3:00 – 3:30 PM</td>
<td>Two short films about research: Tom Isaac's Advocacy Pyramid &amp; iPSC Trial</td>
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<tr>
<td>5:30 – 6:30 PM</td>
<td>Patient Involvement in Practice: Panel discussion featuring a case study of a clinical trial</td>
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<tr>
<td></td>
<td>• Understanding how PwPs help shape a research project</td>
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<td></td>
<td>• What was involved, what would they do differently?</td>
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<td></td>
<td>• What changed as a result of patient engagement?</td>
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<td>• How can others implement patient involvement effectively into their proposals and what's the benefit?</td>
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<td></td>
<td>• How does patient involvement help communication around a project?</td>
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<tr>
<td><strong>WEDNESDAY, JUNE 5</strong></td>
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<tr>
<td>11:30 AM</td>
<td>Hear from your Peers (See Tuesday 7:15 PM)</td>
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<tr>
<td><strong>THURSDAY, JUNE 6</strong></td>
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<tr>
<td>12:00 – 1:00 PM</td>
<td>Common Concerns and Myths about Research Participation Dispelled</td>
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<td></td>
<td>Hosted by The Michael J. Fox Foundation and Cure Parkinson Trust</td>
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<tr>
<td></td>
<td>Participation in research may seem scary or overwhelming. Learn answers to common questions about participating in research and understand the different ways people can get involved.</td>
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<tr>
<td></td>
<td>• What is the difference between an observational study and a study that tests a drug/therapy?</td>
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<td></td>
<td>• There is a research opportunity for almost everyone who is interested, regardless of stage of disease or geographic, mobility or other challenges</td>
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<td></td>
<td>• Why are genetics important? How can I get involved?</td>
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<td></td>
<td>• How to act as an advocate for research and spread the word in your community</td>
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<tr>
<td>1:00 – 3:00 PM</td>
<td>Hear from your Peers (See Tuesday 7:15 PM)</td>
</tr>
<tr>
<td>3:00 – 3:30 PM</td>
<td>Two short films about research</td>
</tr>
<tr>
<td>5:30 – 6:30 PM</td>
<td>Patient Involvement in Practice (See Wednesday, 5:30 PM)</td>
</tr>
<tr>
<td><strong>FRIDAY, JUNE 7</strong></td>
<td></td>
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<tr>
<td>11:30 AM</td>
<td>Hear from your Peers (See Tuesday 7:15 PM)</td>
</tr>
<tr>
<td>11:00 AM – 12:00 PM</td>
<td>Surgical Trials</td>
</tr>
</tbody>
</table>
SOCIAL PROGRAM and SPECIAL EVENTS

WELCOME RECEPTION

**Tuesday, June 4**

7:00 – 9:00 PM | Event Hall and New Hall

Open to all registered delegates.

NETWORKING EVENING FOR NURSES, PTS, OTS, SLPs, & SWS

(Registration required)

**Wednesday, June 5**

6:30 – 8:00 PM | 5th Floor

Open for nurses, PTs, OTs, SLPs, and SWs who are specializing in Parkinson’s disease to come together, meet, network, share knowledge and expand their professional community.

WPC MUSIC & MOVEMENT PD LOUNGE

Supported by Adamas Pharmaceuticals

**Thursday, June 6**

6:30 – 9:00 PM | Gold Room, Grand Prince Hotel

Come join in the fun as we wrap up a week of Parkinson’s presentations, dance classes, inspiring talks, art work and more. The Stanley Fahn Young Investigator Award winner will be announced this evening and we’ll be sure you leave the WPC on a high that will last for the next three years until we meet again at the WPC 2022.

CLOSING REMARKS & RAFFLE

**Friday, June 7**

6:15 – 7:15 PM | Annex Hall 1

Optional Tours

**TOUR 1**

Cost: ¥16,500
(Lunch included)

**Saturday, June 8**

KYOTO & NARA ONE-DAY TOUR

Departure 9:00 AM from Kyoto Train Station | Return at 6:30 PM

A day trip where you will enjoy an exclusive guided tour of Kyoto and Nara. Includes Kinkakuji temple (Golden Pavilion) and Nijo Castle, the Todaji Temple that is an historical treasure in Japan and finally the Kasuga Taisha Shrine. Travel by coach.

**TOUR 2**

Cost: ¥7,600
(Japanese style lunch included)

**Saturday, June 8**

KYOTO MORNING TOUR

Departure 9:00 AM from Kyoto Train Station | Return at 12:30 PM

Enjoy an exclusive city tour of Kyoto with visits to the Kinkakuji temple (Golden Pavilion) as well as the Heian Shrine, which will open their doors to reveal some of their secrets.

Book the tour on the WPC website at www.wpc2019.org/tours or stop by the registration desk for more details.
TRAVEL GRANT RECIPIENTS

JUNIOR RESEARCHERS AND HEALTH PROFESSIONALS

Somayeh Abbasi (Iran)
Patricia Rosalia Ancer Rodríguez (Mexico)
Laura Andreoli (Sweden)
Joanne August (USA)
Maria Barretto (India)
Dayne Beccano-Kelly (UK)
Clara Berenguer-Escuder (Luxembourg)
Nuala Burke (Denmark)
Tamino Capote (Brazil)
Sergio Castillo-Torres (Mexico)
Anne-Marie Castonguay (Canada)
Xi Chen (USA)
Shin Ying Chu (Malaysia)
Alberto Cucca (USA)
Klaudia Cwiekala-Lewis (USA)
Ernest Dalle (South Africa)
Rachael Dawson (USA)
Stephanie De Santiago (USA)
John Dean (Portugal)
Jennifer DeJong (USA)
Mary DiBartolo (USA)
Barbara Suzy Diggle-Fox (USA)
Sayan Dutta (USA)
Diane Ellis (USA)
Joshua Farahnik (USA)
Arooj Fatima (Pakistan)
Natasha Fothergill Misbah (UK)
Jesse Fox (Canada)
Yujing Gao (Australia)
Matthew Georgiades (Australia)
Tara Haskins (USA)
Shelley Hickey (USA)
Donna Hood (USA)

Yoon Irons (UK)
Mindaugas Jonikas (UK)
Nadeesha Kalyani (Australia)
Tejali Kunte (India)
Mohit Kwatra (India)
Alexander Laperle (USA)
Shannon Lewis (USA)
Cynthia Karyna López Botello (Mexico)
Robert Marongiu (USA)
Michèle Matarasso (Canada)
Rustambek Mamturodov (Uzbekistan)
Margaret McCormick (USA)
Kathleen McCoy (USA)
Carlene McLaughlin (USA)
Eiko Minakawa (Japan)
Ahmed Negida (Egypt)
Khuen Yen Ng (Malaysia)
Yingnan Nie (China)
Sara Konstantin Nissen (Denmark)
Joseph Patterson (USA)
Jing Qi (Australia)
Miriam Rafferty (USA)
Venkateswarlal Rama Raju (India)
Kush Sharma (USA)
Sydney Shirquyama (USA)
Carlos Soto-Ríncon (Mexico)
Samuel Stuart (USA)
Aan Terrens (Australia)
Dhivyavantha Vigneswaran (India)
Matta Valetta (Italy)
Zachary Wallen (USA)
Irene Wong-Yu (Hong Kong)

TRAVEL GRANT PROGRAM SUPPORTERS

PEOPLE WITH PARKINSON’S

Gary Ballenger (USA)
Linda Berard (Canada)
Madonna Brady (Australia)
Lai Sheung Chan (China)
Joe Condon (Ireland)
Geoff Constable (Australia)
Rui Couto (Portugal)
Robert Davis (Canada)
Anna Donnelly (USA)
Alan Elliott (New Zealand)
Pat Evans (Canada)
Gerald Gant (Austria)
François Guérin (Canada)
Carolina Ho-wah Lee (China)
Raghunath Khadka (Nepal)
Deanna Krywyy (Canada)
Gay Palazzo (USA)
Chantal Pelletier (Canada)
Gary Rafaelof (USA)
Eman Ragheb (Egypt)
Melissa Rehm (USA)
June Ritar (Australia)
Tiberio Roda (Italy)
Tim Runte (USA)
Paul Michael Satterlee (USA)
Bhusan Shrestha (Nepal)
Munal Subedi (Nepal)
Nadja Tagliabuacci (Canada)
Amarsanaa Tervee (Mongolia)
Allison Toeppelein (USA)

WPC thanks the sponsors and donors who have made the WPC 2019 Travel Grants program possible:

AbbVie
Kyoko Abeta
Adamas Pharmaceuticals
David Adams
Gregory Anderson
Akihumi Arimoto
Veerle Baekelandt
Patricia Bellman
Jean Burns
Andy Butler
Adrian Case
Hiroko Chiba
Barrie Cleveland
Carol Clupny
Charles Clupny
Robert Davis
Edmond J. Safra Foundation
Kelly Foote
Erik Gallardo
Joyce Gordon
Nobutaka Hattori
David Hogg
Wendy Holman
Joseph Honor
ICCA Incredible Impacts Award Fund
International Parkinson and Movement Disorder Society
Karen Jaffe
Kyoko Kimura
Yuka Kimura
Richard Konkol
Michael Kreisberg
Anne-Louise Lafontaine
Yoshijii Matsunoto
Melissa McConaghy
Dan McEachin
Ian McFarlane
Susan Miles
Laurie Mitchley
Yoshikuni Mizuno
Cathy Molohan – WPC Ambassador
Keiko Morishima
Ikuko Moro
Trudi Hoppenberger
Tomoko Oda
Linda Olson
James Patterson
Jon Pawelk
Robert Pearson
Barbara Piccon
Furong Qu
Gerry Seim
Ken Seim
Binit Shah
John Spilberg
Michele Tagliati
Hideko Takahashi
Tsuneo Tanaka
Cathi Ann Thomas
Akihito Tokoyama
William Tuthill
Tomoko Ueno
Yoichi Ueno
US WorldMeds
Rune Veth
Hirohisa Watanabe
A.C. Woolnough
Pamela Woolnough
Robert Wright
Masako Yamane
Annie Yamashita
Maki Yanagawa
Norman Yarrow
Toshiaki Yorikawa
Mark Zeug

Plus many anonymous donations from congress delegates.
Parkinson’s patients like Pedro are starting to experience the benefits of a new outlook on life thanks to Deep Brain Stimulation.

“I feel really lively, like I’m young again. I’ve got my life back. I now have huge expectations for the future. I still have a lot to do.”
CONTINUING EDUCATION

The 5th World Parkinson Congress will offer continuing education credits to medical doctors, nurses, and speech-language pathologists.

Those interested in learning more should reference the insert in the Congress bag, outlining the details on how to secure continuing education credits, and listing all speaker disclosures. Visit the WPC website at www.wpc2019.org/continuingeducation for more details.

Certificates for continuing education credits will be emailed to delegates who pre-paid the $50 US after the congress and after completion of the survey that will be emailed out at the close of the WPC. If you are using a travel agency to book your registration for the congress, be sure that they include your email address on the registration form. This avoids the confusion of having the certificate being sent to the travel agency.

Each delegate, regardless of registration category, will receive a Certificate of Attendance via email post WPC. This is NOT the same as receiving continuing education credits.

If you wish to receive continuing education credits, these must be requested prior to the WPC and can be done during the registration process, or by writing to secretariat@worldpdcoalition.org. On site, credits can be requested at the Registration Desk. The fee for CE credits is $50 US.
FURTHER TOGETHER FOR PEOPLE WITH PARKINSON’S

150,000+ DBS implants

70+ countries with worldwide support

25+ years of DBS innovation

With over 25 years of Deep Brain Stimulation (DBS) experience, we know DBS and we’re committed to providing you the technology you need every step of the journey.

Medtronic DBS Therapy for Parkinson’s is not for everyone. Individual results may vary. A prescription is required. DBS Therapy requires brain surgery which can have serious and sometimes fatal complications. Other complications can occur and may require additional surgery. DBS Therapy may cause new or worsening neurological or psychiatric symptoms. Patients should always discuss the potential risks and benefits of the therapy with a physician. For additional safety information, please refer to Indications, Safety and Warnings at Medtronic.com/DBS or call Medtronic at +1 800-328-0810.

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**PROGRAM-AT-A-GLANCE**

**TUESDAY**
**JUNE 4**

- **8:00 AM**
  - 9:00 AM
  - **Poster Session**
- **9:00 AM**
  - 9:15 AM
  - **Morning Plenary**
- **9:30 AM**
  - 11:30 AM
  - **PRE-CONGRESS COURSES I – V**
    - **COURSE I**
      - Simultaneous interpretation available
    - **COURSE V**
      - Held in Japanese only
- **11:30 AM**
  - 1:30 PM
  - **Buddies Meet & Greet**
    - (4:00 – 5:30 PM)
- **1:30 PM**
  - 3:00 PM
  - **Opening Ceremony**
    - (5:45 – 6:45 PM)
- **3:30 PM**
  - 5:00 PM
  - **Exhibition**
    - (7:00 – 9:00 PM)
- **5:15 PM**
  - 6:30 PM
  - **Welcome Reception**
    - (7:00 – 9:00 PM)
- **6:30 PM**
  - 9:00 PM
  - **Care Partner Lounge**
    - (9:30 AM – 6:30 PM)

**WEDNESDAY**
**JUNE 5**

- **9:00 AM**
  - **Hot Topics**
- **9:15 AM**
  - **WPC Award**
- **9:30 AM**
  - **Parallel Sessions & Workshops**
- **11:30 AM**
  - **Coffee Break**
- **1:30 PM**
  - **Parallel Sessions & Workshops**
- **3:00 PM**
  - **Poster Tours & Daily Wrap-Up**
- **5:00 PM**
  - **Networking Events:**
    - RNs, PTs, OTs, SLPs, SWs
    - (6:30 – 8:00 PM)
- **5:15 PM**
  - **Renewal Room**
    - (9:30 AM – 4:30 PM)
- **6:30 PM**
  - **WPC Theater**
    - (11:30 AM – 6:30 PM)
- **9:00 PM**
  - **Held in Japanese only**
  - **Renewal Room**
    - (7:45 AM – 5:30 PM)
  - **Exhibition**
    - (11:00 AM – 6:45 PM)
プログラム概要

<table>
<thead>
<tr>
<th>8:00 AM</th>
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<tbody>
<tr>
<td>Hot Topics</td>
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<th>9:00 AM</th>
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<tr>
<td>WPC Award</td>
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<th>9:30 AM</th>
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<tr>
<td>Morning Plenary</td>
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<tr>
<th>11:30 AM</th>
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<tr>
<td>Poster Session</td>
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<tr>
<td>Special Lectures</td>
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<tr>
<td>Corporate Lunch Sessions</td>
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<tr>
<td>Lunch</td>
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<tr>
<td>Parallel Sessions &amp; Workshops</td>
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<th>3:30 PM</th>
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<tr>
<td>Coffee Break</td>
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<tr>
<th>5:15 PM</th>
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<tr>
<td>Poster Tours &amp; Daily Wrap-Up</td>
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<tr>
<th>6:30 PM</th>
<th>9:00 PM</th>
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<tbody>
<tr>
<td>Music &amp; Movement PD Lounge (6:30 – 9:00 PM)</td>
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**Language**
- Simultaneous Interpretation from English to Japanese
- Japanese track

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Ticketed event
別途有料

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#WPC2019 @worldpdcongress
At Adamas, we share your commitment to people living with Parkinson’s disease.

Adamas Pharmaceuticals, Inc. is driven to improve the lives of those affected by chronic disorders of the central nervous system.

For more information, please visit our website at www.adamaspharma.com.
SESSION DESCRIPTIONS

Sessions are open to all delegates. Some sessions require an additional fee.

**PRE-CONGRESS COURSES**

*Tuesday*

(Ticket required – Additional fee)

To take place on Tuesday, June 4, these day-long courses focusing on specific areas of Parkinson’s disease will allow unique access to some of the leaders in the community and will help introduce many topics to be covered in the main program giving participants a taste of what’s to come. They will require registration and a nominal fee to participate.

**HOT TOPICS**

*Wednesday/Thursday/Friday*

8:00 – 9:00 AM

Each morning, just before the opening plenary, four of the hottest topics from the poster abstracts will be selected for presentation to the broader audience. Oral presentations will be given on some of the most exciting, cutting-edge work happening today.

**PLENARY SESSIONS**

*Wednesday/Thursday/Friday*

9:30 – 11:30 AM

Designed to bring together all Congress attendees each morning to hear topics of great interest. Plenary speakers will be available in workshops or roundtables later each day to continue discussing the topics in more detail.

**PARALLEL SESSIONS**

*Wednesday/Thursday/Friday*

1:30 – 3:00 PM and 3:30 – 5:00 PM

Designed to offer in-depth sessions focused on specific research in the field of Parkinson’s. These sessions will appeal to those who want to understand the basic and clinical science underlying the research conducted to better understand the many facets of Parkinson’s disease.

**WORKSHOPS**

*Wednesday/Thursday/Friday*

1:30 – 3:00 PM and 3:30 – 5:00 PM

Workshops are designed for smaller groups of attendees. Speakers will give an overview of the assigned topic then work together presenting case studies or research that highlights the topic in ways that are unique and easy to digest. These sessions are designed to allow for more discourse and longer question and answer periods.

**ROUND TABLES**

*Wednesday/Thursday/Friday*

1:30 – 3:00 PM and 3:30 – 5:00 PM

These popular and specially designed roundtable sessions will allow for delegates to sit down with an expert on a wide range of fields in a very small, intimate group, to get to the nitty-gritty about the topics. Experts will give short talks and will then take questions. *(Limited seating. First come, first seated with 10 per table for 90-minute session.)*

**SPECIAL LECTURES**

*Wednesday/Thursday/Friday*

12:00 – 1:00 PM

Special Lectures will be held during the WPC daily: the “WPC James Parkinson Lecture”, “Living well with Parkinson’s”, and the “Current status of iPS cells and efforts for medical application”. Learn more about our special guests for these lectures by viewing the program in the following pages.

**DAILY WRAP-UP PANELS**

*Wednesday/Thursday/Friday*

5:15 – 6:30 PM

The wrap-up sessions are designed to bring together delegates at the end of each day to discuss the highlights from the day. Panelists will be leaders in the field who will have the tough task of preparing these talks each day. This is a great way to catch some key topics you may have missed.

**POSTER TOURS**

*Wednesday/Thursday*

5:15 – 6:30 PM

Tours to meet young researchers and clinicians and hear about their work will be held on Wednesday and Thursday evenings from 5:15 – 6:30 PM. Be sure to stick around to meet these researchers and to thank them for their service to the Parkinson’s community. *(Limited place. Sign-up required.)*

**日本語トラック**

会議期間中、毎日午後に日本語のセッションを行います。

・英語から日本語への同時通訳
・日本語トラック
・別途有料
**PC1 – Fundamentals of PD: The journey (CME)**

*Location: Annex 2*

**Target Audience:** People with Parkinson’s, caregivers, people new to Parkinson’s care, others

**Goal:** Expose participants to key topics that will be elaborated on in the program. Give them a glimpse of what is to come and tools to get the most out of the meeting. Introduce the role of PwPs into the meeting design and success as well as the legacy of the WPC.

**Learning Objectives:**
1. Gain a basic understanding of Parkinson’s, including the research into the cause(s) of the disease, symptoms, and therapies;
2. Learn the spectrum of care and rehabilitation options once diagnosed with Parkinson’s;
3. Understand future therapies for Parkinson’s;
4. To understand how to get the most out of the WPC experience.

### PROGRAM

*Made possible with support from the International Parkinson and Movement Disorder Society*

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Emcee/Panelists</th>
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<tbody>
<tr>
<td>9:00 AM</td>
<td>Welcome</td>
<td>A.C. Woolnough (USA)</td>
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<tr>
<td>9:05 AM</td>
<td>Advocacy pyramid: Patient engagement and communication</td>
<td>Soania Mathur (Canada)</td>
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<tr>
<td>9:30 AM</td>
<td>What causes PD?</td>
<td>Barry Snow (New Zealand)</td>
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<tr>
<td>9:55 AM</td>
<td>What are the clinical features of PD?</td>
<td>Shen Yang Lim (Malaysia)</td>
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<tr>
<td>10:20 AM</td>
<td>Q&amp;A panel with speakers</td>
<td>Soania Mathur (Canada)</td>
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<td>Barry Snow (New Zealand)</td>
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<td>Shen Yang Lim (Malaysia)</td>
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<tr>
<td>10:35 AM</td>
<td>Let’s get moving!</td>
<td>Pamela Quinn (USA)</td>
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<tr>
<td>10:45 AM</td>
<td>COFFEE BREAK</td>
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<tr>
<td>11:15 AM</td>
<td>How has medical &amp; surgical treatment evolved over time?</td>
<td>Genko Oyama (Japan)</td>
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<tr>
<td>11:40 AM</td>
<td>What’s new in research?</td>
<td>Ryosuke Takahashi (Japan)</td>
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<tr>
<td>12:05 PM</td>
<td>Q&amp;A panel with speakers</td>
<td>Jon Stamford (UK)</td>
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<td>Ryosuke Takahashi (Japan)</td>
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<td>Genko Oyama (Japan)</td>
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<tr>
<td>12:20 PM</td>
<td>Let’s get moving!</td>
<td>Miho Sakai (Japan)</td>
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<tr>
<td>12:35 PM</td>
<td>LUNCH</td>
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<tr>
<td>1:45 PM</td>
<td>Tips and tricks for living with Parkinson’s that go beyond medication:</td>
<td>A.C. Woolnough (USA)</td>
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<td></td>
<td>• Speech and swallowing</td>
<td>Hanneke Kalf (The Netherlands)</td>
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<td>• Balance and gait</td>
<td>Lynn Rochester (UK)</td>
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<td>• Nutrition and constipation</td>
<td>Laurie Mischley (USA)</td>
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<td></td>
<td>• Cognitive training, life hacks, and self-management</td>
<td>Lissa Kapust (USA)</td>
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<td>• Facing challenges and overcoming adversity: Family, work, marriage</td>
<td>Victor McConvey (Australia)</td>
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<tr>
<td>3:00 PM</td>
<td>COFFEE BREAK</td>
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<tr>
<td>3:45 PM</td>
<td>Resilience – Beyond a diagnosis</td>
<td>Kathie Hill (USA)</td>
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<td>Nancy Peate (USA)</td>
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<tr>
<td>4:15 PM</td>
<td>Getting the most out of the WPC 2019</td>
<td>Jon Stamford (UK)</td>
</tr>
</tbody>
</table>

**OPENING CEREMONY > 5:45 – 6:45 PM** (Main Hall)

**WELCOME RECEPTION > 7:00 – 9:00 PM**
# Pre-congress — Course I

**PC2 – Interdisciplinary care and Parkinson’s disease: State of the evidence, how to build a center, and working through cases with a team (CME)**

**Location:** Room B-1

**Target Audience:** Neurologists, nurses, rehab specialists, social workers, clinic coordinators

**Goal:** To provide a forum for discussion of the evidence surrounding the impact of interdisciplinary care models and the realities of building a center.

**Learning Objectives:** 1. Be able to explain multidisciplinary and interdisciplinary care and the evidence supporting these models; 2. Detail at least two cultural implications that impact the design of team care; 3. Discuss real life case studies with team members to understand how teams address complex issues and how various team member decisions can impact other decisions (by other team members).

## PROGRAM

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
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</thead>
<tbody>
<tr>
<td>8:55 AM</td>
<td>Welcome remarks</td>
<td>Omotola Thomas (UK)</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Multidisciplinary and interdisciplinary care and the current state of the evidence</td>
<td>Julie Carter (USA)</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>How do I build a multidisciplinary or interdisciplinary center? Challenges we may face in the process</td>
<td>Michael Okun (USA), Genko Oyama (Japan)</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Models of care across different regions of the world: What can we learn from each other?</td>
<td>Bas Bloem (The Netherlands)</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Lunch</td>
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<tr>
<td>1:00 PM</td>
<td>Case discussions I: Motor features of Parkinson’s disease</td>
<td>Michael Okun (USA)</td>
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<td>Panelists:</td>
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<td></td>
<td>Speech Language Pathologist: Corinne Jones (USA)</td>
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<td>RN: Lucie Lachance (Canada)</td>
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<td>Occupational Therapist: Lisa Warren (USA)</td>
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<td>Physical Therapist: Meg Morris</td>
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<td>Surgeon: Kelly Foote (USA)</td>
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<td>Neurologist: Suketu Khandar (USA)</td>
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<tr>
<td>2:30 PM</td>
<td>Coffee break</td>
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<tr>
<td>3:00 PM</td>
<td>Case discussions II: Non-motor features of Parkinson’s disease</td>
<td>Suketu Khandar (USA)</td>
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<td>Panelists:</td>
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<td></td>
<td>Social Worker: Elaine Book (Canada)</td>
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<td></td>
<td>Neurologist: Anne Louise Lafontaine (Canada)</td>
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<td></td>
<td>Occupational Therapist: Lisa Warren (USA)</td>
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<td>Psychiatrist: Daniel Weintraub (USA)</td>
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<td>Neuropsychologist: Kathy Dujardin (France)</td>
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<td></td>
<td>Person with Parkinson’s: Omotola Thomas (UK)</td>
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<tr>
<td>4:30 PM</td>
<td>Closing remarks</td>
<td>Michael Okun (USA)</td>
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</table>

**Opening Ceremony:** 5:45 – 6:45 PM (Main Hall)

**Welcome Reception:** 7:00 – 9:00 PM
PC3 – Advances in research, science & care (CME)

**Location:** Annex 1

**Target Audience:** These will be exciting crosstalk sessions appropriate for a mix of the community, including clinicians, researchers, people with Parkinson’s and others interesting in hearing about what’s new in the research in both basic and clinical sciences as well as the world of care.

**Goal:** To expose participants to unique and exciting research outcomes as well as innovative and impactful programs being implemented for community members.

**Learning Objectives:**
1. Gain more elaborate understanding of research being done to advance the understanding of Parkinson’s and find improved treatment options; 2. Learn about ongoing efforts to advance advocacy work in the community and engage community members; 3. Understand future therapies for Parkinson’s.

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**PROGRAM**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td><strong>MORNING COFFEE</strong></td>
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<tr>
<td>8:50 AM</td>
<td><strong>Welcome</strong></td>
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<tr>
<td></td>
<td>Emcee: A. Jon Stoessl (Canada)</td>
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<tr>
<td>9:00 AM</td>
<td>Surgical advances and infusions in Parkinson’s</td>
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<tr>
<td></td>
<td><strong>Moderator:</strong> Elena Moro (France)</td>
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<td></td>
<td><strong>Speaker:</strong> Kelly Foote (USA)</td>
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<td><strong>Speaker:</strong> Michele Tagliati (USA)</td>
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<td></td>
<td>1– Deep brain surgery: Differentiating different devices</td>
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<td></td>
<td>2– DBS programming with different devices. Advantages of using different devices for optional programming</td>
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<td>3– Infusion and other novel drug therapies in the treatment of PD</td>
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<td>4– Potential of immune-based therapies</td>
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<td></td>
<td>Session supported by unrestricted educational grants from Boston Scientific and Mitsubishi Tanabe Pharma America, Inc.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td><strong>LUNCH AND LEARN: GRAB A BOXED LUNCH AND LISTEN WHILE YOU EAT</strong></td>
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<tr>
<td>11:30 AM</td>
<td>Non-motor complications and treatment options</td>
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<td></td>
<td><strong>Moderators:</strong> Barry Snow (New Zealand)</td>
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<td></td>
<td><strong>Speaker:</strong> Tim Anderson (New Zealand)</td>
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<td><strong>Speaker:</strong> Rebecca Miller (USA)</td>
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<td></td>
<td><strong>Speaker:</strong> Jennifer Goldman (USA)</td>
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<tr>
<td></td>
<td>1– Dizziness and PD, what is it and how can my doctor help?</td>
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<td>Non-motor autonomic problems of PD and what’s their impact?</td>
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<td>2– Has the treatment paradigm changed for PD psychosis?</td>
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<td>3– Autonomic challenges and PD</td>
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<td>4– Advancing treatment options for PD cognitive impairment</td>
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<td>Session supported by an unrestricted educational grant from Lundbeck</td>
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<tr>
<td>1:30 PM</td>
<td><strong>COFFEE BREAK</strong></td>
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<tr>
<td>2:00 PM</td>
<td>Motor complications and treatment options</td>
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<td><strong>Moderator:</strong> Peter LeWitt (USA)</td>
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<td><strong>Speaker:</strong> Raj Pahwa (USA)</td>
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<td><strong>Speaker:</strong> Simon Lewis (Australia)</td>
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<td><strong>Speaker:</strong> Stuart Isaacson (USA)</td>
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<td><strong>Speaker:</strong> M. Angela Cenci Nilsson (Sweden)</td>
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<td></td>
<td>1– Dyskinesia vs tremor, the realities of living with dyskinesia,</td>
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<td>clinical forms of dyskinesia, how to we treat it?</td>
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<td>2– Emergency treatment options for PD</td>
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<td>3– Treatment of Off periods vs Off time</td>
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<td>4– The future of treatments for dyskinesias</td>
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<td>Session supported by unrestricted educational grants from Kyowa Kirin and Acadia Pharmaceuticals</td>
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<tr>
<td>4:30 PM</td>
<td>Understanding Genetics and Parkinson’s: A Powerful Tool for Improving Research, Care &amp; Quality of Life</td>
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<td><strong>Moderator:</strong> John Lehr (USA)</td>
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<td><strong>Panelists:</strong> James Beck (USA)</td>
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<td><strong>Speaker:</strong> Anne Hall (USA)</td>
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<td><strong>Speaker:</strong> Tanya Simuni (USA)</td>
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**OPENING CEREMONY > 5:45 - 6:45 PM** (Main Hall)

**WELCOME RECEPTION > 7:00 - 9:00 PM**
**Final Program**

**Tuesday, June 4, 2019**

### PRE-CONGRESS — COURSE IV

**PC4 — Activism, awareness, and roles patients play (Non-CME)**

*Location: Room B-2*

**Target Audience:** People with Parkinson’s, caregivers, people new to Parkinson’s care, others

**Goal:** Bring together highly engaged people with Parkinson’s with the objective to become more engaged and involved in the global Parkinson’s community.

**Learning Objectives:**
1. For participating people with Parkinson’s understand the scope of activism and how to engage with community members;
2. to help build a network of engaged people who are eager to work together for a larger common good;
3. Be able to explain activism for Parkinson’s and tools that exist for engaging and helping to keep the Parkinson’s agenda front and center as an urgent need for governments, researchers, patients, and others.

**PROGRAM**

*Made possible with the support of US WorldMeds*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>12:00 PM</td>
<td>LUNCH</td>
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<tr>
<td>1:00 PM</td>
<td>Welcome</td>
<td>Tim Hague (Canada)</td>
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<tr>
<td>1:05 PM</td>
<td>Roles patients can play in advocacy &amp; activism</td>
<td>Therese Scott Duncan (Sweden)</td>
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<td>1:40 PM</td>
<td>Block I — A: Research activism</td>
<td>Karen Raphael (USA)</td>
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<td>B: Wellness activism</td>
<td>Tim Hague (Canada)</td>
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<td>C: Tools for activism</td>
<td>Martin Taylor (UK)</td>
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<td>2:30 PM</td>
<td>COFFEE BREAK</td>
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<tr>
<td>2:40 PM</td>
<td>Block II — A: Research activism</td>
<td>Karen Raphael (USA)</td>
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<td></td>
<td>B: Wellness activism</td>
<td>Tim Hague (Canada)</td>
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<td></td>
<td>C: Tools for activism</td>
<td>Martin Taylor (UK)</td>
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<tr>
<td>3:30 PM</td>
<td>BREAK FOR REFRESHMENTS</td>
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<tr>
<td>4:00 PM</td>
<td>Panel discussion — Where do we go from here?</td>
<td>Tim Hague (Canada)</td>
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<td>Moderator:</td>
<td>Benjamin Stecher (Canada)</td>
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<td>Panelists:</td>
<td>Martin Taylor (UK)</td>
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<td></td>
<td></td>
<td>Karen Raphael (USA)</td>
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<tr>
<td>4:55 PM</td>
<td>Next steps</td>
<td>Tim Hague (Canada)</td>
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</table>

### OPENING CEREMONY > 5:45 – 6:45 PM (Main Hall)

### WELCOME RECEPTION > 7:00 – 9:00 PM
**PC5 – Japanese corporate sessions (Non-CME)**

*Location: Room A*

**Target Audience:** Sessions in this section are all non-CME corporate sessions designed by companies for an audience of Japanese-speaking health professionals only.

**Goal:** The aim of this pre-congress course is to provide a forum for discussion on the current state of science, research and care for people who currently work in the pharmaceutical industry.

**Learning Objectives:**
1. Gain more elaborate understanding of research being done globally to advance the understanding of Parkinson’s and find improved treatment options; 2. Understand how the complexity of PD highlights the need for interdisciplinary care; 3. Understand future therapies expected for Parkinson’s; 4. Be able to articulate what people with Parkinson’s are experiencing and what they need most from the industry designed to help them.

**PROGRAM**

*Supported by unrestricted educational grants from Abbott, FP Pharmaceutical, Eisai, Novartis and Kyowa Hakko Kirin*

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<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:45 AM</td>
<td>Abbott</td>
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<tr>
<td>10:45 AM</td>
<td><strong>COFFEE BREAK</strong></td>
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<tr>
<td>11:15 AM</td>
<td>FP Pharmaceutical</td>
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<td>12:15 PM</td>
<td><strong>LUNCH</strong></td>
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<td>1:00 PM</td>
<td>Eisai</td>
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<td>2:30 PM</td>
<td>Novartis</td>
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<tr>
<td>3:30 PM</td>
<td><strong>COFFEE BREAK</strong></td>
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<tr>
<td>4:00 PM</td>
<td>Kyowa Hakko Kirin</td>
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**OPENING CEREMONY > 5:45 – 6:45 PM (Main Hall)**

**WELCOME RECEPTION > 7:00 – 9:00 PM**
HOT TOPICS > 8:00 – 9:00 AM

**Location:** Main Hall  
**Chair:** D. James Surmeier (USA)

**Talk 1:** A novel target for neuroprotection: The small GTPase Rin inhibits LRRK2 to promote autophagy and reduce α-synuclein pathology  
*Supported by American Parkinson Disease Association*  
*Speaker:* Mattia Volta (Italy)

**Talk 2:** A cross-sectional natural history of Parkinson’s disease as reported by >10,000 patients  
*Speaker:* Ira Shoulson (USA)

**Talk 3:** A randomized clinical trial on the evaluation of the effect of vestibular exercises on dizziness and postural control in Parkinson patients  
*Speaker:* Somayeh Abbasi (Iran)

**Talk 4:** The Fox Insight Study: An empowering opportunity to fuel Parkinson’s research and help advance scientific breakthroughs from the comfort of home  
*Speaker:* Roseanne Dobkin (USA)

AWARD CEREMONY > 9:00 – 9:30 AM

**Location:** Main Hall  
**Presenter:** Marie-Françoise Chesselet (USA)

**WPC Award for Distinguished Contribution to the Parkinson Community**  
*Award Recipients:* Lorraine (Lori) Ramig, PhD, CCC-SLP (USA) and Susanna Lindvall, BS Chem (Sweden)

MORNING PLENARY > 9:30 – 11:30 AM

**What is alpha-synuclein?**

**Co-Chair:** Maria Grazia Spillantini (UK)  
**Co-Chair:** Serge Przedborski (USA)

**Talk 1:** What is α-synuclein – The biology  
*Speaker:* Ronald Melki (France)

**Talk 2:** The pathology of α-synucleinopathies (brain donation)  
*Speaker:* Peter Riederer (Germany)

**Talk 3:** Patients as living science: The importance of participating in clinical trials  
*Speaker:* Soania Mathur (Canada)

**Talk 4:** Clinical trials and efficacy of clinical trials targeting α-synuclein  
*Speaker:* Jesse Cedarbaum (USA)

**Learning Objectives:** 1. To be able to explain what is known and not known about the normal function of α-synuclein in the brain; 2. To understand what makes α-synuclein pathological in certain conditions and what this looks like in the brains of patients dying with Parkinson’s disease and related disorders; 3. To discuss the challenges of targeting α-synuclein in clinical trials and where we are currently with such trials; 4. To explain the roles patients can play in clinical trials, beyond being in the trial itself.
LUNCH > 11:30 AM – 1:30 PM

CORPORATE LUNCH SESSIONS

12:00 – 1:00 PM
Location: Annex 1
Open door: 11:30 AM

Empowering people with advancing Parkinson's disease
Welcome and Opening
Co-chair: Atsushi Takeda (Japan)
The little things we take for granted
Co-Chair/Speaker: Per Odin (Sweden)
Recognising progression for the PwP: What are the signals?
Speaker: Angelo Antonini (Italy)
Can effective communication and collaborative decision-making improve patients health and satisfaction? A role play
Speaker: Bas Bloem (The Netherlands)

Panel and audience discussion
Closing remarks
Speaker: Per Odin (Sweden)
Open to all – English (Japanese translation)
Supported by AbbVie

12:00 – 1:00 PM
Location: Room A
Open door: 11:30 AM

Health professionals only
Talks in Japanese
Supported by Sumitomo Dainippon Pharma Co., Ltd.
(See Japanese program on page 16.)

12:00 – 1:00 PM
Location: Annex 2
Open door: 11:30 AM
(In English)

Rehabilitation for people with Parkinson's disease
Chair: Kazushi Takahashi (Japan)
Rehabilitation according to the needs of people with Parkinson's disease
Speaker: Takayo Chuma (Japan)
Management and rehabilitation for Parkinson's disease
Speaker: Akito Hayashi (Japan)

Open to all – Japanese (English translation)
Supported by Takeda Pharmaceutical Company Limited, Japan Medical Office

BOOK NOOK

11:30 AM – 1:30 PM
Location: Event Hall
Meet the Authors: John Ball (USA)
Tim Hague (Canada)

POSTER SESSION 1

11:30 AM – 1:30 PM
Location: Event Hall & New Hall

WSL – JAMES PARKINSON SPECIAL LECTURE

12:00 – 1:00 PM
Location: Sakura Room
Introduction by: Roger Barker (UK)

History of Parkinson’s disease research in Japan: Past, present and future
Speaker: Toshiharu Nagatsu (Japan)

Mitochondrial energy crisis as a pathogenesis of Parkinson’s disease
Speaker: Yoshikuni Mizuno (Japan)

Supported by Acorda Therapeutics

WORLD CAFÉ

12:00 – 1:00 PM
Location: Room 101

Question of the day: How do we change patient dialogue?
*Limited seating up to 30.
Sign-up outside door.

WSL – JAMES PARKINSON SPECIAL LECTURE

12:00 – 1:00 PM
Location: Event Hall

East Meets West understanding the differences of carrying out research in different territories
Supported by The Michael J. Fox Foundation
WP1 – Stem Cells in Parkinson’s Disease

Location: Annex 2

Co-Chair: Roger Barker (UK)
Co-Chair: Hideki Mochizuki (Japan)

Talk 1: Patient-derived cells to study Parkinson’s disease
Speaker: Asuka Morizane (Japan)

Talk 2: Making authentic midbrain dopamine neurons – The challenges
Speaker: Agnete Kirkeby (Denmark)

Talk 3: Clinical application of stem cell transplantation therapy
Speaker: Asuka Morizane (Japan)

Learning Objectives: 1. Understand the basics of cellular reprogramming and in more detail how one can differentiate iPSCs into midbrain dopamine neurons. Understand the features of iPSC-derived dopamine neurons that must exhibit for them to be suitable for transplantation; 2. Be familiar with the potential advantages that iPSC-derived dopamine neurons might have as disease models and obtain insight into some of the pitfalls of these models; 3. Understand the challenges of translating an experimental stem cell-based approach to a clinical therapy; 4. Identify and producing the right type of dopamine neuron, upscaling production, surgical approach, immunosuppression, clinical trial design, imaging etc.

WP2 – Diagnosis, Mechanisms, and Management of Cognitive Deficits in Parkinson’s Disease

Location: Annex 1

Co-Chair: Jennifer Goldman (USA)
Co-Chair: Rebecca Miller (USA)

Talk 1: Cognitive deficits in Parkinson’s disease: Clinical features, diagnosis, and evolution
Speaker: Caroline Williams-Gray (UK)

Talk 2: Neuropathology of cognitive deficits in PD and its insights into therapeutic interventions
Speaker: Tom Montine (USA)

Talk 3: Therapeutic programs for cognitive health in PD - interventions and prevention
Speaker: Atsushi Takeda (Japan)

Learning Objectives: 1. Discuss the clinical features, diagnosis, and progression of different cognitive impairments in Parkinson’s disease. 2. Identify risk factors associated with cognitive decline in Parkinson’s disease and the pathological basis for it. 3. Discuss established and emerging pharmacological and non-pharmacological therapies for cognitive deficits in Parkinson’s disease.

WP3 – Sleep Disorders

Location: Room Sakura

Co-Chair: Anne Louise Lafontaine (Canada)
Co-Chair: Simon Lewis (Australia)

Talk 1: An overview of sleep disorders in Parkinson’s disease
Speaker: Isabelle Arnulf (France)

Talk 2: The restorative function of sleep
Speaker: David Breen (UK)

Talk 3: Tips and tricks to managing sleep disorders in Parkinson’s
Speaker: Aleksandar Videnovic (USA)

Learning Objectives: 1. To provide an overview of sleep disorders in Parkinson’s disease and understand their importance in the prediction of evolution and profile in α-synucleinopathies; 2. To outline the importance of sleep in maintaining brain health (in people with and without Parkinson’s) and to summarize the evidence linking poor sleep with later-life neurodegenerative disease; 3. To provide a review of strategies to improve sleep both using pharmacological and non-pharmacological approaches.

JP1 – The Newest Methods of Diagnosis and Treatment of PD

Location: Room A

Moderators: Hirohisa Watanabe (Japan) Genko Oyama (Japan)

Talk 1: New methods of diagnosing PD
Speaker: Nobukatsu Sawamoto (Japan)

Talk 2: The newest treatments of PD
Speaker: Yasushi Shimo (Japan)

Q&A

The Solution of the Problem According to Age and Stage of the Disease

Talk 3: The problems of YOPD and their counterplan
Speaker: Satoshi Akiyama (Japan)

Talk 4: The interaction with PWPs concerning their stage and age
Speaker: Hirohide Takahashi (Japan)

Learning Objectives: 1. To know the research connecting to early diagnosis and early Treatment of PD following DAT scan. 2. To be able to discuss the discovery of new medications and who will benefit from them. 3. The number of YOPD is small, but they have many problems such as income, job, and pregnancy, delivery etc. which are different from the problems of late onset PD. What is necessary for young PWP to live well? 4. The role of caregivers in the home.
**WORKSHOPS > 1:30 – 3:00 PM**

### WW1 – SELECTIVE NEURONAL VULNERABILITY: WHAT WE CAN AND CANNOT LEARN ABOUT THE PATHOGENESIS OF PD USING DISEASE MODELS

* Location: Room B-2*
  - Co-Chair: Etienne Hirsch (France)
  - Co-Chair: Jeffrey Kordower (USA)

**Talk 1:** Developmental genes lay the foundation for neurodegeneration in PD  
**Speaker:** Ernest Arenas (Sweden)

**Talk 2:** The role of cellular thresholds in driving the selective neuronal vulnerability of PD  
**Speaker:** David Sulzer (USA)

**Talk 3:** The role of neural circuits in PD  
**Speaker:** D. James Surmeier (USA)

**Learning Objectives:**
1. Survey and understand current modeling approaches to define selective molecular and cellular vulnerability of neuronal populations in Parkinson’s disease; 2. Identify existing knowledge gaps in the selective neuronal vulnerability of PD; 3. Discuss application of current knowledge and updated modeling approaches to improve our knowledge and treatment for Parkinson’s disease.

### WW2 – WEARABLE APPS FOR MONITORING PD AND ITS TREATMENT

* Location: Room D*
  - Co-Chair: Elena Moro (France)
  - Co-Chair: Peter LeWitt (USA)

**Talk 1:** State of the art of wearable devices in Parkinson’s disease  
**Speaker:** Joachim Ferreira (Portugal)

**Talk 2:** Applications of wearable devices in clinical trials  
**Speaker:** Tanya Simuni (USA)

**Talk 3:** "Wearables" for monitoring PD and its treatment  
**Speaker:** Walter Maetzler (Germany)

**Learning Objectives:**
1. To describe the current array of wearable devices for monitoring aspects of Parkinson’s disease; 2. To discuss the advantages and limits of these new technologies; 3. To define the optimal way to clinically use such appliances in PD patients.

### WW3 – LEVODOPA AND DOPAMINE AGONISTS: HOW TO FIND A BALANCE BETWEEN THE GOOD AND THE NOT SO GOOD

* Location: Room B-1*
  - Co-Chair: M. Angela Cenci Nilsson (Sweden)
  - Co-Chair: Andy McDowell (New Zealand)

**Talk 1:** The history of levodopa and dopamine agonists – Benefits and myths  
**Speaker:** Stanley Fahn (USA)

**Talk 2:** Learn how to recognize and manage L-dopa induced dyskinesias  
**Speaker:** Masahiko Tomyama (Japan)

**Talk 3:** To learn how to recognize and manage impulse control disorders and dopa-dysregulation syndrome  
**Speaker:** Annette Hand (UK)

**Learning Objectives:**
1. To review the history of Levodopa and its benefits and myths linked to its use. To know the mechanisms underlying the common adverse effects of dopaminergic therapies; 2. To learn how to recognize and manage these adverse effects including dyskinesia; 3. To learn how to manage impulse control disorder.

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**COFFEE BREAK > 3:00 – 3:30 PM**

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**ROUND TABLES 1:30 – 3:00 PM**

### WRT1 –

* Location: Rooms I, J, K*

**Supported by American Parkinson Disease Association**

**Table 1:** Coping day to day – Managing the emotional roller coaster  
**Speaker:** Allison Allen (USA)

**Table 2:** Tips on getting your research published  
**Speaker:** Tanya Simuni (USA)

**Table 3:** Insights into the function of LRRK2 from a genetic point of view  
**Speaker:** Matt Farre (Canada)

**Table 4:** LRRK2 and PD  
**Speaker:** Jie Shen (USA)

**Table 5:** Combined pharmacotherapy and neuromodulation approaches to PD  
**Speaker:** John Rothwell (UK)

**Table 6:** Effectiveness and reliability of TMS treatment, new methods and future perspectives  
**Speaker:** M. Angela Cenci Nilsson (Sweden)

**Table 7:** What is α-synuclein – The biology  
**Speaker:** Ronald Melki (France)

**Table 8:** Pathological features of α-synucleinopathies  
**Speaker:** Peter Riederer (Germany)

**Table 9:** The importance of participating in clinical trials  
**Speaker:** Soania Mathur (Canada)

**Table 10:** Approaches to voice training in PD  
**Speaker:** Darla Freeman (USA)

**Table 11:** How PD affects sexuality and intimacy of PwPD and their care partners  
**Speaker:** Sheila Silver (USA)

**Table 12:** Planet Patient vs Planet Research: How do we align instead of collide?  
**Speakers:** A.C. Woonhough (USA) & Simon Stott (UK)

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WP4 – LRRK2 AND ITS RELATIONSHIP TO ENDOsomAL BIOLOGY

Location: Annex 2

Co-Chair: Mark Cookson (USA)
Co-Chair: Peter LeWitt (USA)

Talk 1: New insights into the function of LRRK2 from a genetic point of view
Speaker: Matt Farrer (Canada)

Talk 2: LRRK2 in dopaminergic neuronal survival and Parkinson's disease
Speaker: Jie Shen (USA)

Talk 3: LRRK2 as a therapeutic target
Speaker: Brian Fiske (USA)

Learning Objectives: 1. To learn about the genetics of LRRK2 in PD and its role in vesicular trafficking; 2. To learn about the cellular function of LRRK2 and its relationship with other PD-linked proteins such as GBA, VPS35 and ATP13A2; 3. To learn about new models for LRRK2.

WP5 – THE MICROBIOME AND DIET IN PARKINSON'S DISEASE

Location: Annex 1

Co-Chair: Marie-Françoise Chesneau (USA)
Co-Chair: Frank Church (USA)

Talk 1: The vermiform appendix contributes to the development of Parkinson's disease
Speaker: Viviane Labrie (USA)

Talk 2: What is evidence for, and the relevance of, GIT pathology in PD?
Speaker: Pascal Derkinderen (France)

Talk 3: Is there any evidence that nutrients modify PD?
Speaker: Laurie Mischley (USA)

Learning Objectives: 1. Review the evidence for the role of the Microbiome to the underlying pathology of PD; 2. Review the range of problems with the GIT function including constipation and the role of Helicobacter pylori; 3. Discuss issues related to diet and supplements in PD.

WP6 – DEPRESSION, ANXIETY, AND APATHY IN PD – PART 1

Location: Room Sakura

Co-Chair: Shen Yang Lim (Malaysia)
Co-Chair: Jon Stamford (UK)

Talk 1: Understanding apathy: What it is, what it is not and its impact on disease
Speaker: Kathy Dujardin (France)

Talk 2: Anxiety in Parkinson's disease – symptoms, frequency, and neurobiology
Speaker: Roseanne Dobkin (USA)

Talk 3: Understanding depression in Parkinson's disease – Symptoms, frequency, and neurobiology
Speaker: Murat Emre (Turkey)

Learning Objectives: 1. To recognize apathy in PD and how better to assess and treat it; 2. To understand the extent and basis of anxiety disorders in PD; 3. What constitutes depression in PD and how can it optimally be managed.

JP2 – DBS AND DEVICE-AIDED THERAPY (PANEL DISCUSSION)

Location: Room A

Moderators: Ryosuke Takahashi (Japan)
Toshiki Mizuno (Japan)

Panelists:
Atsushi Umemura (Japan)
Hiroki Toda (Japan)
Katsuo Kimura (Japan)
Genko Oyama (Japan)
Shinichiro Ogura (Japan)
Katsuyoshi Ito (Japan)

Discussion

Summary: DBS has become a rather common treatment for PD treatment since it received insurance indication, but some patients choose DBS without knowing the necessary details.

Learning Objectives: 1. To know the effects of DBS; 2. The symptoms which will be improved by DBS; 3. About the device – How can PWP select the devices? 4. The symptoms which are not expected to improve; 5. The effects to non-motor symptoms; 6. The information which caregivers should know.
| ROOMS I, J, K | WW4 – TRANSCRANIAL MAGNETIC STIMULATION IN PARKINSON’S DISEASE: FROM BASIC TO CLINICAL RESEARCH Location: Room B-2  
Co-Chair: Paolo Calabresi (Italy)  
Co-Chair: Stephane Lehericy (France)  
Talk 1: Deciphering transcranial magnetic stimulation mechanisms in early and late experimental parkinsonism  
Speaker: Veronica Ghiglieri (Italy)  
Talk 2: Combined pharmacotherapy and neuromodulation approaches to PD  
Speaker: John Rothwell (UK)  
Talk 3: Effectiveness and reliability of TMS treatment, new methods and future perspectives  
Speaker: Angelo Quartarone (Italy)  
  
Learning Objectives: 1. Understand the synaptic and non-synaptic mechanisms underlying the therapeutic effects of TMS in the cortex and basal ganglia; 2. Share new findings on functional markers of synaptic plasticity and its clinical implications for TMS; 3. Developing a dialogue between basic and clinical research on methodological aspects of TMS as a necessary translational aspect of this treatment. | WW5 – HOW TO DISTINGUISH FAKE FROM REAL SCIENTIFIC AND CLINICAL ADVANCES Location: Room D  
Co-Chair: Jonathan Kimmelman (Canada)  
Co-Chair: Simon Stott (UK)  
Talk 1: How do journals decide what to publish and promote?  
Speaker: Elena Becker-Barroso (UK)  
Talk 2: How does the media choose stories and sell them?  
Speaker: Jon Palfreman (USA)  
Talk 3: How do you assess all the information that is out there?  
Speaker: Benjamin Stecher (Canada)  
  
Learning Objectives: 1. Describe the modern media landscape and publishing incentives and how it can and has been manipulated; 2. Give insights into the process of research impact based on information ‘factoids’, fragmented data, news out of context, and hype vs evidence-based medicine and old school processes; 3. Give examples of what can be done to provide sound, unbiased information and efforts to protect patients by legislation. | WW6 – SEXUALITY AND INTIMACY IN PARKINSON’S DISEASE FOR PEOPLE WITH PARKINSON’S AND THEIR PARTNERS Location: Room B-1  
Co-Chair: Victor McConvey (Australia)  
Co-Chair: Lucie Lachance (Canada)  
Talk 1: How PD affects sexuality and intimacy of PwPD and their care partners  
Speaker: Sheila Silver (USA)  
Talk 2: Medical and non-medical management of sexual problems in PD  
Speaker: Jim Bender (The Netherlands)  
Talk 3: How to communicate on sexual issues with my inter-professional team  
Speaker: Gila Bronner (Israel)  
  
Learning Objectives: 1. Awareness and understanding of how Parkinson’s disease may significantly affect the intimate life of PwPD and partners and consequently affect their relationship; 2. Provide PwPD and partners with adequate tools and techniques to cope with these problems; 3. Empower patients and partners to discuss their sexual health problems with their health care professionals. | WRT2 – Location: Rooms I, J, K  
Table 1: Sleep & PD: Tips and tricks  
Aleksandar Videnovic (USA)  
Table 2: Therapeutic programs for cognitive health in PD  
Atsushi Takeda (Japan)  
Table 3: Cognitive deficits in Parkinson’s disease: Clinical features, diagnosis, and evolution  
Caroline Williams-Gray (UK)  
Table 4: The challenges of making authentic midbrain dopamine neurons from stem cells  
Agnete Kirkeby (Denmark)  
Table 5: Clinical application of stem cell transplantation therapy  
Asuka Morizane (Japan)  
Table 6: The role of cellular thresholds in selective neuronal vulnerability in PD  
David Sulzer (USA)  
Interpreter: Shinya Yamashita  
Table 7: The history of levodopa and dopamine agonists, benefits and myths  
Stanley Fahn (USA)  
Table 8: Living well with PD  
Kathie Hill (USA) & Nancy Peate (USA)  
Table 9: α-synuclein and the immune response in PD  
Ashley Harms (USA)  
Interpreter: Kyohel Kitamura  
Table 10: Mechanisms underlying impulsive behaviors and addictions in Parkinson’s disease  
Christelle Baunez (France)  
Table 11: Diagnosed with PD … Now what?  
Andy McDowell (New Zealand)  
Table 12: Managing dyskinesias  
Masahiko Tomiyama (Japan)  
* Roundtables with Japanese translator/Japanese-language support |
**WPC 2019**

**5th World Parkinson Congress**

**KYOTO, JAPAN**

**WPC THEATER**

**FINAL PROGRAM**

**Wednesday, June 5, 2019**

**DAILY > 5:15 – 6:30 PM**

**WPT – POSTER TOURS**

<table>
<thead>
<tr>
<th>5:15 – 6:30 PM</th>
<th>Location: Event Hall &amp; New Hall</th>
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</thead>
<tbody>
<tr>
<td>See pages 108–110 for the list of posters included in each tour.</td>
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<tr>
<td>Sign-up required (New Hall).</td>
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<tr>
<td><strong>Poster Tour 7:</strong> Caregiving, palliative care, self-management, and PD</td>
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<tr>
<td>Host: Colleen Canning (Australia)</td>
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<td><strong>Poster Tour 8:</strong> Health accessibility for all populations</td>
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<tr>
<td>Host: Tanya Simuni (USA)</td>
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<tr>
<td><strong>Poster Tour 9:</strong> Etiology, functional imaging, optogenetics, and PD</td>
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<tr>
<td>Host: Angelo Quartarone (Italy)</td>
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<tr>
<td><strong>Poster Tour 10:</strong> Animal and cellular models, dopamine receptors, and pharmacology</td>
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<tr>
<td>Host: Ashley Harms (USA)</td>
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<tr>
<td><strong>Poster Tour 11:</strong> Protein misfolding, handling, and transmission</td>
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<tr>
<td>Host: Nicolas Dzamco (Australia)</td>
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<tr>
<td><strong>Poster Tour 20:</strong> Public education and awareness programs</td>
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<tr>
<td>Host: Malu Tansey (USA)</td>
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<td>(Moved from Thursday, June 7)</td>
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<th>5:15 – 6:30 PM</th>
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<tbody>
<tr>
<td><strong>Poster Tour 1:</strong> Protein misfolding and handling</td>
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<tr>
<td>Host: Miquel Vila (Spain)</td>
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<tr>
<td><strong>Poster Tour 2:</strong> Animal and cellular models of PD</td>
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<td>Host: Laurent Roybon (Sweden)</td>
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<td><strong>Poster Tour 3:</strong> Alternative and complementary therapies</td>
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<td>Host: Tom Montine (USA)</td>
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<tr>
<td><strong>Poster Tour 4:</strong> Non-motor manifestations and PD</td>
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<td>Host: David Breen (UK)</td>
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<td><strong>Poster Tour 5:</strong> Rehabilitation sciences I</td>
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<tr>
<td>Host: Isabelle Arnulf (France)</td>
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<tr>
<td><strong>Poster Tour 6:</strong> Clinical trial design and patient involvement</td>
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<td>Host: Simon Stott (UK)</td>
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**WWU – DAILY WRAP-UP PANELS**

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<thead>
<tr>
<th>5:15 – 6:30 PM</th>
<th>Location: Main Hall</th>
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<tbody>
<tr>
<td><strong>Chair:</strong> Michele Tagliati (Italy)</td>
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<td><strong>Panelists:</strong> Jennifer Goldman (USA)</td>
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<td>M. Angela Cenci Nilsson (Sweden)</td>
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<td>Frank Church (USA)</td>
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<td>Paolo Calabresi (Italy)</td>
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<td>Nobutaka Hattori (Japan)</td>
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**BOOK NOOK**

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<tr>
<td>Chair: Michele Tagliati (Italy)</td>
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<td>Frank Church (USA)</td>
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<td>Paolo Calabresi (Italy)</td>
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<td>Nobutaka Hattori (Japan)</td>
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<tr>
<td>Meet the Author: Carol Clupny (USA)</td>
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**WPC THEATER**

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<tr>
<th>5:30 – 6:00 PM</th>
<th>Location: Event Hall</th>
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<tbody>
<tr>
<td><strong>Presentation by Not Impossible Labs (USA)</strong></td>
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<tr>
<td>How a wearable technology designed by Not Impossible could counter the symptoms of PD</td>
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**Session Levels**
- Crosstalk – Minimal or no scientific background required
- Moderate-level scientific sessions
- High-level scientific sessions

**Session Type**
- Basic Science
- Clinical Science
- Comprehensive Care

**Language**
- Simultaneous interpretation from English to Japanese
- Japanese track
HOT TOPICS > 8:00 – 9:00 AM
Location: Main Hall
Supported by American Parkinson Disease Association
Chair: Robert Edwards (USA)

Talk 1: Bidirectional gut-to-brain and brain-to-gut propagation of α-synuclein pathology in non-human primates
P03.03 Speaker: Erwan Bezard (France)

Talk 2: Patient engagement in the development of OUR DBS: A global patient registry addressing outcomes and unanswered questions for DBS
P21.02 Speaker: James Kirk (USA)

Talk 3: Automated immunohistochemical detection of skin depositions of pathological α-synuclein in idiopathic rem sleep behavior disorder and parkinsonism
P17.02 Speaker: Sebastian Dziadek (Switzerland)

Talk 4: A closer look at the unmet needs, research and care priorities for women with Parkinson’s
P35.05 Speaker: Veronica Todaro (USA)

AWARD CEREMONY > 9:00 – 9:30 AM
Location: Main Hall
Presenter: Elizabeth Pollard (USA)

WPC Robin A. Elliott Award for Service to the Community Award
Award Recipients: Sara Lew Lai Heong (Malaysia) and Nancy Tingey, OAM, CF, MA, BA (Australia)

MORNING PLENARY > 9:30 – 11:30 AM
Location: Main Hall
Supported by Mitsubishi Tanabe Pharma America, Inc.

Are we moving towards personalized medicine?
Co-Chair: Etienne Hirsch (France)
Co-Chair: Ryosuke Takahashi (Japan)

Talk 1: Heterogeneity of Parkinson’s disease
Speaker: Connie Marras (Canada)

Talk 2: How are the genetics of Parkinson’s disease influencing treatment development?
Speaker: Susanne Schneider (Germany)

Talk 3: New trial approaches to treating Parkinson’s disease
Speaker: Olivier Rascol (France)

Talk 4: What’s it like to live with a gene for Parkinson’s disease?
Speaker: Benjamin Stecher (Canada)

Learning Objectives: 1. To recognize that Parkinson’s disease is not a single disorder but more a collection of similar conditions that can be defined clinically and genetically; 2. To understand our new emerging data relating to some aspects of the genetic basis of Parkinson’s are being used in new trials to target only certain forms of the condition; 3. To show how researchers are designing new clinical trials in Parkinson’s disease using subtypes of patients and better trial designs; 4. Explain what it is like to live with a gene for a neurological condition and how knowing this can help in making informed decisions about their daily living, clinical trial involvement, and long-term plans.
# WPC2019 @worldpdcongress

## FINAL PROGRAM

**Thursday, June 6, 2019**

### LUNCH > 11:30 AM - 1:30 PM

#### CORPORATE LUNCH SESSIONS

- **12:00 – 1:00 PM**  
  **Location:** Room A  
  **Open door:** 11:30 AM  
  Health professionals only – Talks in Japanese  
  Supported by AbbVie  
  *(See Japanese program on page 16.)*

- **12:00 – 1:00 PM**  
  **Location:** Annex 2  
  **Open door:** 11:30 AM  
  Health professionals only – Talks in English  
  **Wearable technology for quantitative evaluation of Parkinson’s disease**  
  *Moderator:* Yoshikazu Ugawa (Japan)  
  *Speaker:* Roongroj Bhidayasiri (Thailand)  
  Supported by Takeda Pharmaceutical Company Limited, Japan Medical Office

#### BOOK NOOK

- **11:30 AM – 1:30 PM**  
  **Location:** Event Hall  
  Meet the Authors: Nancy Tingey (Australia) & Carl Voyles (USA)

#### POSTER SESSION 2

- **11:30 AM – 1:30 PM**  
  **Location:** Event Hall & New Hall

#### CARE PARTNER LOUNGE

- **12:30 – 1:30 PM**  
  **Location:** Room C-1  
  Creating connections  
  An open support group  
  Supported by Acadia

#### TSL – SPECIAL LECTURE

- **12:00 – 1:00 PM**  
  **Location:** Sakura Room  
  **Living well with Parkinson’s disease: What’s your secret?**  
  **Chair:** Raj Pahwa (USA)  
  **Panelists:** Omotola Thomas (UK/Nigeria), Yoshiko Okada (Japan), Emma Lawton (UK), Elizabeth Ildal (Denmark), Benjamin Stecher (Canada)

#### WPC THEATER

- **12:00 – 1:00 PM**  
  **Location:** Event Hall  
  Music and dance performances

#### WORLD CAFÉ

- **12:00 – 1:00 PM**  
  **Location:** Room 101  
  Question of the day: **What are your tips for navigating a young onset diagnosis?**  
  *Limited seating up to 30. Sign-up outside door.*

#### CLINICAL RESEARCH VILLAGE

- **12:00 – 1:00 PM**  
  **Location:** Event Hall  
  **Common Concerns and Myths about Research Participation Dispelled**  
  Learn answers to common questions about participating in research and understand the different ways people can get involved.  
  Supported by The Michael J. Fox Foundation
### PARALLEL SESSIONS > 1:30 – 3:00 PM

| TP1 | BASAL GANGLIA OSCILLATIONS AND CIRCUITRY IN PARKINSON’S DISEASE  
Location: Annex 2 |
|-----|-----------------------------------------------------------------
| Co-Chair: | Elena Moro (France)  
Co-Chair: Barbara Picconi (Italy) |
| Talk 1: Abnormal neural activities in the cortico-basal ganglia networks in animal models of PD  
Speaker: Atsushi Nambu (Japan) |
| Talk 2: Optogenetic modulation of basal ganglia activity in Parkinsonian models  
Speaker: Stella Papa (USA) |
| Talk 3: Adaptive brain stimulation for the treatment of PD: Where are we with this?  
Speaker: Alberto Priori (Italy) |

**Learning Objectives:**
1. Understand how the cortico-basal ganglia-thalamocortical network is organized, and how oscillations can emerge and propagate within this network in animal models of PD.
2. Appreciate the link between specific oscillatory activities and different clinical states, and understand how deep-brain stimulation can reduce pathological oscillations in PD patients.
3. Gain awareness of ongoing efforts to develop adaptive deep-brain stimulation (DBS) for use in PD.

| TP2 | THE MAJOR DISCOVERIES IN PARKINSON’S DISEASE OVER THE LAST 10 YEARS  
Location: Annex 1 |
|-----|-----------------------------------------------------------------
| Co-Chair: | Tim Anderson (New Zealand)  
Co-Chair: Daniel Weintraub (USA) |
| Talk 1: α-synuclein: A story of accumulation and spread  
Speaker: Maria Grazia Spillantini (UK) |
| Talk 2: Preclinical and prodromal PD: Predictive and risk factors  
Speaker: Walter Maetzler (Germany) |
| Talk 3: iPSC and PD  
Speaker: Jun Takahashi (Japan) |

**Learning Objectives:**
1. Understand the concept of α-synuclein accumulation and spread in the pathogenesis of PD.
2. Outline the new concepts and implications of preclinical and prodromal PD.
3. Discuss the development of personalized therapies and disease modelling using iPSCs.

| TP3 | END OF LIFE PLANNING AND CARE FOR PARKINSONISM  
Location: Room Sakura |
|-----|-----------------------------------------------------------------
| Co-Chair: | Julie Carter (USA)  
Co-Chair: Anne Louise Lafontaine (Canada) |
| Talk 1: State of the art of palliative care in Parkinson’s disease: A global perspective  
Speaker: Victor McConvey (Australia) |
| Talk 2: Palliative care in your hands: Advance care planning in parkinsonian disorders  
Speaker: Roongroj Bhidayasiri (Thailand) |
| Talk 3: Case studies in palliative care for parkinsonian disorders  
Speaker: Barry Snow (New Zealand) |

**Learning Objectives:**
1. Explain the benefits and models for Advance Care Planning (ACP).
2. Identify palliative needs for patients with end-stage parkinsonism.
3. Summarize the treatments available for palliation of symptoms at end of life.

| TP4 | WHY DO PEOPLE WITH PARKINSON’S DISEASE FALL AND CAN FALLS BE PREVENTED?  
Location: Room A |
|-----|-----------------------------------------------------------------
| Chair: | Laurie King (USA) |
| Talk 1: Can we predict falls?  
Speaker: Colleen Canning (Australia) |
| Talk 2: Factors that contribute to falls  
Speaker: Anat Mirelman (Israel) |
| Talk 3: Solutions to minimize falls  
Speaker: Lynn Rochester (UK) |

**Learning Objectives:**
1. To describe the common elements that lead to falls in PD including changes in muscle strength, freezing of gait and how changes in cognition impact on gait.
2. To review the evidence that rating scales or other factors can predict who will fall.
3. To review strategies to prevent or minimize falls.
**WORKSHOPS > 1:30 – 3:00 PM**

**TW1 – THE ROLE OF INFLAMMATION AND THE IMMUNE SYSTEM IN PARKINSON’S DISEASE**
Location: Room B-2

Co-Chair: David Standaert (USA)
Co-Chair: Caroline Williams-Gray (UK)

Talk 1: α-synuclein and the immune response in PD
Speaker: Ashley Harms (USA)

Talk 2: Enhancing clearance of α-syn by immune related cells for neuroprotection
Speaker: Nadia Stefanova (Austria)

Talk 3: LRRK2 in the Immune System
Speaker: Nicolas Dzamco (Australia)

**Learning Objectives:**
1. Describe the types of pain that can occur in PD and how to assess them; 2. Understand the mechanisms that underlie different types of pain in PD; 3. Outline the current evidence and treatment approaches to the management of pain in PD.

**TW2 – PAIN AND PARKINSON’S DISEASE**
Location: Room B-2

Co-Chair: A. Jon Stoessl (Canada)
Co-Chair: Karen Raphael (USA)

Talk 1: Pain syndromes occurring in Parkinson’s disease: Presentations and assessment
Speaker: Santiago Perez Lloret (Argentina)

Talk 2: Current understanding of underlying mechanisms of pain syndromes in PD
Speaker: Yih-Ru Wu (Taiwan)

Talk 3: Treatment approaches and clinical trials for pain in PD
Speaker: Joaquim Ferreira (Portugal)

**Learning Objectives:**
1. Describe the types of pain that can occur in PD; 2. Understand the mechanisms that underlie different types of pain in PD; 3. Outline the current evidence and treatment approaches to the management of pain in PD.

**TW3 – YOPD: IT’S NOT ALL ABOUT THE SYMPTOMS — OTHER LIFE CONSIDERATIONS**
Location: Room B-1

Co-Chair: Soania Mathur (Canada)
Co-Chair: Heather Kennedy (USA)

Talk 1: Diagnosed with YOPD – Next steps
Speaker: Andy McDowell (New Zealand)

Talk 2: Tips and tricks for maintaining work/life balance
Speaker: Rebecca Miller (USA)

Talk 3: PD is in the house – Impact on children/teens/young adults
Speaker: Elaine Book (Canada)

**Learning Objectives:**
1. Explore what may be involved in coming to terms with the diagnosis; 2. Understand the mechanisms that underlie different types of pain in PD; 3. Outline the current evidence and treatment approaches to the management of pain in PD.

**ROUNDTABLES 1:30 – 3:00 PM**

**TRT1 –**
Location: Rooms I, J, K

Table 1: Living well with young-onset Parkinson’s
Tim Hague (Canada)
Interpreter: Masatako Hiroi

Table 2: Inflammation, microbiome and PD: What is all the fuss about?
Viviane Labrie (USA)

Table 3: Is there any evidence that nutrients modify PD?
Laurie Mischley (USA)
Interpreter: Rika Kobayashi

Table 4: LRRK2 as a therapeutic target
Brian Fiske (USA)

Table 5: I have Parkinson’s and I care about my genetics: You should too
Martin Taylor (UK)

Table 6: Gut microbiota: Putting the puzzle together
Filip Scheperjans (Finland)

Table 7: Experimental pharmacological treatments for Parkinson’s disease
Jeff Conn (USA)

Table 8: The challenge of disease classification in PD – What does it look like and what does it mean
Rejko Krüger (Luxembourg)

Table 9: What is α-synuclein and what goes wrong with it in PD
Jeffrey Kordower (USA)

Table 10: LRRK2 and Parkinson’s
Mark Cookson (USA)

Table 11: How do you find a good ‘druggable’ candidate in the lab?
Erwan Bezard (France)

Table 12: Stem cell tourism – Why is it dangerous?
Jonathan Kimmelman (Canada)

**COFFEE BREAK > 3:00 – 3:30 PM**

* Roundtables with Japanese translator/Japanese-language support
### TP5 – The Proteinopathy of Parkinson’s Disease and Its Role in Pathogenesis
**Location:** Annex 2

**Co-Chair:** Serge Przedborski (USA)
**Co-Chair:** Ronald Melki (France)

**Talk 1:** Synuclein and its role at the synapse  
**Speaker:** Robert Edwards (USA)

**Talk 2:** Mechanistic insights into GBA1-associated Parkinson’s disease: Therapeutic implications  
**Speaker:** Dimitri Krainc (USA)

**Talk 3:** PINK1, Parkin and the ubiquitin system  
**Speaker:** Noriyuki Matsuda (Japan)

**Learning Objectives:**
1. Gain an appreciation for factors that modulate cell-to-cell transmission of α-synuclein pathology;
2. To outline how cellular degradation and recycling pathways influence the distribution of pathology;
3. Understand the interactions between mitochondrial function and handling of misfolded proteins inside neurons.

### TP6 – Advancing Research, Clinical Trials and Real-World Data
**Location:** Annex 1

**Co-Chair:** Simon Lewis (Australia)
**Co-Chair:** Jasmine Sturr (USA)

**Talk 1:** Where are we with clinical trials right now in PD?  
**Speaker:** Tom Foltyny (UK)

**Talk 2:** What do the guinea pigs really think?  
**Speaker:** Richard Windle (UK)

**Talk 3:** Using real-world data as an alternative to clinical trials  
**Speaker:** Bas Bloem (The Netherlands)

**Learning Objectives:**
1. Identify what patients expect from clinical trials and the need to encourage them to participate in them;
2. Give an overview of the types of different medical and surgical trials that are ongoing; 3. The use of alternative non-trial approaches to better work out how to treat PD.

### TP7 – Important Non-Motor Symptoms That Are Often Overlooked
**Location:** Room Sakura

**Co-Chair:** Lucie Lachance (Canada)
**Co-Chair:** Hirohide Takahashi (Japan)

**Talk 1:** Evaluating and managing sexual dysfunction in PD  
**Speaker:** Sharon Hassan-Baer (Israel)

**Talk 2:** Urological dysfunction in PD – What is it and what can be done about it?  
**Speaker:** Ryuji Sakakibara (Japan)

**Talk 3:** Managing orthostatic hypotension in PD  
**Speaker:** Stuart Isaacson (USA)

**Learning Objectives:**
1. To provide an overview of the sexual dysfunction in PD and some strategies to manage them; 2. To review the most common bladder issues in PD and some treatments that can help; 3. To explain and manage orthostatic hypotension in PD.

### TP8 – Strategies to Optimize Daily Living in PWP: Physical and Speech Therapies
**Location:** Room A

**Co-Chair:** Lee Dibble (USA)
**Co-Chair:** Jennifer Cody (USA)

**Talk 1:** Can we predict falls in PD?  
**Speaker:** Lynn Rochester (UK)

**Talk 2:** Facial masking and drooling: The impact on communication, social interaction, and swallowing  
**Speaker:** Hanneke Kalf (The Netherlands)

**Talk 3:** Early management of swallowing disorders: Can we prevent aspiration pneumonia?  
**Speaker:** Corinne Jones (USA)

**Learning Objectives:**
1. Describe the essential features of gait dysfunction in early PD and implications for treating it early; 2. Examine the implications of facial masking and drooling on communication and social interaction; 3. Participants will be able to list specific approaches for early identification of swallowing disorders in PD; 4. Participants will be able to list specific approaches for treatment of swallowing disorders in PD.

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<table>
<thead>
<tr>
<th>Session Levels</th>
<th>Session Type</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate-level scientific sessions</td>
<td>Basic Science, Clinical Science, Comprehensive Care</td>
<td>Simultaneous interpretation from English to Japanese, Japanese track</td>
</tr>
</tbody>
</table>
TW4 – ADVANCING THE PHARMACOLOGY OF PARKINSON’S DISEASE
Location: Room B-2
Co-Chair: Kalpana Merchant (USA)
Co-Chair: Olivier Rascol (France)
Talk 1: Experimental pharmacological treatments for Parkinson’s disease
Speaker: Jeff Conn (USA)
Talk 2: New insights into L-Dopa induced dyskinesias
Speaker: Barbara Picconi (Italy)
Talk 3: Mechanisms underlying impulsive behaviors and addictions in Parkinson’s disease
Speaker: Christelle Baunez (France)

Learning Objectives: 1. To review the current status of pharmacological targets for the motor and non-motor symptoms of Parkinson’s disease; 2. The basis of L-dopa induced dyskinesias and how to treat them; 3. To review recent advances in the management of impulse control disorders and other non-motor aspects of PD.

TW5 – THE ROLE OF GENETICS AND GENETIC TESTING IN PD
Location: Room D
Co-Chair: Susanne Schneider (Germany)
Co-Chair: Martin Taylor (UK)
Talk 1: The role of genetics in increasing our understanding of the pathophysiology of PD
Speaker: John Hardy (UK)
Talk 2: Genetic testing in PD – What is possible and why is it important?
Speaker: Vincenzo Bonifati (The Netherlands)
Talk 3: Ethical and legal aspects of genetic testing in PD
Speaker: Yann Joly (Canada)

Learning Objectives: 1. An update on the genetic basis for PD and how this helps us understand the pathophysiology of PD; 2. To better understand the need for genetic testing in PD, including current technological challenges with using gene chips and next generation sequencing; 3. To discuss the ethical dilemmas and legal issues of genetic testing for PD.

TW6 – MUSIC & DANCE FOR PARKINSON’S DISEASE
Location: Room B-1
Co-Chair: Terry Ellis (USA)
Co-Chair: David Leventhal (USA)
Talk 1: Dance as exercise for Parkinson’s disease
Speaker: Meg Morris (Australia)
Talk 2: The effects of music on the brain
Speaker: Jeanette Tamplin (Australia)
Talk 3: Why partnered dance might optimize motor and cognitive rehabilitation in Parkinson’s
Speaker: Madeleine Hackney (USA)

Learning Objectives: 1. Be able to discuss how dance can be therapeutic for someone with Parkinson’s; 2. Explain the effect of music on the brain and how this impacts someone with Parkinson’s when used as therapy; 3. Give two explanations how or why partnered dance could improve rehabilitation efforts for Parkinson’s.

Excerpt from Capturing Grace

TRT2 – Location: Rooms I, J, K
Table 1: Palliative care is in your hands
Roongroj Bhidayasiri (Thailand)
Table 2*: iPS cells and PD – What does this mean in 2019?
Jun Takahashi (Japan)
Table 3*: Predicting who will get Parkinson’s disease
Isabelle Arnulf (France)
Table 4*: Shining a light on Parkinson’s: Optogenetic modulation of basal ganglia activity
Stella Papa (USA)
Table 5*: Treatment approaches and clinical trials for pain in PD
Beom Jeon (South Korea)
Table 6*: The heterogeneity of Parkinson’s disease – What does it mean and why is it important
Connie Marras (Canada)
Table 7*: Maintaining balance and optimism when working and raising children with young onset PD
Rebecca Miller (USA)
Table 8: Parkinson’s and the gut microbiome
Haydeh Payami (USA)
Table 9: Measuring gut function in PD
Kathleen Shannon (USA)
Table 10: Is inflammation important in PD?
David Standaert (USA)
Table 11: New causative genes for PD
Alexis Brice (France)
Table 12: Is there a Parkinson’s diet?
Karin Overbeek (The Netherlands)

* Roundtables with Japanese translator/Japanese-language support
## DAILY > 5:15 - 6:30 PM

### TPT - POSTER TOURS

**5:15 – 6:30 PM**  
*Location: Event Hall & New Hall*

See pages 111–113 for the list of posters included in each tour. Sign-up required (New Hall).

- **Poster Tour 12:** Animal and cellular models of PD II  
  *Host:* Susanne Schneider (Germany)
- **Poster Tour 13:** Fitness, wellness, and nutrition  
  *Host:* Karin Overbeek (The Netherlands)
- **Poster Tour 14:** Rehabilitation sciences II  
  *Host:* Margaret Mak (Hong Kong)
- **Poster Tour 15:** Rehabilitation sciences III  
  *Host:* Hirohide Takahashi (Japan)
- **Poster Tour 16:** Biomarkers and PD  
  *Host:* Lucilla Parnetti (Italy)
- **Poster Tour 17:** Brain physiology, cell death, and neurophysiology  
  *Host:* Maria Grazia Spillantini (UK)
- **Poster Tour 18:** Living well with PD  
  *Host:* Lucie Lachance (Canada)
- **Poster Tour 19:** PD progression, cognition, and sleep  
  *Host:* Anne Louise Lafontaine (Canada)
- **Poster Tour 21:** E-health and technology  
  *Host:* Aletta Kraneveld (The Netherlands)

### TWU - DAILY WRAP-UP PANELS

**5:15 – 6:30 PM**  
*Location: Main Hall*

- **Chair:** Serge Przedborski (USA)

- **Panelists:**  
  - Tim Anderson (New Zealand)  
  - Roger Barker (UK)  
  - Julie Carter (USA)  
  - Yann Joly (Canada)  
  - Carolyn Sue (Australia)

### BOOK NOOK

**5:30 – 6:30 PM**  
*Location: Event Hall*

Meet the Author: A.C. Woolnough (USA)

### WPC THEATER

**5:30 – 6:30 PM**  
*Location: Event Hall*

**Presentation by Ben Wylie (UK)**

**Film showcase – Kinetics**

A film by Sue Wylie

Based on a true story, Kinetics explores the unlikely friendship between a woman with early-onset Parkinson’s and a bright but bored student into Parkour. Two people seemingly at polar opposites, but both with a desire to move.

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**Session Levels**  
- Crosstalk – Minimal or no scientific background required
- Moderate-level scientific sessions
- High-level scientific sessions

**Session Type**  
- Basic Science
- Clinical Science
- Comprehensive Care

**Language**  
- Simultaneous interpretation from English to Japanese
- Japanese track

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5th World Parkinson Congress
Kyoto, Japan

Final Program
Thursday, June 6, 2019
HOT TOPICS > 8:00 – 9:00 AM

Location: Main Hall
Chair: Binit Shah (USA)

Talk 1: Patient-derived α-synuclein assemblies/strains display distinct functional characteristics in cells and 
in vivo
Speaker: Veerle Baekelandt (Belgium)

Talk 2: Assessing tele-health outcomes in multiyear extensions of Parkinson’s disease trials (AT-HOME PD):
Initiation of a long-term observational study
Speaker: Ruth Schneider (USA)

Talk 3: Converging electrophysiological functions and pathological calcium phenotype over time results in 
mitochondrial stress: Describing a pathophysiological timeline and neuronal vulnerability in PD
Speaker: Dayne Beccano-Kelly (UK)

Talk 4: Multimodal balance training with rhythmical cues in Parkinson’s disease: A randomized clinical trial
Speaker: Tamine Capato (Brazil)

AWARD CEREMONY > 9:00 – 9:30 AM

Location: Main Hall
Presenter: A. Jon Stoessl (Canada)

WPC Award for Distinguished Contribution to the Parkinson Community
Award Recipient: Soania Mathur, BSC, MD, CCFP (Canada)

MORNING PLENARY > 9:30 – 11:30 AM

FPL – PLENARY
Location: Main Hall

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

Co-Chair: Hideki Mochizuki (Japan)
Co-Chair: Roger Barker (UK)

Talk 1: Your radical new life: Creative ways to overcome our challenges
Speaker: Heather Kennedy (USA)

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

Talk 3: Does PD start outside the brain?
Speaker: Per Borghammer (Denmark)

Talk 4: Managing of the peripheral problems in PD
Speaker: Shen Yang Lim (Malaysia)

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

Enjoy resilience and in-the-moment relief while caregiving with some useful strategies based on Alexander technique (AT), a well-established approach for skillfully managing stressful circumstances.

Supported by Acadia

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**Current status of iPS cells and efforts for medical application**

*Introduction:* Yoshikuni Mizuno (Japan)

*Speaker:* Shinya Yamanaka (Japan) – 2012 Nobel laureate in Physiology or Medicine

Shinya Yamanaka has been affiliated with Kyoto University since 2004.

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**WPC THEATER**

**12:00 - 1:00 PM**

*Location:* Event Hall

Music and dance performances

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**WORLD CAFÉ**

**12:00 - 1:00 PM**

*Location:* Room 101

Question of the day: **What was the most impactful experience of the conference to you?**

*Limited seating up to 30. Sign-up outside door.*

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**CLINICAL RESEARCH VILLAGE**

**12:00 - 1:00 PM**

*Location:* Event Hall

Supported by The Michael J. Fox Foundation

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**Session Levels**

- **Basic Science**
- **Clinical Science**
- **Comprehensive Care**

**Session Type**

- **Basic**
- **Clinical**
- **Comprehensive**

**Language**

- Simultaneous interpretation from English to Japanese
- Japanese track
**FP1 – THE GI TRACT, MICROBIOME AND PARKINSON’S**

*Location: Annex 2*

**Co-Chair: Malu Tansey (USA)**
**Co-Chair: Pascal Derkinderen (France)**

**Talk 1:** Gut microbiota, 10^13 new pieces in the Parkinson’s disease puzzle  
*Speaker: Filip Scheperjans (Finland)*

**Talk 2:** Parkinson’s disease and Parkinson’s disease medications have distinct signatures with respect to the gut microbiome  
*Speaker: Haydeh Payami (USA)*

**Talk 3:** Measuring GI function in Parkinson’s disease  
*Speaker: Per Borghammer (Denmark)*

**Learning Objectives:** 1. To learn about the potential role of the gut microbiome in PD pathogenesis; 2. To learn about environmental factors that affect the gut microbiome in PD; 3. To learn about the latest technologies to measure gastrointestinal function in PD patients.

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**FP2 – NEW THERAPIES AND EMERGING THERAPIES IN PD**

*Location: Room A*

**Co-Chair: Kalpana Merchant (USA)**
**Co-Chair: Raj Pahwa (USA)**

**Talk 1:** Immune therapies for PD  
*Speaker: Seung Jae Lee (Korea)*

**Talk 2:** New surgery for PD  
*Speaker: Binit Shah (USA)*

**Talk 3:** Repurposing drugs that target risk factors for PD  
*Speaker: Michael Schwarzschild (USA)*

**Learning Objectives:** 1. To review evidence for new emerging therapies for PD, including cell-based therapies, surgical techniques and repurposing old drugs; 2. To understand the potential benefits and side effects of these interventions; 3. To put new ‘hyped’ therapies in the context of ‘old’ therapies; ‘Don’t Believe the Hype’.

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**FP3 – IS THERE A “BEST” EXERCISE FOR PARKINSON’S DISEASE?**

*Location: Room Sakura*

**Co-Chair: Joaquim Ferreira (Portugal)**
**Co-Chair: Laurie King (USA)**

**Talk 1:** Aerobic exercise for PD  
*Speaker: Terry Ellis (USA)*

**Talk 2:** Strengthening exercise for PD  
*Speaker: Lee Dibble (USA)*

**Talk 3:** Complex balance training for PD  
*Speaker: Margaret Mak (Hong Kong)*

**Learning Objectives:** 1. To describe the evidence supporting different types of exercise for people with PD; 2. To understand the contributions of varying exercise to specific and different impairments in people with PD; 3. Describe how technology can help with each type of exercise; 4. Describe how each type of exercise could be beneficial at different stages of the disease.
**WORKSHOPS > 1:30 – 3:00 PM**

**FW1 – THE ROLE OF AGING IN PARKINSON’S DISEASE**
*Location: Room B-2*

- **Co-Chair: Miquel Vila (Spain)**
- **Co-Chair: Maria Grazia Spillantini (UK)**

**Talk 1: Aging of the immune system and relevance to brain health and disease**
*Speaker: V. Wee Yong (Canada)*

**Talk 2: Proteostasis, molecular chaperones and aging – Implications for PD**
*Speaker: Heath Ecroyd (Australia)*

**Talk 3: Aging of mitochondrial function and bioenergetics – What does this mean for PD pathogenesis?**
*Speaker: Carolyn Sue (Australia)*

- **Learning Objectives:** 1. To understand how the immune system impacts on the brain with age; 2. To understand how the biological pathways maintaining healthy proteins in cells changes with age and impacts on neurodegeneration; 3. To learn more about how cellular energy is maintained by mitochondria as we age, and the potential impact of age on these processes.

**FW2 – WHAT IS THE BEST BIOMARKER IN PARKINSON’S DISEASE**
*Location: Room D*

- **Co-Chair: Brian Fiske (USA)**
- **Co-Chair: Jean Burns (USA)**

**Talk 1: The use of neuroimaging as a biomarker in PD**
*Speaker: Stephane Lehericy (France)*

**Talk 2: The current status of ‘wet’ biomarkers (blood, CSF etc) as a biomarker in PD**
*Speaker: Lucilla Parnetti (Italy)*

**Talk 3: Could biopsies from outside the brain help in the diagnosis and tracking of PD?**
*Speaker: Kathleen Shannon (USA)*

- **Learning Objectives:** 1. To review the methods and instruments used for biomarker development in PD; 2. To understand the role of clinical, imaging and CSF biomarkers in the diagnosis and tracking of PD; 3. To address the use of biomarkers for clinical trials and assessment of profession.

**FW3 – THE VOICE AND RESPIRATION IN PD**
*Location: Room B-1*

- **Co-Chair: Hanneke Kalf (The Netherlands)**
- **Co-Chair: Jeanette Tamplin (Australia)**

**Talk 1: Overview of voice and breathing in Parkinson’s disease**
*Speaker: Corinne Jones (USA)*

**Talk 2: Approaches to voice training in PD**
*Speaker: Darla Freeman (USA)*

**Talk 3: Maintenance of intelligibility after speech therapy in PD**
*Speaker: Jennifer Cody (USA)*

- **Learning Objectives:** 1. To describe the relationship between breathing, voice and swallowing and how this is important in PD; 2. To understand 2 technology-based approaches to improve voice and speech; 3. To discuss challenges and solutions in training therapies designed to maintain voice intelligibility in PD.

**COFFEE BREAK > 3:00 – 3:30 PM**

**ROUND TABLES 1:30 – 3:00 PM**

**FRT1 –**
*Location: Rooms I, J, K*

- **Table 1:** What is left to be discovered in PD?
  *Tim Anderson (New Zealand)*
- **Table 2:** Where are we with clinical trials in PD in 2019?
  *Tom Foltynie (UK)*
- **Table 3:** How and why you should be a guinea pig in a trial
  *Richard Windle (UK)*
- **Table 4:** Using real world data as an alternative to clinical trials
  *Bas Bloem (The Netherlands)*
  *Interpreter: Hisashi Kamido*
- **Table 5:** Molecular advances in stem cell and reprogramming strategies to treat PD
  *Ernest Arenas (Sweden)*
  *Interpreter: Shinya Yamashita*
- **Table 6:** Pain and PD: Patient reality and what we know
  *Karen Raphael (USA)*
- **Table 7:** The role of genetics in better understanding the pathophysiology of PD
  *John Hardy (UK)*
  *Interpreter: Seigi Oshima*
- **Table 8:** Insulin resistance, diabetes and Parkinson’s disease
  *Dilan Athauda (UK)*
- **Table 9:** The links between mitochondrial failure and lysosomal dysfunction and α-synuclein aggregation
  *Dimitri Krainc (USA)*
- **Table 10:** PINK1, parkin and the ubiquitin system – How do they link to what goes wrong in PD
  *Noriyuki Matsuda (Japan)*
- **Table 11:** Medical and non-medical management of sexual problems in PD
  *Jim Bender (The Netherlands)*
- **Table 12:** Perspectives: Staying positive and engaged after a Parkinson’s diagnosis, advice from a PwP and care partner
  *Karyn Spilberg (Australia) and Sue Harper (Australia)*
  *Interpreter: Takaaki Yakushigawa*
### FP4 – METABOLISM, STRESS, AND PARKINSON’S DISEASE

**Location:** Annex 2

**Co-Chair:** Tom Foltynie (UK)
**Co-Chair:** Marie-Françoise Chesselet (USA)

**Talk 1:** PARIS: The Rosetta Stone to understanding Parkinson’s disease  
**Speaker:** Ted Dawson (USA)

**Talk 2:** Insulin resistance, diabetes and Parkinson’s disease – How do they link together?  
**Speaker:** Dilan Athauda (UK)

**Talk 3:** Glial and immune basis of chronic stress-induced neurodegeneration in Parkinson’s disease  
**Speaker:** Stéphane Hunot (France)

**Learning Objectives:** 1. To understand the role of mitochondria in Parkinson’s disease and related disorders; 2. To describe the pathogenic link between diabetes and Parkinson’s disease and pharmacological strategies that use this information; 3. To understand the role of physiological stress in Parkinson’s disease.

### FP5 – HOW DO YOU TAKE A THERAPY FROM THE LAB, TO THE CLINIC, TO THE MARKET?

**Location:** Room A

**Co-Chair:** Atsushi Takeda (Japan)  
**Co-Chair:** Stuart Isaacson (USA)

**Talk 1:** How do you find a good candidate in the lab?  
**Speaker:** Erwan Bezard (France)

**Talk 2:** How do you take a therapy from the lab, to the clinic, to the market?  
**Speaker:** Kalpana Merchant (USA)

**Talk 3:** How to move from a first in human study to a marketable drug?  
**Speaker:** Jesse Cedarbaum (USA)

**Learning Objectives:** 1. How to identify a good target for treating what goes wrong in cells in PD; 2. How to perform preclinical studies and first in human studies with new therapeutic agents for PD; 3. How to take a therapy from a first in human study to a marketable treatment.

### FP6 – THE INS AND OUTS OF EATING AND PARKINSON’S DISEASE

**Location:** Room Sakura

**Co-Chair:** Hanneke Kalf (The Netherlands)  
**Co-Chair:** Laurie Mischley (USA)

**Talk 1:** How to get food & liquid in despite swallowing problems?  
**Speaker:** Sonoko Nozaki (Japan)

**Talk 2:** Is there a Parkinson’s diet?  
**Speaker:** Karin Overbeek (The Netherlands)

**Talk 3:** Food for thought: The gut-immune-brain axis in Parkinson’s disease  
**Speaker:** Aletta D. Kraneveld (The Netherlands)

**Learning Objectives:** 1. To describe at least two solutions to prevent choking or weight loss because of swallowing problems; 2. To name two food combinations that are best avoided in Parkinson’s; 3. To describe two mechanisms that decrease or increase constipation.
FW4 – NEUROGENETICS IN PARKINSON’S DISEASE: FROM MONOGENIC FORMS OF PD TO SUSCEPTIBLE GENES FOR SPORADIC FORMS OF THE DISEASE
Location: Room B-2
Co-Chair: Matt Farrer (Canada)
Co-Chair: Nobutaka Hattori (Japan)

Talk 1: New causative genes for PD
Speaker: Alexis Brice (France)

Talk 2: Next generation sequencing strategies and its role in identifying in genetic risk factors for Parkinson’s disease
Speaker: Tatsushi Toda (Japan)

Talk 3: The challenge of disease classification in PD – What does it look like and what does it mean
Speaker: Rejko Krüger (Luxembourg)

Learning Objectives: 1. To learn about the new genes identified as causing familial PD; 2. To understand the susceptible genes for ‘sporadic’ PD and its potential roles in PD pathogenesis; 3. To recognize the clinical phenotypes of familial PD that link to different causative gene mutations.

FW5 – STEM CELLS IN PARKINSON’S DISEASE
Location: Room D
Co-Chair: Roger Barker (UK)
Co-Chair: Agnete Kirkeby (Denmark)

Talk 1: Stem cell and reprogramming strategies to treat PD
Speaker: Ernest Arenas (Sweden)

Talk 2: Using stem cells to treat PD
Speaker: Jun Takahashi (Japan)

Talk 3: Stem cell tourism – What is it all about?
Speaker: Jonathan Kimmelman (Canada)

Learning Objectives: 1. Understand the potential of stem cells for learning about the pathophysiology of PD and for identifying drugs that may help to treat PD; 2. Understand the potential of stem cells for use as a direct cell repair strategy in PD; 3. How to avoid exploitation by unscrupulous companies advertising stem cell therapies.

FW6 – DEPRESSION, ANXIETY, AND APATHY IN PD: HOW TO BEST MANAGE IT – PART 2
Location: Room B-1
Co-Chair: Shen Yang Lim (Malaysia)
Co-Chair: Jon Stanford (UK)

Talk 1: Apathy: Is there a treatment?
Speaker: Kathy Dujardin (France)

Talk 2: Anxiety: How best to manage it
Speaker: Roseanne Dobkin (USA)

Talk 3: Depression: How best to treat it
Speaker: Murat Emre (Turkey)

Learning Objectives: 1. Pharmacological therapies to manage anxiety, apathy and depression; 2. Non-pharmacological therapies to manage them; 3. Be able to provide tips to a care partner when living with an apathetic partner.

FRT2 – Location: Rooms I, J, K

Table 1*: Abnormal neural activities in the cortico-basal ganglia networks in animal models of PD
Atsushi Nambu (Japan)

Table 2: Immune therapies for PD
Seung Jae Lee (Korea)

Table 3: Repurposing drugs that target risk factors for PD
Michael Schwarzschild (USA)

Table 4: Why partnered dance is a valuable therapy for people with Parkinson’s
Madeleine Hackney (USA)

Table 5*: Aerobic exercise for Parkinson’s disease – Useful or not?
Terry Ellis (USA)
Interpreter: Mitho Sakai

Table 6: New insights into L-dopa induced dyskinesias
Barbara Picconi (Italy)

Table 7*: Aging of the immune system and its relevance to brain health and PD
V. Wee Yong (Canada)
Interpreter: Narumi Saito

Table 8*: Medical and surgical advances in Parkinson’s
Genko Oyama (Japan)

Table 9*: A family affair: Well-being for everyone when a diagnosis of PD knocks on the door
Jasmine Sturr (USA)
Interpreter: Kanako Okamoto

Table 10*: Music & dance for Parkinson’s disease
Meg Morris (Australia)
Interpreter: Atsushi Naito

Table 11: Sexual intimacy and Parkinson’s
Gila Bronner (Israel)

Table 12: Where are we with DBS?
Elena Moro (France)

* Roundtables with Japanese translator/Japanese-language support
**FWU – DAILY WRAP-UP PANELS**

Location: Annex 1  
Chair: A. Jon Stoessl (Canada)  
Panelists:  
- Ted Dawson (USA)  
- Joaquim Ferreira (Portugal)  
- Susanne Schneider (Germany)  
- Annette Hand (UK)  
- Ryosuke Takahashi (Japan)

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**CLOSING REMARKS & RAFFLE**

Location: Annex 1  
- Recognition Awards  
- Musical performance  
- Passport Raffle  
- Final Remarks  
- Stanley Fahn Young Investigator Award
**POSTERS – Session 1**

**Wednesday, June 5, 2019**

**Basic Science: Etiology, genetics, epidemiology and toxicants** – **NEW HALL**

<table>
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<tr>
<th>Poster</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01.01</td>
<td>Effect of MHCII-transactivator on aggregation, propagation, and toxicity induced by α-synuclein fibrils</td>
<td>Itzia Jimenez-Ferrer, Michael Jewett, Antonio Boza-Serrano, Kelvin C. Luk, Maria Swanberg</td>
</tr>
<tr>
<td>P01.03</td>
<td>The risk of colorectal cancer and stomach cancer in Parkinson’s disease: A systematic review and meta-analysis</td>
<td>Wei Kee Lum, Shaun Lee, Khuen Yen Ng</td>
</tr>
<tr>
<td>P01.05</td>
<td>Sequencing known Parkinson’s disease genes in Latino PD patients with positive family history from the LARGE-PD consortium</td>
<td>Oswaldo Lorenzo-Betancor, Marlo Cornejo-Olivas, Elison H Sarapura-Castro, Luis E Torres, Miguel A Inca-Martinez, Pilar Mazzetti, Carlos Cosentino, Federico Micheli, Vitor Tumas, Elena Dieguez, Victor Ragglo, Vandercl Borges, Henrique B Ferraz, Carlos M. Rieder, Artur Shumacher-Schuh, Cyrus Zabetian, Ignacio F. Mata, Latin American Research Consortium on the Genetics of PD (LARGE-PD)</td>
</tr>
<tr>
<td>P01.07</td>
<td>Deletion of GBA2 in neuronopathic Gaucher’s disease medaka could not rescue the phenotype</td>
<td>Etsuro Nakanishi, Norihito Uemura, Hisako Akiyama, Masato Kinoshita, Hodaka Yamakado, Shunichi Takeda, Yoshiho Hirabayashi, Ryo Suake Takahashi</td>
</tr>
<tr>
<td>P01.09</td>
<td>Survival of patients with Parkinson’s disease is influenced by the mutations in the LRRK2 but not GBA gene</td>
<td>Avner Thaler, Nurit Omer, Tal Koziolovski, Tanya Gurevich, Anat Bar-Shira, Mall Gana-Weiss, Avi Orr-Utregger, Nir Giladi, Anat Mirelman</td>
</tr>
<tr>
<td>P01.11</td>
<td>Association of α-synuclein and DAT-SPECT imaging in Parkinson’s disease patients of Coimbatore population, India</td>
<td>Dhivya Venkatesan, Balachandar Vellingiri</td>
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**Basic Science: Cell death, disease modification, and trophic factors** – **NEW HALL**

<table>
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<tr>
<th>Poster</th>
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<th>Presenters</th>
</tr>
</thead>
<tbody>
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James Norton, Doral Frederick, Kathy Chi-Burris, Randy Owen

P23.22 Long-term efficacy for parkinsonism and safety of zonisamide in patients with dementia with Lewy bodies: A phase III trial
Shunji Toya, Toshinari Odawara, Kazuko Hasegawa, Kenji Kochi, Shunji Toya, Miho Murata, Kenji Kosaka, Kentaro Takai

P23.24 Levodopa carbidopa prodrug (ABBV-951) 24 hour continuous subcutaneous infusion shows similar pharmacokinetics in Caucasian and Japanese healthy volunteers
Masayoshi Yanagawa, Naotaka Uchiyama, Maurizio Facheris, Janet Benesch, Wei Liu, Matthew Rosebraugh
Clinical Science: E-health and technology – NEW HALL

P25.01  Telehealth – Current trends and future potential  
Joanne August

P25.03  Technology serving elderly couples living with Parkinson’s: Key steps and components of a web-based intervention  
Line Beaudet, José Côté, Nicole Charpentier, Sylvain Chouinard, Renée Descôteaux, Michel Panisset, Patricia Auger, Dora Rodriguez, Geneviève Rouleau, Romain Rigal

P25.08  Parkinson’s Kinetigraph (PKG) in clinical management of Parkinson’s disease  
Shalini Rao, Louise Ebenezer, Sandip Raha

P25.09  A Swedish self-tracking app for improving neurology visits for Parkinson’s disease  
Therese Scott Duncan, Eleonor Högström, Inger Lundgren, Sara Riggare

P25.10  Assessing tele-health outcomes in multiyear extensions of Parkinson’s disease trials (AT-HOME PD): Initiation of a long-term observational study  
Taylor Myers, Ruth Schneider, Shalini Anthwal, Elise Kayson, Larsson Omborg, Christopher Tarollii, Eric Macklin, Margaret Daeschler, Ray Dorsey, Lara Mangravite, Michael Schwarzschild, Tanya Simuni

Clinical Science: Neuroimaging – NEW HALL

P26.02  Impact of white matter lesions on cognition and gait in Parkinson’s disease  
Celeste Chen, Eric Fang, Mário João Fatariya, Chu Ning Ann, Bénédicte Maréchal, Tobias Kober, Jie Xin Lim, Soo Lee Lim, Eng King Tan, Ling Ling Chan

P26.03  Selective parafoveal inner retina thinning predicts visual outcomes in Lewy body diseases  
Ane Murueta-Coyena, Rocío del Pino, Marta Caldos, Begoña Arana, Olaia Lucas-Jiménez, Marian Acera, Beatriz Tijero, Naroa Ibarretxe-Bilbao, Natalia Ojeda, Juan Carlos Gómez-Esteban, Inigo Gabilondo

P26.04  Asymmetric dopaminergic depletion is related with cardiovascular non-motor symptom in drug-naïve patients with Parkinson’s disease  
Minkyeong Kim, Jong Kyu Park, Seunghwan Moon, Jong Hyeon Ahn, Ji Sun Kim, Jin Whan Cho, Jinyoung Youn

Clinical Science: Prodromal – NEW HALL

P27.01  Clinical characteristics of patients with idiopathic REM sleep behavior disorder (RBD): Comparing groups with short-term, intermediate-term, and long-term disease duration  
Sooyeoun You, Soo Myeong Jeon, So Young Do, Yong Won Cho

Comprehensive Care: Caregiving, relationships, respite care, families – NEW HALL

P28.01  Debriefing the caregiver role: A workshop for those who have lost someone with PD  
Elaine Book, Myriame Lepine-Lyons

P28.05  Utilizing community partnerships to provide a respite care program for people with Parkinson’s disease  
Lynne Gotham, David LeVan

P28.07  A view from the corner: The experience of caregiving during the Rock Steady Boxing program  
Donna Hood, Tara Haskins

P28.08  Engaging the family: Adult children of people with PD private Facebook group  
Sarah Jones, Kelly Roberson, Andrea Merriam

P28.10  The psychological impact of Parkinson’s disease patients’ delusions on spouses: A qualitative analysis  
Caroline Nolan, Noelle Robertson, Janis Miyasaki

P28.12  To develop a training program with accompanying workbook for care partners  
Elizabeth Rose
P28.13  **Assessment of the long term impact of a care partners’ course: Plan of action**  
Debbie Shapiro, Ariel Simantov  

**Comprehensive Care: Fitness, wellness, nutrition**  

**NEW HALL**  

P29.01  **A wearable ankle exoskeleton improves walking economy and balance in an individual with Parkinson’s disease: A feasibility case study**  
Valerie Carter, Tarang Jain, Zachary Learner  

P29.04  **Kick Out PD: Mobility, quality of life, and feasibility outcomes in a pilot study of a PD-specific karate intervention**  
Brianna Sennott, Claire Niemet, Monica Lee, Courtney Whitelock, Yuanqing Liu, Deborah Hall, Cynthia Comella, Jori Fleisher  

P29.05  **Kick-out PD: Qualitative analysis of expectations and outcomes in a pilot study of a Parkinson’s disease karate intervention**  
Jori Fleisher, Claire Niemet, Brianna Sennott, Monica Lee, Courtney Whitelock, Deborah Hall, Cynthia Comella  

P29.07  **Growing a Parkinson community-university collaboration through Rock Steady Boxing**  
Tara Haskins  

P29.08  **On the reasons for participation of exercise continuation program – PD Cafe – for Parkinson’s disease**  
Junya Ogawa  

P29.09  **Nutritional status in patients with Parkinson’s disease in a tertiary teaching Hospital in Northeastern México**  
Cynthia K. López-Botello, Ingrid Estrada-Bellmann, Beatriz E. Chávez-Luevanos, Sergio A. Castillo-Torres, Patricia R. Áncer-Rodríguez  

P29.16  **Motor performance and quality of life in a community exercise program for Parkinson’s disease**  
Benjamin Rossi, Elizabeth Stiles, Karen Jaffe, David Riley  

P29.17  **Introduction of exercise class ’PD Gym in KMC’ for patients with Parkinson’s disease**  
Kotomi Sato, Fumito Nishizaki, Kohel Yamashita, Katsuhiko Terashita, Nami Tsukahara, Kenichi Sakajiri  

P29.18  **A novel motor and cognitive program to retrain coordination and functional movement in Parkinson’s disease: A study by Cleveland Clinic Lou Ruvo Center, Las Vegas and University of Nevada Las Vegas**  
Darbe Schlosser, Merrill Landers, Zoltan Mari  

**Comprehensive Care: Alternative & complementary therapies/ Creativity**  

**EVENT HALL**  

P30.01  **Dance for Parkinson’s: Outcomes of a knowledge dissemination initiative**  
Rachel Bar, Jennifer L. Lapum, Michelle M. Dionne  

P30.02  **Dance for Parkinson’s: Exploring a remote delivery model**  
Rachel Bar, Grace Ferrari, David Leventhal, Sarah Robichaud  

P30.04  **Creativity and Parkinson’s: Connections made pursuing creative endeavours**  
Madonna Brady  

P30.07  **Counselling program: Providing emotional support to those affected by Parkinson’s across British Columbia**  
Myriame Lyons, Jean Blake, Stacey Dawes  

P30.08  **A black box model for Parkinson’s disease (PD): Ayurvedic complementary methods and data science**  
Daryl Eigen  

P30.13  **Dance workshop for Parkinson’s disease patients**  
Yosuke Kokunai, Bunpel Kunimoto, Julie Salgues, Philippe Chehere, Fumihsa Soga  

P30.15  **A study on the effects of a group dance and creative movement program using Indian dance techniques on symptoms of Parkinson’s disease**  
Tejali Kunte, Maria Barreto, Nicole D’souza
POSTERS – Session 1
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P30.16 From body, mind, to the integration: A mixed-method, randomized controlled trial of mindfulness yoga on physio-psycho-spiritual well-being of people living with Parkinson’s disease

P30.17 Theoretical concept of impact of Tai Chi on falls in clients with Parkinson’s disease
Robert Stusarz, Brandon Parkyn, Klaudia Lewis-Cwiekala

P30.20 Combating Parkinson’s through the arts: The practice of origami
Paul Rohrlich

P30.21 Taiko drumming for individuals with Parkinson’s disease: Performing artists partner with OT to promote community wellness
Sydney Shiroyama

P30.23 An approach to Parkinson’s disease patient combined with yoga and pilates: PD Cafe – for Parkinson’s disease
Erika Tomioka

Comprehensive Care: Disability and quality of life outcome measures – EVENT HALL

P32.02 Life satisfaction in men and women with Parkinson’s disease
Stina B Jonasson, Susanne Iwarsson, Maria H Nilsson

P32.04 Differentiation of fatigue and tiredness vocabularies in US and UK patient samples
Jon Stamford, Leah Mursaleen

P32.05 The impact of Parkinson’s disease on quality of life: The JAQPAD (Japanese QOL survey of Parkinson’s disease) study
Yoshio Tsuboi, Ryoko Nakagawa, Miwako Ishido, Yoko Yoshinaga, Takafumi Hashimoto, Takayasu Mishima, Shinsuke Fujioka

Comprehensive Care: Palliative care/ End of life care/ Long-term care – EVENT HALL

P34.01 A comparative analysis of long-term custodial care utilization in patients with Parkinson’s disease psychosis versus without psychosis within the United States
James Wetmore, Heng Yan, Muna Irfan, Yi Peng, David Gilbertson, Suying Li, Andrew Shim

P34.02 Team-based outpatient palliative care improves patient and care partner–centered outcomes in Parkinson’s disease
Benzi Kluger, Maya Katz, Nicholas Galifianakis, Kirk Hall, Steven Pantilat, Ryan Khan, Carl Friedman, Wendy Cernik, Judy Long, Yuika Goto, Jean Kuttner, Stefan Silliau, Janis Miyazaki

P34.03 The experience of care home placements for people with Parkinson’s disease: A qualitative study in the North East of England
Lloyd Oates, Annette Hand, Iorelle Dismore, William Gray, Richard Walker

P34.04 Bridging the gaps in Parkinson’s education for nurses in long term care facilities
Annie Li Wong, Nijee

Comprehensive Care: Health accessibility/ Underserved populations – EVENT HALL

P35.03 Neuro Life Online: Live–stream community building therapeutic intervention (exercise, socialization, wellness and more) available worldwide, used in US, Australia, UK, Canada and Israel
Sarah Jones

P35.04 Rural & regional Australia: The case for specialist Parkinson’s nurse services
Rachel Rossiter, Vincent Carroll, Annabel Matheson, Marguerite Bramble

P35.05 A closer look at the unmet needs, research and care priorities for women with Parkinson’s
Megan Feeney, Veronica Todaro, Danielle Agpalo, Sharon Kitscher, Allison Willis, Karlin Schroeder, Christiana Evers
Comprehensive Care: Self-management, empowerment, coping strategies – EVENT HALL

P37.01  Mindfulness based stress reduction in Parkinson’s disease  
Allison Allen, Katie Durham, Jeff Brantley, Patrick Hickey, Burton Scott, Ronald Vereen

P37.03  Impact of a self-efficacy enhancing program for recently diagnosed persons with Parkinson’s disease and their care partners  
Diane Cook, Cynthia McRae, Kathleen Crist

P37.04  Online support groups: Building a sense of community across British Columbia  
Myriam Lyons, Jean Blake, Stacey Dawes

P37.05  Impact of nurse navigation on Parkinson’s disease community wellness  
Stephanie De Santiago, Diane Nunez

P37.08  ‘Mind the gap’ – A scoping review of long term, physical, self-management in Parkinson’s  
Sophia Hulbert, Vicki Goodwin

P37.09  In Sync! Comprehensive support group network: Support group in a box  
Sarah Jones, Judy Tailey

P37.11  Living with Parkinson’s. Support Groups. Don’t feel so lonely. A look at the team of people required to live well with Parkinson’s  
Ian McFarlane

P37.13  Parkinson’s care (coping, advocating, relating and engaging): A small group self-management educational and support group pilot program  
Anissa Mitchell

P37.16  A treatment protocol for Parkinson’s related fatigue using cognitive behavioral therapy approach  
Ling Wan-Albert, Alison Bell

P37.17  Do education programs affect the quality of life of people with Parkinson’s disease? A systematic review and meta analysis  
Georgina Whish-Wilson, Prue Morgan

Comprehensive Care: Pharmacy and/or social work – EVENT HALL

P38.01  Direct client care for individuals diagnosed with Parkinson’s disease and their support systems  
Celeste Harris, Kathleen Crist

P38.02  Priority setting in a Parkinson patient association – A mixed method approach  
Romain Rigal, Nicole Charpentier, Line Beaudet

Living with Parkinson’s: Public education or awareness programs – EVENT HALL

P39.02  An intraprofessional mock code: Nurse anesthesia and baccalaureate nursing students – Parkinson’s disease patient missed/omitted/delayed medication simulation case study  
Diane Ellis, Shelley Hickey, Melissa O’Connor, Carlene McLaughlin, Meghan Galvin, Adeline Doyle

P39.03  Living solo with Parkinson’s disease  
Sandra Elms

P39.04  "Let us go singing as far as we go: The road will be less tedious” Virgil  
Sandra Ems

P39.05  Sidekicks™: An intergenerational program uniting people with Parkinson’s and youth  
Sara Garvey, Polly Dawkins, Lundbeck

P39.06  #UNITED for Parkinson’s campaign  
Omotola Thomas, Claire Jones
P39.10 Providing authentic learning experiences about Parkinson’s disease: Bringing humanity into the classroom
Margaret McCormick, Ingrid Pretzer-Aboff, Gwyn Vernon

P39.12 The Edmond J. Safra Visiting Nurse Faculty Program at the Parkinson’s Foundation
Gwyn Vernon

Living with Parkinson’s: Living well with PD – EVENT HALL

P41.01 The effects of tango on well-being and functional mobility in Parkinson’s disease
Kyoko Abeta

P41.02 No Parky
Michael Atkinson

P41.03 Shaking through the tulips
Michael Atkinson

P41.04 Calling All Artists: A program for artists with Parkinson’s disease
Rachael Dawson, Lissa Kapust, David Simon

P41.09 If you can dream it, you can do it: A selfstudy in living well in Denmark
Elisabeth Ildal

P41.10 The benefits dance activities bring to the daily lives of people with Parkinson’s disease
Yayoi Koga

P41.11 What are the most important factors for living well with Parkinson’s disease? An informal survey from a women’s Parkinson’s Facebook group
Sharon Krischer

P41.12 Inspirational reading to enrich your journey with Parkinson’s disease
Deanna Krywy

P41.13 Living with Parkinson’s. Dealing with other Parkinson’s symptoms. A look at the life of someone with Parkinson’s and how to deal with day to day issues.
Ian McFarlane

P41.14 A walk in the park: The lived experience of Parkinson’s disease and the role of Lifestyle Redesign® occupational therapy in addressing unmet needs
S. Hanlon Newhall, Jim Elyea

P41.15 An opportunity for healthcare professionals to guide and untangle discussions about delusions and hallucinations
James Norton, Daniel Kaiser, Stephen Bell

P41.20 Happier now: How positive psychology changed how I live with Parkinson’s disease, a caregiver’s journey
Suzette Shahmoon

P41.21 Tikvah for Parkinson, a community model for a non-pharmaceutical intervention program
Debbie Shapiro, Ari Simantov, Tanya Gurewitz

P41.23 PD Link Northwest: A peer-to-peer support network for people with Parkinson’s disease and care partners
Melissa Tribelhorn, Terry Harrigan, Maria Cole, Sarah Winter

P41.27 Creating a virtuous cycle of PwP support
Alison Williams, Bill Wright, Judith Shepherd

Living with Parkinson’s: Advancing research: Fundraising, trials, campaigns – EVENT HALL

P42.01 The Fox Insight Study: An empowering opportunity to fuel Parkinson’s research and help advance scientific breakthroughs from the comfort of home
Roseanne Dobkin, Catherine Kopil, Ninad Amondikar, Lana Chahine, Christine Cowles, Connie Marras, Lindsey Riley, David Standaert, Daisy Daeschler, Ethan Brown, Marissa Dean, Ken Marek, Caroline Tanner
Living with Parkinson’s: Other – EVENT HALL

P43.05 Implementing the nurse navigator model within an interdisciplinary team at the McGill University Health Center: A patient and caregiver reported outcome survey
Jennifer Doran, Lucie Lachance, Sebastien Belliveau, Anne-Louise Lafontaine

P43.08 Parkinson’s – No longer the shaking palsy
Gunvant Patel

P43.09 Little bits of big data for Parkinson’s disease and co-morbidities: A computer programmer takes on his Parkinson’s disease
William Patterson

P43.10 People like me: Voice-activated actionable insights for PD patients from AI analysis of structured and unstructured data such as voice, image, movement and biometrics
Koen Van den Brande

P43.11 Development of a new seating system for postural deformities caused by Parkinson’s disease
Jiro Yonezaki, Makiko Ikeda

Late-Breaking – EVENT HALL

LBP.02 Association between SNPs of SLC41A1 and Parkinson’s disease risk in the central Europe population
Maria Brodnanová, Michal Cibulka, Martin Kolísek, Ivana Pilchová, Zuzana Tatarková, Milan Gröflk, Egon Kurča, Oto Osina, Peter Račay, Dušan

LBP.03 Analysis of SLC41A1 promoter sequence in Slovak cohort of Parkinson’s disease patients
Michal Cibulka, Mária Brodnanová, Martin Kolísek, Zuzana Tatarková, Ivana Pilchová, Milan Gröflk, Andrea Štanclová, Zora Lasabová, Egon Kurca, Peter Račay, Dušan Dobrota

LBP.05 Genetic basis of inherited Parkinson’s disease in Finland
Risto Pohjolan-Pirhonen, Eino Palin, Johanna Eerola-Rautio, Anna Maija Saukkonen, Virginilia Brilhante, Pentti Tienari, Anu Suomalainen

LBP.06 Potential blood based biomarkers for Parkinson’s disease by genetic and epigenetic analysis
Garry Wong, Changliang Wang, Linjing Shen, Liang Chen

LBP.07 Analysis of Parkinson’s disease at a single neuron level

LBP.08 The Cryo-EM structure of amyloid fibril formed by full-length α-synuclein
Dan Li, Xueming Li

LBP.09 Interplay between α-synuclein and lipids in Parkinson’s Disease
Cong Liu, Chunyu Zhao, Chuchu Wang, Zhengjiang Zhu, Dan Li

LBP.10 Protein aggregation and exosomal release induced by α-synuclein: new insights into protective mechanisms of Drp1 inhibition
Rebecca Fan, Min Guo, Shouqing Luo, Meil Cui, Kim Tiue

LBP.11 Dissecting the effect of Parkinson’s disease-related Miro1 mutations in mitochondria-associated membranes and mitophagy
Clara Berenguer-Escudé, Paul Antony, Françoise Massart, Philip Seibler, Christine Klein, Anne Grünewald, Dajana Großmann, Rejko Krüger

LBP.12 Role of metformin in diabetic aging female rat brain: A future therapy for neurodegenerative diseases
Pardeep Kumar, Najma Baquer

LBP.13 Maintenance of lysosomal homeostasis by LRRK2 and Rab GTPases: implications for the pathomechanism of Parkinson’s disease
Tomoki Kuwahara, Tomoya Eguchi, Maria Sakurai, Tadayuki Komori, Kai Funakawa, Takeshi Iwatsubo
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LBP.14 Functional studies of mitochondrial protein p13 in the experimental parkinsonism model
Shintani Norihito, Naoki Inoue, Sae Ogura, Yohei Moroto, Hiroki Ueno, Kousuke Baba, Hideki Mochizuki, Harutoshi Fujimura, Hitoshi Hashimoto

LBP.15 Mitochondrial fitness: novel diagnostic tool for patients with Parkinson disease
Ivana Pilchova, Zuzana Tatarkova, Michal Cibulka, Milan Grotlik, Maria Brodnanova, Egon Kurca, Peter Racay, Martin Kolisek

LBP.16 Robust generation of oligodendrocytes from pluripotent stem cells: a platform for studying disease mechanisms
Carla Azevedo, Margarita Chumarina, Yuriy Pomeshchik, Laurent Roybon

LBP.17 CLR01 protects dopaminergic neurons in vitro and in vivo in mouse and human models
Nora Bengoa-Vergniory, Emilie Faggiani, Paula Ramos, Natalie Connor-Robson, Milena Cioroch, Fabio Cavaliere, Benjamin Dehay, Gal Bitan, Carlos Matute-Almau, Erwan Bezard, Richard Wade-Martins

LBP.18 iPSC-derived dopaminergic neurons reveal LRRK2 mutations impair clathrin mediated endocytosis and help identify novel LRRK2 substrates

LBP.19 Assessment of potential neuroprotective effects of nicotine in a human dopaminergic in vitro model of Parkinson’s disease
Mohamed Bilal Fares, Carole Mathis, Athanasios Kondylis, Omar Alljievic, Nicolas Sierro, Julia Hoeng, Manuel Peitsch

LBP.20 Suppression of autophagic activity by Rubicon is a signature of aging

LBP.21 Differential neuroprotective properties of nilvadipine enantiomers in experimental models of Parkinson’s disease
Selwin Gabriel Samuel, Caryse S. Fong, Katerina Hanton, Jacinta Conroy, Vinod Kumar, Trent M. Woodruff, John O’Sullivan, Richard Gordon

LBP.22 Neuroprotective potential of curcumin along with piperine against MPTP induced Parkinsonism in rats: Behavioral and neurotransmitter analysis
Shamser Singh, Puneet Kumar

LBP.23 PET imaging reveals early and persistent dopaminergic deficits after intra-striatal injection of preformed α-synuclein fibrils
Majken Thomsen, Anna C. Schacht, Jan Jacobsen, Mette Simonsen, Cristine Betzer, Poul Henning Jensen, David Brooks, Anne M. Landau, Marina Romero-Ramos

LBP.24 Synaptojanin 1 (SYNJ1) haploinsufficiency causes impaired autophagy and age-dependent decreased dopamine release in the dorsal striatal slices
Lianteng Zhi, Ninghan Wang, Wangchen Tsering Tsering, Laura Beth McIntire, Guomei Tang, Hui Zhang

LBP.25 GABA potently inhibits platelet activation: ex vivo and in vivo studies
Wan-Jung Lu, Kuan-Hung Lin, Ray-Jade Chen

LBP.26 Dopaminergic denervation in PD is higher in the striatal region corresponding to the upper limb
Michele Matarazzo, Ivan Klyuzhin, José Ángel, Pineda-Pardo, Zoe Anderson, Jessamyn McKenzie, Nicole Neilson, José Ángel Obeso, Vesna Sossli, A. Jon Stoessl

LBP.27 Discovery of small molecule inhibitors against α-synuclein aggregation via Mass Spectrometry-based screening
Mingming Xu, Wendy Loa-Kum-Cheung, Haiyan Zhang, Ronald Quinn, George Mellick

LBP.28 Effective connectivity changes during processing of predictive information in Parkinson’s disease
Noa Fogelson, Pablo Diaz Brage

LBP.29 Transcranial direct current stimulation and yoga for functional movement disorders
Jung E Park, Ji-Yi Hong, Su-Young Lee

LBP.30 The prediction of dystonia patients' state based on machine learning and deep learning
Zhang Zhao
A stick from found wood
Will snap without sighs, and yet
Bundled, builds a bridge

Nancy Picard (USA)
5th WORLD PARKINSON CONGRESS

POSTERS – Session 2
Thursday, June 6, 2019

11:30 AM – 1:30 PM
(See floorplans on pp. 116–117 for poster locations.)

Presenters of featured posters listed below will be present over lunch to discuss their work.

**Basic Science: Etiology, genetics, epidemiology and toxicants – NEW HALL**

**P01.02**  The risk of Parkinson’s disease in chronic hepatitis C virus-infected patients with and without antiviral therapy
Wey-Yil Lin, Ming-Shyan Lin, Yi-Hsin Weng, Tu-Hsueh Yeh, Yu-Sheng Lin, Po-Yu Fong, Yih-Ru Wu, Ying-Zu Huang, Chin-Song Lu, Rou-Shayn Chen

**P01.04**  The clinical profile of GBA-associated Parkinson’s disease: A seven year study of motor disease burden
Jodi Maple-Grødem, Ingvid Dalen, Ole-Bjørn Tysnes, Angus Macleod, Carl Counsell, Lars Forsgren, Guido Alves

**P01.06**  Impact of offering genetic testing and counseling to people with Parkinson's disease in a clinical setting
Anna Naito, James Beck, Anne Hall, Karen Marder, Martha Nance, Michael Schwarzschild, Tanya Simuni, Roy Alcalay

**P01.08**  Lifestyle-gene interaction in Parkinson’s disease
Shin Hui Ng, Celeste Yen Teng Chen, Yi Lin Ong, Hui Hua Li, Ebonnne Yulin Ng, Prakash M Kumar, Wing Lok Au, Louis Tan, Eng King Tan

**P01.10**  Ratio of neutrophil to white blood cell, ratio of neutrophil to lymphocyte and weight loss in de novo Parkinson's disease
Tadashi Umehara, Shiraishi Tomotaka, Nakahara Atsuo, Matsumo Hiromasa, Komatsu Teppel, Sakai Kenichiro, Omoto Shusaku, Murakami Hidetomo, Mitsumura Hidetaka, Oka Hisayoshi, Iguchi Yasuyuki

**P01.12**  Large multi-center study reveals robust and replicable evidence for dysbiosis of gut microbiome in PD
Zachary Wallen, Mary Appah, Marissa Dean, Stewart Factor, Eric Molho, Cheryl Sesler, David Standaert, Cyrus Zabetian, Haydeh Payami

**Basic Science: Cell death, disease modification, and trophic factors – NEW HALL**

**P02.01**  Intracerebral delivery of VEGF-B improves motor function in PINK1-knockout rats: A follow-up study investigating the effects on dopaminergic neurons

**P02.02**  Honokiol, a natural compound to alleviate α-synucleinopathies?
Marion Delenclos, Jeremy D Burgess, Priyanka Periselta, Sara Fagen, Natasha DeMeeo, Pamela J McLean

**P02.04**  Constitutive activation of pro-survival pathway ameliorates aggregation of α-synuclein in dopaminergic neurons
Julia Konovalova, Piotr Chmielarz, Safak Er, Andrii Domanskyi

**P02.05**  Identification of novel DJ-1 protein targeting small molecule for the potential treatment of Parkinson’s disease
Gergely Tóth, Balázs Herberth, Balázs Fórizs, Eva Moravcsik, Fanni Toldai, Jean-Christophe Rochet, Gennady Smagin, Thomas Neumann

**Basic Science: Protein misfolding, handling, and transmission – NEW HALL**

**P03.01**  Patient-derived α-synuclein assemblies/strains display distinct functional characteristics in cells and in vivo
Anke Van der Perren, Géraldine Gelders, Alexis Fenyi, Luc Bousset, Filipa de Brito, Wouter Peelaerts, Steve Gentleman, Ronald Melki, Veerle Baekelandt

**P03.02**  Neuroprotective role of Andrographolide in in vitro model of Parkinson’s disease: Possible role in α-synuclein aggregation
Sussy Bastias-Candia, Milka Martinez, Nibaldo Inestrosa

**P03.05**  The autophagic secretion of α-synuclein is dependent on galectin 3
Edward Campbell, Kevin Burbidge

**P03.06**  Inhibition of α-synuclein aggregation and prion-like propagation as intervention strategies to slow the progression of Parkinson’s disease
Sayan Dutta, Daniel Ysselstein, Priya Prakash, Krupal Jethava, Ranjan Sengupta, Chao Feng, Gaurav Chopra, Carol Post, Stahelin Robert, Jean-Christophe Rochet
P03.07  Identification of a factor reducing PFF-induced Lewy body pathology in dopaminergic neurons  
Safak Er, Piotr Chmielarz, Laura Bandres, Katrina Albert, Julia Konovalova, Mikko Airavaara, Andril Domanskyi

P03.11  The effect of reduced retromer function on the clearance and transfer of intra- and extra- cellular \( \alpha \)-synuclein and beta-amyloid in neurons  
Nazira J. Albargothy, Anna Ansell-Schultz, Juan F. Reyes, Martin Hallbeck

P03.13  Comprehensive screening of the cell surface receptor for \( \alpha \)-synuclein fibrils using a MPL/BLOTCHP-MS technology  
Junpei Kobayashi, Takafumi Hasegawa, Naoto Sugeno, Shun Yoshida, Akio Kikuchi, Michinori Ezura, Toru Baba, Atsushi Takeda, Masashi Aoki

P03.15  The role of RNA in synapse physiology and neurodegeneration in Parkinson’s disease  
Tiago Outeiro, Maria Xylaki

P03.16  On the mechanism of inhibition of \( \alpha \)-synuclein aggregation by the DJ-1 protein  
Gergely Tóth, András Czałik, Anasztázi Hetényl, Balázs Fórizs, Katalin Solti, Tamás Martinek, Daniel Ysselstein, Jean-Christophe Rochet

Basic Science: Mitochondria, oxidative stress, and pathogenesis – NEW HALL

P04.01  Cytosolic PINK1 promotes ubiquitin phosphorylation and Parkin-mediated mitophagy independently of mitochondrial-localized PINK1  

P04.04  Identification and validation of new therapeutic targets against Parkinson’s disease by CRISPR-CAS9 screening at the genome level  
Axelle Dovonou, Yves De Koninck, Emmanouil Metzakopian, Martin Lévesque

P04.06  Neuroprotective effect of stomatin-like protein 2 overexpression in A53T- \( \alpha \)-synuclein Parkinson’s disease mice model  
Marina Lorente-Picón, Hélène Doucet-Beaupré, Alessandra Zanon, Sara Meschini, Martin Parent, Irene Pichler, Martin Lévesque

Basic Science: Pathology – NEW HALL

P05.01  Validating targets in Parkinson’s disease using the Parkinson’s UK Brain Bank resource  
Djordje Gveric, Javier Alegre-Abarrategui, Richard Reynolds, Steve Gentleman

P05.02  Cerebral amyloid angiopathy in two autopsy-proven patients with dementia with Lewy bodies  
Takayuki Kosaka, Yanosuke Kozuaki, Tomoko Amano, Shinsuke Nishi, Takaaki Ito, Akiyoshi Kakita

Basic Science: Animal and cellular models of Parkinson’s disease and Parkinsonisms – NEW HALL

P06.03  Functional analysis and single cell characterization of human fetal ventral midbrain in 2D and 3D cultures  
Marcella Birtele, Alessandro Fiorenzano, Jenny Nelder, Danielle Ottosson Rylander, Yogita Sharma, Mallin Parmar

P06.04  C-terminal domain of LRRK2 with the G2019S mutation can enhance \( \alpha \)-synuclein toxicity in dopaminergic neurons in vivo  
Emmanuel Brouillet, Noëmie Cresto, Francesco Gabinelli, Pauline Roost, Camille Gardier, Marie-Claude Gaillard, Charlène Josephine, Mylène Gaudin, Pauline Gipchtein, Philippe Hantraye, Alexis Pierre Bemelmans, Géraldine Liot, Nadja Van Camp

P06.06  Targeting iron for the development of treatments for multiple system atrophy  
Jay Shukla, Erin McAllum, Gawain McColl, David Finkelstein

P06.07  DNAJC13 in Parkinson’s disease; characterization of the p.N855S knock-in mouse model  
Jesse Fox, Jordan Follet, Emil Gustavsson, Matthew Farrer

P06.08  Of mice and men, investigating the role of RAB39B in Parkinson’s disease  
Yujing Gao, Gabrielle Wilson, Sarah Stephenson, Paul Thomas, Verónica Martínez-Cerdeño, Klymet Bozaoglu, Catriona McLean, David Finkelstein, Paul Lockhart
P06.09  Optimization of evans blue quantification as a blood–brain barrier integrity tracer during Parkinson's disease and L-dopa induced dyskinesia  
Fernanda Grecco Grano, Elaine Del-Bel

P06.11  Therapeutic benefits on motor functions and neuroprotective effect of repetitive transcranial magnetic stimulation on parkinsonian rats  
Tsung-Hsun Hsieh, Jia-Jin Chen, Chih-Wei Peng, Ying-Zu Huang

P06.13  Characterization of Rab phosphorylation by LRRK kinases  
Genta Ito, Kyohei Ito, Miho Araki, Taisuke Tomita

P06.14  1-methylxanthine circling behavior without apomorphine in rats  
Luis Clemente Jimenez-Botello, Rigoberto Oros-Pantoja

P06.17  Production of transplantable CORIN-positive midbrain dopaminergic precursors from human pluripotent stem cells is highly sensitive to small changes in WNT signalling  
Tilo Kunath, Nicola Drummond, Maurice Canham, Yixi Chen, Craig Leighton, Sabrina Das, Sergiy Sylantyev, Ngoc-Nga Vinh, David Harrison, Mariah Lelos

P06.18  Novel rat model of Parkinson's: CRISPR-mediated introduction of a G51D mutation into the endogenous rat SNCA gene displaces α-synuclein from the synapse  
Tilo Kunath, Stephen West, Karamjit Singh Dolt, Owen Harrison, Yayoi Kunihiro, Tomoji Mashimo

P06.21  Development of in vitro PARK 9 Parkinson’s disease model using carbonate apatite nanoparticles  
Khuen Yen Ng, Yiling Jye Yap, Ezharul Hoque Chowdhury, Rhun Yian Koh, Soi Moi Chye, Iekhsan Othman

P06.22  Mutant α-synuclein alters GATA1-dependent transcriptional regulation of the lysosomal ATPase ATP6V0A1 with downstream impact on autophagy  
Julia Obergasteiger, Christa Uebberacher, Vito D’Agostino, Francesca Pischedda, Giovanni Piccoli, Peter P Pramstaller, Andrew A Hicks, Mattia Volta, Corrado Corti

P06.24  Temporal genetic profiling of early synucleinopathy in nigrostriatal dopamine neurons  
Joseph Patterson, Christopher Kemp, Megan Duffy, Anna Stoll, Kathryn Miller, John Beck, Scott Counts, Kelvin Luk, Caryl Sortwell

P06.29  In vivo generation of SNCA conditional knock-up allele as a new and unique mouse model of Parkinson’s disease  
Giorgio Turconi, Jaan-Olle Andressoo

P06.32  The biological compatibility of the circadian system for therapeutic intervention in Parkinson’s disease: A study by The Bronowski Institute, Australia  
Gregory Willis

P06.33  Does transgenic overexpression of A53T human α-synuclein recapitulate the site-specific iron accumulation of the human Parkinson’s disease brain?  
Tracy Zhang, Dominic J. Hare, Jessica Billings

Basic Science: Brain physiology, neuroplasticity, and circuitry – NEW HALL

P07.01  Quantitative EEG and migraine in patients with Parkinson’s disease  
Hee-Tae Kim, Jin-Young Ahn

P07.02  Spatiotemporal patterns of direct and indirect pathway striatal projection neurons in a mouse model of Parkinson's disease and dyskinesia  
Cristina Alcacer, Marcelo Mendonça, Andreas Klaus, Vítor Paixão, M. Angela Cenci Nilsson, Rui Costa

P07.06  Genetic barcoding to track cell fate specification from dopamine-patterned human ES cells  
Yu Zhang, Fredrik Neilsen, Alessandro Fiorenzano, Yogita Sharma, Jenny Johansson, Tomas Björklund, Malin Parmar
Basic Science: Neuropharmacology – NEW HALL
P09.01  Long-term suppression of levodopa-induced dyskinesia by sub-anesthetic ketamine is mediated by BDNF and changes in striatal dendritic spine morphology

P09.02  7,8-Dihydroxyflavone (TrkB agonist) prevented the neuroinflammation and neurodegeneration via acting on sulfiredoxin peroxiredoxin axis in Parkinson’s disease evaluated in-vitro and in-vivo
*Mohit Kwatra*, Sahabuddin Ahmed, Vegi Ganga Modi Naidu

P09.06  Can Coenzyme Q10 and creatine slow the progress of Parkinson’s disease?
*Ahmed Negida*

Basic Science: Electrophysiology & functional imaging, optogenetics – NEW HALL
P10.01  Hitting the brakes: Freezing of gait in Parkinson’s disease derives from pathological activity in the subthalamic nucleus
*Matthew J Georgiades*, James M Shine, Moran Gilat, Jacqueline McMaster, Brian Owler, Neil Mahant, Simon JG Lewis

P10.02  The role of LRRK2 at cortico- and thalamo-striatal synapses in the G2019S knock-in mouse model
*Naila Kuhlmann*, Chelsie Kadgien, Matthew Farrer, Austen Milnerwood

P10.03  Cortical response to open and closed-loop tactile cueing during walking and turning in Parkinson’s
*Samuel Stuart*, Martina Mancini

Clinical Science: Symptoms, signs, features & non-motor manifestations – NEW HALL
P12.04  Complementary and Alternative Medicine (CAM) and over-the-counter therapies in Parkinson’s: A simple algorithm and relatively inexpensive plan
*Frank Church*

P12.05  Observed racial differences in Parkinson’s disease in the Fox Insight cohort, an international internet-based study
*Marissa Dean*, Janel Barnes, Luba Smolensky, Ninad Amondikar, Chelsea Caspell-Garcia, Traci Schweiger, Lindsey Riley, Caroline Tanner, David Standaert

P12.06  Impact and perceptions of non-motor symptoms in Parkinson’s disease as reported by people with Parkinson’s (PWP) and their care partners: A pilot survey of the PDMAAlliance
*Sarah Jones*, Robert Hauser, Neal Hermanowicz

P12.07  A fitbit for Parkinson’s?
*Lars Jorgensen*

P12.09  Eye problems experienced by people with Parkinson’s disease – Influence of double vision on activities of daily living
*Yoshiki Kuwahara*, Reina Miyamoto, Syun Tanaka, Mitsushi Sekimoto, Shinichi Takabatake

P12.13  Attitude of older patients with Parkinson’s disease towards deprescribing: A pilot study
*Khuen Yen Ng*, Shaun Wen Huey Lee

P12.14  Motor and non-motor symptoms more disturbing for people living with Parkinson’s disease in Brazil: AMPARO’s study

P12.15  Risk factors for the development of cognitive impairment in Parkinson’s disease
*Adolfo Ramirez-Zamora*, Samuel Wu, Fernando Cubilloos, Miriam Rose Rafferty, Kelly Lyons, Eugene Nelson, Thomas Davis

P12.17  Characterizing stepping responses using an instrumented pull test in people with mild Parkinson’s disease
*Joy Tan*, Thushara Perera, Wesley Thevathasan, Jennifer McGinley

P12.18  Characteristics of swallowing dysfunction by video-fluoroscopic swallowing study in Parkinson’s disease
*Satoshi Tomita*, Tomoko Oeda, Kwiyoung Park, Atsushi Umemura, Masayuki Kohsaka, Kenji Yamamoto, Hideyuki Sawada
P12.20  Survey to understand the impact of Parkinson’s on the individual with the condition and their spouse/partner/loved ones – Compiled and developed by Team Spark for Rallying to the Challenge 2018, Grand Rapids Michigan
Jordan Webb, Daniel deWitt, Ginny deWitt, Shaun Hindley, Lois Bourma, Ron Rutowski, Jill Peirce, Ken Peirce, Bruce Mabee, Gloria Groner, Alison Sheltrown, Kim Cousineau

Clinical Science: Progression & prognosis – NEW HALL

P13.01  Ambulatory inertial sensors in Parkinson’s disease: Exploring the objective characterization of motor disability with Timed Up and Go test
Milton Biagioni, Kush Sharma, Alberto Cucca, Raphaela Sills, Jiyoon Jung, Shashank Agarwal, Daniella Mania, Andrew Feigin

P13.03  What factors predict hospital admissions in community-dwelling people with Parkinson’s?
Roshan Sebastian, William Gray, Aishling Foley, Lydia Trendall, Annette Hand, Dori Oh, Steve Dodds, Elliot McLenaghan, Vasco Dossantos, Lloyd Oates, Claire McDonald, Richard Walker

P13.04  Intestinal microbial diversity and Parkinson's disease severity
Samantha Evans, Josh Farahnik, Laurie Mischley

P13.05  Role of complex Parkinson’s clinic in movement disorder clinic
Sandip Raha, Shalini Rao, Louise Ebenezer

Clinical Science: Cognition/ Mood/ Memory – NEW HALL

P15.01  Action observation affects hand movement amplitude more than simple cues in Parkinson’s
Judith Bek, Emma Gowen, Stefan Vogt, Trevor Crawford, Ellen Poliaffoff

P15.06  How does Parkinson’s affect gesture and communication about spatial information?
Stacey Humphries, Judith Holler, Trevor Crawford, Ellen Poliaffoff

P15.07  Analysis of sub-threshold errors reveals no deficit in response inhibition in mild to moderate Parkinson’s
Jade Pickering, Jennifer McBride, Iracema Leroi, Ellen Poliaffoff

P15.08  Lessons from the cognitive rehabilitation program of the Parkinson Foundation of Colombia
David Quebradas

P15.10  Mild cognitive impairment (MCI) subtypes after deep brain stimulation (DBS): Role of pre-operative diagnosis
Alexander Tröster, Angela Abbott, Krista Hanson

P15.11  Facial emotion recognition in Parkinson’s disease: Impact of presentation time and levodopa
Josefine Waldthaler, Charlotte Krüger-Zechlin, Lena Stock, Lars Timmermann

Clinical Science: Sleep disorders/ Fatigue – NEW HALL

P16.02  The effect of DUODOPA treatment in advanced Parkinson’s disease on sleep quality and sleep disorders
Hakan Ekmekci, Azer Mammadli, Cihat Ozguncu, Şerefnur Öztürk

P16.03  Inverse association between objective sleep quality and early morning akinesia in patients with Parkinson’s disease: Cross-sectional analysis of the PHASE study
Hiroshi Kataoka, Kelgo Saeki, Yuki Yamagami, Kazuma Sugie, Kenji Obayashi

P16.06  Bright light therapy does not alter the sleep/wake cycle when treating circadian based sleep disorders in Parkinson’s disease: A study by The Bronowski Institute, Australia
Gregory Willis

Clinical Science: Biomarkers – NEW HALL

P19.01  Dopamine buffering capacity measured by phMRI as a novel biomarker of disease progression in PD
Kevin Black, Jonathan Koller
P19.03  The diagnostic and therapeutic potential of miR-153 and miR-223 in Parkinson's disease
Marisa Cressatti, Wei Song, Julia Gallindez, Olivia Cannie, Ana M. Velly, Mervyn Gornitsky, Hyman M. Schipper

P19.04  Lipid analysis of CSF from Parkinson's disease patients with and without a LRRK2 mutation
Jasmin Gaither, Russell Pickford, Simon Lewis, Woojin Kim, Nicolas Dzamko

P19.05  Evaluation of fungal markers in Parkinson's disease
Joshua Farahnik, Laurie Mischley

P19.07  Parkinson’s patients possess abnormal blood monocytes and changes in soluble biomarkers
Sara Konstantin Nissen, Kalpana Shrivastava, Daniel Otzen, Holger Jon Møller, Claudia Schulte, Walter Maetzler, Marina Romero-Ramos

P19.11  The Accelerating Medicine Partnership in Parkinson’s disease (AMP PD) – a data biosphere to support discovery research and broad data sharing
Margaret Sutherland

Clinical Science: Pharmacological therapy – NEW HALL

P20.03  Istradefylline, an adenosine A2A receptor antagonist, as adjunct to levodopa in Parkinson’s disease (PD): A safety analysis of eight randomized controlled trials and four open-label long-term studies
Nobutaka Hattori, Fabrizio Stocchi, Kapil Sethi, Marc Cantillon, Eri Ohta, Phyllis M. Salzman, Akihisa Morita, Keiyo Toyama, Rajesh Pahwa

P20.04  A pooled analysis for 8 randomized controlled trials of istradefylline, an adenosine A2A receptor antagonist: Efficacy as adjunct to levodopa in Parkinson’s disease (PD)
Stuart H. Isaacson, Nobutaka Hattori, Marco Onofrj, Akihisa Morita, Keiyo Toyama, Phyllis M. Salzman, Marc Cantillon, Eri Ohta, Peter LeWitt

P20.05  Mavoglurant (AFQ056) for the treatment of levodopa-induced dyskinesia in patients with Parkinson’s disease: A meta-analysis of 485 patients’ data
Ahmed Nediga

Clinical Science: Rehabilitation sciences (PT, OT, SLP) – NEW HALL

P22.04  Comparing Forward (FW) and Backward Walking (BW) speeds with age and disease severity in persons with Parkinson's disease (PwP)
Becky Farley, Delanee Schwartz, Valerie Carter, Tarang Jain

P22.05  Innovative delivery of a home-based gamified rehabilitation for early Parkinson's disease – A protocol for a usability evaluation of a digitalized healthcare approach
Shermyn Xi Mon Neo, Chloe Lauha Chung

P22.06  Outcome of SPEAK OUT! for adults with Parkinson's disease
Alison Behman, Jennifer Cody, Christen Madsen II

P22.07  World’s largest Parkinson’s chorus
Jennifer Cody, Samantha Elandary

P22.11  The effect of predominately home-based physiotherapy on mobility, balance and quality of life in people with Parkinson’s disease: a systematic review
Allyson Flynn, Elisabeth Preston, Natalie Allen, Sarah Dennis, Colleen Canning

P22.12  Implementation success and challenges of post therapy LOUD for LIFE® and BIG for LIFE® exercise classes for people with Parkinson’s
Angela Halpern, Laura Guse, Cynthia Fox
Global implementation of an evidence-based physical and occupational therapy (LSVT BIG®) for Parkinson’s disease: Germany, France and Japan  
Cynthia Fox, Laura Guse

Music therapy on gait disturbance and gait analysis for Parkinson’s disease using a portable gait rhythmogram  
Emiri Gondo

The efficacy of levodopa-carbidopa intestinal gel in patients with Parkinson’s disease – a 2 year follow-up study  
Jelka Jansa, Dejan Georgiev, Maruša Mencinger, Tomaž Rus, Maja Trošt

Design of the PERSPECTIVE study: PERsonalized SPEeCh Therapy for active conversation  
Janna Maas, Nienke de Vries, Bas Bloem, Hanneke Kalf

Balance exercise increases serum brain-derived neurotrophic factor level in people with Parkinson’s disease. A pilot study  
Jadwiga Szymura, Jadwiga Kubica, Magdalena Wiecek, Joanna Gradek, Elżbieta Mirek, Zbigniew Szygula

A mobile application specifically designed to facilitate exercise in Parkinson’s disease: Safety, feasibility, and signal of efficacy  
Merrill Landers, Terry D. Ellis

Physical activity and exercise choices in people with Parkinson’s disease: Preferences and barriers  
Jennifer McGinley, Mary Danoudis, Belinda Bilney, Meg Morris, Rosemary Higgins

The immediate effect of rehabilitation using motor intervention in Parkinson’s disease patient: A case study  
Hajime Nakanishi, Hiroko Hashimoto, Megumi Nakamura, Haruka Nakanishi, Chihami Ishizuki, Hideki Miyaguchi

Fall-related activity avoidance: A 3-year follow-up in people with Parkinson’s disease  
Maria H Nilsson, Magnus Lindh-Rengifo, Stina B Jonasson

Clinical characteristics for long-term therapeutic effects of LSVT LOUD® in Japanese patients with Parkinson’s disease  
Tomoo Ogino, Satoshi Tomita, Masayuki Tahara, Tomoko Oeda

Voice quality and prosody changes of persons with Parkinson’s disease undergoing ‘SPEAK-OUT!’ therapy during conversational and reading speech  
Eunsun Park, Frank Boutsen, Justin Dvorak

The severity of motor symptoms is the best predictor for level of functionality according to FIM in people with Parkinson’s disease  
Elisa Libardi, Pâmela Barbosa, Tiemi Yoshioka, Maria Elisa Piemonte

Depression instead of the motor or cognitive alterations is the crucial factor in determining the performance perception and performance satisfaction in people with Parkinson’s disease  
Tiemi Yoshioka, Elisa Libardi, Pâmela Barbosa, Maria Elisa Piemonte

Construct validity of more affected hand performance on the 9-Hole Peg Test in people with Parkinson’s disease  
Elizabeth Proud, Meg E. Morris, Belinda Bilney, Kimberly J. Miller, Marten Munneke, Maarten Nijkrake, Jennifer McGinley

Classifying Parkinson’s disease by movement subtypes: Findings from a multimodal exercise program  
Monica Rivera

Elderly with Parkinson’s disease evaluated in the neurological center: CENPAR, Chile  
Paola Alicia Riveros Cortés, Paulina Salinas, Cristian Mateo

Health in Chile and Parkinson’s disease, case study: CENPAR, Chile  
Paola Alicia Riveros Cortés, Cristian Mateo, Paulina Salinas, Diana Garrido, Hector Valenzuela, Marisol Said, Claudia Gonzalez

The consideration of personality in patients with Parkinson’s disease and freezing of gait  
Makoto Sawada, Kenji Wada-Isoe, Satoko Nakashita, Tetsuya Maeda, Ritsuko Hanajima, Kenji Nakashima

Measurement and correction of stooped posture during gait using wearable sensors in patients with Parkinsonism  
Han Gil Seo, Seo Jung Yun, Quoc Khanh Dang, Youngjoon Chee, Sun Gun Chung, Byung-Mo Oh

Staying UpRight in Parkinson’s disease: A novel postural intervention  
Samuel Stuart, Alan Godfrey, Lynn Rochester, Fay Horak, Martina Mancini
P22.55  Hand tapping for screening dysfunctional rhythmic coordination in patients with Parkinson's disease
Shizuka Uetsuki, Hiroshi Kinoshita, Ryuichi Takahashi, Kazumasa Yokoyama, Hiroo Yoshikawa

P22.57  Efficacy of a mobile technology-based brisk walking program in improving dynamic balance and motor performance in people with Parkinson's disease – a randomized controlled trial
Irene Wong-Yu, Elion Choi, Tsz Ki Lai, Chung Ling Lam, Ka Hei Sin, Cheuk Kei Wong, Margaret Mak

Clinical Science: Clinical trials: Design, outcomes, recruiting, PwP involvement, communications – NEW HALL

P23.01  Intrinsic auricular muscle zone stimulation improves walking parameters faster than the medications in motion capture analysis of Parkinson’s disease patients
Yusuf Ozgur Cakmak, Burak Ozsoy, Sibel Ertan, Ozgur Oztop Cakmak, Gunes Kiziltan, Hale Yapici Eser, Ecem Ozyaparak, Yasemin Gunsoy

P23.02  Multimodal balance training with rhythmical cues in Parkinson’s disease: A randomized clinical trial
Tamine Capato, Nienke de Vries, Egberto Barbosa, Jorik Nonnekes, Bastiaan Bloem

P23.03  Targeted digital marketing campaigns successfully recruit diverse cohorts of people with Parkinson’s disease and healthy controls to the Fox Insight Longitudinal Study
Roseanne Dobkin, Ninead Amondikar, Chelsea Caspell-Garcia, Janel Barnes, Lauren Bataille, Lana Chahine, Andrea Katz, Catherine Kopil, Connie Marras, Amanda Melnick, Tracy Schwieger, Bernadette Siddiqi, Luba Smolensky, David Standaert, Caroline Tanner

P23.05  Use of digital techniques to recruit Parkinson's clinical trials
Tara Fox, Beth Hirschhorn, Marianne Bach, Sara James, Judy Shih, George Nomikos, Jesse Cedarbaum

P23.09  The effectiveness of boxing exercise in elderly people including people with Parkinson’s disease
Noriko Kawashima, Masayo Isogai, Michiko Matsuhashi, Mikiko Komachi, Hiroko Ikebe, Aya Kumon, Kumiko Myashita, Atsuko Sato, Kazuko Hasegawa

P23.10  Inhaled levodopa (CVT-301) for treatment of off periods in Parkinson’s disease: efficacy as assessed by 39-item Parkinson’s disease quality of life (QoL) questionnaire
Peter LeWitt, Robert A. Hauser, Charles Oh, Jenny Qian, Christopher Kenney, Iresha Abeynayake

P23.12  Meta-analysis of mortality following subthalamic and pallidal deep brain stimulation for patients with Parkinson’s disease
Ahmed Negida

P23.15  Can non-invasive brain stimulation enhance dual-task performance in Parkinson’s disease?
Jing Qi, Graham Kerr, Karen Sullivan, Simon Smith, Marcus Meinzer

P23.16  Understanding trial specific recruitment challenges – A dynamic approach to identifying and overcoming obstacles: PD patient’s perspective

P23.17  A model of patient engagement in research: Takeda and Parkinson’s Foundation co-creating clinical trials
Karlin Schroeder, Megan Feeney, Christiana Evers, Casey Gallagher, Jessica Scott, Chi Onyebuchi, Joel A. Posener

P23.18  Improving clinical trials through the science of patient engagement
Karlin Schroeder, Megan Feeney, Christiana Evers, Casey Gallagher, Veronica Todorato

P23.19  Examining Parkinson’s disease psychosis treatment and outcomes in the real world: Interim year 1 findings from the INSYTE observational study
Jennifer Goldman, Susan Fox, Stuart Isaacs, Doral Fredericks, Jeff Trotter, Kaitlin Healy, Amy Ryan, Andrew Shim

Clinical Science: Rating scales – NEW HALL

P24.01  Validating a new dependency measure for Parkinson’s disease
Neil Ramsay, Angus Macleod, Carl Cournsell
P24.02 The new Parkinson’s Disease Composite Scale: A proven instrument for the quick and holistic assessment of Parkinson’s patients
Pablo Martinez Martin, Giada Radicati, Carmen Rodriguez-Blazquez, John Wetmore, Norbert Kovacs, Ray Chaudhuri, Fabrizio Stocchi, Dominic Graham, Russell Patten

P24.03 Rasch analysis of the clinimetric properties of the Korean dizziness handicap inventory in patients with Parkinson’s disease
Hui-Jun Yang, Da-Young Lee, Ji-Yun Park

Clinical Science: E-health and technology – NEW HALL

P25.02 The facilitators and barriers of telemedicine: How it can affect patients with Parkinson’s disease
Taylor Fitzgerald, Valerie Carter, Joseph Carter

P25.05 A wearable sensor device with internet connectivity for accurate movement assessment in Parkinson’s patients
J. Sebastian Marquez, Corneliu Luca, Masudur R. Siddiquee, Robin Mayrand, Roozbeh Atri, Ou Bai

P25.06 Feasibility analysis of hand rotation test for quantifying Parkinson’s disease motor states: Smartphone vs wristband motion sensor
Somayeh Aghanavesi, Mevludin Memedi, Hasan Fleyeh

P25.07 An Internet of Things system for patient empowerment: a case study on measuring patients’ understanding of causal relationships between symptoms and behaviour
Liran Kam, Mevludin Memedi, Ella Kolkowoka, Isabella Scandurra, Paul de Roos, Dag Nyholm, Gunnar O. Klein

P25.11 Collaborative framework for delivering on ways that digital technologies can help to optimize new Parkinson’s treatment trials
Diane Stephenson, Jesse Cedarbaum, Klaus Romero, Polly Dawksins, Sara Garvey, Mark Frasier, Alysa Reimer, Lauren Bataille, James Beck, Karlin Schroeder, Beth Vernaleo, David Dexter, Jill Gallagher, Joy Duffen, Helen Matthews, Steve Ford

Clinical Science: Neuroimaging – NEW HALL

P26.01 MIBG scintigraphy in the differential diagnosis of Parkinsonism
Sophie Bourgeois

P26.05 Abnormal verticility perception in Parkinson’s disease patients with lateral trunk flexion is associated with hypoperfusion in the right temporoparietal junction
Masayuki Kohsaka, Tomoko Oeda, Shigetoshi Takaya, Atsushi Umemura, Satoshi Tomita, Kwiyoung Park, Kenji Yamamoto, Hideyuki Sawada

P26.06 Iodine-123-metaiodobenzylguanidine scintigraphy (MIBG) in routine clinical practice – a local experience in movement disorder clinic
Sandip Raha, Shalini Rao

Comprehensive Care: Caregiving, relationships, respite care, families – NEW HALL

P28.02 Neuropsychiatric symptoms and caregiver burdens in Parkinson’s disease and Alzheimer’s disease – differences between spouse and offspring
Sang-Myung Cheon, Min-Jung Park, Jae Woo Kim

P28.03 Parkinson’s disease care partner psychological health and well-being: A proposed assessment and treatment paradigm
Nadeeka Dissanayka, Roseanne Dobkin

P28.04 Share the care: Supporting Parkinson’s disease caregivers through peer mentoring
Jeanette Lee, Ellen Klostermann Wallace, Claire Niemet, Serena Hess, Joshua Chodosh, Deborah Hall, Jayne Wilkinson, Bichun Ouyang, Jori Fleisher

P28.06 Alexander technique group classes are a feasible and promising intervention for care partners of people living with Parkinson’s disease
Monika Gross, Ramyaa Ravichandra, Belinda Mello, Rajal Cohen

P28.09 The relationship between depression and emotional support by patients’ attending physicians among primary caregivers of patients with Parkinson’s disease: Focusing on cognitive evaluation of family function
Tatsuya Nakai, Yoshitico Takemoto
**Caregivers burden in Parkinson's disease in Singapore**  
Ee-Chien Lim, Mark MJ Tan, Nivedita Nadkarni, Eng-King Tan, Kumar M Prakash

**Availability for home-based care program concerning Parkinson's disease patients and their families**  
Tomiyasu Mari, Teruyo Kurebayashi, Estuko Tsukamoto

**What I learnt from taking care of my mother who has Parkinson's disease**  
Lam Swee Yeoh

### Comprehensive Care: Fitness, wellness, nutrition – NEW HALL

**The success of disease specific exercise approach in persons with Parkinson’s disease: An observational study**  
Chloe Newell, Lexi Okurily, Tarang Jain, Valerie Carter

**Impact of Rock Steady Boxing in patients with Parkinson’s disease**  
Rachael Dawson, Jamasp Sayadi, Lissa Kapust, Lauren Anderson, Stacey Lee, Al Latulippe, David Simon

**The effect of the dance DVD created for the rehabilitation of Parkinson's disease patients**  
Hiroko Hashimoto, Hajime Nakanishi, Megumi Nakamura

**Big for Life® exercise group for people with Parkinson’s: The Australian experience**  
Amie Malcolm, Michelle Skinner

**Living with Parkinson’s – My running story. Returning to running after diagnosis and a pathway to running faster than before diagnosis.**  
Ian McFarlane

**Living with Parkinson's. Exercise and Parkinson's. A look at how through the power of exercise I can run up hills again**  
Ian McFarlane

**Developing silver food which easy to swallow in patients with Parkinson's disease**  
Eungseok Oh, Bok Sookyong, Ahn Soyoung, Jee Sungjoo

**Body fat loss is associated with autonomic dysfunction in Parkinson’s disease**  
Tomoko Oeda, Atsushi Umemura, Masayuki Kohsaka, Satoshi Tomita, Hideyuki Sawada, Kwiyoun Park

**Impact of boxing-based training in Parkinson’s disease: A new lifestyle for PD patients in Chile!**  
Miguel Pina, Lorena Bernales, Pablo Roa

### Comprehensive Care: Alternative & complementary therapies/ Creativity – EVENT HALL

**Dance and action representation: Experiences of a co-developed dance programme for Parkinson’s**  
Judith Bek, Aline Arakaki, Matthew Sullivan, Ellen Poliakoff

**Occurrence of spleen qi deficiency as defined by Chinese medicine in Parkinson’s disease**  
Ka Kit Chua, Min Li

**Art therapy may improve signs and symptoms of Parkinson’s disease: Preliminary findings from the "ExplorArtPD Study"**  
Kush Sharma, Ikuko Acosta, Marygrace Berberian, Daniella Mania, Jung Jiyoun, J.R. Rizzo, Andrew S. Feigin, Milton C Biagioni, Alberto Cucca

**Development of a music therapy protocol to enhance breathing, swallowing, and vocal/speech functions for individuals with Parkinson’s disease: A pilot study**  
Eri Haneishi, Osamu Shirokoto, Hirohide Takahashi, Hideki Kawahara, Kaori Hagiwara, Yuka Miura

**Group singing improves quality of life in people with Parkinson’s: An international Sing to Beat Parkinson’s project**  
Yoon Irons, Grenville Hancox, Trish Vella-Burrows, Eun-Young Han, H. Ju Chong, David Sheffield, Don Stewart

**Effects of dance on cognitive functions, psychological symptoms and health-related quality of life in Parkinson’s disease**  
Nadeesha Kalyani, Karen Sullivan, Gene Moyle, Sandy Brauer, Graham Kerr
POSTERS – Session 2
Thursday, June 6, 2019

P30.12 Egaoshi® ("Smiling") yoga: Invented by Kyoko Kimura, the first Egaoshi® in Japan, an all-in-one exercise introducing a combination of smiling, food, breathing, music, movement and beauty that tremendously improves the symptoms of Parkinson’s disease
Kyoko Kimura

P30.14 Group music therapy enhances positive affect in people with Parkinson’s disease
Satomi Kondo

P30.18 Multidisciplinary care models for Parkinson’s disease: The Parkinson’s Foundation Centers of Excellence experience
Clarissa Martinez Rubio, Samuel S. Wu, Hanzhi Gao, Veronica L. Todaro, Fernando Cubillos, Nadia Romero, Jennifer G. Goldman

P30.19 The effects of non-invasive transcranial brain current stimulation (tDCS) on posture over stable and unstable surfaces in people with Parkinson’s: A randomised double-blind sham-controlled crossover study
Jing Qi, Graham Kerr, Karen Sullivan, Simon Smith, Marcus Meinzer

P30.24 Building international communities – Dance with Parkinson’s
Sara Houston, Monica Gillette, Yuko Kuroda, Mariko Konno, Kurumi Nakamura, Kumi Shimokura, Roberto Casarotto, Daniele Volpe

P30.25 The effects of concomitant use of hydrogen water and photobiomodulation (PBM) to Parkinson’s disease
Dean Wu, Chaur-jong Hu, Chien-Tai Hong, Hung-Yu Lin

Comprehensive Care: Lay/professional health literacy & public thought – EVENT HALL

P31.01 Subjective observations on the effects of antibiotics on the PD symptoms of PWP William Curnow since previous PWC4 poster including data taken before and after FMT procedure plus three usages of antibiotics
William Curnow, Thomas Borody, Sandra Clewett

P31.02 Development of a Massive Open Online Course (MOOC) to educate healthcare professionals about Parkinson’s disease
Mary DiBartolo, Robin Hoffman

P31.03 Exploring OFF experiences and communication with clinicians
Sara Garvey

P31.04 In support of a fungal and related mycotoxin model contributory to Parkinson’s
Glen Pettibone, David Spry

P31.05 Service-learning as an introduction to Parkinson’s disease for pre-clinical medical students
Stephanie Blissonnette, Okeanis Vaou, Marie Saint-Hilaire

Comprehensive Care: Disability and quality of life outcome measures – EVENT HALL

P32.01 Quality of life in Parkinson’s disease patients may not improve with physical, social, or emotional interventions
Erika Adelman, Albert Ortega, Jonathan Muller, Kimberly Muller, Alejandro Aragon, Josiah Winters, Nora Davis, Lisa Warner, Miran Salgado

P32.03 The association between non-motor symptoms and quality of life in Parkinson’s disease
Melanie Cusso, Alla Sewram, Dean Pountney, Kenneth Donald, Tien K Khoo

P32.06 ‘Where’s the ‘feeling better’ box?’ Beyond PDQ39
Alison Williams

Comprehensive Care: Shared decision-making: PwP – caregiver – doctor – EVENT HALL

P33.01 Preparing future practitioners for interdisciplinary teams: An update on the collaborative study research at Concordia College, Moorhead, Minnesota, USA
Jennifer DeJong, Jack Rydell, Betty Larson

P33.02 emPowered! Tool: Enhancing communication systemwide – Building skills and expanding confidence for PwP and care partners in self-advocacy and care team planning
Sarah Jones
A national comprehensive survey study of Parkinson’s disease psychosis patients and caregivers regarding time to Parkinson’s disease psychosis diagnosis and treatment initiation
Peter Schmidt, Adolfo Díaz, Fernando Cubillos, Paula Wiener, Sharon Metz, Nadia Romero, Candace Andersson, Sherry Andes, Doral Fredericks, Andrew Shim

Comprehensive Care: Health accessibility/ Underserved populations – EVENT HALL

"No one has ever mentioned such word": Knowing, or not knowing about Parkinson’s disease in Kenya, sub-Saharan Africa
Natasha Fothergill Misbah, Suzanne Moffatt, Kate Hampshire, Juzar Hooker, Judith Kwasa, Richard Walker

Implementing a change of approach: From mono-to interdisciplinary follow-up of patients with PD
Michaela D. Gjerstad, Kristin Borch, Thyra Kirknes, Magne Wang Fredriksen, Thomas Rannstad Haugen, Mark Tiemessen, Espen Dietrichs, Guido Alves, Norwegian ParkinsonNet implementation group

Educational and outreach interventions to address neuropsychiatric issues in Parkinson’s disease
Glenn Stebbins

Use of a hybrid telehealth visiting nurse clinic to support the use of device assisted therapies for Parkinson’s disease in a large rural and remote North Queensland area. A feasibility and a patient perception observational study
Rachael White, Richard White

Comprehensive Care: Daily life activities including working & driving – EVENT HALL

A day in the life of...
Clare Lindley

Action imagery and observation in neurorehabilitation for Parkinson’s disease (ACTION-PD): A pilot RCT of a home-based intervention to improve functional actions
Ellen Poliakoff, Judith Bek, Chesney Craig, Zoe Franklin, Matthew Sullivan, Emma Gowen, Stefan Vogt, Trevor Crawford, Paul Holmes

Falls during neurorehabilitation and beyond in people with Parkinson’s disease
Christina Hohenwarter, Auguste Tautscher-Basnett, Volker Tomantschger, Manfred Freimueller

Comprehensive Care: Self-management, empowerment, coping strategies – EVENT HALL

Life does not end where a diagnosis starts: Entraïdons-nous (let us help each other)
Linda Bérard, Chantal Pelletier, Nadia Tagliabracci, François Guérin

Poised for Parkinson’s: Group classes in Alexander technique for managing symptoms of Parkinson’s disease
Monika Gross, Ramyaa Ravichandra, Glenn Batson, Rajal Cohen, Monica Norcila, Lisa First

Improving self-management and management of daily life for people with Parkinson’s disease through an educational intervention - the Swedish National Parkinson School (NPS)
Carina Hellqvist, Nil Dizdar, Carina Berterö, Märta Sund Levander, Peter Hagell

Patient-centered care for people with Parkinson’s disease in the context of a navigator program
Kim Yie Lin, JuHee Lee

Parkinson’s smell levels, symptom management and empowerment: When Joy met Alison
Allison Williams, Joy Milne

Providing education and support for newly diagnosed patients and families in the community
Cathi Thomas, Tamara DeAngelis, Marie Saint-Hilaire, Terry Ellis

Applying the extreme sport Art Du Deplacement (ADD)/ Parkour into rehabilitation training to increase physical and mental well-being in people with Parkinson’s disease (PDP)
Mareike Schwed, Kasturi Torchia, Gogoly Yao, Tobias Getrost
P37.18 The self-identified experiences and needs of people with Parkinson’s disease relating to patient education: A qualitative study
Georgina Whish-Wilson, Prue Morgan

Living with Parkinson’s: Public education or awareness programs – EVENT HALL

P39.01 Introducing the clinical trial companion, a research engagement tool
Catherine M. Kopil, Todd Sherer, Deborah W. Brooks, Holly Teichholtz, Rachel Dollhun, Kristin Demafeliz, Sarah Berk, Siddiqi, Emily Moyer, Amanda Melnick, Andrea Katz, Maggie McGuire, Kristen Teesdale, Brittany Greco, Tanya Simuni, Michael Schwarzschild, Claire Henschcliffe, Sohini Chowdhury

P39.07 Art as a vehicle for participation in the Spanish-speaking Parkinson community
Claudia Martinez, Gregory A. Pearce

P39.09 Spanish-language educational programming: Serving diverse communities
Christiana Evers, Clarissa Martinez-Rubio, Adolfo Diaz, Donna Sperlakis, Sarah Osborne

P39.11 Community engagement as stakeholder in improving student nurse awareness of Parkinson’s disease support groups
Lewis McCoy, Kathleen McCoy

Living with Parkinson’s: Government advocacy/ Campaigns/ Public policy – EVENT HALL

P40.01 Actual status of support for Parkinson’s disease patients in our hospital
Kentaro Ohta, Nakajima Takashi, Utsumi

Living with Parkinson’s: Living well with PD – EVENT HALL

P41.05 Live not just survive with Parkinson’s disease: A Edmond J. Safra visiting nurse faculty program presentation
B. Suzy Diggle

P41.06 Innovative model of care for persons with Parkinson’s disease in rural India
Sharmila Donde, Maria Barretto

P41.07 Parkinson’s disease. A patient’s perspective
Rob Hagen

P41.08 Multidisciplinary musical approach for the treatment of Parkinson
Rachel Heffez Ayzenfeld, Oriot Lif Kimhi, Ahmed Daka, Nirit Lev, Irit Alon, Omri Lapidot

P41.16 Graphical approach to predict response of Parkinson medicine using the coefficient named the Walk-Disability-Level (WDL) which can be easily felt by patient by himself without using any special equipment
Mitsushige Oda, Yuya Oda

P41.17 The profile of long-term Parkinson’s disease survivors with more than 30 years of disease duration in Japan
Yoshiko Okada

P41.18 Parkinson’s roadmap for education and support services™: Press-A how-to for developing early coping skills
Rosa Peña, Robin Kornhaber

P41.19 Women and Parkinson’s – Through a new lens
Kim Nitz, Lou Eisenbrandt, Megan Feeney, Karlin Schroeder

P41.24 Sábados en movimiento (moving Saturdays): Empowering patients with Parkinson’s disease
Beatriz Muñoz, Jaime Valderrama, Yor Castaño, Lady Lucio, Andres Navarro, Jorge Orozco

P41.25 Using physical exercise to improve quality of life, postural balance and physical function in general. A study by University of Kent, England
Arthur Waters, Steve Meadows, Anna Ferrusola-Pastrana, Glen Davidson, Chris Fullerton

P41.26 Parkinson’s Fitness – Paying it forward
Brett Warthen
POSTERS – Session 2
Thursday, June 6, 2019

P41.28 Perak Parkinson’s Association’s efforts in creating awareness and helping PWP 6 years after establishment
Lam Swee Yeoh

Living with Parkinson’s: Other – EVENT HALL

P43.01 William James, psychologist: the latest James Parkinson doppelgänger
Sergio A. Castillo-Torres, Carlos A. Soto-Rincón, Ingrid Estrada-Bellmann, Andrew J. Lees

P43.02 PRISM: An ongoing pan-European exploratory, cross-sectional, web-based survey of people living with PD and their care partners
Jordan Webb, Andrew Lees, Tom Foltynie, Angelo Antonini, Georg Ebersbach, Joaquim Ferreira, Olivier Rascol, Eduardo Tolosa, Rachel Gibson

P43.03 Investigation of effect of LRRK2 kinase activity on the GLUT4 membrane translocation in adipocytes
Motoki Imai, Kawakami Fumitaka, Isaka Yuki, Kawashima Rei, Maekawa Tatsunori, Kanzaki Makoto, Ichikawa Takaumi

P43.04 Characterization of the role of LRRK2 in the regulation of glucose metabolism
Fumitaka Kawakami, Yuki Isaka, Rei Kawashima, Tatsunori Maekawa, Makoto Kanzaki, Takaumi Ichikawa

P43.06 One man’s journey: Living with Parkinson’s
Rex Moore

P43.07 Being the patient at the centre of a multi-disciplinary team approach to Parkinson’s care: A personal perspective
Janet Niven

Late-Breaking – EVENT HALL

LBP.46 Identification of cerebrospinal fluid proteins associated with impaired sleep quality in Parkinson’s disease
Eiko Minakawa, Hiroko Yagihara, Yuji Saitoh, Ayumi Tsuru, Minori Suzuki, Yuichi Kamei, Koji Ueda, Keiji Wada, Yoshitaka Nagai

LBP.47 Hip fractures in patients with Parkinson’s disease
Eun-Suk Kim, Chang-hwan Kim

LBP.48 Features of autonomic failure in elderly patients with Parkinson’s disease and Dementia with Lewy bodies on emergency hospitalization
Teruaki Kawasaki, Yuko Watanabe, Yoshitomo Shirakashi, Hideo Yagi, Ichiro Akiguchi

LBP.49 Metabolomics-based identification of metabolic alterations in PARK2
Taku Hatano, Ayami Okuzumi, Shin-ichi Ueno, Takashi Ogawa, Shinji Saiki, Nobutaka Hattori

LBP.50 Canine aromatic detection of Parkinson’s Disease: Can dogs identify PD early?
Laurie Mischley, Stuart Isaacson

LBP.51 Pharmacokinetics of ND0612 administered at different infusion sites and with different cannula lengths: An open-label, randomized, cross-over study in healthy volunteers
Tal Bimberg, Tami Yardeni, Sheila Oren, Olivia Rosenfeld, Liat Adar

LBP.52 A third way to fund research
David Jones, Edwards Gaynor

LBP.53 Zonisamide ameliorates motor symptoms and sleep problems in patients with Parkinson’s disease: a 3-month open-label study
Keisuke Suzuki, Hiroaki Fujita, Takeo Matsubara, Taro Kadowaki, Kei Funakoshi, Yuji Watanabe, Tomohiko Shiina, Hirotsuka Sakuramoto, Mai Hamaguchi, Koichi Hirata

LBP.54 The effect of speech rate on lip kinematics in Parkinson’s disease
Shin Ying Chu, Steven M. Barlow, Jaehoon Lee, Jingyan Wang

LBP.55 Effects of computerized cognitive training, with and without concurrent exercise, on executive functions in Parkinson’s disease
Miguel Fernandez del Olmo, Jose Andrés Sanchez-Molina, Helena Fernandez-Lago, Luis Morenilla-Burlo, Joaquin Gomez-Varela
   Sophia Hulbert, Kim Chivers-Seymour, Ann Ashburn

LBP.57  Cochrane Systematic Review on singing for people with Parkinson’s
   Yoon Irons, Esther Coren, Megan K. Young, Donald E. Stewart, Manfred Gschwandtner, George Mellick

LBP.58  Translational research platform for intelligent deep brain stimulation
   Yingnan Nie, Huichun Luo, Shouyan Wang

LBP.59  Measures of vocal effort in Parkinson’s disease: self-perception, and feedback on performance
   Merrill Tanner, Lili Liu

LBP.60  Effects of combined auditory cues and treadmill training on cortical excitability and gait performance in Parkinson’s disease
   Wei Zeng, Pei-Jung Kao, Ya-Yun Lee, Ruey-Meei Wu, Jer-Junn Luh, Shi-Yun Lin

LBP.61  The Australian Parkinson’s Mission: Integrating genomics, biomarkers and patient cell phenotyping into disease modifying clinical trials
   Antony Cooper, Simon Lewis

LBP.62  Neuropsychiatric complications as key components of Parkinson’s disease: A critical framework for enhancing engagement in PD mental health research
   Michael Dennin, Molly St. Dennis, Kailyn Rodriguez, Alejandro Interian, Roseanne Dobkin

LBP.63  BouNDiess: An active-controlled randomized, double-blind double-dummy study of continuous ND0612 infusion in patients with fluctuating Parkinson’s disease
   Werner Poewe, Karl Kleburtz, Fabrizio Stocchi, Sheila Oren, Tami Yardeni, Liat Adar, Olivia Rosenfeld, C. Warren Olanow

LBP.64  Directional versus omnidirectional Deep Brain Stimulation for Parkinson’s disease: 12-month results of a multi-center, prospective, blinded, crossover study
   Alfons Schnitzler, Pablo Mir, Matthew Brodsky, Leonard Verhagen, Sergiu Groppa, Binith Cheeran, Edward Karst, Florence Defresne, Jan Vesper

LBP.65  Communicating clinical trials to scientists, health professionals, study participants and the public: Hype, hope or despair?
   Alan Whone, Claire Bale, Helen Matthews

LBP.66  Usefulness of cardiac MIBG scintigraphy and midbrain/pontine ratio to differentiate Parkinson’s disease from multiple system atrophy and progressive supranuclear palsy
   Hiroaki Fujita, Keisuke Suzuki, Tarō Kadowaki, Mai Hamaguchi, Koichi Hirata

LBP.67  Distinctive MRI patterns of brain iron accumulation in atypical parkinsonian syndromes
   Jae-Hyeok Lee

LBP.68  Caregiving 101: A solution-oriented guidebook for those providing care to persons living with Parkinson’s disease
   Marjorie Getz

LBP.70  Effects of yoga on oxidative stress, motor function, and non-motor symptoms in Parkinson’s disease: A pilot randomized controlled trial
   Corjena Cheung, Rozina Bhimani, Jean Wyman, Jürgen Konczak, Usha Mishra, Marcia Terluk, Reena Kartha, Paul Tuite

LBP.71  ‘Digital Dancing’ – Can you see what you feel?: An exploration of the physical ‘experience’ of dance for Parkinson’s through 3-D motion analysis
   Sophia Hulbert, James Fullam, Chris Hunt, Victoria Goodwin

LBP.72  How does the contribution of movement as an artistic and expressive medium improve the quality of life of both the person with Parkinson’s and their caregiver?
   Natalie Muschamp

LBP.73  Effects of vibrotactile stimulation on resting tremor in Parkinson’s disease
   David Putrino, Adam Fry, Taylor Patterson, Daniel Belcher
LBP.74  Association between health literacy and health-related quality of life in patients with Parkinson’s disease who participate in an ongoing group exercise program  
Ken Irisawa, Tamami Aida, Junya Ogawa

LBP.75  A cross-sectional assessment of function and disability in patients with Parkinson’s disease and Parkinson’s disease dementia using WHO Disability Assessment Schedule 2.0  
Jiahung Chen, Chientai Hung

LBP.76  Assessment of psychosis in patients with Parkinson’s disease  
Syed Sammar Abbas Zaidi, Arooj Fatima

LBP.77  Cost-effectiveness of a Parkinson’s nurse specialist position in rural and regional Australia: A pilot retrospective analysis  
Vincent Carroll, Marguerite Bramble, Alfred Wong, Deborah Schwebel, Rachel Rossiter

LBP.78  Health services for Parkinson patients in five hospitals in South Sumatera, Indonesia  
Selly Marisdina, Oktavianus Tambun, Ritki Amelia, Marissa Sylvia Regina, Dewi Susan, Wilasari Novatina

LBP.79  Inside the mind of a working mum with Parkinson’s Disease!  
Genna Douglas

LBP.80  Characteristics and difficulties patients with Parkinson’s disease have with going out  
Yumi Iwasa

LBP.81  Development of a structured psychosocial intervention programme for patients with Parkinson’s disease and their families  
Priya Thomas, Ravi Yadav

LBP.82  Apple: the first website about Parkinson’s disease for the patients in Japan  
Toshiko Atoda

LBP.83  YOPD: A rare opportunity (to rebrand for the better)  
Gaynor Edwards

LBP.84  The economic burden of Parkinson’s disease (PD) in the United States  
Brian Fiske, Carlyle Tanner, Roger Albin, Nabila Dahodwala, Earl Dorsey, Wenyu Yang, Laura Schmiel, Inna Cintina, Catherine Kopil, James Beck, Jamie Hamilton

LBP.85  Wearable device use increases the Quality of Life in people with Parkinson’s disease  
Nuala Burke, Lise Pape

LBP.86  Parky Life  
Matt Eagles

LBP.87  How to maintain a good voice for people with PD: A fun vocal exercise  
Merrill Tanner

LBP.88  Living with Parkinson’s disease in Peru  
Christine Jeyachandran

LBP.89  Impairment of static balance in patients with Parkinson’s disease using wearable device  
Ho-Won Lee, Pan-Woo Ko, Kyunghun Kang, Yong-Hyun Lim

LBP.90  Alpha-synuclein-induced synaptic changes in Parkinson’s disease  
Emma Persson, Leire Almendoz-Gil, Fadi Rofo, Mirjam Gooedkoop, Sara Ekmark-Lewén, Martin Ingelsson, Joakim Bergström

LBP.91  Development of gut and brain synucleinopathy in a mouse model of inflammatory bowel disease  
Stefan Grathwohl, Emmanuel Quansah, Nazia Maroof, Liz Spycher, Jennifer A. Steiner, Annika Herrmann, Fethallah Benmansour, Gonzalo Christian Duran Pacheco, Julianne Siebourg-Polster, Krisztina Oroslan-Szovit, Helga Remy, Monique Famy, Maria Cristina De Vera Madry, Thomas Emrich, Zachary Madaj, Martha L. Escobar Galvis, Christoph Mueller, Patrik Brundin, Markus Britschgi

LBP.92  Characterization of arm swing asymmetry in Parkinson’s disease patients using portable accelerometers  
Domiciano Rincón, Jaime Valderrama, Yor Castaño, Linda Montilla, Beatriz Muñoz, Andrés Navarro, Jorge Orozco

LBP.93  Effects of virtual reality exercise therapy on balance function and quality of life among patients with Parkinson’s disease  
Geun-Ho Lee, Mee-Young Park

LBP.94  The safety and feasibility of aquatic physiotherapy on falls and balance in people with Parkinson’s disease: A pilot randomised control trial  
Aan Terrens, Sze-Ee Soh, Prue Morgan

#WPC2019 @worldpdcongress
POSTER TOURS
Wednesday, June 5, 2019

5:15 PM – 6:30 PM

Presenters of featured posters will be present during poster tours to explain their work. Tour sign up is required (see sheets in back of New Hall, near the poster board row P01.01-P02.06).

Poster Tour 1: Protein misfolding and handling
Host: Miquel Vila (Spain)

P03.01 Patient-derived α-synuclein assemblies/strains display distinct functional characteristics in cells and in vivo
P03.03 Bidirectional gut-to-brain and brain-to-gut propagation of α-synuclein pathology in non-human primates
P03.04 Machine learning reveals different pathological signatures induced by distinct patient-derived α-synuclein pathogenic structures in monkeys
P03.05 The autophagic secretion of α-synuclein is dependent on galectin 3
P03.09 Extracellular α-synuclein enters dopaminergic neurons by modulating flotillin-1-assisted dopamine transporter endocytosis
P03.10 Effects of the intracellular milieu on alpha synuclein fibril formation: A study by Kyoto University, Japan
P03.17 Suppression of amyloid fibril formation of α-synuclein by the human molecular chaperone Hsp60

Poster Tour 2: Animal and cellular models of PD
Host: Laurent Roybon (Sweden)

P06.01 Role of indirect pathway D2 receptors in L-DOPA-induced dyskinesia
P06.02 Converging electrophysiological functions and pathological calcium phenotype over time results in mitochondrial stress: Describing a pathophysiological timeline and neuronal vulnerability in PD
P06.05 Parkinson’s disease-linked D620N VPS35 knockin mice manifest tau neuropathology and dopaminergic neurodegeneration
P06.07 DNAJC13 in Parkinson’s disease; characterization of the p.N855S knock-in mouse model
P06.19 An iPSC derived model of early onset sporadic Parkinson’s disease shows disease relevant phenotypes that are reversed by specific phorbol esters
P06.31 A novel target for neuroprotection: The small GTPase Rin inhibits LRRK2 to promote autophagy and reduce α-synuclein pathology
LBP.17 CLR01 protects dopaminergic neurons in vitro and in vivo in mouse and human models

Poster Tour 3: Alternative and complementary therapies
Host: Tom Montine (USA)

P30.06 Art therapy may improve signs and symptoms of Parkinson’s disease: Preliminary findings from the ”ExplorArtPD Study”
P30.10 Group singing improves quality of life in people with Parkinson’s: An international Sing to Beat Parkinson’s project
P30.11 Effects of dance on cognitive functions, psychological symptoms and health-related quality of life in Parkinson’s disease
P30.12 Egaoshi® (“Smiling”) yoga: Invented by Kyoko Kimura, the first Egaoshi® in Japan, an all-in-one exercise introducing a combination of smiling, food, breathing, music, movement and beauty that tremendously improves the symptoms of Parkinson’s disease
P30.15 A study on the effects of a group dance and creative movement program using Indian dance techniques on symptoms of Parkinson’s disease
P30.21 Taiko drumming for individuals with Parkinson’s disease: Performing artists partner with OT to promote community wellness
LBP.70 Effects of yoga on oxidative stress, motor function, and non-motor symptoms in Parkinson’s disease: A pilot randomized controlled trial

Poster Tour 4: Non-motor manifestations and PD
Host: David Breen (UK)

P12.01 Visuomotor training to music with learning choreography changes sensorimotor networks and weekly dance slows down disease progression as assessed by UPDRS and MMSE over 4-years P13.03 Feasibility of peer coaching to increase physical activity in people with Parkinson disease
P12.11 Communication about of OFF periods in Parkinson’s disease: A survey of physicians, PwP and care partners
P12.12 Experience and impact of OFF periods in Parkinson’s disease: A survey of physicians, PwP and care partners
P12.15 Risk factors for the development of cognitive impairment in Parkinson’s disease
P12.16 A wireless brain-spine interface alleviating gait deficits in a non-human primate model of Parkinson’s disease
P17.02 Automated immunohistochemical detection of skin depositions of pathological α-synuclein in idiopathic rem sleep behavior disorder and parkinsonism
P20.04 A pooled analysis for 8 randomized controlled trials of istradefylline, an adenosine A2A receptor antagonist: Efficacy as adjunct to levodopa in Parkinson’s disease (PD)
P20.05 Efficacy and safety of apomorphine sublingual film for the treatment of ‘OFF’ episodes in patients with Parkinson’s disease: A phase 3, double-blind, placebo-controlled trial
Poster Tour 5: Rehabilitation sciences
Host: Isabelle Arnulf (France)
P13.06 Tracking freezing of gait in Parkinson’s disease: A model identification objective method for predicting and preventing FoG episodes in PD
P13.08 A cross-sectional natural history of Parkinson’s disease as reported by >10,000 patients
P22.01 A randomized clinical trial on the evaluation of the effect of vestibular exercises on dizziness and postural control in Parkinson patients
P22.08 Satisfaction and usefulness of a bootcamp educational and practical program for individuals with Parkinson’s disease
P22.42 Parkinson’s Foundation Physical Therapy Faculty Program evaluation
P22.44 Global implementation of efficacious voice treatment for Parkinson’s disease: LSVT LOUD Germany, France and Japan
LBP.54 The effect of speech rate on lip kinematics in Parkinson’s disease
LBP.55 Effects of computerized cognitive training, with and without concurrent exercise, on executive functions in Parkinson’s disease

Poster Tour 6: Clinical trial design and patient involvement
Host: Simon Stott (UK)
P23.01 Intrinsic auricular muscle zone stimulation improves walking parameters faster than the medications in motion capture analysis of Parkinson’s disease patients
P23.02 Multimodal balance training with rhythmical cues in Parkinson’s disease: A randomized clinical trial
P23.14 Use of pimavanserin in combination with selective serotonin reuptake inhibitors (SSRIs)
P23.24 Levodopa carbidopa prodrg (ABBV-951) 24 hour continuous subcutaneous infusion shows similar pharmacokinetics in Caucasian and Japanese healthy volunteers
LBP.61 The Australian Parkinson’s Mission: Integrating genomics, biomarkers and patient cell phenotyping into disease modifying clinical trials
LBP.63 BouNDless: An active-controlled randomized, double-blind double-dummy study of continuous ND0612 infusion in patients with fluctuating Parkinson’s disease
LBP.64 Directional versus omnidirectional Deep Brain Stimulation for Parkinson’s disease: 12-month results of a multi-center, prospective, blinded, crossover study

Poster Tour 7: Caregiving, palliative care, self-management, and PD
Host: Colleen Canning (Australia)
P28.03 Parkinson’s disease care partner psychological health and well-being: A proposed assessment and treatment paradigm
P28.06 Alexander technique group classes are a feasible and promising intervention for care partners of people living with Parkinson’s disease
P34.02 Team-based outpatient palliative care improves patient and care partner-centered outcomes in Parkinson’s disease
P37.03 Impact of a self-efficacy enhancing program for recently diagnosed persons with Parkinson’s disease and their care partners
P38.01 Direct client care for individuals diagnosed with Parkinson’s disease and their support systems
P41.25 Using physical exercise to improve quality of life, postural balance and physical function in general. A study by University of Kent, England
LBP.76 Assessment of psychosis in patients with Parkinson’s disease

Poster Tour 8: Health accessibility for all populations
Host: Tanya Simuni (USA)
P35.01 "No one has ever mentioned such word": Knowing, or not knowing about Parkinson’s disease in Kenya, sub-Saharan Africa
P35.02 Implementing a change of approach: From mono-to interdisciplinary follow-up of patients with PD
P35.04 Rural & regional Australia: The case for specialist Parkinson’s nurse services
P35.05 A closer look at the unmet needs, research and care priorities for women with Parkinson’s
P35.07 Use of a hybrid telehealth visiting nurse clinic to support the use of device assisted therapies for Parkinson’s disease in a large rural and remote North Queensland area. A feasibility and a patient perception observational study
LBP.77 Cost-effectiveness of a Parkinson’s nurse specialist position in rural and regional Australia: A pilot retrospective analysis
Poster Tour 9: Etiology, functional imaging, optogenetics, and PD

Host: Angelo Quartarone (Italy)

P01.12 Large multi-center study reveals robust and replicable evidence for dysbiosis of gut microbiome in PD

P10.01 Hitting the brakes: Freezing of gait in Parkinson’s disease derives from pathological activity in the subthalamic nucleus

P10.02 The role of LRRK2 at cortico- and thalamo-striatal synapses in the G2019S knock-in mouse model

P10.03 Cortical response to open and closed-loop tactile cueing during walking and turning in Parkinson’s

P11.03 Olfactory bulb atrophy in the earliest clinical stage of Parkinson’s disease

Poster Tour 10: Animal and cellular models, dopamine receptors, and pharmacology

Host: Ashley Harms (USA)

P06.04 C-terminal domain of LRRK2 with the G2019S mutation can enhance \(\alpha\)-synuclein toxicity in dopaminergic neurons in vivo

P06.06 Targeting iron for the development of treatments for multiple system atrophy

P06.30 Age-dependent intracellular neuromelanin accumulation sets the threshold for Parkinson’s disease pathology

P06.32 The biological compatibility of the circadian system for therapeutic intervention in Parkinson’s disease: A study by The Bronowski Institute, Australia

P08.01 Retromer-mediated trafficking of the dopamine transporter in PD

P09.01 Long-term suppression of levodopa-induced dyskinesia by sub-anesthetic ketamine is mediated by BDNF and changes in striatal dendritic spine morphology

P09.03 Leucine-Rich Repeat Kinase 2 regulates Parkinson’s disease levodopa-induced dyskinesia

LBP.27 Dopaminergic denervation in PD is higher in the striatal region corresponding to the upper limb

Poster Tour 11: Protein misfolding, handling, and transmisson

Host: Nicolas Dzamko (Australia)

P03.06 Inhibition of \(\alpha\)-synuclein aggregation and prion-like propagation as intervention strategies to slow the progression of Parkinson’s disease

P03.08 Involvement of the CD163 receptor in the \(\alpha\)-synuclein induced neurodegeneration in Parkinson’s disease

P03.12 Misfolded \(\alpha\)-synuclein hampers oligodendroglial maturation in multiple system atrophy

P03.14 Deciphering the role of posttranslational modifications on \(\alpha\)-synuclein aggregation and toxicity

P03.15 The role of RNA in synapse physiology and neurodegeneration in PD

P03.16 On the mechanism of inhibition of \(\alpha\)-synuclein aggregation by the DJ-1 protein

LBP.08 The Cryo-EM structure of amyloid fibril formed by full-length \(\alpha\)-synuclein

LBP.09 Interplay between \(\alpha\)-synuclein and lipids in Parkinson’s Disease

Poster Tour 20: Public education and awareness programs

Host: Malu Tansey (USA) – (Moved from Thursday, June 7)

P39.01 Introducing the clinical trial companion, a research engagement tool

P39.10 Providing authentic learning experiences about Parkinson’s disease: Bringing humanity into the classroom

P39.12 The Edmond J. Safra Visiting Nurse Faculty Program at the Parkinson’s Foundation

P41.06 Innovative model of care for persons with Parkinson’s disease in rural India

P41.15 An opportunity for healthcare professionals to guide and untangle discussions about delusions and hallucinations

P42.01 The Fox Insight Study: An empowering opportunity to fuel Parkinson’s research and help advance scientific breakthroughs from the comfort of home

P43.05 Implementing the nurse navigator model within an interdisciplinary team at the McGill University Health Center: A patient and caregiver reported outcome survey
Poster Tour 12: Animal and cellular models of PD II  
Host: Susanne Schneider (Germany)

- **P06.08** Of mice and men, investigating the role of RAB39B in Parkinson’s disease
- **P06.10** Auxilin protects against α-synuclein aggregation, cell death and impairment of endocytosis
- **P06.15** Parkinson’s disease-on-a-chip: Reconstructing the nigrostriatal pathway in vitro
- **P06.24** Temporal genetic profiling of early synucleinopathy in nigrostriatal dopamine neurons
- **P06.25** α-synuclein propagation via olfactory pathway in non-human primate model
- **P06.27** The rat α-synuclein preformed fibril model: Focus on longitudinal PET imaging and behavioral characterization
- **LBP.25** Synaptojanin 1 (SYNJ1) haploinsufficiency causes impaired autophagy and age-dependent decreased dopamine release in the dorsal striatal slices

Poster Tour 13: Fitness, wellness, and nutrition  
Host: Karin Overbeek (The Netherlands)

- **P21.02** Patient engagement in the development of OUR DBS: A global patient registry addressing outcomes and unanswered questions for DBS
- **P29.02** The success of disease specific exercise approach in persons with Parkinson’s disease: An observational study
- **P29.03** Impact of Rock Steady Boxing in patients with Parkinson’s disease
- **P29.08** On the reasons for participation of exercise continuation program – PD Cafe – for Parkinson’s disease
- **P29.09** Nutritional status in patients with Parkinson’s disease in a tertiary teaching Hospital in Northeastern México
- **P29.16** Motor performance and quality of life in a community exercise program for Parkinson’s disease

Poster Tour 14: Rehabilitation sciences II  
Host: Margaret Mak (Hong Kong)

- **P22.11** The effect of predominately home-based physiotherapy on mobility, balance and quality of life in people with Parkinson's disease: a systematic review
- **P22.19** Design of the PERSPECTIVE study: PERsonalized SPEeCh Therapy for actIVE conversation
- **P22.25** Changes in fear of falling: A 3-year prospective study
- **P22.31** Exercise and physical activity for people with progressive supranuclear palsy: A rare form of atypical Parkinsonism
- **P22.36** Effect of virtual reality gaming and conventional rehabilitation on physical function and quality of life in patients with Parkinson’s disease
- **P22.43** Physical therapy practice patterns, barriers, and facilitators at Parkinson’s disease expert centers in the United States: A mixed methods study
- **P22.54** Relationship between speech, voice and swallowing disorders with non-motor symptoms in Parkinson’s disease: A study conducted in a group of people with Parkinson in Venezuela

Presenters of featured posters will be present during poster tours to explain their work. Tour sign up is required (see sheets in back of New Hall, near the poster board row P01.01-P02.06).
Poster Tour 15: Rehabilitation sciences III
Host: Hirohide Takahashi (Japan)

P22.09 Boxing as an alternate treatment for sleep disorders in individuals with Parkinson’s disease: A feasibility study
P22.28 Inpatient multidisciplinary rehabilitation effects on the quality of life for Parkinson’s disease: A quasi-randomized controlled trial
P22.29 Physical activity and exercise choices in people with Parkinson’s disease: Preferences and barriers
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**WPC HAIKU COMPETITION WINNERS**

Present in all things  
Together we are mighty  
Love unshaken love  

Madonna Brady (Australia)
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The WPC 2019 will offer space in two exhibit halls, the Event Hall, and the New Hall.

**EVENT HALL** is open entirely to all delegates, including health professionals and people with Parkinson’s.
NEW HALL posters are open to all, but the exhibit area is designated solely for health professionals.
**Exhibitors & Partner Tables**

### Exhibitors

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Empowering Life

Sanofi is a health-care partner who offers support to people who need it.
ABBVIE, INC.
1 North Waukegan Road
North Chicago, IL 60064
USA
Tel: +1 800-255-5162
www.abbvie.com

AbbVie is a global, research-driven biopharmaceutical company committed to developing advanced therapies for some of the world’s most complex and critical conditions. AbbVie’s mission is to use its expertise and unique approach to innovation to improve treatments across four therapeutic areas: immunology, oncology, virology and neuroscience.

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Ardsley, NY 10502
USA
www.acorda.com

Acorda Therapeutics is a biopharmaceutical company focused on developing therapies for neurological disorders.

TAKEDA PHARMACEUTICAL COMPANY LIMITED
1-1, Nihonbashi-Honcho 2-chome
Chuo-ku, Tokyo 103-8668
Japan
Tel: +81-3-3278-2111
www.takeda.com

Our mission is to strive towards Better Health and a Brighter Future for people worldwide through leading innovation in medicine.
Abbott is a global healthcare leader that helps people live more fully at all stages of life. Our portfolio of life-changing technologies spans the spectrum of healthcare, with leading businesses and products in diagnostics, medical devices, nutritionals and branded generic medicines. Our 103,000 colleagues serve people in more than 160 countries.

Kyowa Hakko Kirin Co., Ltd. is a global research-based life sciences company specialized in biotechnologies with over 8,000 employees. The core therapeutic areas are oncology, neuroscience, nephrology, and immunology and allergy. The company leverages leading-edge technologies to improve the health and well-being of people worldwide.

Boston Scientific is a worldwide developer, manufacturer and marketer of medical devices whose products are used in a broad range of interventional medical specialties. As an innovation leader in Deep Brain Stimulation Technology, Boston Scientific is committed to transforming lives through innovative medical solutions that improve the health of patients.

The Parkinson’s Foundation makes life better for people with Parkinson’s disease by improving care and advancing research toward a cure. In everything we do, we build on the energy, experience and passion of our global Parkinson’s community. For more information, visit Parkinson.org or call (800) 4PD-INFO (473-4636).
SUMITOMO DAINIPPON PHARMA CO., LTD.

13-1, Kyobashi 1-chrome
Chuo-ku, Tokyo 104-8356
Japan
Tel: +81-80-5319-9582
takahiro-minato@ds-pharma.co.jp
www.ds-pharma.co.jp

Sumitomo Dainippon Pharma Co., Ltd., operates every day to achieve its corporate mission “to broadly contribute to society through value creation based on innovative research and development activities for the betterment of healthcare and fuller lives of people worldwide”.

ACADIA PHARMACEUTICALS INC.

3611 Valley Centre Drive, Suite 300
San Diego, CA 92130
USA
Tel: +1 858-558-2871
info@acadia-pharm.com
www.acadia-pharm.com

ACADIA Pharmaceuticals Inc. is a biopharmaceutical company focused on the development and Commercialization of innovative medicines to address unmet medical needs in neurological and related central nervous system disorders.

ADAMAS

1900 Powell St STE 750
Emeryville, CA 94608
USA
Tel: +1 510-450-3500
info@adamaspharma.com
www.adamaspharma.com

At Adamas Pharmaceuticals, Inc., we believe in the power of medicines derived from a deep understanding of time-dependent biology. We strive to create medicines with therapeutic profiles that match the pattern of disease to drive a more significant and durable clinical effect.
### SUPPORTERS

**BRONZE**

**AMERICAN PARKINSON DISEASE ASSOCIATION**

135 Parkinson Plaza  
Staten Island, NY  10305  
USA  
Tel: +1 718-981-8062  
spaul@apdaparkinson.org  
[www.apdaparkinson.org](http://www.apdaparkinson.org)

The American Parkinson Disease Association (APDA) is the largest grassroots network dedicated to fighting Parkinson’s disease (PD) and works tirelessly to assist the more than 1 million Americans with Parkinson’s disease live life to the fullest in the face of this chronic, neurological disorder. APDA offers Strength in Optimism, Hope in Progress.

**EISAI CO., LTD.**

4-6-10 Koishikawa  
Bunkyo-ku, Tokyo  112-8088  
Japan  
[www.eisai.co.jp/index.html](http://www.eisai.co.jp/index.html)

Eisai’s corporate philosophy reflects our commitment to business activities aiming to increase the benefits to patients, their families, and consumers, who we clearly recognize as the key players in healthcare. This corporate philosophy is summarized by the term “hhc (human health care).” We believe that in order to truly consider the perspectives of patients and their families, it is important for each employee to first get close to patients and see the situation from their perspectives in order to learn to empathize with thoughts and feelings that might not necessarily always be expressed in words.

**BIOGEN**

225 Binney Street  
Cambridge, MA  02142  
USA  
Tel: +1 781-464-2000  
[www.biogen.com](http://www.biogen.com)

At Biogen, our mission is clear: we are pioneers in neuroscience. Since our founding in 1978 as one of the world’s first global biotechnology companies, Biogen has led innovative scientific research with the goal over the last decade to defeat devastating neurological diseases.

**FP PHARMACEUTICAL CORP.**

1-3-40 Nishi-otsuka  
Matsubara-shi, Osaka  580-0011  
Japan  
info@fp-pharm.co.jp  
[www.fp-pharm.co.jp/index.html](http://www.fp-pharm.co.jp/index.html)

FP Pharmaceutical Corporation has specialized in manufacturing and marketing of prescription drug for the treatment of Parkinson’s disease, who introduced Selegiline hydrochloride into the Japanese market for the first time in 1998.
Lundbeck, a global pharmaceutical company based in Copenhagen, Denmark, was founded in 1915. As one of the world’s leading companies specializing in brain disorders, Lundbeck’s key focus is to address disorders such as depression, anxiety, schizophrenia, epilepsy, and Huntington’s, Alzheimer’s and Parkinson’s diseases.

Novartis Pharma is a Japan-based subsidiary of Novartis’s pharmaceuticals department, the world’s leading healthcare company based in Basel, Switzerland. Using the Novartis Group’s global network and R & D capabilities, we deliver innovative medicines to the medical field to realize the health and well-being of people in the world and Japan.
Otsuka Pharmaceutical is dedicated to the research & development of highly-innovative drugs and diagnostics. Leveraging our research culture of curiosity, determination and unconventional thinking, we strive for solutions that only Otsuka can deliver, to improve the health of people across the world.

Otsukawa Grand Central Tower
2-16-4 Konan
Minato-ku, Tokyo 108-8242
Japan
Tel: +81-3-6717-1400
Fax: +81-3-6717-1470
www.otsuka.co.jp/en

The Michael J. Fox Foundation for Parkinson’s Research (michaeljfox.org) works urgently toward one goal: speeding a cure for Parkinson’s disease. Since inception, The Foundation has invested more than $800 million in high-impact programs worldwide to transform the best scientific ideas into therapies needed by the millions with Parkinson’s.

Grand Central Station – PO Box 4777
New York, NY 10163-4777
USA
Tel: +1 212-509-0995
info@michaeljfox.org
www.michaeljfox.org

Sunovion Pharmaceuticals Inc. is a global biopharmaceutical company whose spirit of innovation is driven by the conviction that scientific excellence paired with meaningful advocacy and relevant education can improve lives. We are proud to support innovation, education and advocacy for people living with Parkinson’s disease. For more information visit Sunovion.com and LittleBigThings.com.

Sunovion Pharmaceuticals Inc. is a U.S. subsidiary of Sumitomo Dainippon Pharma Co., Ltd.

84 Waterford Drive
Marlborough, MA 01752
USA
Tel: +1 888-394-7377
info@sunovion.com
www.sunovion.ca

At US WorldMeds, we hold a fundamental belief that our science has the potential to improve the lives of Parkinson’s patients. Our pipeline of development projects, along with our currently available PD treatment, reflects our resolve to bring innovative solutions to Parkinson’s patients. Stop by our booth to learn more.

4441 Springdale Rd
Louisville, KY 40241
USA
www.usworldmeds.com
The WPC Buddies Program is an initiative to strengthen the global Parkinson's community by connecting World Parkinson Congress registrants with each other before the Congress even begins!
ABBOTT  Booth #309

6300 Bee Cave Rd. Bldg. 2, Suite 100
Austin, TX  78746
USA
Tel: +1 512-293-3008
amanda.carbone@abbott.com
www.abbott.com

Abbott is a global healthcare leader that helps people live more fully at all stages of life. Our portfolio of life-changing technologies spans the spectrum of healthcare, with leading businesses and products in diagnostics, medical devices, nutritionals and branded generic medicines. Our 103,000 colleagues serve people in more than 160 countries.

ACORDA THERAPEUTICS INC.  Booths #209, 615

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USA
Tel: +1 914-347-4300
www.acorda.com

Acorda Therapeutics is a biopharmaceutical company focused on developing therapies for neurological disorders.

ACORDA PHARMACEUTICALS INC.  Booth #606

3611 Valley Centre Drive, Suite #300
San Diego, CA  92130
USA
Tel: +1 858-558-2871
dkremer@acadia-pharm.com
www.acadia-pharm.com

ACADIA Pharmaceuticals Inc. is a biopharmaceutical company focused on the development and commercialization of innovative medicines to address unmet medical needs in neurological and related central nervous system disorders. Visit Booth No. 606 to learn more.

ALEXANDER TECHNIQUE FOR PARKINSON’S: AN INITIATIVE OF THE POISE PROJECT  Booths #418, 639

5 Grove Garden Avenue
Candler, NC  28715
USA
Tel: +1 828-254-3102
info@thepoiseproject.org
www.thepoiseproject.org

ALEXANDER TECHNIQUE FOR PARKINSON’S: an initiative of The Poise Project. Adaptive Alexander-technique-based programs teach people living with Parkinson’s how to actively choose functional patterns that promote optimal postural tone, increasing ability for self-management of motor and non-motor symptoms and enhancing independence and quality of life.

ALEXION PHARMA, INC.  Booth #617

No. 1-18-14 Ebisu Shibuya-ku
Tokyo, Japan  150-0013
Japan
Tel: +81-3-5795-0733
yuri.kataoka@alexion.com
www.alexionpharma.jp

Alexion is a global biopharmaceutical company focused on serving patients and families affected by rare diseases through the innovation, development and commercialization of life-changing therapies. Patients with rare diseases often have no effective treatment options, and they and their families suffer with little hope. Our goal is to deliver medical breakthroughs where none currently exist.
The American Parkinson Disease Association (APDA) is the largest grassroots network dedicated to fighting Parkinson’s disease (PD) and works tirelessly to assist the more than 1 million Americans with Parkinson’s disease live life to the fullest in the face of this chronic, neurological disorder. APDA offers Strength in Optimism, Hope in Progress.

APDM Wearable Technologies focuses on discovering sensitive endpoints of disease progression in neurodegenerative conditions by quantifying movement with Opal sensors and sophisticated algorithms. Mobility Lab gait and balance analysis system has been utilized extensively in Parkinson’s Disease research. Other solutions – Motion Studio raw inertial data and Moveo Explorer kinematic data.

Atuka provides contract research services with world-leading expertise in Parkinson’s disease and related neurological conditions. We provide cutting-edge, rodent and non-human primate models to evaluate efficacy (symptomatic and disease-modification) and target engagement. Atuka offers biodistribution, medical chemistry, DMPK and in-vivo imaging.

Biodex has coupled technology with music to improve quality of life for more people with Parkinson’s through you. A first in neurologic rehabilitation, the Gait Trainer 3 hosts a library of tempo-to-cadence matched music selections designed to inspire correct movement. See and hear the magic behind the science.

At Biogen, our mission is clear: we are pioneers in neuroscience. Since our founding in 1978 as one of the world’s first global biotechnology companies, Biogen has led innovative scientific research with the goal over the last decade to defeat devastating neurological diseases.

We are a non-profit association created 8 years ago by people with Parkinson’s and their family members. We will present a newborn project ready for rehabilitation holidays for people with Parkinson’s and their families.
**Davis Phinney Foundation**

4730 Table Mesa Dr. J-200
Boulder, CO 80305
USA
Tel: +1 970-315-4114
jdeidel@dpf.org
www.dpf.org

The Davis Phinney Foundation for Parkinson’s is a dynamic, international nonprofit organization located in Colorado. Our mission is to help people with Parkinson’s to live well today, and we inform and inspire thousands of people living with Parkinson’s around the world each year through our programs.

---

**EGAO YK Academy**

19-6 Kamikeibu-cho, Uzumasa, Ukyo-ku
Kyoto-City 616-8103
Japan
Tel: +075-882-8103
yk.smile.academy@gmail.com
www.smile-academy.jp

I am Kyoko, the “Egaoshi®” in Japan. Ever since my aunt died of Parkinson’s disease, my quest began for a cure. I invented “Egaoshi Yoga”, “Ha! Dance”, “Pa-pi-pu-pe-po Dance” which is a combination of Smile, Food, Breathing, Music, Movement and Beauty, which led to tremendous improvement of Parkinson’s disease symptom.

---

**International Parkinson and Movement Disorder Society**

555 E. Wells Street, Suite 1100
Milwaukee, WI 53202
USA
Tel: +1 414-276-2145
info@movementdisorders.org
www.movementdisorders.org

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 and related movement disorders. Visit the MDS exhibit booth to learn more about MDS education and membership.

---

**Boston Scientific**

25155 Rye Canyon Loop
Valencia, CA 91355
USA
Tel: +1 661-949-4000
bsndbpatientcare@bsci.com
www dbsandme.com

Boston Scientific is a worldwide developer, manufacturer and marketer of medical devices whose products are used in a broad range of interventional medical specialties. As an innovation leader in Deep Brain Stimulation Technology, Boston Scientific is committed to transforming lives through innovative medical solutions that improve the health of patients.

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**IOS Press**

Nieuwe Hemweg 6B
Amsterdam, North Holland 1013 BG
The Netherlands
Tel: +31 20-6883355
c mcnamara iospress.com
www.iospress.nl

IOS Press is headquartered in Amsterdam with satellite offices in the USA, Germany, India and China. The IOS Press Neurodegenerative Journals Collection (iospress.com/neurodegen) features a portfolio of international, rigorously peer-reviewed journals – including the Journal of Parkinson’s Disease (journalofparkinsonsdisease.com). IOS Press is the official publisher of the WPC 2019 abstracts.
**Japan Parkinson’s Disease Association**

Booth #112

#306 Yamo-Emerald Mansion 4-31-12 Kumabukuro
Nakano-Ku, Tokyo 165-0025
Japan
Tel: +81 3-6257-3994
jpda@jpda-net.org
www.jpda-net.org

Japan Parkinson’s Disease Association is an organization that pursues volunteer activities consisting of PD patients and their family members. Setting out the eradication of Parkinson’s disease as goal, we aim to make an effort to make further steps toward mutual support, and to make a friendship and interact globally.

---

**Japan Serfcare Study Group**

Booth #502

5-35-1, Utsukushigaoka Aobaku
Yokohama, Kanagawa 225-0002
Japan
Tel: +045-905-3365
fukumoto@bp-tech.jp

The contents of our activity are that correct knowledge about Serfcare dissemination awareness.

---

**Kyowa Kirin**

Booth #638

135 Route 202/206, Suite 6
Bedminster, NJ 07921
USA
Tel: +1 908-234-1096
deb.braccia@kyowakirin.com
www.kyowa-kirin.com

Kyowa Hakko Kirin Co., Ltd. is a global research-based life sciences company specialized in biotechnologies with over 8,000 employees. The core therapeutic areas are oncology, neuroscience, nephrology, and immunology and allergy. The company leverages leading-edge technologies to improve the health and well-being of people worldwide.

---

**LSVT Global, Inc.**

Booth #501

3323 N. Campbell Ave., Suite 5
Tucson, AZ 85719
USA
Tel: +1 520-867-8838
info@lsvtglobal.com
www.lsvtglobal.com

LSVT Global pioneered innovative, scientifically-validated therapies that work to restore and maintain voice (LSVT LOUD®) and movement (LSVT BIG®) in people with Parkinson’s disease. We have trained a large network of expert speech, physical and occupational therapists from 73 countries who positively impact the lives of patients in their worlds.

---

**Medtronic**

Booths #201, 625

710 Medtronic Parkway
Minneapolis, MN 55432
USA
Tel: +1 763-514-4000
www.medtronic.com

Every day we are driven by the possibilities of what medical technology can do to improve people’s lives – not only technology in devices, but also in processes and in healthcare systems around the world. Join us in our commitment to take healthcare Further, Together. Be inspired at medtronic.com

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**Not Impossible Labs**

Booth #102

628 California Ave.
Venice, CA 90291
USA
Tel: +1 618-558-9062
lesley@notimpossiblelabs.com
www.notimpossible.com

Not Impossible’s Vyb Lab is developing the Vyb One, a non-invasive, mobile app-driven vibratory wearable system. The system is proving effective in providing confidence to individuals while carrying out daily activities. Not Impossible Labs is an innovation incubator and content studio dedicated to changing the world through technology and story.
PARKINSON'S FOUNDATION
Booth #510

200 SE 1st Street, Suite 800
Miami, FL 33131
USA
Tel: +1 800-473-4636
helpline@parkinson.org
www.parkinson.org

The Parkinson’s Foundation makes life better for people with Parkinson’s disease by improving care and advancing research toward a cure. In everything we do, we build on the energy, experience and passion of our global Parkinson’s community. For more information, visit Parkinson.org or call (800) 4PD-INFO (473-4636).

PARKINSON’S UK
Booth #417

215 Vauxhall Bridge Road
London, London SW1V 1EJ
UK
Tel: +44 207-931-8080
hello@parkinsons.org.uk
www.parkinsons.org.uk

Parkinson’s UK is the largest, non-commercial, charitable funder of Parkinson’s research in Europe. Our ultimate ambition is to find a cure, and improve life for everyone affected by Parkinson’s. We are a people movement, and together we’re bringing forward the day when no one fears Parkinson’s – join us.

PARKINSON & MOVEMENT DISORDER ALLIANCE
Booth #511

PO Box 36233
Tucson, AZ 85704
USA
Tel: +1 800-256-0966
info@pmdalliance.org
www.pmdalliance.org

Parkinson & Movement Disorder Alliance (PMDAlliance) ignites vitality, connection & personal power through comprehensive educational and community building programs live and live-stream. Our flagship Neuro Life Online program provides education by experts & movement disorder physicians, exercise, wellness and social connection. Download the app!

SENSE4CARE S.L.
Booth #103

Tirso de Molina, 36 Of. 18
Cornellà de Llobregat, Barcelona 08940
Spain
Tel: +34 93-492-39-59
info@sense4care.com
www.sense4care.com

Sense4Care is a leader R+D company designing, developing and producing wearables devices based on the identification of human movement patterns. STAT-ON is a medical device Class 2a that makes possible a complete Parkinson’s disease management by detecting motor symptoms (states ON-OFF, bradykinesia, dyskinesia, Freezing of Gait), falls and others.

SOARING WITH HOPE/ THE PD CRANE DANCE PROJECT
Booth #217

630 South Orange Grove Blvd.
Pasadena, CA 91105
USA
Tel: +1 626-340-6467
SoaringWithHope@gmail.com
www.facebook.com/amy.carlson.1088
www.cranedances.com

SOARING WITH HOPE FOR PD is to give hope and raise awareness for Parkinson’s globally for the next WPC World Parkinson’s Congress which will be held in Kyoto Japan, June 2019. WPC proudly presents ‘Soaring with Hope for Parkinson’s disease’, a project made possible with support from US WorldMeds and Britannia Pharmaceuticals.

SUMITOMO DAINIPPON PHARMA CO., LTD.
Booth #614

13-1, Kyobashi 1-chrome
Chuo-ku, Tokyo 104-8356
Japan
Tel: +81-80-5319-9576
shunji-toya@ds-pharma.co.jp
www.ds-pharma.co.jp

Sumitomo Dainippon Pharma Co., Ltd., operates every day to achieve its corporate mission “to broadly contribute to society through value creation based on innovative research and development activities for the betterment of healthcare and fuller lives of people worldwide.”
The Michael J. Fox Foundation for Parkinson’s Research (michaeljfox.org) works urgently toward one goal: speeding a cure for Parkinson’s disease. Since inception, The Foundation has invested more than $800 million in high-impact programs worldwide to transform the best scientific ideas into therapies needed by the millions with Parkinson’s.

The World Parkinson Coalition® works with nearly 200 organizations globally to connect and inspire members of the Parkinson’s community. Its main focus is organizing and hosting the triennial World Parkinson Congress where it brings together some of the world’s most respected movement disorder specialists, neuroscientists, nurses, rehab specialists, people with Parkinson’s and care partners to learn about the latest scientific discoveries, medical practices, and care initiatives for PD.
Come Join Us

International Congress of Parkinson’s Disease and Movement Disorders®

NICE, FRANCE SEPTEMBER 22-26, 2019

www.mdscongress.org

IMPORTANT DATES
July 18, 2019: Early Registration Deadline
August 22, 2019: Final Pre-Registration Deadline
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<th>Website</th>
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<td>#2</td>
<td>NPO U60 CHALLENGED SUPPORTERS</td>
<td>210-32, Jyunwa, Ikawadani</td>
<td>Kobe-city, Japan</td>
<td>+81 90-2323-6438</td>
<td><a href="mailto:andyt2015@u60challenged.com">andyt2015@u60challenged.com</a></td>
<td><a href="http://www.u60challenged.com">www.u60challenged.com</a></td>
</tr>
<tr>
<td>#3</td>
<td>HONG KONG PARKINSON'S DISEASE FOUNDATION</td>
<td>Room C, 3/F, Worldwide Centre, 123 Tung Kowloon</td>
<td>Hong Kong</td>
<td>+852 2374-4338</td>
<td><a href="mailto:vinccing@genesismarketing.com.hk">vinccing@genesismarketing.com.hk</a></td>
<td><a href="http://www.hkpdf.org.hk">www.hkpdf.org.hk</a></td>
</tr>
<tr>
<td>#4</td>
<td>PARKINSON'S DISEASE NURSE SPECIALIST ASSOCIATION</td>
<td>C/O Bronllys Hospital</td>
<td>Bronllys, Powys, LD3 0LU, UK</td>
<td>+44 187471-2595</td>
<td><a href="mailto:pdnsaqueries@gmail.com">pdnsaqueries@gmail.com</a></td>
<td><a href="http://www.pdnsa.org">www.pdnsa.org</a></td>
</tr>
<tr>
<td>#5</td>
<td>THE CURE PARKINSON'S TRUST</td>
<td>120 Baker Street</td>
<td>London, UK</td>
<td>+44 207929-7656</td>
<td><a href="mailto:helen@cureparkinsons.org.uk">helen@cureparkinsons.org.uk</a></td>
<td><a href="http://www.cureparkinsons.org.uk">www.cureparkinsons.org.uk</a></td>
</tr>
<tr>
<td>#6</td>
<td>PARKINSON CANADA</td>
<td>316 – 4211 Yonge Street</td>
<td>Toronto, ON M2P 2A9, Canada</td>
<td>+1 416-227-9700</td>
<td><a href="mailto:info@parkinson.ca">info@parkinson.ca</a></td>
<td><a href="http://www.parkinson.ca">www.parkinson.ca</a></td>
</tr>
<tr>
<td>#7</td>
<td>ENTRAIDONS-NOUS</td>
<td>110, rue Kenneth</td>
<td>Saint-Colomban, QC J5K 1W5, Canada</td>
<td>+1 514-943-8792</td>
<td><a href="mailto:en@entraidonsnous.ca">en@entraidonsnous.ca</a></td>
<td><a href="http://www.entraidonsnous.ca">www.entraidonsnous.ca</a></td>
</tr>
<tr>
<td>#8</td>
<td>DANCE FOR PD®/MARK MORRIS DANCE GROUP</td>
<td>3 Lafayette Ave</td>
<td>Brooklyn, NY 11217, USA</td>
<td>+1 718-624-8400</td>
<td><a href="mailto:info@danceforpd.org">info@danceforpd.org</a></td>
<td><a href="http://www.danceforpd.org">www.danceforpd.org</a></td>
</tr>
<tr>
<td>#9</td>
<td>ROCK STEADY BOXING, INC.</td>
<td>7440 N Shadeland Ave Ste 202</td>
<td>Indianapolis, IN 46250, USA</td>
<td>+1 317-205-9198</td>
<td><a href="mailto:jjohnson@rocksteadyboxing.org">jjohnson@rocksteadyboxing.org</a></td>
<td><a href="http://www.rocksteadyboxing.org">www.rocksteadyboxing.org</a></td>
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Parkinson's Disease Glossary

A guide to the scientific language of Parkinson’s disease

Acetylcholine: One of the chemical neurotransmitters in the brain and other areas of the central and peripheral nervous system. It is highly concentrated in the basal ganglia, where it influences movement. It is located in other regions of the brain as well, and plays a role in memory. Drugs that block acetylcholine receptors (so-called anticholinergics) are utilized in the treatment of PD.

Acetylcholinesterase Inhibitors: A drug that inhibits the enzyme that breaks down acetylcholine resulting in increased activity of the chemical neurotransmitter acetylcholine. Used to treat mild to moderate dementia in Parkinson’s disease.

Agonist: A chemical or drug that can activate a neurotransmitter receptor. Dopamine agonists, such as pramipexole, ropinirole, bromocriptine and apomorphine, are used in the treatment of PD.

Aggregate: A whole formed by the combination of several elements. In Parkinson's disease, there is a clumping of many proteins inside neurons, including α-synuclein. Levy bodies are a kind of aggregate found in PD.

Akinesia: Literally, means loss of movement also described as a difficulty with initiating voluntary movements. It is commonly used interchangeably with bradykinesia, however bradykinesia means slow movement.

Alpha-synuclein (α-synuclein): A protein present in nerve cells where it can be found in their cell body, their nucleus and their terminals. The accumulation and aggregation of this protein is a pathologic finding in PD. The first genetic mutation found in PD was discovered in the gene for α-synuclein (SNCA), and was called PARK1. α-synuclein also accumulates in multiple system atrophy (MSA) and in Lewy Body Disease. α-synuclein appears to play a key role in the pathogenesis of PD.

Alexander Technique: This technique is a form of complementary therapy, pioneered at the turn of the century by FM Alexander. The principal aim is to help improve health by teaching people to stand and move more efficiently.

Amantadine: A medication used to treat Parkinson’s disease as a single therapy or with L-DOPA and other medications. It has both an anti-Parkinson’s effect and an anti-dyskinesia effect.

Aminoguanidine: Also known as pimagedine. It acts to reduce levels of advanced glycation end products. It has been investigated as a potential treatment for diabetic nephropathy and kidney diseases and as a disease modifying therapy in PD.

Amygdala: An almond-shaped nucleus located deep in the brain’s medial temporal lobe in animals. It is involved in fear and anxiety responses, and in the formation of memories involving emotion.

Anticholinergics: A type of medication that interferes with the action of acetylcholine. It is sometimes used in PD to restore the balance between dopamine and acetylcholine in the striatum. They are not recommended for use in the elderly because they can cause confusion. Examples include:
- benztpine mesylate
- biperiden hydrochloride
- orphenadrine citrate
- procyclidine hydrochloride
- trihexyphenidyl hydrochloride

Anhedonia: Decreased ability or inability to experience pleasure.

Anosmia: Total loss of the sense of smell. See also Hyposmia.

Antagonists: Has the opposite effect from an agonist. Antagonists block neurotransmitter receptors. Dopamine antagonists can worsen Parkinson's symptoms and can cause drug-induced Parkinsonism. Virtually all antipsychotic drugs have dopamine antagonist action.

Apathy: Lack of interest, enthusiasm, or concern.

Apomorphine: A type of dopamine agonist, which is highly powerful and effective but also causes unpleasant effects, such as nausea. A pump delivering apomorphine can be used in more advanced stages of the disease.

Astrocytes: They are a major support cells in the brain. Among other things, they secrete growth factors that help neurons grow and communicate. They can also pump glutamate, a neurotransmitter that, in excess, can cause neurotoxicity.

Ataxia: Inability to coordinate voluntary muscle movements; unsteady movements and staggering gait.

ATP13A2 (PARK 9): A gene that codes for a form of the ATPase enzyme. When mutated, this gene may cause a form of early onset Parkinson’s.

Autonomic Nervous System (ANS): Part of the peripheral nervous system, consisting of sympathetic and parasympathetic nerves that control involuntary actions, in particular the heartbeat, smooth muscle (such as bladder and blood vessels), the digestive system, and glands.

Autonomic Dysfunction: Any abnormal functioning of the autonomic nervous system resulting in problems with bodily functions such as bowel and bladder control, blood pressure control, sweating, drooling, and so forth.

Autophagy: The segregation and disposal of damaged organelles within a cell. This is a normal physiological process in the body. It maintains normal functioning by protein degradation and turnover of the destroyed cell organelles for new cell formation. During cellular stress the process of Autophagy is increased. Cellular stress is caused when there is deprivation...
of nutrients and/or growth factors. Thus autophagy may provide an alternate source of intracellular building blocks and substrates that may generate energy to enable continuous cell survival. Dysfunctional autophagy can lead to the building of damaged organelles and misfolded proteins in the cell.

**Autosomes/autosomal:** Refers to all the chromosomes excluding the sex-related X and Y chromosomes.

**Autosomal recessive:** A mode of inheritance of genetic traits located on the autosomes that only manifests when two copies of a mutated gene (two alleles) are present. In order for a particular trait to be expressed, both parents must have the particular mutated allele or gene, and both must pass it to the offspring who then manifests the genetic disease. Some genetic forms of PD are autosomal recessive, such as from the genes known as parkin, PINK1 and DJ1. In some cases, the gene of interest is missing. In others, there are abnormalities and if two different abnormalities of the same gene are inherited, that can result in recessive inheritance.

**Axon:** A nerve fiber that carries electrical impulses from the nerve cell body to other neurons. Thick axons tend to be through the brain and spinal cord; they are surrounded by a protective fatty sheath called myelin (in multiple sclerosis the myelin is damaged). Thin axons tend to be unmyelinated. In PD, α-synuclein is deposited in long, thin axons, and these are called Lewy neurites.

**Basal Ganglia:** Clusters of neurons that include the caudate nucleus, putamen, globus pallidus and substantia nigra which are located deep in the brain and play an important role in movement. Cell death in the substantia nigra contributes to Parkinsonian signs. The subthalamic nucleus is now also often considered part of the basal ganglia because it connects with other regions of the basal ganglia.

**Big data:** A term for data sets that are so large or complex that traditional data processing applications are inadequate.

**Biomarker:** An early indicator that a person may have a disease, such as Parkinson’s. A biomarker, if present, could indicate that the person has a disease before symptoms of that disease appear. There is a search for biomarkers for PD. Biomarkers could be a chemical, clinical, or imaging finding.

**Blood brain barrier:** The separating membrane between the blood and the brain; a tight physical barrier that normally keeps immune cells, and some chemicals and drugs out of the brain.

**Braak Staging:** A method to classify the degree of pathology in Parkinson’s disease on brain autopsy, based on the idea that more brain regions contain α-synuclein pathology as Parkinson’s disease progresses over time. There is also a (different) Braak staging for Alzheimer’s disease.

**Bradykinesia:** Literally, means slowness of movement. It is commonly (but erroneously) used synonymously with akinesia and hypokinesia. Bradykinesia is a clinical hallmark of Parkinsonism.

**Bradyphrenia:** Slowness of thought common to many brain disorders.

**Brain stem:** The part of the brain between the cerebral hemispheres and the spinal cord. The three parts of the brain stem are the medulla oblongata, pons, and midbrain. The brain stem is a vital structure that is a passageway between the brain and spinal cord, and it contains neurons involved in sleep and wakefulness, as well as the main centers that command vital functions such as respiration and heart function. The substantia nigra, which is damaged in Parkinson’s, is located in the midbrain of the brain stem.

**C-Ab1:** A gene implicated in the processes of cell differentiation, cell division, cell adhesion, and stress response.

**Calcium:** An essential mineral. Calcium is important for neurological “signaling” and is involved in many chemical reactions within neurons and in mitochondria function. Calcium overload in substantia nigra has been postulated as one mechanism that could contribute to death of these neurons.

**Carbidopa:** A drug given with levodopa. Carbidopa blocks the enzyme dopa decarboxylase, thereby preventing levodopa from being metabolized to dopamine. Because carbidopa does not penetrate the blood brain barrier, it only blocks levodopa metabolism in the peripheral tissues and not in the brain, thereby reducing side effects, but increasing the effectiveness of levodopa.

**Carer/ Care Partner:** A name used to describe anyone who provides help or support of any kind to a relative or friend.

**Caudate nucleus:** A nucleus located in the basal ganglia important in learning and memory. It is one component of the basal ganglia called the striatum. The other component is the putamen.

**Cerebellum:** Part of the hindbrain; controls smooth movements. When damaged, it results in ataxia.

**Cerebrospinal fluid (CSF):** A watery fluid generated within the brain’s ventricles. CSF circulates to bathe the brain and spinal cord to cushion these from physical impact. Small amounts can be harvested in humans by lumbar puncture to measure chemicals coming from the brain.

**Chemokines:** Signaling proteins that are part of the Cytokines family. They are named for their ability to induce movement in an organism in response to chemical stimulus.
**Chronic:** (opposite: acute) Chronic diseases are of long duration. Chronic diseases are typically of subtle onset and slow worsening over time. The term does not imply anything about the severity of a disease.

**Clinical Trials:** Refers to those research studies that involve human volunteers and are conducted to add to our understanding of certain diseases or to determine whether a drug may be effective in treating a disease.

**Central Nervous System (CNS):** consists of the brain, brain stem and spinal cord.

**Coenzyme Q10:** An antioxidant studied in Parkinson’s disease to slow down disease progression, but with little proven benefit so far.

**Cognition:** Mental processes including attention, remembering, producing and understanding language, solving problems and making decisions.

**Cognitive:** Relating to mental activity such as thinking, reasoning, making judgments and remembering.

**Cogwheel:** Stiffness of the muscles characterized by jerky movements when arms and legs are moved against a resistance.

**Complementary therapies:** These are non-medical treatments, which many people use in addition to conventional medical treatments, such as the Alexander technique, acupuncture, aromatherapy, music and art therapies, reflexology, and osteopathy.

**Computed tomography (CT):** A medical imaging method employing computer processing to produce images seen as slices through the tissue. This presentation of images is known as tomography.

**COMT Inhibitor:** A drug used to treat Parkinson’s symptoms. It works by inhibiting COMT thereby preventing the breakdown of dopamine resulting in increased levels of this neurotransmitter.

**COMT (catechol-O-methyltransferase):** One of the enzymes that break down dopamine, adrenaline (also called epinephrine) and noradrenaline (also called norepinephrine).

**Continuous Dopaminergic Stimulation (CDS):** A therapeutic concept for the management of Parkinson’s disease that proposes that continuous (as opposed to discontinuous or pulsatile) stimulation of striatal dopamine receptors will delay or prevent the onset of levodopa-related motor complications.

**Controlled Release Drugs:** These are special preparations of drugs that release the drug into the body slowly and steadily rather than all at once. They keep the amount of the drug in the bloodstream at a steadier level than the ‘ordinary’ version of the same drug.

**Cytokines:** A family of small proteins that are secreted by specific cells of the immune system and carry signals locally between cells, and thus have an effect on other cells. Unlike growth factors, they have no specific role in cell proliferation and are primarily linked to blood and immune cells. Some cytokines are “pro-inflammatory, which is beneficial against infections ut may also cause death of cells in the body whereas others are “anti inflammatory” and may be beneficial in stopping inflammation. Higher levels of pro-inflammatory cytokines are found in Parkinson’s brains.

**DaTscan:** a type of neuroimaging that can be used to differentiate between Parkinson’s disease and conditions that look similar, by evaluating the brain’s dopamine system.

**Deep Brain Stimulation (DBS):** A surgical treatment that involves the implantation of a medical device (electrical stimulator) that acts as a brain pacemaker sending electrical impulses to the specific area in which the electrode was inserted. In Parkinson’s patients, the device is typically inserted in either the subthalamic nucleus or the globus pallidus, less often in the thalamus or pedunculopontine nucleus, depending upon the specific problem.

**Dementia:** A decline in cognitive function due to damage or disease in the brain beyond what might be expected from normal aging. Areas particularly affected include memory, attention, judgment, language, planning and problem solving.

- **Alzheimer's disease dementia:** The most common form of dementia, typically presents with difficulty in remembering names and events. May also initially include apathy and depression, and later impaired judgment, disorientation, confusion, behavior changes and difficulty speaking, swallowing and walking. Associated with abnormal deposits of the protein fragment beta-amyloid (plaques) and twisted strands of the protein tau (tangles) as well as brain nerve cell damage and death.

- **Dementia with Lewy bodies (DLB):** Similar, but not identical, symptoms as in Alzheimer’s dementia. DLB commonly has a greater occurrence of sleep disturbances, well-formed visual hallucinations, and muscle rigidity. Associated with aggregation of α-synuclein in the cerebral cortex. Lewy bodies are also a pathologic hallmark in Parkinson’s disease. The relationship of DLB and PD remains to be resolved.

- **Parkinson’s dementia:** Presents similarly to Alzheimer’s dementia or dementia with Lewy bodies, but is typically preceded by clinical Parkinson’s disease. Associated with α-synuclein aggregates that more likely begin in the brain stem, including the substantia nigra.
**PARKINSON’S DISEASE GLOSSARY**

**Dendrites:** (from Greek meaning, "tree") Nerve fibers that project from the nerve cell body. Branches of dendrites are the receiving fibers of signals coming to the neuron from other neurons and convert these chemical signals into electrical ones to the nerve cell body.

**Depression:** Causes feelings of sadness and/or a loss of interest in activities once enjoyed. It can decrease one's ability to function in daily activities. Depression can be a clinical symptom of PD.

**Disease modification:** Treatments or interventions that affect the underlying pathophysiology of the disease and have a beneficial outcome on the course of a disease, for example Parkinson's.

**Disequilibrium:** Another word for unsteadiness or balance problems.

**DJ-1:** Mutations in this gene cause an autosomal recessive form of Parkinson's disease. The function of the DJ-1 protein appears to reduce oxidative stress.

**Dopa decarboxylase inhibitors:** Drugs (such as carbidopa) that inhibit the metabolism of levodopa to form dopamine. By inhibiting dopa decarboxylase only in the peripheral organs (not the Central Nervous System), levodopa concentration is increased and more can enter the brain. These drugs are particularly useful in Parkinson's when used with levodopa.

**Dopamine:** A small chemical molecule that is one of the brain’s neurotransmitters. Among other brain regions, it is found in the ventral striatum within the substantia nigra. These cells project to the striatum in the basal ganglia. Deficiency of dopamine in the striatum due to the death of cells in the substantia nigra causes symptoms of Parkinsonism.

**Dopamine agonist:** A compound that activates dopamine receptors, other than dopamine. Examples include, bromocriptine mesylate (Parlodel), pergolide (Permax), pramipexole (Mirapex), ropinirole hydrochloride (Requip), piribedil, cabergoline, apomorphine (Apokyn), rotigotine (Neupro patch) and lisuride. These act like dopamine, but are not actually dopamine. They can be used in both the early and late stages of Parkinson's disease. They are the second most powerful type of anti-Parkinson medication after levodopa. They can cause side effects such as sleepiness, sleep attacks, ankle swelling, hallucinations and impulse control problems, more commonly than levodopa does.

**Dopaminergic pathways:** Neural pathways in the brain which utilize dopamine as their neurotransmitter. There are four major groups: the nigrostriatal, mesocortical, mesolimbic and tuberoinfundibular pathways.

- **Nigrostriatal:** Connects the substantia nigra to the striatum. Involved heavily in Parkinson's.

- **Mesocortical:** Connects the ventral tegmental area (adjacent to the substantia nigra) to the cerebral cortex. Closely associated with the mesolimbic pathway. Can cause hallucinations and schizophrenia if not functioning properly.

- **Mesolimbic:** Connects ventral tegmental area to nucleus accumbens, amygdala & hippocampus and prefrontal cortex. Along with the mesocortical pathway, is involved in memory, motivation, emotional response, reward and addiction.

- **Tuberoinfundibular:** from hypothalamus to pituitary gland involved in hormonal regulation, maternal behavior (nurturing), pregnancy and sensory processes.

**Drug Repurposing:** Repurposing generally refers to studying drugs that are already approved to treat one disease or condition to see if they are safe and effective for treating other diseases.

**Duodopa:** Advanced Parkinson’s therapy. It is a new means of delivering the current gold-standard via pump directly in the small intestines.

**Dysarthria:** Impaired speech function.

**Dyskinesia:** Abnormal involuntary movements; also sometimes called hyperkinesia.

**Dysphagia:** Difficulty in swallowing.

**Dystonia:** Characterized by persistent or intermittent contractions of opposing muscles causing abnormal movements or postures. It should not be confused with dyskinesia.

**Embryonic stem (ES) cells:** See stem cells.

**Encephalitis:** Inflammation of the brain. See neuroinflammation.

**Entacapone:** A Parkinson’s drug that is used alongside levodopa and carbidopa. It inhibits the enzyme COMT, decreasing the breakdown of levodopa.

**Exosomes:** Small ball-like structures produced by the cells and which can be found in all sorts of body fluids such as blood, urine, and CSF and cultured medium of cell cultures. They are formed inside the cell and during this process they engulf bits of the cellular fluid and contents.

**Executive Dysfunction:** A deficit in executive functioning that may occur in Parkinson’s dementia. Executive functioning allows the completion of tasks using higher level mental skills such as planning, organization, memory, flexible thinking, and self-regulation.

**Festination:** An involuntary quickening of the gait; the acceleration of gait noted in Parkinsonism and similar disorders, literally means “chasing the center of gravity.”
Freezing of Gait (FOG): The sudden brief inability to walk or to continue walking.

Functional magnetic resonance imaging (fMRI): An imaging technique designed specifically for the brain. It measures the rate at which oxygen is removed from the blood to the cells, therefore suggesting the activity of a particular area of the brain.

GABA (gamma amino butyric acid): The principal inhibitory neurotransmitter in human brain. GABA neurons are rich in the striatum, globus pallidus, substantia nigra and cerebellum.

GABA (Glucocerebrosidase): An enzyme found within the lysosome of cells. Mutations in the GBA gene are associated with Parkinson’s disease.

GDNF: Gial Cell line derived nerve growth factor. See growth factors.

Gene therapy: The insertion of genes into an individual’s cells and tissues to treat hereditary diseases where deleterious mutant alleles can be replaced with functional ones. The genes are usually placed within a non-pathogenic virus, which serves as the vector to penetrate the cells. Gene therapy can also be used to correct non-genetic deficiencies such as the loss of dopamine in Parkinson’s, to modify the function of a group of cells (e.g. convert an excitatory structure to one that is inhibitory) or to provide a source of growth factors.

Genotype: The collection of genetic material in an organism that gives rise to its characteristics.

Glia (Glia cells): Non-neural cells, commonly called neuroglia or simply glia (Greek for "glue"), that maintain homeostasis, form myelin, and provide support and protection for the brain’s neurons. Astrocytes are one kind of glial cells.

Globus pallidus: A major part of the basal ganglia involved in movement control. It is split into two main parts: the internal globus pallidus (GPI), and the external globus pallidus (GPe). Deep brain stimulation of the GPI causes an increase in motor function in Parkinson’s patients. Often patients also show a reduction in dyskinesia, prorably because they require less levodopa.

Glucose: A simple sugar that is an important energy source in living organisms and is a component of many carbohydrates.

Glutamate: An amino acid and the main excitatory neurotransmitter in the human brain. The major input to the striatum is from the cerebral cortex and uses glutamate as a neurotransmitter. Excess glutamate can occur if the neurotransmitter is not well regulated and may cause cell death.

Glycation: The bonding of a sugar molecule to a protein or lipid molecule without enzymatic regulation.

Glycosylceramide: A type of cerebrosides. Cerebrosides are an important component in muscle and nerve cell membranes.

Growth factors: Naturally occurring substances (usually proteins) that help maintain the health of neurons and encourage cell growth, proliferation and differentiation. Some growth factors are being looked at to try to promote the survival of the neural cells that are degenerating in Parkinson’s.

- Glial cell line derived nerve growth factor (GDNF): Thought to promote the health of dopamine neurons.
- Brain-derived nerve growth factor (BDNF): Also supports dopamine neurons.
- Fibroblast growth factor (FGF): Studies have found a possible genetic link to Parkinson’s disease on the FGF20 gene.
- Vascular endothelial growth factor-B (VEGF-B): May have neuroprotective affects in Parkinson’s disease.

Gut microbiome: The complex community of microorganisms that live in the digestive tracts of humans and other animals.

Heterogeneity: Lacking uniformity in composition or character (as opposed to homogeneity, which is uniformity in composition or character).

Hippocampus: A complex neural structure (shaped like a sea horse) located in the temporal lobes of the brain; involved in memory storage, motivation and emotion as part of the limbic system.

Hoehn and Yahr scale: A commonly used system for describing how the symptoms of Parkinson’s disease progress. The higher the stage, the more advanced the disease.

- Stage 0: No signs of disease.
- Stage 1: Unilateral symptoms only.
- Stage 1.5: Unilateral and axial (midline) involvement.
- Stage 2: Bilateral symptoms. No impairment of balance.
- Stage 2.5: Mild bilateral disease with recovery on pull test.
- Stage 4: Severe disability, but still able to walk or stand unassisted.
- Stage 5: Needing a wheelchair or bedridden unless assisted.

Hyperkinesia: An abnormal increase in movement and/or muscle activity; sometimes used synonymously with dyskinesia.

Hypokinesia: Literally means reduced amplitude of movement. It is commonly used synonymously (but erroneously) with akinesia and bradykinesia.

Hypothalamic pituitary adrenal axis (HPA): The three primary components of the endocrine system. Made up of...
Multiple healthcare professionals

Hypothalamus: A brain region that links the limbic system to the pituitary gland and is a major area for the autonomic nervous system.

Idiopathic: Arising from an unknown cause.

Idiopathic Parkinson’s disease: This term is used to describe the common type of Parkinson’s disease to distinguish it from other forms of Parkinsonism (also termed “Sporadic PD”).

Impulse control disorder (ICD): A set of psychiatric disorders characterized by an inability to control one’s actions, in particular those that might bring harm to oneself or others. Common ICDs in patients receiving dopamine agonists are pathologic gambling, compulsive eating, compulsive shopping and hypersexuality.

Interdisciplinary care: Multiple healthcare professionals collaborating to provide care with a common perspective, often involving joint consultations.

iPS Cells: Stem cells that can be generated directly from adult cells. See stem cells.

Learned voluntary movements: Movements that we learn to do, like walking and talking.

Leucine rich repeat kinase 2 (LRRK2): A protein created by the LRRK2 gene which when mutated can lead to Parkinson’s. Several different mutations in the LRRK2 gene have been found to cause Parkinson’s disease, but there may also be variants within the general population that do not necessarily cause disease.

Levodopa (L-DOPA): A chemical that is the precursor to dopamine. It can pass through the blood-brain barrier (whereas dopamine cannot). Once it has entered the central nervous system, L-dopa is converted into dopamine by aromatic L-amino acid decarboxylase (DOPA decarboxylase/DDC). L-DOPA is also converted into dopamine within the peripheral nervous system, but this is usually blocked by employing peripherally-active dopa decarboxylase inhibitors to avoid unwanted effects.

Lewy bodies: A pathologic hallmark of Parkinson’s disease and dementia with Lewy bodies. First described by Frederic Lewy, Lewy bodies are seen microscopically as inclusions in neurons in several brain regions, including the substantia nigra and locus ceruleus. One protein seen is α-synuclein in an aggregated form. Aggregates of this protein in axons are called Lewy neurites.

Magnetic resonance imaging (MRI): A noninvasive medical imaging technique to visualize detailed internal structure and limited function of the body. MRI provides much greater contrast between the different soft tissues of the body than computed tomography (CT), making it especially useful in neurological (brain), musculoskeletal, cardiovascular and oncological (cancer-related) imaging.

MAO (monoamine oxidase): A family of enzymes with two subtypes: MAO-A and MAO-B. These catalyze the oxidation of amine molecules (replacing the amine group with an oxygen molecule.)

• MAO A inhibitors: Drugs that inhibit the MAO-A enzyme, which is responsible for the metabolism of dietary tyramine. MAO-A inhibitors can cause tyramine-induced hypertension, the so-called “cheese effect” because tyramine can be found in high concentrations in some soft cultured cheeses.

• MAO B inhibitors: These drugs (e.g. selegiline, rasagline) inhibit the breakdown of dopamine via MAO-B enzyme and do not cause the “cheese effect” of hypertension.

MPTP (N-methyl-4-phenyl-1,2,3,6-tetrahydropyridine): A neurotoxin precursor of MPP+ that is taken up in dopamine nerve terminals. MPP+ damages the dopamine cells. MPTP is catalyzed to MPP+ by MAO-B. MPTP has been widely used to create an animal model of Parkinsonism by depleting substantia nigra dopamine neurons.

Microbiome: The collection of microbes (bacteria, viruses, fungi) and their genetic material that live outside an area of the human body. See gut microbiome.

Microglia: A type of glial cell; it provides the first immune defense mechanism in the brain and central nervous system.

Micrographia: The tendency to have very small handwriting due to difficulty with fine motor movements in Parkinson’s disease.

Mild Cognitive Impairment (MCI): A decline in memory or intellectual functioning that is not as severe as that found in dementia.

Mitochondria: A spherical or elongated organelle in the cytoplasm of nearly all eukaryotic cells, containing genetic material and many enzymes important for cell metabolism, including those responsible for the conversion of food to usable energy. It consists of two membranes: an outer smooth membrane and an inner membrane arranged to form cristae.

Mitophagy: The selective degradation of mitochondria by autophagy. See Mitochondria and Autophagy.

Motor skills: The degree of control or coordination provided by brain control of the skeletal muscles.
Motor symptoms: Symptoms that involve movement, coordination, physical tasks or mobility. These include, among others: resting tremor, bradykinesia, rigidity, postural instability, freezing, micrographia, mask-like expression, unwanted accelerations, stooped posture, dystonia, impaired motor dexterity and coordination, speech problems, difficulty swallowing, muscle cramping, and drooling of saliva. See non-motor symptoms.

Movement Disorder Specialist (MDS): A neurologist that has special interest in and extra training and experience with movement disorders such as Parkinson’s disease.

Multidisciplinary care: Care given by multiple healthcare professionals each approaching the patient from their professional perspective, often involves separate, individual consultations.

Multiple System Atrophy (MSA): A less common degenerative neurological disorder that causes symptoms similar to Parkinson’s disease but with more widespread damage to the central nervous system. Other systems involved besides the basal ganglia include the cerebellum and autonomic systems.

Neuroinflammation: The swelling of the tissue in the nervous system. It could be initiated in response to a number of things including infection, traumatic brain injury, toxic metabolites, or autoimmunity. Microglia are the immune cells activated in response to these cues.

Neurology: A branch of medicine dealing with the diagnosis and treatment of disorders of the nervous system.

Neuromelanin: The dark pigment made from oxidized metabolites of monoamine neurotransmitters including dopamine and norepinephrine, found in neurons enriched with these amines, namely the substantia nigra and locus ceruleus, respectively. Neuromelanin gives the substantia nigra (Latin for “black substance”) its black appearance.

Neuromodulator: A chemical substance other than a neurotransmitter, released by a neuron at a synapse and either enhances or dampens their activities.

Neurological conditions: Disorders caused by damage or malfunctioning of the brain or nervous system.

Neurologist: A doctor who specializes in the diagnosis, care and treatment of disorders of the brain or nervous system.

Neuroplasticity: The ability of the brain to change and form new connections even with aging. It involves neurons regenerating anatomically or functionally after partial injury, or changing (such as by making more numerous or more effective connections) in response to training and experience.

Neuron: A nerve cell that is the fundamental unit of the brain and nervous system. Neurons transmit information through electrochemical signals.

Neuroprotection: Mechanisms within the nervous system that would protect neurons from dying due to a degenerative disease or from other types of injury.

Neuroprotective: Serving to protect neurons from injury or degeneration or an effect that may result in salvage, recovery or regeneration of the nervous system, its cells, structure and function.

Neuropsychology: The study of how the structure and function of the brain influence behavior and cognition.

Neuroscience: The scientific study of the nervous system that deals with the anatomy, biochemistry, molecular biology, and physiology of neurons and neural circuits.

Neurotransmitter: A chemical messenger in the nervous system that permits communication between two neuronal cells, often but not always across a synapse. The neurotransmitter is usually released from the nerve terminals on the axons. Examples of neurotransmitters include dopamine, acetylcholine, adrenaline, noradrenaline, serotonin, glutamate, and GABA.

Neurotrophic factors: A family of biomolecules that support the growth, survival, and differentiation of both developing and mature neurons.

Nicotine: A stimulant that acts as an agonist at nicotinic receptors, which are one kind of receptors for acetylcholine. Nicotine is present in cigarette smoke and has been proposed to decrease chances of developing Parkinson’s disease, but this remains controversial and the mechanism of the relationship is not well understood.

Non-motor symptoms: Symptoms that do not involve movement, coordination, physical tasks or mobility, including impaired sense of smell, constipation, sleep disturbances, mood disorders, orthostatic hypotension, bladder problems, sexual problems, excessive saliva, weight loss or gain, vision and dental problems, fatigue, depression, fear and anxiety, skin problems, and cognitive issues. See motor symptoms.

Objective measurements: The repetition of a unit amount that maintains its size, within an allowable range of error, no matter which instrument, intended to measure the variable of interest, is used and no matter who or what relevant person or thing is measured.

Occupational therapist: Occupational therapists are concerned with assessing a person’s home or work situation and then devising ways to make them more manageable and

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PARKINSON’S DISEASE GLOSSARY

less hazardous. They can also advise on aids and equipment and leisure activities.

**Olfactory dysfunction:** An impaired ability to detect odors, impaired sense of smell. Thought to be an early sign of Parkinson’s disease but can occur in many situations not related to Parkinson’s.

**On and Off:** The clinical states of PD while being treated with levodopa, which commonly causes clinical fluctuations after a few years of treatment. The “on” state is when the PD symptoms and signs are reduced by levodopa. The “off” state is when the benefit has been reduced or lost. The most common type of “off” is wearing-off, due to the levodopa’s benefit not lasting more than 4 hours after a dose. Sudden and unpredictable “off” states can also occur, but are less common. “Off” states usually will respond to another dose of levodopa. Clinical fluctuations are considered a complication of levodopa therapy.

**Organoid:** A miniature, simplified version of an organ that shows realistic micro-anatomy. They are derived from tissue, embryonic stem cells, or induced pluripotent stem cells.

**Orthostatic hypotension:** A drop in blood pressure when a person is standing. It can be a complication of medications, but can sometimes be due to Parkinson’s itself.

**Oxidative stress:** See Reactive Oxidative Species.

**Paradoxical kinesia:** The ability to move as a response to an unexpected stimulus, occurring in a person who previously could not move so easily. Paradoxical kinesia can occur in Parkinson’s disease.

**Parkin:** A protein that is generated by the Parkin gene. With homozygous (both alleles affected) Parkin mutations (PARK2 gene), Parkinson’s disease develops. It is the most common cause of juvenile onset PD.

**Parkinson-plus syndromes:** A group of neurodegenerative diseases featuring the classical features of Parkinsonism (rigidity, akinesia/bradykinesia, postural instability and less common tremor) with additional features that distinguish them from typical Parkinson’s disease. Parkinson-plus syndromes include multiple system atrophy (MSA), progressive supranuclear palsy (PSP), and corticobasal degeneration (CBD).

**Parkinsonism:** A group of neurologic diseases whose features include slowness and paucity of spontaneous movement (bradykinesia), rest tremors, rigidity of the muscles, loss of postural reflexes, flexed posture and freezing of gait.

**Parkinsonian gait:** With bradykinesia, gait is slow, short paced and with a tendency to shuffle, associated with decreased arm swing. Freezing of gait can also occur in Parkinsonism.

**Pathogenesis:** The underlying biologic mechanism responsible for a disease.

**Peripheral Nervous System:** The nervous system outside the brain and spinal cord.

**Phenotype:** The observable characteristics of an organism or person, such as appearance, development and behavior. Determined by the interaction between the genotype and the environment.

**Phosphorylation:** A process that modifies proteins by adding one or more phosphates. For proteins that function as enzymes, this results in activating or deactivating their function.

**Pill-rolling tremor:** A characteristic tremor in Parkinson’s patient where the thumb and forefinger involuntary move in a way that resembles rolling a small object such as a pill.

**PINK-1:** An abbreviation for the name of a gene that encodes a particular serine/threonine kinase found in mitochondria that stops stress related cell destruction. With homozygous (both alleles affected) PINK-1 mutations, juvenile or early onset Parkinson’s disease can develop. Lack of PINK-1 causes an overload of calcium in mitochondria and indirectly cell death. The substantia nigra is particularly sensitive to PINK-1 mutations.

**Physiotherapist:** Physiotherapists use physical means such as exercise and manipulation to help prevent or reduce stiffness in joints and restore muscle strength. They can also advise on aids and equipment to help with movement problems.

**Placebo:** A simulated or inert form of treatment without known proven benefit on a symptom or a disease. A pill serving as a placebo is colloquially called a “sugar pill.” Placebos are employed in controlled clinical trials along with the active drug being tested; patients and health professionals involved in the trial do not know who receives the placebo or the drug. The difference in responses between the two drugs is considered the true effect of the active drug. Surgical trials can also utilize a placebo arm in which sham or simulated surgery is performed in the control group. Sometimes placebos provide benefit; it is called a placebo effect. The mechanism of how placebos provide benefit may be associated with release of dopamine in the brain when patients believe that they receive an effective drug.

**Positron emission tomography (PET):** A medical imaging technique in which radioactive isotopes that emit gamma rays are used. The radioactive substance is incorporated into a chemically active compound (a radiotracer, which could be a substrate for an enzyme or a ligand that binds to neurotransmitter receptors) utilized by an organ in the body. The emitted gamma rays are detected by a special camera/scanner. These radioactive strikes on the camera are analyzed by a computer.
to produce an image to localize where that ligand is located in the organ being studied. Fluorodeoxyglucose (FDG) measures regional metabolism of glucose (sugar); fluorodopa (F-DOPA) is taken up in dopamine nerve terminals. The amount of uptake serves as a measure of the integrity of these nerve terminals. Other radiotracers may bind to neurotransmitter receptors (including those for dopamine) or to inflammatory cells, etc.

**Postural instability**: Difficulty with balance.

**PPMI – Parkinson’s Progression Markers Initiative**: A study launched in 2010 by Michael J Fox Foundation to find biomarkers for PD; s a landmark observational clinical study to comprehensively evaluate people with Parkinson’s disease and those at greater risk of developing the disease, as well as healthy controls.

**Prodromal**: Referring to the period before the classic manifestation of a disease leading to diagnosis.

**Progressive Supranuclear Palsy (PSP)**: A rare degenerative brain disorder that causes serious and progressive problems with control of gait and balance, along with complex eye movement and thinking problems. A classic manifestation of the disease is the inability to move the eyes properly. PSP is one of the Parkinson-plus syndromes.

**Proteostasis**: A combination of the words protein and homeostasis. It is the concept that there are biological pathways within cells that control the creation, folding, tracking, and degradation of proteins present within and outside the cell.

**Proteosomes**: Protein complexes which degrade unneeded or damaged proteins.

**Protein**: 1. A class of food necessary for the growth and repair of the body tissues—sources of proteins include fish, meat, eggs and milk. 2. Large biomolecules or macromolecules consisting of long chains of amino acid residues. Within organisms, proteins catalyze metabolic reactions (enzymes), replicate DNA, and transport molecules.

**PwP**: Person with Parkinson’s.

**Reactive oxygen species (ROS)**: Chemically-reactive molecules containing oxygen that may trigger cell death. These are also called oxyradicals. These molecules are a cause of oxidative stress that may play a role in the pathogenesis of cell death of dopamine neurons. Oxyradicals are formed during regular cellular and mitochondrial metabolism. Defense mechanisms include naturally occurring reducing agents to neutralize the oxyradicals.

**Receptor**: A protein structure typically embedded in the cell membrane with which neurotransmitters and drugs interact.

**REM (rapid eye movement) sleep behavior disorder (RBD)**: A sleep disorder that involves movement and abnormal behavior during the sleep phase with rapid eye movements – the stage of sleep in which dreaming occurs. In normal sleep, muscles are paralyzed during dreaming, except for the eye movements. In RBD, muscles are not paralyzed so that the dreamer acts out his or her dreams. RBD is common in people with Parkinson’s disease or Multiple System Atrophy.

**Restless leg syndrome (RLS)**: A neurological disorder characterized by unpleasant sensations in the legs, like the feeling of ants crawling underneath the skin. These sensations usually occur in the late evening and during sleep. Walking around relieves the sensation, hence the term “restless legs.” RLS interferes with sleep and is common in people with PD. Medications, such as dopamine agonists, levodopa and opioids, can be effective treatments.

**Rigidity**: A special type of muscle stiffness, which is one of the main symptoms of Parkinson’s disease. The muscles tend to pull against each other instead of working smoothly together.

**Schwab and England Activities of Daily Living (ADL) Scale**: An estimation of the abilities of a person’s degree of independence. The person (or a family member) can self-assess this as:

- 100% — Completely independent. Able to do all chores without slowness, difficulty or impairment.
- 90% — Completely independent. Able to do all chores with some slowness, difficulty or impairment. May take twice as long to complete.
- 80% — Independent in most chores. Takes twice as long. Conscious of difficulty and slowing.
- 70% — Not completely independent. More difficulty with chores. 3 to 4 times longer to complete chores for some. May take large part of day for chores.
- 60% — Some dependency. Can do most chores, but very slowly and with much effort. Errors, some impossible.
- 40% — Very dependent. Can assist with all chores but few alone.
- 30% — With effort, now and then does a few chores alone or begins alone. Much help needed.
- 20% — Nothing alone. Can do some slight help with some chores. Severe invalid state
- 10% — Totally dependent, helpless.
- 0% — Vegetative functions such as swallowing, bladder/bowel function are not functioning. Bedridden.

**Senescence**: A process in cells that stops them from dividing. It gets activated when certain types of damage occur.

**Serotonin**: A neurotransmitter that regulates mood, appetite, and sleep. It also has some cognitive functions, including memory and learning. The serotonin-containing neurons are in the brain stem. Serotonin is reduced in PD.
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Shaking palsy: Prior term for Parkinson’s disease.

Side effects: A reaction to drugs, which is additional to the intended therapeutic actions. These unwanted extra effects are called side effects. Side effects vary in their severity from person to person, and often disappear when the body becomes used to a particular drug.

Single photon emission computed tomography (SPECT): A nuclear medicine tomographic imaging technique using gamma rays and able to provide 3D information, for instance on brain chemistry.

Sleep apnea: A sleep disorder characterized by abnormal pauses in breathing or instances of abnormally low breathing during sleep.

Sodium channel: Voltage gated channels in nerve cell membranes that allow the generation of action potentials. Sodium ions are important in generating the electrical impulses that travel down the dendrites and axons. After sodium enters the cell during this process, it needs to be pumped back out, via the so-called sodium-pump, a process that requires the utilization of cellular energy. Sodium channels may be a target for new drugs in Parkinson’s.

Stem cells: Biological cells found in all multicellular organisms, that can divide (through mitosis) and differentiate into diverse specialized cell types and can self-renew to produce more stem cells. They are a potential line of treatment in Parkinson’s, either by directly replacing the old nigrostriatal neuronal cells or by creating growth factor releasing cells. Problems have arisen due to the inability to stop growth, which may cause tumor growth.

Striatum: A large cluster of nerve cells that are part of the basal ganglia. The striatum consists of two sectors: the caudate nucleus and the putamen. It controls movement, balance, and walking; the striatum receives nerve inputs from many parts of the brain including dopamine neurons from the substantia nigra and glutamate neurons from the cerebral cortex. Acetylcholine and GABA neurons are located within the striatum. GABA neurons also send signals outside the striatum. The striatum contains the largest concentration of dopamine and acetylcholine in the brain.

Substantia nigra: (Latin for black substance). A brain structure located in the midbrain that plays an important role in movement. Parts of the substantia nigra appear darker than neighboring areas due to high levels of neuromelanin in dopaminergic neurons. The substantia nigra is the site of the brain’s major collection of dopamine neurons, which project their axons to the striatum, the so-called nigrostriatal pathway. These neurons slowly die in PD. The substantia nigra is part of the basal ganglia; the other parts of the basal ganglia include the striatum (caudate nucleus, putamen), globus pallidus, and subthalamic nucleus. The substantia nigra is made up of two parts: the pars compacta and the pars reticulata.

- Pars compacta: The part of the substantia nigra primarily involved in Parkinson’s. It contains dopamine neurons, and it is black due to the high concentration of neuromelanin within these neurons. (Parkinson’s disease is characterized by the death of dopaminergic neurons in the substantia nigra pars compacta.)

- Pars reticulata: Part of the substantia nigra that serves both as the location of dendrites from the pars compacta, receiving nerve signals to the substantia nigra and also as an output, conveying signals to numerous other brain structures. These output neurons are mainly GABAergic neurons.

Subthalamic nucleus (STN): A small lens-shaped nucleus involved in movement control. As suggested by its name, the subthalamic nucleus is located below the thalamus. It is part of the basal ganglia. It receives input from the cerebral cortex and from the globus pallidus interna. It sends its output mainly to the globus pallidus externa and substantia nigra pars reticulata. It is a component of the “indirect pathway” within the basal ganglia. It is "overactive" in PD due to loss of inhibitory incoming fibers. It is a common target in deep brain stimulation for PD.

Shuffling gait: Refers to short, slow steps, with feet close to the ground or dragging along the ground. This gait is often seen in people with advanced Parkinson’s disease.

SWEDD- Scans Without Evidence of Dopamine Deficit: When individuals with early-stage Parkinson’s disease have normal dopaminergic functional imaging scans, these are called Scans Without Evidence of Dopamine Deficit.

Synapse: The narrow space between two neurons (axon to dendrite) or between a neuron and a muscle. Axons release neurotransmitters at the nerve terminal. The neurotransmitter crosses the synapse to activate or inhibit another nerve cell by acting on a receptor on the dendrite.

Synaptic plasticity: The ability of synaptic activity to modify and adapt to changes.

Syndrome: A group of symptoms that tend to occur together and which reflect the presence of a specific disorders or diseases. Parkinson syndrome, also called Parkinsonism, comprise a group of disorders with symptoms and signs in common, such as bradykinesia, rigidity, tremor, loss of postural reflexes, flexed posture and freezing of gait. A person with Parkinsonism does not need to have all of these but must have bradykinesia according to one diagnostic criterion. Disorders that fall within Parkinson syndrome include Parkinson’s disease, atypical Parkinsonism, Parkinson Plus Syndromes, drug-induced Parkinsonism, and normal pressure hydrocephalus.
Synucleinopathy: A class of neurodegenerative disease resulting from pathological accumulation of α-synuclein in neurons (Parkinson’s, Lewy Body Dementia) or a kind of glia cells called oligodendrocytes (Multiple System Atrophy).

Tau proteins: Proteins that stabilize microtubules, which are structural entities in axons. They are abundant in neurons in the central nervous system and are less common elsewhere. When tau proteins are defective and no longer stabilize microtubules properly, they can result in dementia (including Alzheimer’s disease).

Tauopathies: A class of neurodegenerative diseases resulting from the pathological aggregation of tau protein in so-called neurofibrillary tangles (NFT) in the human brain. Besides Alzheimer’s, this is commonly seen in Pick’s disease, progressive supranuclear palsy (PSP) and corticobasal degeneration (CBD).

Thalamotomy: A now uncommon surgical procedure used to treat Parkinson’s tremor in which a small portion of the brain area called the thalamus is destroyed.

Thalamus: A midline paired symmetrical structure situated between the cerebral cortex and brain stem, both in terms of location and neurological connections. It is composed of many regions with distinct functions. For example, some thalamic regions relays sensory signals to the cerebral cortex, other relay signals from the basal ganglia to the cerebral cortex, and others relay motor signals from the cortex to the spinal cord and brain stem.

Toxicity: The degree to which a chemical substance or a particular mixture of substances can damage an organism.

T.R.A.P.: Acronym for four primary Parkinson’s disease symptoms:
- Tremor: Shaking of limb (usually hands) while they are at rest.
- Rigidity: Muscle stiffness and resistance to movement.
- Akinesia/bradykinesia: Difficulty initiating voluntary body movements/Slowed ability to start and continue movements.
- Postural instability: Loss of postural stability can cause falls

Transcranial Magnetic Stimulation: A method in which a changing magnetic field is used to cause electric current to flow to a small region of the brain.

Transcription factors: Proteins in eukaryotes (cells which contain complex membrane-bound structures within the cell) that regulate the transcription (i.e. the expression) of genes.

Translation: A step in protein biosynthesis wherein the genetic code transferred from DNA to messenger RNA (mRNA) is decoded to allow the formation of a protein molecule. The process is preceded by transcription of the DNA into the mRNA.

Tyramine-induced hypertension: High blood pressure caused by an increase in tyramine in the blood, which forces noradrenaline/norepinephrine out of vesicles and into circulation. This is the so-called “cheese effect” because some fermented cheeses (and other foods) contain high concentrations of tyramine. Normally, tyramine is broken down in the gut by MAO-A. When this enzyme is inhibited, the tyramine in food is able to enter the blood stream and produce its hypertensive crisis.

Tyrosine: An amino acid used by cells to synthesize proteins. It is also the precursor of dopamine.

Ubiquitin: A small regulatory protein that is composed of 76 amino acids. It is involved in the degradation of damaged proteins. In Parkinson’s disease, it is believed that accumulation of damaged proteins “choke” the cell, leading to the eventual death of the cell.

Unified Parkinson’s Disease Rating Scale (UPDRS): A rating scale used to measure the severity of Parkinson’s disease. The UPDRS can follow a person’s worsening over time and also measure improvement with various treatments. The UPDRS is made up of the following sections:
- Part I: Evaluation of mentation, behavior, motivation and mood
- Part II: Self-evaluation of the activities of daily life (ADLs) including speech, swallowing, handwriting, dressing, hygiene, falling, salivating, turning in bed, walking, cutting food
- Part III: Clinician-scored motor evaluation
- Part IV: Measures some of the adverse effects (such as motor complications of “off” states and dyskinasias) of levodopa therapy in Parkinson’s disease

Ventral Tegmental Area (VTA): A group neurons located in the midbrain next to the substantia nigra and involved in cognition and motivation, including reward and addiction.

Vesicle: An organelle in a cell that separates some molecules from the rest of the cell. In nerve terminals, the vesicles are called synaptic vesicles. They store neurotransmitters, which are released into the synapse when the nerve fires.

Wearable devices: Devices worn on the body, incorporating computers, electronics, software and/or sensors, often used to measure some aspect of function or physical manifestation, for example: activity trackers, accelerometers, gyroscopes, etc.

Wearing Off: The loss of the effectiveness of Parkinson’s medication between doses resulting in the return of symptoms.
KYOTO INTERNATIONAL CONFERENCE CENTER

606-0001 Kyoto Prefecture, Kyoto, Sakyo Ward, Iwakura Osagicho, 422
Kokusaikaikan Station (K01), Karasuma Subway (green line)
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1555 Peel Street, Suite 500, Montréal, QC H3A 3L8, Canada

Tel: +1 514-287-9898 ext. 335 – Fax: +1 514-287-1248 – secretariat@worldpdcoalition.org