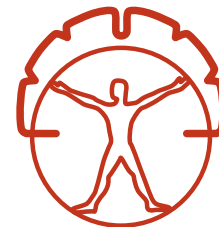
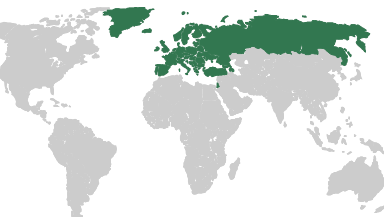


# MOVING ALONG



International Parkinson and  
Movement Disorder Society

Editor, Antonio Strafella, MD, PhD, FRCPC



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for Young Neurologists:  
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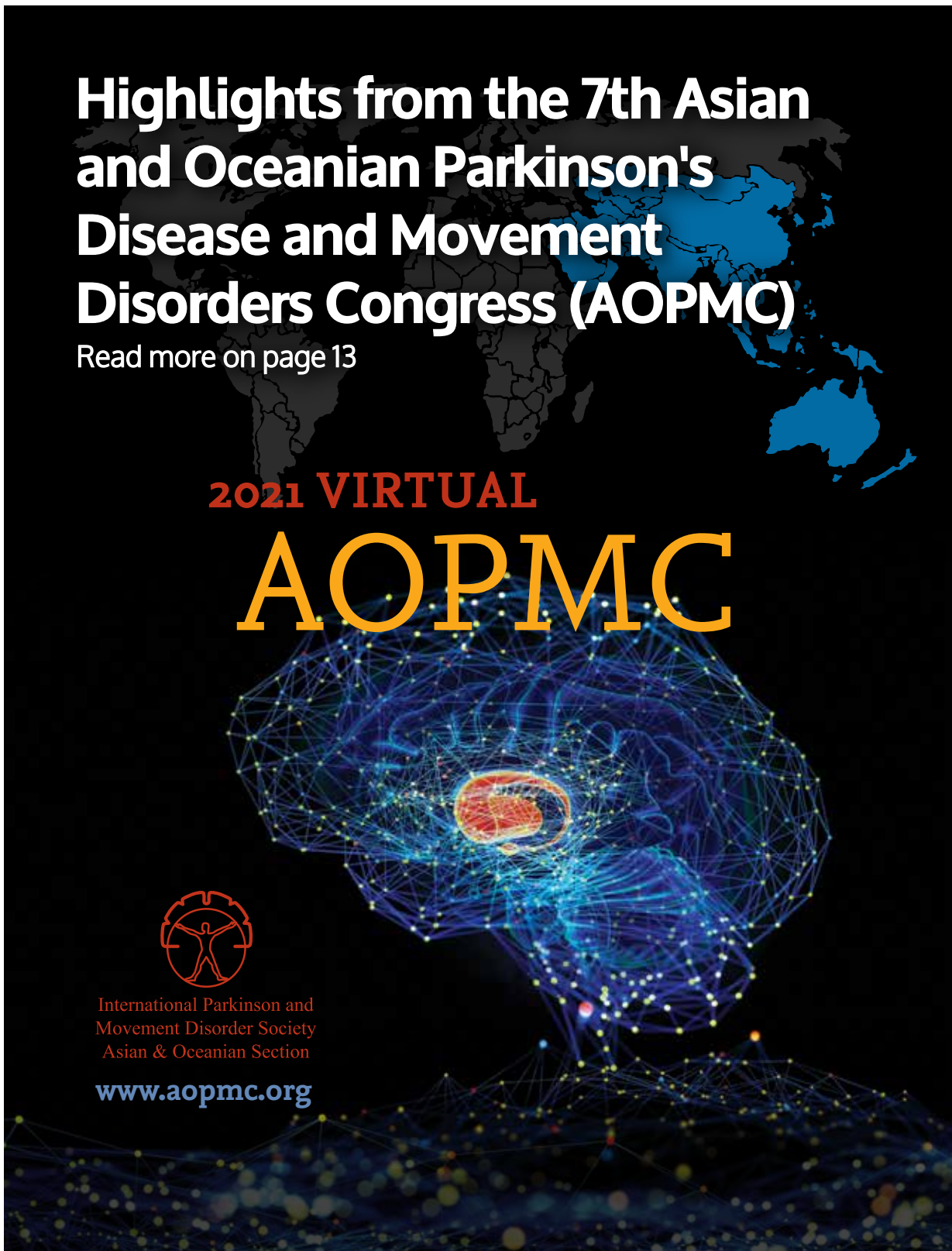
2021 VIRTUAL

# AOPMC



International Parkinson and  
Movement Disorder Society  
Asian & Oceanian Section

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





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

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## Letters to the Editor *Your comments and questions are always welcome.*

### Editorial Policy

As part of its democratic commitment, MDS welcomes the input of all its members about the features and articles that appear in this newsletter. Have a comment or question? Each issue will include responses in the "Letters to the Editor" section. All materials submitted become the property of MDS.

### Address your communications to:

Editor: *Moving Along*  
International Parkinson and Movement  
Disorder Society  
555 East Wells Street, Suite 1100  
Milwaukee, WI 53202-3823 USA  
Tel: +1 414-276-2145  
Fax: +1 414-276-3349  
info@movementdisorders.org

## Editorial

On behalf of the *Moving Along* Editorial Board, we hope that you and your family members continue to be healthy and safe during this challenging time of the coronavirus (COVID-19) pandemic.

We would like to thank the entire MDS community for the enthusiasm demonstrated in contributing to this new issue of *Moving Along* during these difficult times. The editorial board really appreciates your participation and contribution.

For the third issue of this year, the editorial board worked tirelessly to pull together new exciting material. Dr. Elena Moro provided an outstanding contribution on the "history of DBS in Movement Disorders", we are quite sure you will enjoy reading her great piece. The MDS-AOS contributed as well with exciting topics from that region, including highlights from the 2021 AOPMC. This issue will feature as well scientific topics and several recent important developments in the field of neurodegenerative diseases. And lastly, the "President's Corner", features outgoing remarks from Prof. Claudia Trenkwalder, as well as an introduction from the incoming President, Prof. Francisco Cardoso.

We would like to thank the MDS Officers, International Executive Committee, Regional Section leadership, and all of the MDS staff for their amazing support in making this possible. We hope you enjoy this and the future issues of *Moving Along*.

Warm regards,



Antonio Strafella, MD, PhD, FRCPC  
*Moving Along* Editor, 2021-2023



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## President's Corner

When I stepped into the role as President of MDS in 2019, I could not have imagined serving in a more peculiar time for our Society. Although there had been some significant drawbacks and disadvantages during my tenure such as no live educational courses and no in-person meetings or congresses, I have had the immense pleasure of serving as President to see MDS take the most innovative and inspiring steps of growth in its time— and surprisingly, through these adjustments and times of growth, we are still financially in good standing!

For the first time, MDS was able to reach all corners of the world with exceptional educational courses to non-members, expanding now into the region of Africa, achieving interest and active participation with many new people.


Whether it be in-person, online, or a hybrid approach, we are committed to building up this community and bringing education and science wherever it is needed. We have now accomplished a global outreach and will continue to expand our reach and connect our members internationally. We have learned that this approach works, and we will not forget this important message for the future.

However, inclusion does not exclusively mean geographically. With the better utilization of virtual tools, we can more easily access marginalized groups to bring more women and achieve gender balance to participating members in speaking roles and leadership positions.

That having been said, I am fortunate to have been working with the many volunteers in the committees, task forces, and study groups throughout MDS who have help make these successes for our members possible. However, it would be remiss of me not to express my sincerest gratitude to the additional 2019-2021 MDS Officers, Christopher Goetz, Francisco Cardoso, Louis C.S. Tan, Irene Litvan, Bastiaan Bloem, and Charles Adler. Although I will continue to serve MDS as the Past-President, it was an honor to lead the membership as President during a challenging time in history.

At this time, I would like to welcome Francisco Cardoso to the role as the new MDS President who will continue to lead The Society in education and advancements in the field as well as continue the many successes aforementioned above—I wish you all the best for your term as MDS President, Francisco!

And in conclusion, for one last time, it is my pleasure to introduce two more MDS young members (see page 5).



Claudia Trenkwalder, MD  
MDS President, 2019-2021



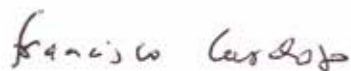
## Incoming President's Letter

It is a great honor for me to have assumed the position of President of the International Parkinson and Movement Disorder Society (MDS). I would like to express my gratitude to the out-going President, Claudia Trenkwalder, for her outstanding leadership over the past two years during such a unique a difficult time for The Society.

I would also like to congratulate all of the 13,000 individuals who attended the MDS Virtual Congress 2021 this year and the staff, officers, speakers, and volunteers who worked tirelessly to host an educational event on such a scale as this entirely virtual. I hope to see you all next year in-person, where we can continue to share and discuss the latest high quality movement disorders education and networking opportunities.

As I look ahead to the upcoming years and discuss with my colleagues across MDS, I am encouraged with the fact that there is tremendous power in the size of our membership and the many talents our members bring to this organization. Regardless of the opportunities or challenges we might face, through our collective action, I am confident we can fulfill our mission to advance, improve, educate, and collaborate throughout the Parkinson and movement disorder society.

I hope you will take some time to read this issue of *Moving Along* and consider contributing as an author in future issues. I appreciate your support and encourage you to share any feedback and ideas you may have as we work together in the upcoming years.



Francisco Cardoso, MD, PhD, FAAN  
MDS President, 2021-2023



President's Corner, continued on p. 5



President's Corner, continued from p. 4



**Marcela Cordellini, MD**  
**Curitiba, Brazil**

My name is Marcela Ferreira Cordellini. I am a neurologist in Curitiba, in the south region of Brazil.

I graduated Medical School at Federal University of Paraná in 2012 and started my training in neurology that same year at Hospital INC (Neurological Institute of Curitiba). I fell in love

with movement disorders in my second year of medical school, when we were taught the Basal Ganglia circuitry. Since then, I moved towards this specialty and did lab research in Parkinson's disease and estrogen replacement.

During my residency, I maintained my interest in movement disorders and began researching opportunities I could have in this field and was able to do an observership at Queen's Square National Hospital for Neurology and Neurosurgery in London, with the movement disorders team for eight weeks. At the same time, I found MDS through the Brazilian Academy of Neurology newsletter and promptly sought affiliation.

With MDS, I was able to deepen my knowledge with online courses and attended my first MDS International Congress in Berlin in 2017. I am a member of the MDS Young Members Group and have served as a Social Media Ambassador. I also participated in the MDS-PAS LEAP Program in 2020.

Currently I work as a neurologist and preceptor-in-chief of the Neurology residency program at the Neurological Institute of Curitiba and am the coordinator of the Movement Disorders Sector at the hospital, with in-patients and out-patients. I work with general movement disorders but my main interests are Deep Brain Stimulation and botulinum toxin.

My aspirations are to grow as a Movement Disorders Specialist within my service and in my country and enhance and encourage more people into this area. Within MDS, I would like to become more active in Special Interests Groups and as a leader and to seek opportunities to contribute in them.



**Mario Cornejo-Olivas, MD**  
**Lima, Peru**

I am the current head of the neuropathology department at Instituto Nacional de Ciencias Neurológicas (INCN) in Lima and associate researcher at Cayetano Heredia University.

As clinician and researcher with major in neurogenetics, I had the honor to serve as the chief

of the Neurogenetics Research Center at INCN for about six years.

I received my medical degree at Universidad Nacional de San Agustín and completed the neurology residency at Universidad Nacional Mayor de San Marcos. I became involved with neurogenetics at the beginning of my clinical career, completing postgraduate trainings in neurogenetics and movement disorders (University of Washington) and medical genetics and genomics (Cayetano Heredia University and NGHRI sponsored programs). As a former NIH Fogarty global health research scholar and fellow, I realized the need of promoting research across admixed Latino population and other understudied communities.

My clinical and research interests are focused on exploring genetic and environmental factors affecting families with neurogenetic disorders in underserved communities. We have implemented multidisciplinary outpatient and outreach clinics for Huntington's, inherited ataxias, familial Parkinson's disease and other rare neurodegenerative disorders. Our research on monogenic disorders gave us not only a better picture of genetic epidemiology but also contributed to improve diagnosis, healthcare and counseling for affected patients and at-risk family members.

I joined the MDS community during my first year as resident in neurology. I attended several MDS International and regional scientific meetings, also presenting posters regarding our ongoing research work. Being a part of the MDS Young Members Group, one of the very first MDS groups I joined, allowed me to share experiences with peers and strengthen my research network. As a former MDS fellow, I learned about the importance of improving leadership and mentoring skills, and contributing to the dissemination of knowledge in order to improve the care of movement disorders across the globe. I am particularly grateful to MDS for allowing me to serve as faculty on regional and international MDS meetings. Contributing to PAS regional courses and MDS Task Forces, like MDSGene, allowed me to meet extraordinary clinicians, scientists and mentors as well as the privilege of respectfulness, teamwork and a goal-oriented approach when working with multidisciplinary and multinational teams. I am particularly excited to contribute to the achievement of MDS-PAS goals as a current Executive Committee member.

As clinician, scientist and MDS member, I am committed to translate research findings to both improve healthcare access in underserved regions and to develop multidisciplinary healthcare programs with precision medicine approach for rare neurodegenerative diseases, combining clinical care, appropriate molecular diagnosis, and genetic counseling and biobanking.

I am currently living close downtown Lima. I enjoy traveling, swimming, watching movies and spending hours talking to friends with a cup of coffee.

## History of Deep Brain Stimulation for Movement Disorders

— Elena Moro, MD, PhD, Professor of Neurology, Grenoble Alpes University, Grenoble, France

— Rubens Gisbert Cury, MD, PhD, Medical Assistant at Department of Neurology, School of Medicine, University of São Paulo, São Paulo, Brazil



Elena Moro, MD, PhD

The origins of brain stimulation stretch back to the late 19th century, when the stimulation of animals' cerebral cortex established the fundamentals of functional cortical localization. Later, in the 1950s, intraoperative electrical stimulation was used to identify brain targets before stereotactic lesioning to treat disabling tremor (thalamotomy) or dystonia (pallidotomy). In the late 1960s, further move to early forms of deep brain stimulation (DBS) was discouraged by the arrival of levodopa treatment which demonstrated high success for relieving most parkinsonian symptoms. By the 1980s, however, it became clear that levodopa therapy was not the long-term efficacy 'miraculous cure' as it was initially thought to be; in the same time, advancements in pathophysiology and neurophysiology of movement disorders and also in technology rapidly appeared<sup>1</sup>.

In this context, in 1987, a research team from Grenoble, France, led by the neurosurgeon

Alim Louis Benabid and the neurologist Pierre Pollak, explored the use of high-frequency DBS of the thalamic ventralis intermedius nucleus (Vim) as an alternative to thalamic lesioning for patients with essential tremor and advanced Parkinson's disease (PD)<sup>[2]</sup>. The spectacular clinical success of this application ushered in a new era to treat movement disorders. The findings that stimulating the Vim with frequencies above 100 Hz could simulate the effects of a lesion - but with the advantage to be completely reversible - were a major step towards applying DBS as a valid therapeutic option. The popularity of the DBS technique spread quickly among the neurological and neurosurgical communities, and from 1991 on many centers around the world started the DBS adventure.

Subsequent observations showed that, although Vim DBS had excellent efficacy for PD tremor, the stimulation of this thalamic target could not improve bradykinesia, rigidity, or dyskinesia. Advances in understanding the basal ganglia pathophysiology allowed to investigate new DBS targets, such as the globus pallidus internus (GPI) and the subthalamic nucleus (STN) for treating PD. In 1992, Siegfried and Lippitz (Switzerland) reported three patients with PD who had GPI DBS and remarkably improved parkinsonian symptoms<sup>[3]</sup>. In 1993, the Grenoble's team successfully implanted the first STN DBS in a PD patient, reporting great improvement of all levodopa-responsive signs and important dyskinesia reduction due to the concomitant dopaminergic treatment reduction<sup>[4]</sup>. A few years later, pallidal DBS was also successfully introduced to treat various types of dystonia<sup>[5,6]</sup>.

In the following years to now, DBS has been applied to other neurological (Tourette's syndrome, epilepsy, dementia, headache, vegetative state, stroke recovery) and psychiatric (depression, addiction, obsessive-compulsive disorder and post-traumatic stress disorder) conditions. To date, about 200,000 patients worldwide have been treated with DBS for disabling movement disorders.

Technological progress in several domains (imaging, neurosurgical tools and devices) has been the success of DBS. During the first surgeries, ventriculography was the imaging technique utilized to set the surgical coordinates. Currently, high-resolution imaging with segmentation of the brain structures, tractography, local field potentials and robotics play a major role in reaching functional surgery accuracy as well as in providing detailed functional and structural datasets which can be applied to explore the connectivity properties of DBS targets. New stimulation techniques are continuously emerging, such as the use of directional electrodes to control the steering of current through the brain and the closed-loop - "on-demand" stimulation, where the stimulation is automatically delivered according to the variations in the pathological neural signals over time. Together, these technological advances help tailor DBS according to each patient's needs, and improve targeting, clinical results and management.

The fascinating success of DBS has provided a clear example of fruitful translation from basic neurophysiological research into clinical practice. Evolution in understanding brain circuits and biomarkers of disease progression and DBS response will contribute to researching new brain targets and advancing new techniques. Nevertheless, the revolution made by the modern era of DBS has been possible because of the hard and uninterrupted teamwork of neurologists, neurosurgeons, neurophysiologists and overall multidisciplinary cooperation. This mutual collaboration will still be the key to success in the upcoming years.



History of Deep Brain Stimulation for Movement Disorders, *continued on p. 7*

History of Deep Brain Stimulation for Movement Disorders, *continued from p. 6*

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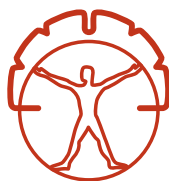
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# *Movement Disorders*

Nov. 18-19, 2021

# CLINICAL PRACTICE

## *MDS 1st Movement Disorders Clinical Practice Conference*



International Parkinson and  
Movement Disorder Society

## MDS-ES Virtual School for Young Neurologists: An Interview With Angelo Antonini and Kailash Bhatia

— Angelo Antonini, MD, PhD, University of Padua, Padua, Italy

— Kailash Bhatia, MD, DM, FRCP, Professor of Clinical Neurology, Institute of Neurology, UCL, Queen Square, London, United Kingdom

— Bettina Balint, MD, Research Fellow, University Hospital Heidelberg, Kraichtal, Germany



Angelo Antonini, MD, PhD



Kailash Bhatia, MD, DM,  
FRCP



Bettina Balint, MD

Bettina Balint, a member of the *Moving Along* Editorial Board, interviewed the Course Directors from the MDS-ES Virtual School for Young Neurologists to learn more about the history and future program, as well as the successes of this year's event.

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### Dr. Balint: As course directors, what is your summary of this year's MDS-ES Virtual School for Young Neurologists?

**Prof. Antonini:** It has been a great experience and most importantly we have had an outstanding participation from fellows from over 30 countries in Europe. When we organized the first virtual school last year, we were not sure if we would be able to have a good level of interaction with the students, but we were very happy of the first one and decided to have a second with some adjustments based on the initial experience.

**Prof. Bhatia:** The challenge was to make it effective and a good learning experience despite the virtual platform and we were gratified to see that we could make it work and we had a great number of enthusiastic participants from over 30 countries and the initial feedback was that the attendees enjoyed it. I think one does still miss the subtle clinical nuances which can be done at the bedside with the students present - nevertheless it was a successful event.

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### Dr. Balint: How long does the tradition of the MDS summer and winter schools go back? What has changed over time?

**Prof. Antonini:** Both myself and Kailash Bhatia were in Marburg when this school started in 2008 if I'm correct. I remember the spirit that moved us as teachers in engaging the students and spending three full days together. It was different from a congress... it was essentially a retreat where we all had the opportunity to examine patients in person, have dinner together discussing challenging cases and also having great fun. The school continued, and a few years later, given the huge success, Werner Poewe suggested to have a second one during the winter.

This is the reason why we were a bit concerned last year and this year when we planned a virtual school... We were worried we would not be

able to have the same atmosphere and interaction. We were very pleased to find out it was a great success, too, and students also seemed to have enjoyed it. It was great to see that many of the teachers had attended the first schools as students! This is exactly the objective: attract young neurology trainees and gain their interest for movement disorders, in some cases becoming themselves leaders.

**Prof. Bhatia:** Indeed, we were in Marburg at the school organised by Wolfgang Oertel and since then at several summer and winter schools. Over time we have developed the successful mix of hands-on experience at the bedside with live patients and the dedicated lectures and the video sessions by the attendees and faculty. That is the basic formula. For the virtual school this had to be of course modified as we could not have the live patient sessions. This was the main difference between this one compared to previous schools. Also, the post meeting evening events over the dinners etc. of interaction a bit informally, which most students and faculty found enjoyable, were also missing this time around.

In the classic format, I found particularly the interactive sessions with patients very enjoyable. How did you account for the interactive part in the virtual format?

**Prof. Antonini:** As I said before this was quite a challenge. We all did our best to stay online and actively interact discussing cases as they were presented. It was great to have very interesting presentations from most of the students. It has been a great occasion to address also rare genetic diseases.

**Prof. Bhatia:** Agree that this was a challenge - however we could have the breakout sessions with students with their video cases and with nice discussions.

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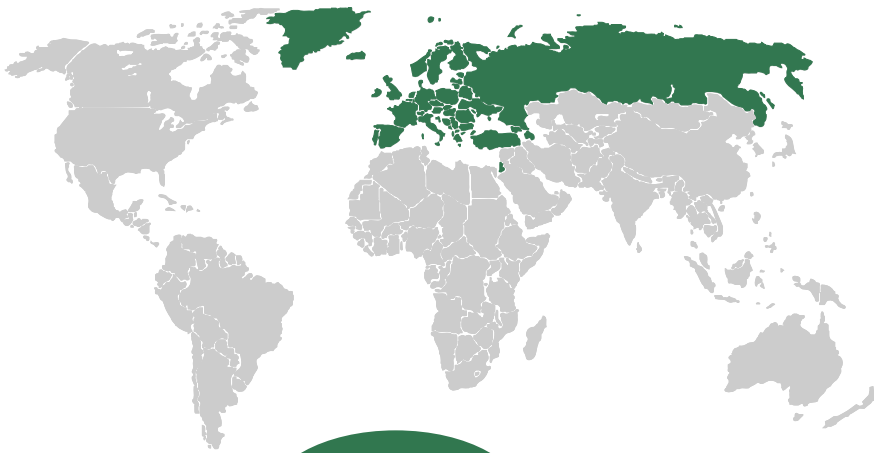
### Dr. Balint: Any thoughts on future perspectives?

**Prof. Antonini:** I think having in person schools and offer the opportunity to see live patients is very valuable. However, I think it would be important to keep some virtual component also in the future to offer the possibility to attend to a larger audience, particularly students coming from regions where it is not easy to travel. I would like to see a sort of hybrid format in the future.

**Prof. Bhatia:** I agree with Angelo that perhaps a carefully thought-out hybrid version may work - this will give us a chance to have a wider participation and not turn away too many aspiring students as we have to do when we have the fully in person schools. Also, the rotation through 6-8 live cases can be quite tedious for the faculty, students and patients alike. Interactive OSCE type of step-wise modules with live participation and changing scenarios can be exciting and engaging but needs a lot of preparation. This could be a way forward.



# MDS-ES Virtual School for Young Neurologists Highlights



July 15-17,  
2021

72 participants  
from 19 ES countries

## Course Directors



Angelo Antonini, MD, PhD  
University of Padua  
Padua, Italy



Kailash Bhatia MD, DM, FRCP  
University College London  
London, United Kingdom

## Faculty



Neil Archibald, MA, BM, MCh,  
MRCP, PhD  
James Cook University Hospital  
Middlesbrough, United  
Kingdom



Bettina Balint, MD  
University Hospital Heidelberg  
Kraichtal, Germany



Miryam Carecchio, MD, PhD  
University of Padua  
Padua, Italy

## Best Case Presentations (student selections)



Maja Klarendic (Slovenia)



Javier Azcarate (Spain)



Marija Roddate (Latvia)



Marina de Koning-Tijssen, MD,  
PhD  
University Medical Center  
Groningen, Netherlands



Christos Ganos, MD  
Charité, University Medicine  
Berlin  
Berlin, Germany



Anna Latorre, MD, PhD  
University College London  
London, United Kingdom



Francesca Morgante, MD, PhD  
St. George's University of London  
London, United Kingdom



Irena Rektorová, MD, PhD  
Masaryk University and St.  
Anne's University Hospital  
Brno, Czech Republic



Maria Stamelou, MD, FEAN  
HYGEIA Hospital  
Athens, Greece

## Sail4Parkinson and Virtual Hospitals: An Interview with Nicola Modugno

— Nicola Modugno, MD, PhD, Neurologist at IRCSS Neuromed, Pozzilli Italy, Research Associate, University of L'Aquila, Italy

— Margherita Fabbri, MD, PhD, Neurologist, Toulouse University Hospital, Toulouse, France

— Francesca Morgante, MD, PhD, Associate Professor in Neurology, St. George's University of London, United Kingdom



Nicola Modugno, MD, PhD



Margherita Fabbri, MD, PhD



Francesca Morgante, MD, PhD

Margherita Fabbri, a member of the *Moving Along* Editorial Board, and Francesca Morgante interviewed Nicola Modugno to learn more about ParkinZone and the evolution of the Sail4Parkinson and Virtual Hospital projects.

**Dr. Fabbri: "ParkinZone" is a non-profit association which you established in 2006 with the goal to empower patients and treat them by means of activities aimed to improve emotional and physical wellbeing. Among these, we have particular interest in the Sail4Parkinson (S4P) and "Virtual Hospital" projects.**

**I am keen to know more on how those activities were developed, the clinical mainstays and future perspectives. What inspired you to create this project? Who were the main promoters?**

**Dr. Modugno:** Since starting to work with people with Parkinson's disease (PD), I became particularly interested in developing innovative models of care that could deal with the complex clinical needs of our patients, while providing continuity of assistance. When ParkinZone ([www.parkinzone.org](http://www.parkinzone.org)) was established in 2006, I involved actors and musicians who set up theatre and music classes for PD patients. These activities became popular among patients, as they could work on motor control of their symptoms and, in the meantime, rediscover their

emotional side. Indeed, we were also able to demonstrate that such approach was effective on motor and non-motor symptoms, including anxiety, depression, and apathy<sup>[1,2]</sup>.



Besides medicine, I personally have a great passion for surfing and sailing. I thought to combine artistic activities such as theatre and music, with the sailing training, extending this possibility to caregivers, too.

The first edition of Sail4Parkinson was held in 2016 with four patients participating. Currently, the program involves sailors, surfers, theatre actors and directors, musicians, neurologists, psychologists, and physiotherapists. Patients attend sailing classes in the morning and theatre and music classes in the afternoon. We were amazed to see that such program provides immediate benefit on mobility and mood. Interestingly, patients quickly learn the principles of sailing and, at the end of the week, they can conduct the sailboat on their own. We also observed that sailing could be a fantastic opportunity of rehabilitation as PD patients are forced to move in a small space such as the boat and in coordination with all the other sailors. ParkinZone was the promoter of the project, which was also supported by donations from private donors, a few pharmaceutical companies, and the Italian Academy for movement disorders (Accademia LIMPE-DISMOV).



Sail4Parkinson and Virtual Hospitals: An Interview with Nicola Modugno, continued on p. 11



Sail4Parkinson and Virtual Hospitals: An Interview with Nicola Modugno, *continued from p. 10*



Patients Participating in Sail4Parkinson Program

**Dr. Fabbri:** Is Sail4Parkinson restricted only to patients in the early stage? Are there any age restrictions?

**Dr. Modugno:** Initially, we restricted the participation to people in early and intermediated stages. However, upon building up experience in this program, we also involved patients with advanced PD and with Deep Brain Stimulation, as well as a few with mild cognitive impairment who attended with their caregivers. Each of them has different goals from the S4P program but ultimately, their expectations were met independently from disease stage.

**Dr. Fabbri:** Since its creation, you have elaborated four main mainstays that are the principles of S4P. Could you briefly explain these mainstays?

**Dr. Modugno:** The 4 mainstays of S4P are 1) Sailing; 2) Theatre and 5 actions; 3) Meditation; 4) Nature and harmony.

We teach them the safety rules and the principles of sailing and how to move in the boat. They learn how to manage the boat according to the weather conditions together with the others as a team. The “5 actions” is a warming up and meditation technique thought for actors, adapted for patients and caregivers with the aim of stimulating concentration and creativity as well as being able to perform as a member of a team. During this training, the participants play with their body, voice and expressivity to discover new abilities, accompanied by live music. Every day, the group undergo meditation and psychological workout guided by a psychologist. PD patients struggle to cope with stress and acceptance of their disease and such work is aimed to improving their emotional control. Finally, the western coast of Sardinia (Sinis and Montiferru) is the perfect setting for such program with its uncontaminated nature that contributes to stimulate different sensory modalities and making the patients regaining confidence in their body.

**Dr. Fabbri:** Do you believe that the patients have a longstanding benefit after having participated to a S4P session? Do you have any suggestions to help patients/health professionals in bringing “the message” at home?

**Dr. Modugno:** We have not yet systematically assessed the long-term impact of the S4P on patients’ quality of life, but after this experience patients seem to cope better with the disease and the relationship with their carers improves. Overall, I believe that the learning skills acquired during this experience might have a long-standing benefit if the patient is able to interiorize them, being an incredible non-pharmacological approach.

**Prof. Morgante:** During the 2020 COVID-19 lockdown, you have relentlessly worked together with four patients and one psychologist to provide daily support to people with PD and their caregivers who were left inactive and isolated at home. Can you tell us about this innovative initiative which is named the “Virtual Hospital”?

**Dr. Modugno:** When the COVID-19 lockdown started, we were forced to interrupt all ongoing complementary therapy projects. Furthermore, the hospital stopped outpatient clinics for more than two months, leaving many people isolated and without proper treatment. Thus, we decided to transfer many of our activities online and make them available in live and recorded format also for those not followed up by our hospital. We created the ParkinZone Virtual Hospital, which offered free of charge daily activities, including physical and cognitive activities (Pilates, Feldenkrais, Mindfulness, Dance, music, theatre, writing and English classes) for the whole PD community throughout Italy.



From the top to the bottom: Professor Francesca Morgante, MD, PhD, Professor Eduardo Tolosa, MD, Professor Olivier Rascol, MD, PhD, Dr. Nicola Modugno, MD, PhD, Dr. Giovanni Cossu, MD

Sail4Parkinson and Virtual Hospitals: An Interview with Nicola Modugno, *continued on p. 12*

Sail4Parkinson and Virtual Hospitals: An Interview with Nicola Modugno, *continued from p. 11*

**Dr. Fabbri: One of the highlights of the Virtual Hospital project, is the “Question Time (QT)”. What is it special about the QT sessions? What are the goals of the QT?**

**Dr. Modugno:** The QT is a 90-minutes session on Zoom, during which a health professional or a neuroscientist gives a short talk about a clinical or scientific topic related to PD. These sessions are very informal, and patients formulate their questions in the chat box or sometimes by speaking aloud. They have been so successful among Italian PD patients that I proposed to Francesca Morgante to make them available for UK patients on a weekly basis. For the Italy-UK QT, live Italian translation is provided by one Italian PD patient who is a professional interpreter in life. Also, the technical support and the organization is handled by three other PD patients, without whom the QT would not happen. Finally, many colleagues from Italy and around the world have volunteered and participated to the QT. The QT have two main objectives: 1) to empower patients by making them knowledgeable about their symptoms and how to report them efficiently at the time of consultation; 2) to disseminate findings from scientific research. We think that the second goal has a particular value also for us as neurologists. Indeed, when communicating about research studies, we have an amazing opportunity to understand what is meaningful in the research setting to patients’ life. It also forces us to be intellectually honest with them.

**Prof. Morgante: Is the Virtual Hospital still working since the pandemic crisis? What are the perspectives?**

**Dr. Modugno:** Both the Virtual Hospital and QT were very well received, with drawing audiences (nearly 10,000 participants in a year). We realized

these are powerful tool to reach a vast group of people and this why we are continuing such activities. Also, they are a great example on how patients and neurologists can work together to help other patients, but also to improve the understanding of PD in health professionals.

**Prof. Morgante: How do you conceive participative medicine? What does it mean for you to empower our patients with PD?**

Participative medicine means being part of team, which involves different health professionals and the patients. They are allied to gain a better understanding about the disease but also to reposition the person with PD into society, allowing to reconsider herself/himself as a human being and not a sick subject. This might happen by empowering people with PD, which means to provide tools to them to make informed choices and, more importantly, let them see the disease from a different and constructive perspective.

### Acknowledgments

**Dr. Modugno:** I wish to thank all the people who helped me to build up this story: my family, my best friends Imogen Kusch, Francesca Morgante and Silvia della Morte, Daniela Meloni and Limolo Activities, the patients and all the people who work with Parkinzone ([www.parkinzone.org](http://www.parkinzone.org)) and our partners in Fuerteventura “Fuerte a la Vida, Parkinson No Limits”.

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## 7<sup>th</sup> Asian and Oceanian Parkinson and Movement Disorders Congress (AOPMC)

— Roongroj Bhidayasiri, MD, FRCP, FRCPI, Professor of Neurology and Director, Chulalongkorn Centre of Excellence on Parkinson's Disease & Related Disorders Bangkok, Thailand



Roongroj Bhidayasiri, MD, FRCP, FRCPI

Following the memorable previous AOPMCs in Hangzhou, Philippines, Singapore, India, Taipei, and Thailand, there is no doubt that the first virtual AOPMC has continued their legacy of providing quality movement disorder education to attendees across the Asian and Oceanian Section and beyond. With a total of 5,527 attendees, representing 82 countries/territories, this biennial activity broke registration records to become the largest AOPMC ever.

There were 92 faculty hailing from 21 countries in the Asian and Oceanian region and beyond. Together they presented at 20 scientific sessions in addition to the corporate symposiums and Video Tournament. The AOPMC pre-congress on Practical Management of Movement Disorders initiated early on June 4 and continued until the interactive development sessions began in the afternoon – these unique development and meet-the-expert sessions focused on small group discussions in English, Japanese, and Chinese and allowed younger members to engage directly with senior experts in the field. After the opening ceremony the main scientific program began with the keynote award lectures the Yoshikuni Mizuno award lecture and the Philip Thompson award lecture. The plenary sessions on *Specific Movement Disorders in the Asian Oceanian Region: Historical and Recent Developments* and *Phenotype-Genotype in the MDS-AOS Region, Current and Future Therapies in Parkinson's Disease: An "MDS-AOS Perspective"*, *Adapting Technologies for Parkinson's Disease (Not the Other Way Around)*, and the three concurrent parallel sessions all attracted a large virtual audience to their live streaming sessions where participants could submit questions via the live chat box.

On June 7, one day after the main event, the leaders from 17 different neurological or movement disorder societies met to hold the first MDS-

AOS Affiliate Networking Event. Together the MDS-AOS leadership met and discussed the current accomplishments and challenges these MDS-AOS Affiliate Societies and potential societies are facing, while learning what collaborating with the MDS-AOS means to their local society.

### 2021 Virtual AOPMC Highlights:

- 1) The Opening Ceremony on June 4, Chair of the AOPMC Oversight Committee and MDS-AOS Chair, Roongroj Bhidayasiri providing the 7th AOPMC keynote address. MDS President, Claudia Trenkwalder, AOPMC Organizing Committee Co-Chairs: Nobutaka Hattori and Victor Fung graced the occasion delivering their welcome remarks alongside many members of the MDS-AOS leadership. The Ceremony commenced with the announcement of the Mascot Contest, MACOP the MD (Winner: Sasivimol Virameteekul), and finished with interviews from the plenary session faculty.



2021 AOPMC Mascot Winner, MACOP the MD, by Sasivimol Virameteekul (Bangkok)

- 2) The Video Tournament was held on the evening of June 5, and was organised by Victor Fung and Helen Chiang. The event involved many of the younger MDS members, residents and fellows. Participants witnessed clinical experts analyse and discuss a case by phenomenology, syndromic classification and differential diagnosis whilst audience could submit comments via a live chat.
- 3) The 4th Philip Thompson and Yoshikuni Mizuno Lectureship awards were bestowed accordingly to Beomseok Jeon and Ryosuke Takahashi, and were followed by presentations from the junior award winners Thomas Welton and Warongporn Phuenpathom.
- 4) Another new feature at this AOPMC was the COVID-19 fighter award with more than a dozen of video submissions from various groups within the AOS. These videos demonstrate how we strive to do the best we can for our communities and patients in the face of many uncertainties the pandemic has thrown at us. While the situations and solutions are different between countries, the determination shown by all submitters are the same, with all showing strength, unity and resolve despite the rapidly changing, and usually



2021 MDS-AOS Affiliate Networking Event

MDS-AOS Affiliate Networking Event

7<sup>th</sup> Asian and Oceanian Parkinson and Movement Disorders Congress (AOPMC), *continued from p. 13*

worsening, situations. Therefore, it has been the unanimous decision of judges that they are all winners. [Watch the full video of the COVID-19 Fighter Award winners on the MDS YouTube page.](#)

Despite the COVID-19 pandemic resulting in a shift from an in-person meeting in Tokyo, to pivoting to a fully virtual event, this Congress was

a success thanks to the dedication and time put forth from the AOPMC Organizing Committee and Scientific Program Committee members. Leading this shift to a 2021 virtual AOPMC was made possible through the hard work and leadership of the AOPMC Chair, Roongroj Bhidayasiri, Nobutaka Hatori, and Victor Fung. See you all at our next AOPMC 2023 in Kolkata!

*MDS-AOS Lectureship Award winners: Ryosuke Takahashi, MD, PhD and Beomseok Jeon, MD, PhD*

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Educate.  
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## 2021 Virtual AOPMC: Junior Awards

Doctors Warongporn Phuenpathom and Thomas Welton were selected for the Junior Awards at the 2021 Virtual AOPMC. Junior Awards were awarded to the top two scoring abstracts that met the following criteria: individual is the first author of the abstract, Junior to mid-level in their career (individual's age 45 years or less) AND the Principal Investigator (PI) of the study.

### Combined Plantar Stimulations Using a Novel Parkinson Shoe Can Benefit Parkinson's Disease Patients with Unresponsive Freezing of Gait



*Dr. Warongporn Phuenpathom is currently a second-year fellow and a PhD candidate in movement disorders at Chulalongkorn Center of Excellence for Parkinson's Disease and Related Disorders, Bangkok, Thailand. She completed her medical degree from Chulalongkorn University in 2013 and then trained as a neurology resident at the same institution. She previously received the Best Resident Research Award in an Annual*

*Meeting of the Royal College of Physicians of Thailand in 2017, the Honorable Mention Award in an Annual Meeting of the Thai Neurological Society in 2019, and the Best Oral Winner in the Research Day of Internal Medicine Department, Chulalongkorn University in 2021.*

*Dr. Phuenpathom is an active member of the International Parkinson and Movement Disorder Society and Thailand Parkinson and Movement Disorder Society. She is now researching and developing novel technologies in gait and balance disorders in Parkinson's Disease and atypical parkinsonism in collaboration with a great team at Chulalongkorn Center of Excellence for Parkinson's Disease and Related Disorders.*

It was a considerable honor and a terrific experience for me to receive a Junior Award at the 2021 MDS Asian and Oceanian Parkinson's Disease and Movement Disorders Congress (AOPMC). This is largely due to the incredible opportunities for young members organized by MDS, which has always striven for exceptional activities in movement disorders. Moreover, our study could not have been completed without support from our helpful team, especially Professor Roongroj Bhidayasiri and Assistant Professor Pattamon Panyakaew at Chulalongkorn Center of Excellence for Parkinson's Disease and Related Disorders.

Our most important inspiration for this study is the growing number of Parkinson's disease (PD) patients worldwide as we are approaching to the aging society. Freezing of gait (FOG) is one of the most common motor symptoms in advanced PD, which can lead to falls, fractures, immobility and reduction of quality of life in PD patients<sup>1-3</sup>. Our team must care for these patients on a daily basis and believe that there should be a device to aid in the improvement of gait problems in our patients. To achieve this goal, a novel PD shoe with combined plantar sensory stimulations was invented, based on previously known information regards to the benefits of pressure or vibratory stimulation<sup>4,5</sup>.

In our study, we demonstrated the efficacy of combined vibratory and pressure stimulation in reducing freezing episodes and improving spatiotemporal gait parameters, including stride length, stride velocity, and stride length in the three strides before freezing episodes when compared to vibration, pressure and control groups. We hypothesized that this was a result of a 'dual action stimulation', a synergistic effect between the feedforward and feedback signals in the loop of peripheral sensory receptors and the central nervous system<sup>5-6</sup>. Moreover, a dual action stimulation can improve sensory attenuation, contributing to better prediction in PD patients<sup>7</sup>. A prototype of an innovative PD shoe that consists of vibratory stimulation, an inside soft silicone pressured at plantar areas, and a switched battery circuit has consequently been developed and is being tested in PD patients with FOG.

During our journey to this award, we would like to acknowledge not only the importance of our patients, our knowledge and skills in Parkinson's disease but also our enthusiastic, motivated colleagues and great resources from Chulalongkorn Center of Excellence for Parkinson's Disease and Related Disorders. Our center has always been committed to providing the best care to our patients, as well as conducting innovative research and educating patients and health care providers. All faculties who support the mission, especially Professor Roongroj Bhidayasiri and Assistant Professor Pattamon Panyakaew, have been a tremendous inspiration to me during this two-year fellowship program. Being surrounded by these motivated colleagues and an encouraging environment, we gradually developed skills in the electrical circuit and the innovative design of our shoe. These also demonstrated a well-balanced blend of science and art as a distinguishing feature of the next generation researchers in movement disorders as in Albert Einstein's quote 'The greatest scientists are artists as well'.

In conclusion, our study introduces the significant benefit of combined plantar stimulations on unresponsive FOG along with the low-cost innovative PD shoe, only 1,000 Thai Baht or about 30 Dollars, which can be developed using widely available materials and measurements so accessible even in developing countries. Future studies focusing on the validation of this shoe in PD patients, synchronization of the stimulations with gait cycles, and the long-term effect of stimulations are encouraged to provide the best prospects for PD patients in terms of FOG reduction. Finally, we also hope that our study will encourage further studies involving advanced technologies in gait and balance of PD patients, which will be one of the lights illuminating another path for PD patients with FOG.

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## Longitudinal Study of Grey Matter Nuclei in Early Parkinson's Disease Using Diffusion Kurtosis Imaging



*Dr. Thomas Welton earned his PhD in Radiological Science from the University of Nottingham in the UK in 2017. He spent three years at the University of Sydney, Australia, where he learned quantitative MRI analysis techniques and applied them in neurological disease. He is now a Senior Research Fellow at the National Neuroscience Institute in Singapore, where he is researching movement disorders in integrative studies of neuroimaging,*

*blood biomarkers and genetic data. Dr. Welton is an ISMRM Junior Fellow and recipient of a national-level grant in Singapore to study the neural mechanisms of genetic risk of essential tremor.*

It was a very great honour to receive the Junior Award at the 2021 MDS Asian and Oceanian Parkinson's Disease and Movement Disorders Congress (AOPMC). The work of the MDS to elevate its young members is truly exceptional and praiseworthy. I owe the success of this project to my great mentors, Prof. Tan Louis and Prof. Tan Eng-King, with whose support and guidance I have been blessed.

My journey to this award involves the fortunate confluence of two streams of research. The first relates to the use of innovative MRI acquisition and analysis techniques. I learned these skills throughout my PhD studies at the birthplace of MRI, the Sir Peter Mansfield Imaging Centre in Nottingham, under the supervision of brilliant clinician-scientists, Prof. Rob Dineen and Prof. Dorothee Auer. There, I learned how neuroimaging is a powerful tool to detect and characterise brain microstructure and connectomics, and how its application to neurological disease could benefit clinical outcomes. My interactions

with patients during this time were humbling and motivating as a young scientist. Then, during my three years in Sydney, I gained a deeper understanding of the mechanisms underpinning diffusion MRI, and published work showing its application in various contexts while pushing the limits of MRI technology<sup>1</sup>.

The second stream of research relates to Parkinson's disease. I was very blessed to join a fantastic team of clinicians and scientists at the National Neuroscience Institute in Singapore, dedicated to the management and scientific investigation of movement disorders. The Parkinson Disease Longitudinal Study, Singapore (PALS) study of Prof Louis Tan and his team is a large longitudinal study spanning 5 years, acquiring a rich dataset characterising early Parkinson's disease. This team extends to the Radiology department at the Singapore General Hospital where, under A/Prof Chan Ling Ling, the superb-quality multi-modality MRI data are gathered. In joining this team, I appreciated the deep synergy between clinical and scientific aspects and recognised the exceptional opportunity to apply myself.

In the study, we used a recent technique, diffusion kurtosis imaging, to overcome a key limitation of diffusion MRI. Diffusion MRI allows us to detect the motion of water molecules in tissue<sup>2</sup> but, in the brain, this motion is restricted by cellular membranes and organelles.

Diffusion kurtosis imaging allows the modeling of restricted motion, and thus a better characterisation of the underlying microstructure<sup>3</sup>. For the first time, we applied this technique in a longitudinal study of early Parkinson's disease. We found that the diffusion kurtosis profiles of separate grey matter nuclei varied widely, showing the capability of this technique to distinguish different microstructural compositions. The mean kurtosis differed between Parkinson's and control groups at both the baseline and 2-year timepoints and, specifically in the nucleus accumbens, the slope over two years differed between the groups (interaction effect). We then showed correlations between the 2-year change in kurtosis characteristics and clinical features.

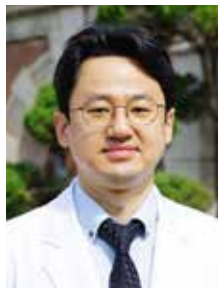
We believe that diffusion kurtosis imaging could be a useful imaging biomarker to characterise brain microstructure relating to Parkinson's disease, even in its early stages. The study highlights the need to account for other complex changes that occur with ageing. The nucleus accumbens, amygdala and hippocampus may be good targets for further study with diffusion kurtosis imaging, which could focus on non-motor symptoms of Parkinson's disease. Ultimately, the key to better understanding of disease mechanisms is in integrating data across biological levels including, for example, neuroimaging brain-connectomics, genomics and metabolomics, to uncover new pathophysiologic links<sup>4</sup>. This will require the use of innovative analysis tools and techniques including those utilising machine learning. Another continuing theme of my research will be reproducibility and open science, for which there is a growing awareness of its importance among neuroimaging researchers<sup>5,6</sup>. My future research will incorporate these ideas in further studies of movement disorders.

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## 2021 Virtual AOPMC: Lessons Learned from the Live Interactive Development Sessions

— Jung Hwan Shin, Clinical Fellow, Movement Disorder Center, Seoul National University Hospital, Seoul



Jung Hwan Shin

I am Jung Hwan Shin, Clinical Fellow at Movement Disorder Center in Seoul National University Hospital, Seoul. I participated in two development sessions during the 2021 Virtual AOPMC; 1. How to become a Movement Disorder Specialist, 2. Skills Workshop (How to publish a scientific article and How to do a successful English presentation).

I previously had several experiences participating in the interactive development sessions during the in-person AOPMC meetings. I have to say that I was a bit concerned about whether the live interactive session could be successful on the online platform. Personally, with great surprise, it was successful and more interactive than ever! I want to focus on the second interactive session (Skills Workshop). The lectures were given by Eng King Tan and Jee-Young Lee regarding how to publish an article. Both of the experts shared practical and fundamental principles in writing scientific articles. We could learn that there are no fancy skills that could make an article published but it is important to stick to the basic principles. It was also interesting to hear the mistakes, failures, and funny events that

happened to the experts in their early careers. Those experiences inspired me to not be afraid of failures or mistakes. The second session was about how to do a successful scientific presentation in English, which was given by Stanley Chen and Carolyn Sue. The content was excellent but I realized that the presentation itself was a perfect example of an excellent English presentation. Experts gave practical tips on how to prepare and deliver a great presentation, which I would follow in my next presentation. The best thing about the online interactive session during the 2021 AOPMC is that the submission of questions became easier and more accessible. I think it was these active questions and discussions with the audience that made the interactive sessions more successful this year.

I would like to thank all the experts that prepared and gave such a wonderful lecture. Learning from the experiences of the experts and having a chance to discuss with them is a precious chance for young members. I think the sessions are as important as other scientific sessions especially for young members like me, as we can develop the core skills that are required to grow as a movement disorder specialist. I hope the interactive development sessions will continue and I will be looking forward to the in-person interactive session in the future which I believe will be much more successful and interactive!

2021 Virtual AOPMC: Junior Awards, continued from p. 16

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## 2021 Virtual AOPMC: The Yoshikuni Mizuno Lectureship Award — Animal Models of Prodromal Parkinson's Disease

— Ryosuke Takahashi, MD, PhD, Professor and Chairman, Department of Neurology, Kyoto University Graduate School of Medicine, Kyoto



Ryosuke Takahashi, MD, PhD

*Professor Ryosuke Takahashi, MD, PhD, works at the Department of Neurology, Kyoto University Graduate School of Medicine, Kyoto, Japan. His major research interests are the molecular pathogenetic mechanisms underlying Parkinson's disease and its related disorders and the development of disease-modifying therapies against these disorders.*

*He graduated from Kyoto University, Japan in 1983. He completed his neurology residency in Kyoto University Hospital and its affiliated hospitals. In*

*1989, he began performing basic research on neurodegenerative disorders and neuronal apoptosis as a staff scientist at Tokyo Metropolitan Institute for Neurosciences. He then worked as a postdoctoral fellow with Dr. John C. Reed at the Sanford-Burnham Institute, San Diego, CA, USA. Thereafter, he became the head of his own Laboratory at RIKEN Brain Science Institute, Japan, in 1999.*

*Since 2005, he has been Professor and Chair of the Department of Neurology at Kyoto University Graduate School of Medicine. He served as the chair of the task force for the 2011 version of the Japanese treatment guidelines for Parkinson's disease, the President of the Japanese Society of Neurology from 2014 to 2018, the Vice President of the Japanese Society for Neuroscience from 2015 to 2019 and an International Executive Committee Member of the International Parkinson and Movement Disorder Society from 2015 to 2019. He is on the editorial board of *Movement Disorders*, *Journal of Neural Transmission and Molecular Brain* and has published more than 400 original articles in peer-reviewed international journals, including *Nature*, *Cell*, *Neuron*, *Brain* and *Annals of Neurology*. He is currently conducting a first-in-human clinical trial of iPS cell-derived dopamine neuron transplantation therapy for patients with Parkinson's disease as a Co-PI with Professor Jun Takahashi.*

I am very honored to receive the Yoshikuni Mizuno Lectureship award. I would like to express my sincere gratitude to the selection committee members and my colleagues and friends in MDS-AOS. Taking this opportunity, I would like to write about why I began studying basic science as a clinician and how I have formulated research questions based on clinical observations, which I spoke about in my Yoshikuni Mizuno lecture at the 2021 AOPMC. After I graduated from medical school in 1983, I underwent neurology residency training for six years.

Three years after graduation, I moved to Tokyo Metropolitan Neurological Hospital, where around 30 patients with amyotrophic lateral sclerosis (ALS) patients were being treated on artificial ventilators. Nothing was known about the pathogenetic mechanisms underlying ALS in the 1980s. After seeing so many ALS patients, I began to think about undergoing basic science training in order to clarify the pathogenetic mechanism

underlying ALS and develop effective therapies against this devastating disease. When I consulted with Prof. Masakuni Kameyama, who was my mentor at Kyoto University, he handed me a printout of a paper entitled, "On the origin and prevention of PAIDS (Paralyzed Academic Investigator's Disease Syndrome)" (J Clin Invest, 1986).

The author of this oddly titled article was Joseph Goldstein, who was awarded the Nobel Prize in 1985 along with Michael Brown for their discoveries concerning the regulation of cholesterol metabolism. In that article, Goldstein related the very impressive stories of three physician-scientists who started their careers as clinicians and made great discoveries in the field of human diseases. Among these giants, I was most fascinated by Archibald E. Garrod (1857-1936), who is now called the Father of Biochemical Genetics. He discovered alkaptonuria and proposed the idea that alkaptonuria, or "black urine disease", was an inborn hereditary disease in 1902, when the very concept of a "gene" had not yet been proposed. Despite being a clinician, he underwent basic science training in biochemistry in order to identify the components of the pigments in the colored urine of patients with alkaptonuria. Based on Garrod's historical achievements, Goldstein created "Garrod's formula" as follows: clinical stimulus x basic science training = fundamental discovery. I was deeply impressed by this story and decided to start my basic science training without hesitation.

I learned from Garrod's episode that good clinical questions arise from careful clinical observations. Around ten years ago, Atsushi Takeda and his coworkers at Tohoku University, Sendai, Japan, demonstrated that hyposmia precedes dementia in Parkinson's disease (PD) patients through a 3-year longitudinal study (Baba T, et al. *Brain*, 2012). A thorough reading of this report suggested that this pathway might be caused by the propagation of  $\alpha$ -synuclein ( $\alpha$ -syn) from the olfactory bulb (OB) to the hippocampus and its related structures. Although Brundin et al. showed early on that the injection of  $\alpha$ -syn preformed fibrils (PFFs) into the OB of mice resulted in the propagation of  $\alpha$ -syn aggregates widely in the olfactory system and hippocampus, these pathological changes were not accompanied by cognitive impairment (Rey NL, et al., *J Exp Med*, 2016).

Our group therefore injected  $\alpha$ -syn PFFs into the OB of  $\alpha$ -syn-overexpressing Tg mice. Ten months later, the CA3 region and dentate gyrus of the hippocampus showed severe atrophy, accompanied by memory loss (Uemura N, et al., *Mov Disord*, 2021). We also found that perampanel, an AMPA-type glutamate receptor inhibitor, was able to suppress the  $\alpha$ -syn propagation in our mouse model. Interestingly, perampanel blocked the neuronal uptake of  $\alpha$ -syn PFFs by inhibiting macropinocytosis in a neuronal activity-dependent manner (Ueda J, et al., *Mov Disord*, 2021). I hope our findings in a mouse model will help delay or stop the development of dementia altogether in PD patients with hyposmia in the future.

## 2021 Virtual AOPMC: The Philip Thompson Lectureship Award - Apraxia of Eyelid Opening and Concept of Negative Dystonia

— Beomseok Jeon, MD, PhD, Professor, Seoul National University Hospital, Seoul



Beomseok Jeon, MD, PhD

Professor Beomseok Jeon is Medical Director of the Movement Disorder Center at Seoul National University Hospital. He is the past President of the Korean Movement Disorder Society, and served as the International Delegate of the Korean Neurological Association.

He also served as the Director of Office of the Medical Policy and Communication, Seoul National University. Currently, he is the President of the Asia-Oceanian Association of Neurology

(AOAN) and Past-Chair of the International Parkinson and Movement Disorder Society-Asian and Oceanian Section (MDS-AOS).

Prof. Jeon graduated from Seoul National University College of Medicine, and completed his neurology residency both at Seoul National University Hospital (1983-1987) and at the University of Minnesota (1987-1991), and then had a Movement Disorder fellowship under Prof. Stanley Fahn at Columbia University (1991-1993). He also studied basic neurosciences under Prof. Robert Burke as a H. Houston Merritt Fellow (1997-1998) at Columbia University. Prof. Jeon has extensively studied genetics in Korean patients with parkinsonism, and is currently interested in medical and surgical treatment of advanced parkinsonism. He has published over 400 peer-reviewed articles, and wrote three books for patients and families with Parkinson's disease and ataxia.

I would like to thank the scientific committee for the honor of the Philip Thompson Lectureship award.

Professor Thompson served as President of our MDS in 2009-2011. His contribution and expertise has been in neurophysiological studies of motor control, and made initial description and application of transcranial electrical and magnetic brain stimulation in humans including mechanisms of D and I wave activation of corticospinal system and paired pulse interactions including Short-interval intra-cortical inhibition, and trans-callosal inhibition. Thus, I was very happy to get a chance to discuss my neurophysiology work that I presented in 1995 titled as Apraxia of Lid Opening: a form of Negative dystonia. Eyelid movement has two actors: Orbicularis Oculi(OO) and Levator Palpebrae(LP) acting as agonist and antagonist to each other. Blepharospasm has features of

over-contraction of OO and co-contraction of OO and LP. However, there are so called "Apraxia of Lid Opening(ALO)" where there is no apparent contraction of OO clinically and neurophysiologically with no abnormal activity in OO and failure to activate LP. (Fig 1)

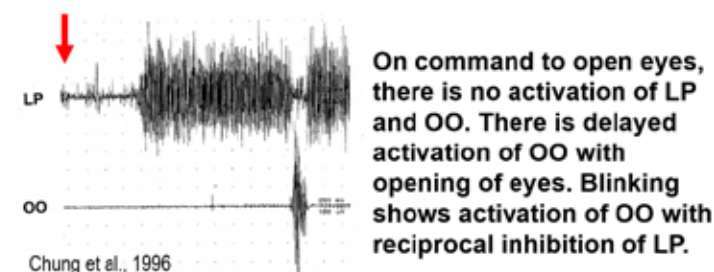


Figure 1

ALO is different from dystonia in that there is no abnormal contraction of muscles. However, there are many clinical features that ALO shares with dystonia. For example, they frequently coexist, and have sensory tricks etc. Therefore, I suggested that inappropriate sustained or intermittent "inhibition" or failure to activate the wanted muscle contraction long enough may result in sustained postures clinically resembling dystonia, and I proposed the term "negative dystonia". Negative phenomenon does occur in movement disorders, and the best example is negative myoclonus. I suggest that the fundamental pathophysiology of dystonia that causes inappropriate sustained muscle "contraction" may also inappropriately "inhibit" or "fail to activate" muscles resulting in abnormal postures. ALO is an example of negative dystonia caused by failure to activate LP.

This concept of failure to activate may be useful in understanding freezing of gait(FOG).

There are studies supporting that FOG shares features of dystonia in task-specificity and co-contraction of agonists and antagonists. In the Andrew's paper in 1973, there are segments of absent muscle activity during freezing, which suggests failure to activate the intended muscles. Thus FOG also has a feature of negative dystonia in not being able to activate the intended muscles. Again, I thank the scientific committee for the honor, and wish Professor Thompson the best health.

## The First Virtual MDS-Africa School for Young Neurologists: Overcoming the Challenges

— Ali Shalash, MD, PhD, Professor of Neurology at Ain Shams University, Cairo, Egypt

— Sarah Urasa, MBChB, MMed, MSc, Clinical Neurologist at Kilimanjaro Christian Medical Centre, Moshi, United Republic of Tanzania

— Kigocha Okeng'o, MD, Neurophysician at Muhumbili National Hospital, Dar Es Salaam, United Republic of Tanzania

Despite current challenges, MDS-Africa successfully organized its first Virtual School for Young Neurologists in June 2021. Due to shifting needs amidst the COVID-19 pandemic, MDS established an online education framework to continue delivering high-quality education in a virtual format all over the world, including the annual MDS Schools for Young Neurologists as well as regional and global educational activities. Generally, education and training in Africa face many challenges including a finite number of neurologists, limited resources for education and health services, travel restrictions, and the high cost of programs and travel (MDS education needs survey 2017).

The annual MDS-Africa School for Young Neurologists first began in 2019 in Cairo, Egypt. A second in-person School was planned for 2020 in Tunis, Tunisia, however, due to the COVID-19 pandemic, this could not be held as planned. This year, on June 26 and 27 the School was held virtually by course directors Kigocha Okeng'o (Tanzania) and Sarah Urasa (Tanzania), with Ali Shalash (Egypt) as a Co-director and advisor.

The main challenge was to provide the same highly interactive program and clinical training sessions as in-person. Other challenges included limited internet connection and related technical issues in Africa and organizing virtually across time zones.

Despite these various challenges, this course was a success, attracting 102 applicants, among whom 92 were selected from 18 African countries. In addition, the MDS-Africa School Faculty was a rich representation of extremely experienced movement disorder specialists and MDS leaders from around the world.

The School included several interactive and clinically oriented sessions such as examination interactive session, Movement

### COURSE DIRECTORS



**Kigocha Okeng'o, MD**  
Muhumbili National Hospital  
Dar Es Salaam, Tanzania



**Sarah Urasa, MBChB, MMed, MSc**  
Kilimanjaro Christian Medical Centre  
Moshi, Tanzania



**Ali Shalash, MD, PhD**  
Ain Shams University  
Cairo, Egypt

### COURSE FACULTY



**Masharip Ataazhanov, MD, PhD,  
DSc, FRCP**  
University of Zambia  
Lusaka, Zambia



**Samia Ben Sassi, MD**  
Mongi Ben Hmida National -  
Institute of Neurology  
Tunis, Tunisia



**Kallash Bhatia, MD, DM, FRCP**  
University College London -  
Institute of Neurology  
London, United Kingdom



**Francisco Cardoso, MD, PhD,  
FAAN**  
Federal University of Minas Gerais -  
Belo Horizonte,  
Minas Gerais, Brazil



**Jonathan Carr, MBChB, PhD**  
Stellenbosch University Tygerberg,  
South Africa



**Joaquim Ferreira, MD, PhD**  
University of Lisbon  
Lisbon, Portugal



**Victor Fung, MBBS, PhD, FRACP**  
Westmead Hospital  
Sydney, Australia



**William Matuja, MD**  
Muhumbili National Hospital  
Dar Es Salaam, Tanzania



**Njideka Okubadejo, MBChB,  
FMCP, FAAN**  
College of Medicine, University of  
Lagos  
Lagos, Nigeria



**Ronald Postuma, MD, MSc**  
McGill University Health Centre,  
Montreal General Hospital  
Quebec, Canada



**Richard Walker, MD**  
North Tyneside Gen. Hospital, Dept  
of Medicine  
North Shields, UK

102 Participants Accepted

54%  
Female

58%  
MDS  
Members

44% Clinicians  
33% Residents  
8% Students



25 Countries  
Represented

The First Virtual MDS-Africa School for Young Neurologists: Overcoming the Challenges, *continued on p. 21*



The First Virtual MDS-Africa School for Young Neurologists: Overcoming the Challenges, *continued from p. 20*

recommendations were raised to MDS-Africa leaders to formulate additional educational activities. Interestingly, the virtual MDS-Africa School was an excellent opportunity to engage several African colleagues from various countries within the continent and overcome barriers associated with in-person courses such as travel restrictions and costs.

In 2021, the MDS-Africa Education Committee organized a total of five regional online courses, in addition to the MDS-Africa School and several outreach programs. The 2021 MDS-Africa online courses include a variety of important topics such as basic knowledge, advanced therapies, and pediatric movement disorders, targeting other non-English speaking countries, (a French course was held in March); and allied health

professionals. Also, MDS-Africa launched an innovative five-part virtual interactive course through The Society's newly enhanced learning management system, the MDS Education Roadmap. Additional MDS-Africa initiatives include promotion of the MDS UPDRS Training Program for African neurologists; and several outreach programs specially the African Movement Disorders Grand Round "Multicenter Webinar". All these activities have been developed with the intentions to expand knowledge and reinforce skills of African healthcare providers in the interest of enhancing care for African populations into the future and continuing the MDS vision in Africa despite the current challenges.

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