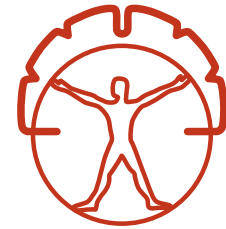


# MOVING ALONG

Editor, Antonio Strafella, MD, PhD, FRCPC



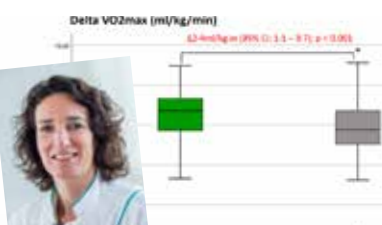
International Parkinson and  
Movement Disorder Society



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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.

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## Editorial

On behalf of the *Moving Along* Editorial Board, we sincerely hope you and your family are healthy and safe during this unprecedented time of the coronavirus (COVID-19) pandemic. It is indeed a very challenging time for everyone.

I would like to thank you all for the positive feedback we have received from several members of the MDS community regarding the latest issues and the new format of *Moving Along*. The publication of "Early View" articles on the MDS website and sharing through the MDS social media channels has been very well received. I encourage you to follow these articles at #MDSMovingAlong. The electronic-only version of the new *Moving Along* has proved to be a wise decision, as we now will have a faster, more efficient and environmentally-friendly distribution to MDS members. The new series of interviews with our members and leaders has provided an opportunity to hear directly from them about scientific progress and recent advances in basic and clinical research. We will continue to welcome all of your suggestions and feedback.

The Editorial Board has worked tirelessly and engaged the MDS community at large to collect exciting material for this new issue of *Moving Along*. The first issue of 2020 takes a look at the latest events and highlights from our Society, with several MDS activities happening worldwide. For the first time, we have highlighted activities occurring in the African region, as well as awards to Junior Members. We would like to take this opportunity to welcome Dr. Jon Stoessl, the new Editor-in-Chief of *Movement Disorders*, and for taking the time to share his insights about the future of our Journal. And lastly, the new "President's Corner", by Prof. Claudia Trenkwalder, will continue to introduce young members to our MDS community.

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, 2019-2021



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## President's Corner

What's new in our Society? We continue to grow—with new members—into different fields of movement disorders, as well as in our collaborations with other societies, and by reaching out into remote areas of the globe. In December, there were educational activities in the Middle East such as the MDS-AOS 2nd School for Young Neurologists and the 4th Middle East Camp for Parkinson's, Movement Disorders and Neuromodulation, a two-day curriculum of movement disorders for neurologists from the region with many interesting discussions and exchanges, wonderfully organized by Jawad Bajwa and the Middle East Working Group, who are part of the MDS-AOS. In January and February, for the first time, the Regional Sections gathered to discuss how to implement the Society's strategic plan—developed at our strategic meeting in 2018 in San Francisco—into regional activities and programs: The MDS-PAS met in Panama City, led by Cindy Comella; the MDS-ES in Padua, organized by Angelo Antonini; and due to the coronavirus outbreak the in-person meeting was canceled and the MDS-AOS successfully met online via WebEx.



It was obvious how many problems the Regions had in common despite different cultures and populations. One of the needs all Regions highlighted is the need for the adaptation of MDS education into local languages, where English is not the most natural language for scientific communications. This struggle may sound strange for the many English native speakers, but is a serious problem for many parts of the world. It sounds like a hopeless struggle—but situations improve and MDS will continue to adapt! Our Center-to-Center Program receives positive feedback, both from the hosts and the mentee centers, and continuation seems likely.

Finally, it will be the task of future movement disorders experts to explore ways to enhance both neurologists' education and patient care in the field, and therefore, I want to continue by introducing two more members of our Young Members Steering Committee (see p. 5).

Sincerely,

Claudia Trenkwalder, MD  
MDS President, 2019-2021

## A Note Regarding COVID-19

As the coronavirus disease 2019 (COVID-19) spreads across the globe, MDS recognizes the importance of your role as healthcare providers, particularly to elderly patients who are at a high risk of experiencing severe symptoms, with increased mortality, due to their age and likely comorbidities. In the same way that you are committed to your patients, clinics, and communities, MDS remains committed to providing you with resources that will help you navigate this difficult period. Please visit the [COVID-19 resources page](#) for a full statement from the Society and more information. This page will be updated constantly as more relevant information is available.

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**Bruno Bergmans, MD**  
**Bruges & Ghent, Belgium**

My movement disorders practice in the tertiary hospital AZ St-Jan Brugge spans the full spectrum of movement disorders. I treat many Parkinson's disease patients, but also rarer movement disorders. We offer specialized therapies like botulinum injections, deep brain stimulation and

intestinal levodopa continuous infusion. As a consultant in the Ghent University Hospital, I treat patients with dystonia with botulinum toxin injections.

I have retained a strong research interest in neurodegenerative diseases since my PhD, working with stem cells in Alzheimer's disease in the lab of Prof. Dr. Bart De Strooper, VIB-KU Leuven, Belgium.

We offer a variety of clinical and academic trials to our patients so they can participate in and contribute to increasing knowledge about these debilitating diseases. As I am first and foremost a clinician, I am very interested in the novel developments regarding the phenotyping of atypical parkinsonian syndromes, neurogenetics and imaging. I hope to contribute to bringing novel therapies to the clinic. I expect to see huge advances in targeted small molecular therapies, genetic therapies, antibody therapies and stem cells.

Right from my start as a movement disorders specialist, I have always found the MDS International Congresses and courses to be excellent opportunities to discuss challenging cases, exchange experiences and build an international network.

I feel honored that I was chosen to be part of the Steering Committee of the Young Members Group. It is great to sit together with likeminded people to help develop innovative educational formats that MDS excels at.

From my molecular biology background, I also hope to play a role in stimulating crosspollination between basic scientists and clinicians. I think the MDS International Congress is the perfect venue to stimulate more translational research speeding up much-needed therapies for our patients. I hope MDS can be an important catalyst for the major treatment advances I expect to see the next decades in movement disorders. I think it is a very exciting time to be a movement disorders specialist and to be part of MDS.

Being married to a cognitive neurologist, our two children, Elisabeth (4) and Frederik (1), will get their fair share of neuroscience as they grow up.

To balance the exposure to debilitating diseases, I find solace in the quietude and beauty of nature. As an avid birder I feel my birding skills (eye for detail, pattern recognition, and memory training) help me to be a more proficient clinician.



**Shaimaa Ibrahim El-Jaafary, MD**  
**Cairo, Egypt**

I'm Shaimaa El-Jaafary, associate professor of neurology and movement disorders specialist at Cairo University, Egypt. As an active MDS member, I joined the steering committee for the MDS Young Members Group in 2019. I joined MDS in 2015, through an online search for educational resources

in movement disorders. I came upon the website and applied for Waived Dues membership, since at that time I enjoyed the educational resources and reduced registration fees to various educational courses. The first time I attended the MDS International Congress was in Berlin, Germany in 2016, where I met Prof. Oscar Gershanik, who spoke about the opportunities for neurologists from Egypt. I then attended the MDS-ES Summer School in Lisbon 2016. After I joined the MDS-Middle East Task Force in 2017, I participated in many activities and became involved in the Arabic validation of MDS-UPDRS. Finally, I co-authored an accepted article discussing the needs of patients with Parkinson's disease in the greater Middle East. I also was a social media ambassador at MDS International Congress in 2017 and 2018.

I completed my fellowship (EHDN-MDS) with Prof. G. Bernhard Landwehrmeyer and his team at the Huntington's Disease Center in Ulm, Germany, in 2019. My main interest is to raise awareness about Parkinson's disease, Huntington's disease and dementia, to erase their stigma, and to help patients and their families to live better by finding the support they need. I am also interested neurosonology with its different applications in movement disorders. I am very interested in medical education and keen on engaging medical students in various activities related to movement disorders, with whom we were successful in raising awareness about Parkinson's disease among other students and the medical community. I have been accepted for the 2020 MDS LEAP Program, and I am very happy about this opportunity. I am working hard to be a future distinguished movement disorders specialist and to be able to educate others.

I see the future of MDS as a great society, capable of supporting all young members in Africa and the Middle East, so they may be actively involved in the various activities in order to become good movement disorders specialists in these underserved regions. I like pets and my hobbies are reading, listening to classic music, and I recently started playing the violin.

## 2019 International Congress: Junior Award Lectures

Eleonora Fiorenzato, PhD and Juan Li, PhD were selected for the 2019 Junior Awards at the International Congress of Parkinson's Disease and Movement Disorders in Nice, France. Their award-winning abstracts and research were presented during the Presidential Lectures Plenary Session on Monday, September 23, 2019.



Eleonora Fiorenzato (left) and Juan Li (right) with Claudia Trenkwaller and Christopher Goetz at the Presidential Lectures in Nice, France.

## Dynamic Functional Connectivity Signature of Cognitive Decline in Parkinson's Disease

— Elenora Fiorenzato, PhD, Postdoctoral Fellow, IRCCS San Camillo Hospital, Venice, Italy



Eleonora Fiorenzato, PhD, completed her MA and PhD in Neuroscience and Neuropsychology at the University of Padua, Italy. She published her PhD thesis 'Cognitive and brain imaging changes in parkinsonisms', in 2018, supervised by Prof. Angelo Antonini. During her PhD research, Eleonora spent six months in Prof. Antonio Strafella's neuroimaging lab at the University of Toronto, where

she learned innovative methods of MRI imaging analysis and investigated pathophysiology of cognitive impairment in Parkinson's disease. Currently she has a position as postdoctoral fellow at the Parkinson's disease and Movement Disorders unit coordinated by Dr. Roberta Biundo at the IRCCS San Camillo Hospital in Venice.

Among Parkinson's disease (PD) non-motor symptoms, cognitive deficits are highly relevant as they negatively affect quality of life, increase caregiver burden and often progress to dementia. However, the mechanisms underlying cognitive dysfunctions in PD are still unclear<sup>1,2</sup>.

Resting-state fMRI studies demonstrated presence of an altered functional substrate in PD with cognitive deficits, involving brain connectivity at rest and during the execution of specific tasks<sup>3-5</sup>. However, these findings are based on a static functional connectivity approach, which enables to study brain activations with high spatial accuracy, despite poor temporal resolution. In this context, dynamic functional connectivity (DFC) has been identified as a novel fMRI analysis method,

allowing to capture temporal variations of functional connectivity and making this approach more suitable to understand cognitive processes<sup>6,7</sup>.

In our study<sup>8</sup>, using resting-state DFC, we investigated differences in dynamic connectivity between healthy controls (HC) and PD patients at various cognitive stages, ranging from normal cognition to dementia.

We included 118 PD patients and 35 HC. Based on an extensive neuropsychological battery, 52 PD were classified as having normal cognition (PD-NC), 46 with mild cognitive impairment (PD-MCI) and 20 with dementia (PDD). A sliding window approach was used to study the DFC. Our results demonstrated presence of two distinct connectivity 'States' across the entire group: a more frequent, segregated brain state characterized by the predominance of sparsely within-network connections, State I, and a less frequent, integrated state with strongly connected functional internetwork components, State II. In PD, the segregated state occurred 13.89% more often than in HC, paralleled by a proportional reduction of the integrated state. PD subgroups analyses revealed that the segregated state occurred more frequently in PDD than in PD-MCI and PD-NC groups. Further, PDD patients dwelled significantly longer in the segregated State I, showing a statistically significant lower number of transitions to the strongly interconnected State II compared to the other PD-subgroups.

Our study suggests that dementia in PD is characterized by altered temporal properties in dynamic connectivity — with reduced 'crosstalk'

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and increased segregation between brain networks.

These findings converged with a recent study<sup>9</sup> in showing that slowing of brain dynamics was a distinctive pattern of PDD patients as well as dementia with Lewy bodies, but not observed in Alzheimer's disease patients of comparable cognitive severity. In this context, we speculate diffuse synuclein rather than amyloid pathology perhaps contributes to DFC changes<sup>10</sup>. However, future resting-state DFC studies, possibly combined with pathophysiological confirmation, could help to better understand the progressive dysfunction of networks between PD cognitive states. We believe investigating the temporal dynamics of functional connectivity, could be a useful imaging biomarker to monitor cognitive changes in PD.

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## Validation of the PREDIGT Score for the Incidence Rate of Parkinson's Disease

— Juan Li, PhD, Postdoctoral Research Fellow and Methodologist, Ottawa Hospital Research Institute, Ottawa, ON, Canada



*Juan Li, PhD, is a postdoctoral fellow and methodologist at Ottawa Hospital Research Institute in Canada's capital. She is currently a member of the Schlossmacher lab focusing on Parkinson's disease (PD). Dr. Li has a diverse background including formal training in statistics and mathematics that she previously applied to engineering (during her PhD) and algorithm development for governmental*

*educational authorities (during her first fellowship). In her current role, she works closely with neurologists Drs. Michael Schlossmacher and Tiago Mestre, with a general practitioner and AI expert, Dr. Doug Manuel, and with a leading biostatistician, Dr. Tim Ramsay.*

The PREDIGT model is a simple, mathematical model to predict the incidence rate of Parkinson's disease (PD); it had been previously developed by Dr. Schlossmacher and colleagues (and published in *Eur J Neurosci* 2017). In her lecture, Dr. Li presented results for the initial validation efforts of the PREDIGT model in which she assessed the model's discriminative performance in differentiating PD patients from healthy subjects.

PREDIGT is a hypothesis driven model founded on the concept that PD pathogenesis is multifactorial. Five factors are postulated to determine cumulative incidence rates: Exposure to environmental factors (E); DNA variants (D); Gene–environment interactions that initiate pathological responses (I); Gender (G); and Time (T), which encompasses effects of ageing, latency of illness, and passage of time. Known, risk-elevating as well as protective factors were selected based on published meta-analyses and assigned positive and negative values, respectively. Values for variables within the five factors generate a cumulative risk score. In the proposed model, no motoric performance-related data are included.

The initial validation effort of the PREDIGT model used cross-sectional data from two case-control cohorts: the single center De Novo Parkinson's Study (DeNoPa) from Kassel, Germany (Mollenhauer et al., *Neurology* 2013) and the multi-centric Parkinson's Progression Marker Initiative (PPMI) of North America and Europe (Marek et al, *Progress in Neurobiology*, 2011). In total, enrolment data from 1006 study participants (PD patients, n=651; age- and sex-matched controls, n=355) were analyzed.

In her lecture, Dr. Li first summarized the impact that select variables have on the risk of developing PD using odds ratios with related confidence intervals. Constipation, hyposmia (grouped under factor 'E'), a family history of PD (factor 'D'), and the presence of either depression, anxiety and/or REM sleep-behavior disorder (factor 'I') were confirmed to be associated with significantly elevated risk for PD. In contrast, a smoking history and consumption of caffeinated beverages (factor 'E') showed the previously identified, mildly protective effect.

The discriminative power of the PREDIGT model was assessed by using receiver operating characteristic (ROC) curves and area under the ROC curve (AUC) analyses. Score distribution in both groups (PD vs. HC) were plotted graphically to display group differences. The AUC, as an integrated measure of the sensitivity and specificity of discrimination between PD and controls in the PPMI, DeNoPa, and in both cohorts combined, generated values of 0.86, 0.85, and 0.85, respectively.

Dr. Li concluded her presentation by suggesting that these initial results showed promising, early validation of the original PREDIGT model. Work is currently ongoing to interrogate additional cohorts and new epidemiological data to expand and calibrate variables within each risk category and to test PREDIGT's predictive power for incident PD.

## An Interview with Jon Stoessl: The New Editor-In-Chief of *Movement Disorders*

Anhar Hassan, a member of the *Moving Along* Editorial Board, recently spoke with Jon Stoessl, the new Editor-in-Chief of *Movement Disorders*. In this interview, Dr. Stoessl discusses his career path, advice, and vision for the Journal.

**Anhar:** Firstly, congratulations on your new role as the Editor-in-Chief for *Movement Disorders*. By way of introduction to our readers, could you please share a brief summary of your career biography?

**Jon:** Sure. I'm not sure how far back you want me to go. I actually started in university with a combined program in physiology and psychology, so I got interested in the brain at an early stage. I ended up going to medical school at Western, followed by internship at McGill, and then returned to London, Ontario for one year of internal medicine and neurology residency. After that I came to Vancouver for the first time where I did a fellowship with Donald Calne. I was working in movement disorders and Alzheimer's disease. I actually saw neurology consults in the Alzheimer's clinic at its inception, and positron emission tomography which at the time was a fairly new emerging technology. PET really got me interested in molecular imaging and neuropharmacology, which was what had appealed to me about movement disorders in the first place.

After doing a two-year fellowship in Vancouver, I went to the UK for another two years of fellowship at the Merck Sharp & Dohme Neuroscience Research Center that had just opened. I was under the supervision of Sue and Les Iversen, who had recently moved there from Cambridge. I was not a Merck employee. I was funded by the Canadian MRC. I did that because I wanted more basic training in neuropharmacology, and it was a great time. People working there were really interested in the science and extremely generous in terms of trying to teach me the stuff they knew.

Then I returned to London, Ontario for my first faculty position at Western and remained there for about eight years. In London, on faculty, I was really the only person doing movement disorders. I was trying to set up a lab at the same time. At that point, there was no molecular imaging, so I was trying to set up an animal lab. I was basically on my own, which was a challenge doing a busy area of subspecialty and also run an animal lab. Then the opportunity came up to move back to Vancouver in 1996. That turned out to be a great opportunity for me.



**Anhar:** Great, and that's where you are still?

**Jon:** Yes. So, I've held a number of roles over that time. I initially came out here as a professor in neurology. Then Donald Calne retired, so I became the director of the Pacific Parkinson's Research Center at UBC. That was really an exciting time. We had a very strong and active research program that integrated clinical care and clinically oriented research. A lot of collaborations including with people at Mayo. Then a little over 10 years ago, I became head of neurology at UBC. For a while, I combined that with being the hospital head. I've since dropped that. Then a while later, I also became the co-director then the director of the Center for Brain Health at UBC. As I took on those roles, I dropped the role of directing the Parkinson's Center. Although, it's still obviously my first love and the focus of my work.

**Anhar:** To help counterbalance your academic activity, do you mind sharing some personal biographic details?

**Jon:** Life outside work? Does that exist? Well again, I'm not sure how far back you want to go. I was actually born in England. We moved to Canada when I was very young. That's actually pretty important for me because I'm very grateful for the opportunities that Canada offered. My father was a refugee from the Holocaust. I think you wouldn't get the opportunities everywhere that I've had, so I am extremely grateful for that. Beyond work, I do have some other interests. Music is one. Both listening to music, and I play piano. Otherwise, being outside, going for walks, hikes, and in the summer time, kayaking, but I'm a fair-weather kayaker. Ocean kayaking since we go to the Golf islands, and I really love being out there.

An Interview with Jon Stoessl: The New Editor-In-Chief of *Movement Disorders*, continued on p. 9



An Interview with Jon Stoessl: The New Editor-In-Chief of *Movement Disorders*, continued from p. 8

**Anhar:** I just wanted to shift gears regarding your role as the new editor.

**Jon:** In 2014, Jose Obeso approached me about becoming the deputy editor of *Movement Disorders* under his leadership. That role started in the beginning of 2015. While it was busy, and now has become a lot busier, it was also very rewarding, partly because we all think of the journal as an important aspect of the society's activities. It's a great way to learn about what's happening out there. Additionally, because of the great leadership and friendship from Jose and Maria Stamelou who was the assistant editor. The three of us would meet once or twice a week. That was obviously not always possible to schedule by Skype. That was really fun and increased my commitment to the Journal. I was already fairly committed to that type of work, and so here I am.

**Anhar:** So to summarize, that was a six year lead-in time to getting familiar with the workings of the journal? In the January 2020 issue of *Movement Disorders*, there was an editorial introducing yourself and your plan to retain the current editorial board with some change in the higher leadership structure. Could you explain to our readers what your rationale was behind that? Down the line do you foresee a change in the editorial board?

**Jon:** Let me do that in reverse order. Yes, for sure, there will be changes in the makeup of the editorial board, and probably in the associate editors as well. I know that a changeover is an ideal time to clean house. Many people may have wondered why I wouldn't have made a bigger change, but the fact is when you look at our associate editors, they're all excellent. Really, it would be hard to improve. I think the same is true for the editorial board actually. However, one does need turnover in any organization. I think we will eventually have to make some changes to bring in younger blood. We also have to make changes out of respect to people who feel they have done their bit and it's time to move on. The other thing would be to ensure that we have adequate coverage for the various disciplines.

The problem is that this tends to ebb and flow. In some weeks, we just get completely overwhelmed with papers in one particular discipline. Neuroimaging happens to be one of them. Then it may go quiet for a few days, then we get another onslaught. I do have to keep an eye on that, and ensure that no associate editor is consistently getting so overburdened that they're starting to hate it. If that happens, then we would need to expand the number of associate editors. By the same token, I suppose it's possible that there are some areas that will

become less represented in terms of the submissions, although I doubt that that's going to happen to a dramatic degree, but it's possible that there are some areas that will fall off.

The editorial board is much the same thing. The demands on the editorial board members are lower than they are on the associate editors who may need to have a significant volume of papers. The other thing is keeping in mind is some kind of succession planning. We want to ensure that there are people who are lined up to be future editors and future associate editors. I think being on an editorial board, for somebody less senior in the field is not a bad thing. Then ultimately, some of those people will become associate editors and some of those people may ultimately become the editor-in-chief.

The other consideration I had is that we are going to talk about the philosophy of the Journal, but it has really not changed. We see ourselves as being in a translational space. That means we need to have people who are good at science, but we also want them to not lose sight of the importance of the clinic. While we have some people, who are purely scientists and some people who are purely clinicians, many people do both. Even if some would describe themselves as one rather than the other, they're all people who are really driven by a commitment to both. That was a really important consideration in selecting the team of the new deputy editors both of whom are superb scientists and also clinicians. They never lose sight of either of those disciplines.

**Anhar:** As a follow-on to that question, is there a way that motivated readers would be able to express interest in being considered for the editorial board? What things would you be looking for be?

**Jon:** Sure, if there are people out there who are keen. Basically, the editorial board members are mainly there as reviewers that you should be able to call on more often than you would pick somebody who's got no particular link. Sometimes we know about people and sometimes we don't. Of course, the people you're more likely to know are those who are more senior because everybody knows them. It's often actually the younger people who we don't know as well. Sometimes, there's a lot of stuff we do to find appropriate people. Self-declared interest is not a bad thing. There's no guarantee. I actually keep a list of people who I have in mind or people who have expressed interest. And really, to fit in this role, the thing is to do reviews when you're asked if you feel comfortable with the material. If you don't, then of course it's better not to do it and to say why. There's nothing wrong with saying I don't feel that I have the expertise to comment on this particular topic. If you do the review, to do it in a timely fashion and in a constructive

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fashion. It's actually very helpful to get a critical review that really goes into what the pros and cons are, but nobody wants a destructive review. The authors obviously don't want that kind of thing, but nor do we. That's probably the best preparation. We are thinking about trying to educate or groom a new generation of people, so the Society itself is looking at this. It was an interest that I had expressed when I submitted my name for consideration to be the next editor. We're going to be trying to work together on that. To do some activities that would actually help people learn how to become better reviewers and ultimately editors. I actually think that's a really important part of one's education because it helps one write better papers and better grant applications. I always encourage faculty here to get themselves engaged in review activities.

**Anhar:** I think that's an excellent sentiment and very appropriate because I can attest to that, the education I've had from reviewing papers.

**What do you perceive to be the strengths that already exist in the Journal?**

**Jon:** I think the strengths are largely thanks to my predecessors. Of course, it started as a predominantly clinical journal, and it filled a huge unmet gap at that time. As time has moved on, our knowledge about the basic science related to basal ganglia function in health and dysfunction in disease has expanded. Jose Obeso and Warren Olanow put a lot of effort into changing the face of the Journal, and the type of material. I know that that was not initially popular. Readers felt they'd lost a familiar product, but I think the commitment to that concept has paid off huge dividends because the quality of the journal is high and we are getting people who are submitting really good work. I would see our strength as being in that translational domain.

The other strengths we have is that the people who are involved are really committed to it. Many members of the society really care about what appears in the Journal, the success of the Journal. I don't measure the success only by the impact factor, which is of course one of the typical metrics. I think success is looked at in terms of "do people look forward to the new journal coming in?" Are they excited to see what's going to be in the next issue? Will they learn something that changes the way they think about a particular problem? I think we are doing that. Of course, we could always do better, but I think we are moving in that direction. There are a lot of people in the society who understand the importance of that, and are therefore prepared to contribute very generously to the Journal.

Something that surprises me is that, although you don't normally go asking a senior person for reviews every week, there are some very senior people in our field who do review when they're asked to, and they give thoughtful and timely reviews. I think it really speaks to their commitment.

**Anhar:** You had mentioned that there were some aspects you think could be improved upon, when you were discussing the strengths of the journal. What opportunities do you see for improvement of the Journal?

**Jon:** It's not so much that I would say improved upon, but I think we can always do better. We try to get strong papers that are in that translational domain. I think we're still a little behind where I would like to see us in terms of clinical trials. We would like to see clinical trials that are well done. We are still very much clinical in our focus. If it's a purely clinical type observation, that typically is more appropriately housed with our sister journal *Movement Disorders Clinical Practice*.

We never lose sight of the clinical relevance of the material. Of course, we'd always like every paper to be a citation classic. We're not quite there, and I think we try very hard amongst our strengths. We try hard to have an efficient service as well. We give quick responses. Sometimes those are not the responses people want. We will actually reject papers quite quickly without review if we think they are either unlikely to survive the review process, or that we don't think they're a good fit for the Journal. Those papers may get rejected within hours, and I understand for authors that's obviously not the response they want.

In the big picture, we feel we're actually doing them a favor because otherwise their time is wasted if they're going to come back with a negative outcome anyhow. I think we try very hard to be respectful of authors. Our turnaround times are pretty good whether or not the paper goes out for review and we work hard at maintaining that. We'll give reminders to people if stuff is not happening in a timely fashion and so on. There's always room for improvement, and I would say that the peer review process is by its very nature somewhat arbitrary. We can make mistakes as can everybody else. We do recognize that.

**Anhar:** Do you have a five-year vision for the Journal? Any changes you envisage to the format, content or the online version of the Journal?

**Jon:** I guess I would like to see the content further strengthened in terms of the translational domain. The stuff is really novel, changing the way we think about things. I think that can also apply to basal ganglia function in health. There's a lot

An Interview with Jon Stoessl: The New Editor-In-Chief of *Movement Disorders*, continued from p. 10

of interesting aspects of basal ganglia of neurotransmitters that may have implications for disease. I think there is a lot of important physiology to understand and as long as it's relevant to basal ganglia, we're interested. I think I would like to see growth of gaps and controversies, and we have three editors handling the gaps and controversies sections and they are engaged. They stay in touch and they have a lineup of papers. I would like this to be something that's spicy enough that people want to pick up the Journal, but obviously respectful in the nature of the discussions. As you know from the meetings, these debates are always popular, because it's valuable to hear people with expertise on both sides of a question.

We are running a relatively new thing which is the history section. I think that may become an increasingly valuable aspect because movement disorders is a relatively young field. I think it's really important for people coming into the field to have an appreciation for the history that preceded them. We're looking at a time of generational shift right now, so hopefully that will be taken up well. And yes, we have paid fair amount of attention to formatting and appearance things. We're working closely with our partners at MDCP on that. I think we're moving towards some common appearances to improve presentation of tables and figures, and maybe abstracts that have graphical information in them and so on. That's all in process right now, but it's in an area of active development.

**Anhar:** These sound like potentially exciting changes coming, and to monitor how that will translate to readers.

**Jon:** I guess the other things is to make it easier for people so you're aware of the podcasts. Those have been phenomenally successful. I think we all feel that there's a growing role for this and how those integrate with other activities such as CME activities. Wouldn't it be great if you could have a podcast that you could listen to while you're driving into work in the morning, get CME points, and bring you up to date, not only on a clinical problem but the integration of the clinical problem with the underlying basic science? We're very lucky. We've got some people who are heavily engaged in that. Vikas Kotagal edits the hot topics for us and also the CME section of the journal. The podcasts are being run by Michele Matarazzo and Sarah Schaeffer. They've been really energetic and actively engaged in them.

**Anhar:** My next question relates to the difficulties and challenges you faced early on as a researcher, and how you dealt with those? You alluded to one earlier as early faculty. Do you think early career researchers face similar issues today?

**Jon:** I think the specific issues probably differ from one person to another. When I started my career as a new faculty member, I was working in a very well-established department, although I was pretty close to being on my own. On the one hand, you have the pleasure of independence, but that has to be balanced against all the benefits that accrue to being part of a larger machine. The larger machine means you're more readily integrated into activities in a successful unit, and that you hopefully have mentors who will try to promote your career and look for opportunities for you. Those are good things. Then of course when you're in that situation, you probably have a little bit less independence than you might want. I think most people by the time that they've finished all their training are ready for little independence. There's no right answer to that. I guess you go and find a spot where you're comfortable.

The other thing I always tell trainees, who are not necessarily people in movement disorders, is that you should really do what you enjoy. I think there's always a tendency for people to think about where the opportunities are and what they think somebody else wants them to do. Yes, one has to be realistic, but at the same time if you commit yourself to doing something because you think somebody else wants you to do it, you may not be really happy doing it. You're committing your whole life to it. So I think you want to find an area that you really find enjoyable and exciting. Then look for ways to make it happen and to be realistic about one's strengths and one's weaknesses.

I think there are many models for a successful academic career. To many of us, the ultimate successful model would be a clinician who's able to hold his or her own in a basic lab where fundamental research is being done. I can assure you I have nothing but admiration for the people who manage to juggle and succeed in both those worlds. But it's not for everybody. I think one has to be realistic about that. There are a lot of fascinating research questions that arise out of our daily clinical encounters. It's always good to keep those in mind.

Then I guess from my perspective, we want to look at problems that are important. That sounds ridiculous; that sounds trivially obvious, but I'm not sure that it always is. People will sometimes find a little niche and become an expert at it. That's great, but if it's a niche that nobody else cares about, then it may not do you that much good in the long run. That's actually I think where our clinical grounding can be very helpful because we do have an idea of the things that actually count.

An Interview with Jon Stoessl: The New Editor-In-Chief of *Movement Disorders*, continued on p. 12

An Interview with Jon Stoessl: The New Editor-In-Chief of *Movement Disorders*, continued from p. 11

**Anhar:** I think those are very helpful words of advice. This leads to my next question. Many of our readers, particularly our younger members, are researchers trying to publish manuscripts and build a career in academia. What words of advice would you have for them?

**Jon:** Be patient. I would say we're living in an era where I think sometimes people publish too much, and people pay too much attention to the number of publications. Personally, I prefer the idea of having fewer publications that really matter. One has to be prepared to put up with disappointment. I still have papers rejected. It happens to all of us, and you just have to take the feedback, use it in a positive way, and also sometimes knowing when it's time to move on.

I do think that doing peer review is a great education for learning how to write better papers. Sometimes you just have to sit down and write. I think people get too hung up on the idea of having this big massive obstruction in front of them. When you think about it, for a paper you've hopefully got the methods and results. So, you can write that out and then the rest of the paper should be about crafting a story about why you thought it was important to do the study in the first place. Then telling people what your interpretation is and what your future directions might be.

If you can break it down into more digestible components, I think that can be helpful. Again, you want to be realistic about it. If you have an observation that is kind of cute, but it's not addressing a fundamental issue, you're not going to send a paper like that to *Nature*. Maybe it's not appropriate to send it to *Movement Disorders* either. You really want to think about who your target audience is, who will be reading it and reviewing it. Just think about whether it's the right fit.

**Anhar:** I think those are very sage words of advice. It seems refreshing or novel to propose writing fewer papers, as academic promotion seems to be tied to number of publications. Maybe that pressure drives down the quality of papers potentially. I wonder what your thoughts are on that.

**Jon:** I think it's not only junior people. Hubel and Wiesel who won the Nobel Prize for the visual physiology pathways, I think their Nobel Prize was based on 17 papers. We live in an age where people have hundreds of papers and there's a limit to how many good papers you can write in a certain amount of time. I don't want to do anybody a dis-service by telling them to not publish, and then they lose their promotion. I do think the quality counts for something. Really at the end of the day, the whole purpose of this is to tell people about something that will make them see a particular problem through a different lens.

**Anhar:** At the end of your tenure as Journal Editor, what do you hope to leave as your legacy to the Journal and to the International Parkinson and Movement Disorder Society?

**Jon:** Just more of what we talked about, I think. I would like it to be a journal that people look forward to receiving and opening whether it's in print or online. Where they really feel that when they look through the table of contents obviously not everything is going to catch everybody's eye, but there are going to be at least two or three things that they really want to read, and that they know they can look to us for high quality paper that if not definitive, at least something that one can rely upon.

**Anhar:** Is there anything else you would like to say to the MDS members and journal readers?

**Jon:** It's the Society's journal. While I was obviously thrilled and very honored to be selected as the editor, it's also an enormous responsibility. I think there is a responsibility to our authors to ensure that they are treated fairly and with respect, that they can look to have decision in a timely fashion. I strongly believe in diversity represented within the Journal. I think there's a big responsibility to the society because in many ways the Journal is one of the flagship activities of the society. It's especially a responsibility to the readers because we in many ways control the material that our readers see. We need to be sure that they're getting high quality information. But there's more to it than that. You're also kind of selecting the nature of the material that they see. That means you're trying to have a balance between established knowledge and emerging knowledge. I certainly hope that those are things that our readership can look forward to. Then finally as we've already discussed, I think making sure that there's a new generation of people in place is always an important aspect of what one does.

**Anhar:** Thank you again for taking the time for this interview.

## Functional Movement Disorders – Renewed Interest in Our Field’s Last Frontier

— Kathrin LaFaver, MD, and Alberto Espay, MD, Co-Chairs of the MDS Functional Movement Disorders Study Group

Functional Movement Disorders (FMD) are among the most common disorders in a movement disorders clinic, for too long considered the domain of psychology. Over the past decade, there has been renewed interest in the neurobiological underpinnings as well as in improving practices in diagnosis and treatment. The MDS FMD Study Group, established in 2018, has attracted members from 15 countries around the world, and is building a network of researchers motivated to advance the care of these patients. As an effort to plan ahead, we conducted a survey of MDS members to compare perceptions and clinical practices as compared to a similar survey published in 2009<sup>1</sup>. The results, presented at the International Congress of Parkinson and Movement Disorders in Nice last fall, showed that while there has been an increase in the practitioners’ willingness to manage patients with FMD, there remain critical gaps in knowledge and poor access to care. Complementary to this effort, FMD Study Group member Dr. Carine Maurer, from Stony Brook, NY, USA, has been gathering data to determine the effect of transcultural differences in the care of FMD patients around the world.

Important changes in DSM-5 diagnostic criteria, which no longer require the presence of psychological stressors for the diagnosis of FMD, and increasing evidence for the benefits of multidisciplinary rehabilitation and psychotherapy approaches stimulated the publication of a collaborative review on current concepts in the diagnosis and treatment of FMD<sup>2</sup>. This piece has stimulated a vibrant conversation on where we are and where we should be.

Our long-term goal is the creation of a biorepository for FMD to study genetic, environmental, psychosocial and neuroimaging markers, categorizing patients into subtypes better suited for a range of therapeutic approaches, and identifying subtype-specific predictors for treatment outcomes. Many of our members are involved in efforts to define optimal outcome measures in FMD research, an important step towards the design and execution of future multicenter treatment trials<sup>3</sup>.

To justify the investments needed to support these goals, Dr. Chris Stephen, from Harvard Medical School, has been combing data from several healthcare databases showing the steep financial impact of FMD, including the heavy and preventable costs of unnecessary investigations and hospitalizations. The documentation of high medical costs and lost economic opportunities will serve to advocate for improved education and greater research funding.



*Some of the members of the MDS Functional Movement Disorders Study Group at the 2019 American Academy of Neurology Meeting in Philadelphia, PA, USA. Left to right: Anthony Lang, Stephen Reich, Carine Maurer, Alberto Espay, Selma, Aybek, Mark Hallett, Allen Wu, Sarah Lidstone, David Perez, Codrin Lungu, Kathrin LaFaver, and Jung Park.*

While lots of work remains to be done, there is exceptional enthusiasm among our members in working towards better understanding and improving the lives of patients with FMD around the world.

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## Towards a Prescription for Exercise for Persons Living with Parkinson's Disease

— Nicolien van der Kolk, MD, Department of Neurology, Radboud University Medical Center, Nijmegen, Netherlands



Nicolien van der Kolk, MD

Exercise is increasingly recognized as an effective treatment for persons with Parkinson's disease (PD) that can complement conventional medical management. It has the potential to improve general health (e.g. cardiovascular fitness) and thereby lower comorbidities and disability. Exercise may also have symptomatic effects on the manifestations of PD itself. The number of publications supporting a symptomatic effect on functional outcomes such as gait or global motor scores are increasing fast. There is even some experimental evidence, mainly from animal work, that exercise might have a disease-modifying potential. Also, large epidemiological studies in healthy people indicate that those who exercise have a lower risk of developing PD. However, only few studies have convincingly shown a clinically significant and long lasting impact of exercise on PD symptoms, while evidence on disease-modification in persons with PD is still lacking. Although many clinicians are convinced of the positive effects of exercise and frequently recommend persons with PD to incorporate exercise routines in their daily life, the absence of convincing evidence on the clinical benefits often keeps affected individuals from following this advice.<sup>1</sup> Clinical trial data demonstrating the benefit(s) of exercise are therefore urgently needed. One major challenge in providing high-quality evidence on the effects of exercise, however, lies in the nature of the intervention. Not only does it require a behavioral change (and therefore consistent motivation), exercise as an intervention is also extremely difficult to blind and to dose. That is, in contrast to a readily administered drug, for which an identically appearing placebo pill can be provided, exercise is hard to compare to a control group without the psychological confound of the control participants clearly being aware they are not receiving the actual intervention that is potentially beneficial to them. In a recently published aerobic exercise study (the Park-in-Shape study) a unique design was used that resembles a double-blind approach.<sup>2</sup> Participants were unaware of the content of the two study arms beforehand and were only informed about the content of their own assigned group. Participants were only informed on the general goal of the study (evaluating the effect of physical activity on PD symptoms), but were unaware of the main objective (evaluating the effect of aerobic exercise on PD symptoms). Together with another recent high-quality aerobic exercise trial (the SPARX study) that was performed in persons with de novo PD who were unmedicated,<sup>3</sup> these two studies jointly provide high-quality evidence of an attenuating effect of aerobic exercise on PD motor symptoms when assessed without medication. Although the minimal effective exercise dose is still unclear, these studies show that a moderate to vigorous intensity is required to reach the observed effect, whereas a lower intensity was unable to show an

Exercise is increasingly recognized as an effective treatment for persons with Parkinson's disease (PD) that can complement conventional medical management. It has the potential to improve general health (e.g. cardiovascular fitness) and thereby lower comorbidities and disability. Exercise may also have symptomatic effects on the manifestations of PD itself. The number of publications supporting a symptomatic effect on

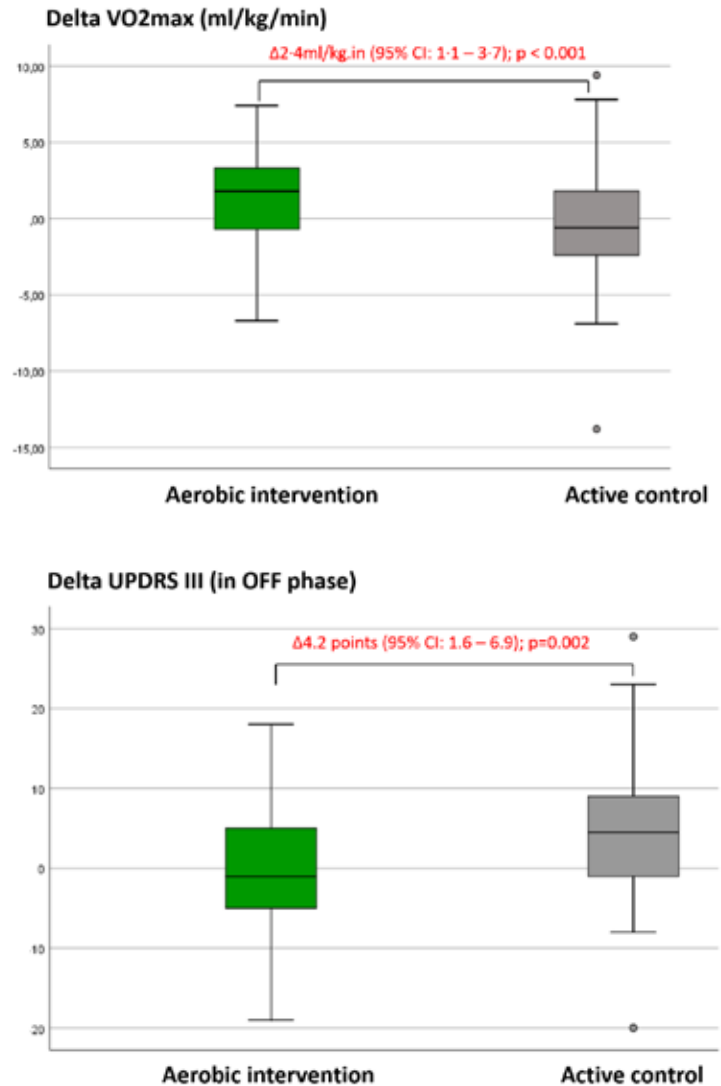


Figure 1. Difference scores between baseline and follow-up after 6 months of either aerobic intervention or active control (stretching, relaxation exercises) in the Park-in-Shape study.

## Towards a Prescription for Exercise for Persons Living with Parkinson's Disease, *continued from p. 14*

effect after 6 months of exercise. This further underlines the dose-effect relationship that is also observed for other interventions.<sup>4</sup>

Several challenges still remain to be solved in future studies. First, whether aerobic exercise can induce a clinically relevant effect on motor symptoms while participants are tested on medication, on non-motor symptoms and ultimately on quality of life should be examined in future large trials with longer follow-up. Second, the sustainability of the observed effects needs to be addressed. Third, adherence and safety of aerobic exercise in persons with PD should be explored further in implementation studies. The Park-in-Shape study showed that home-based aerobic exercise is feasible for persons with PD, however, some form of sustained supervision is probably necessary for motivation and safety. Versatile gaming techniques and innovative technology to provide both remote supervision and remote assessment can be instrumental in this matter. Finally, the pressing question whether diseases-modification can be achieved by high-intensity aerobic exercise still needs further research. It is encouraging to see that the aerobic exercise group in these two recent trials stabilized their motor symptoms, whereas the control group progressed. These effects are by themselves not incompatible with a possible disease modification, but certainly also do not prove disease modification, as symptomatic effects could well have contributed to the group differences immediately after the intervention. Other trial designs are needed to examine this further, including e.g. wash-out periods (to see if group differences persist after cessation of exercise) or a delayed start design, which has been advocated as one possible way to test the disease-modifying potential of drugs like rasagiline or levodopa.<sup>5-8</sup>

Until these questions are answered and a personalized prescription for exercise can be provided, the current evidence should be used to increase the intrinsic motivation among persons with PD to perform regular exercise.

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## MDS-Africa Education Committee: Challenges, Activities and Ambitions

— Ali Shalash, MD, PhD, Ain Shams University, Cairo, Egypt; Chair, MDS-Africa Education Committee

In the past few years, remarkable strides have been taken by the International Parkinson and Movement Disorder Society (MDS) to promote education and training in Africa in the field of Movement Disorders. In 2017, The African Steering Committee, chaired by Njideka Okubadejo, was created with aim of bringing a unified focus to the great variation of needs of African countries. More recently, the MDS-Africa Education Committee, chaired by professors Ali Shalash (Chair) and Jonathan Carr (Co-Chair), was established in January 2019, of which the mission is to develop and deliver innovative education specifically tailored to the needs of the African region. In addition to individual accomplishments, representation from all five regions of Africa was considered in choosing committee members.

Education and training in Africa face many challenges including small numbers of neurologists, poor resources for education and health surfaces, travel restrictions and high cost of programs and travelling (2017 MDS Education Needs Assessment Survey). Once launched, the African Education Committee established a strategic plan for educational activities in Africa for the next two years that is consistent with MDS international education plans and considers specific needs of Africa. The Plan includes organizing live courses and MDS school annually that cover different regions of the continent; targeting different specialties in this field such as practitioners, basic scientists, neurologists, and allied health professionals; promoting online education programs through MDS Virtual Professor Programs (VPP); considering other non-English speaking countries especially the French speaking ones; and collaboration with other organizations (e.g., AFAN, IBRO).

Since December 2018, MDS-Africa has offered three Live Education Programs, including the first MDS School, within the continent (Lagos, Nigeria; Cairo, Egypt; Moshi, Tanzania), providing education for 96 participants from a total of 20 countries. As the first offerings aimed to address the needs within Africa as a whole, their content was general, targeting young neurologists, nurses and allied health professionals, as well as educators and those in a position to pass on their training to others. Additionally, Developing World Education Programs (DWEP) and three Virtual Professor Programs were held in the final months of 2019.

Three live Regional Education Courses are anticipated for the future, including the 2nd School for Young Neurologists. Included in the mix with the Outreach Programs for the coming year is a novel educational format: African Movement Disorders Grand Round “Multicenter Webinar”. In addition, French speaking VPP and DWEP programs have been determined. Furthermore, future innovative programs for Africa are expected, including an online interactive movement disorders course and the MDS-UPDRS Training Program for African Neurologists. All of these activities aim to acquire African health providers the knowledge and skills which enables them to provide proper care to the African populations in the future.



Members of the MDS-Africa Leadership at the International Congress in Nice, France, 2019.



1st MDS African School for Young Neurologists: Fundamentals of Movement Disorders – Cairo, Egypt, January 17-19, 2019. Course Directors: Ali S. Shalash, MD, PhD, Joaquim J. Ferreira, MD, PhD



Movement Disorders Overview for Practicing Clinicians. Lagos, Nigeria, December 7-9, 2018. Course Director: Njideka Ulunma Okubadejo, MBChB, FMCP

### MDS-Africa Leadership

Chair: Ali S. Shalash, MD, PhD

Co-Chair: Jonathan A. Carr, MBChB, PhD

Members: Ferzana Hassan Amod, MBChB, FCNeurology; Augustina O. Charway-Felli, MD-PhD candidate; Jacques Doumbe, MD; Ademola Ayodele Oremosu, MBBS, MSc, PhD; Riaan Van Coller, MMed; Emmanuel Epenge; Juzar A. Hooker, MB ChB MMed DCN FCP; Biniyam A. Ayele, MD; Houyam Tibar, MD; Samia Ben Sassi, MD



## MDS Africa LEAP: Interviews with Biniyam Alemayehu Ayele and Oluwadamilola Ojo

Margherita Fabbri, a member of the *Moving Along* Editorial Board, reached out to the participants from the 2019 MDS LEAP class to learn more about how the program has impacted their careers and contributions to the African region.

**Margherita:** Thank you for taking the time for an interview for *Moving Along*. First of all, congratulations on being selected for the 2019 LEAP Program. Please tell us your current professional position and your brief biographical sketch.



Biniyam Ayele, MD

**Biniyam:** Thank you very much for interviewing me for *Moving Along*. I am currently serving as an assistant professor of Neurology at Tikur Anbessa Specialized Hospital, Department of Neurology College of Health Sciences Addis Ababa University, Ethiopia. I received my doctorate degree from Jimma University in 2010. Following that, I served as a medical director of Bule Hora Hospital for three years. In 2014, I joined the department of

Neurology, Addis Ababa University and completed my neurology residency training in January, 2017. On the same year I completed my six-month fellowship training in clinical neurophysiology at Cairo University. In addition, I am also serving as a member of MDS-Africa Section Education Committee and also part of MDS LEAP class of 2019. Recently, we managed to distribute L/dopa (Credanil) donated by World Parkinson Program (WPP) for more than 100 Parkinson's disease patients who has economic problem to cover their six months usage in collaboration with Parkinson Patient Support Organization-Ethiopia (PPSO-E). I am also working closely with Prof. Miriam Redleaf to start "Rock Steady Boxing" training in Ethiopia in collaboration with Parkinson Patient Support Organization-Ethiopia (PPSO-E). Regarding research activities, we are undergoing a facility based clinical research to understand the burden of non-motor symptoms of Parkinson's disease in Ethiopia. I am also part of a multicentre, international research aimed to understand Parkinson's disease genetics, as the study also includes Ethiopia.



Oluwadamilola Ojo, MBBS

**Oluwadamilola:** Thank you for having me and it is a pleasure! I am currently a senior lecturer at the College of Medicine of the University of Lagos and an honorary consultant neurologist at the Lagos University Teaching Hospital, Lagos, Nigeria. I received my medical degree at the University of Ilorin and my residency training in internal medicine and neurology at the University of Ilorin Teaching Hospital and Lagos University Teaching Hospital respectively. I was exposed to Parkinson's disease and the field of Movement Disorders by Prof. Njideka Okubadejo during my neurology training. This interest culminated in a dissertation on an aspect of PD and subsequently a one-year clinical research fellowship under the tutelage of Prof. Hubert Fernandez at the Cleveland Clinic. My current research interests are non-motor features of PD in Nigerians and dystonia in Nigerians. I am married, have two kids and outside work, love movies, fictional books and sports.

**Margherita:** Do you know how many neurologists are actually working in your country?

**Biniyam:** Close to 40, excluding those currently on training.

**Oluwadamilola:** Approximately 75 - 80 (many more than these have been trained but lost to "brain drain")

**Margherita:** Why did you apply for the MDS LEAP Program?

**Biniyam:** The MDS LEAP program was established to provide leadership training to young neurologists like me to support our future endeavours to become leaders in the field of Movement Disorders. Leadership trainings like this are vital in building the capacity of a young movement disorder specialist. Since I am actively engaged in movement disorders related activities here in Ethiopia, in terms of clinical activity, research activity focusing on movement disorders and volunteer works, mainly for patients living with Parkinson's disease, attending such leadership training will give me the opportunity to create networks with other colleagues working in all parts of the world and will help me to acquire knowledge and skill regarding leadership and managerial capacity. Finally, such leadership training will give me an opportunity to be involved in different leadership activities in MDS.

**Oluwadamilola:** I applied for the MDS LEAP program to identify, develop and hone my leadership skills to enable me better train and mentor younger physicians and make a positive impact on healthcare in Nigeria.

MDS Africa LEAP: Interviews with Biniyam Alemayehu Ayele and Oluwadamilola Ojo, *continued from p. 18*

**Margherita:** What personal goals would you like to achieve through your participation in the MDS Leap Program?

**Biniyam:** My future goal is to improve the low quality health service currently given to patients with movement disorders in Ethiopia. So, being part of this LEAP program will give me an opportunity create a network of collaboration which will help me to get fellowship training in movement disorders in order to run the movement disorder care in Ethiopia. In addition, it allows me to live my life in principles and how to work with others in order to make my institution effective. To take part and contribute my share by being part of my institution leadership's positions and MDS leadership positions. The mentorship component of the program is a great experience for me in exposing me to a new experience of the mentor-mentee relationship.

**Oluwadamilola:** The personal goals I would like to reach courtesy of the LEAP program include self-mastery, acquiring skills required to look at and take on challenges from a different perspective, problem-solving, and becoming a leader who inspires a younger generation of neurologists and movement disorder specialists willing to stay in Nigeria and impact/improve the management and access to care of movement disorder patients, and who are driven to improve health services, research and policy in the country.

**Margherita:** How do you imagine your career in five years?

**Biniyam:** I would imagine my career in five years in three important areas:

- I. Academic and clinical: I will probably complete my fellowship in movement disorders and be able to expand and strengthen the existing movement disorder clinics at my hospital and affiliate hospital.
- II. Research: I will conduct different epidemiological and interventional studies in area of movement disorder in Ethiopia, ultimately increasing the data share from Ethiopia, especially in Parkinson's disease genetic areas.
- III. Leadership: I will likely be an active member of MDS and will increase my current involvement in the MDS African Section and likely work in one of the top leadership spots in the regional section.

**Oluwadamilola:** In five years, I want to expand the Movement Disorders Clinic in L.U.T.H. to be the foremost Centre of Excellence for Movement Disorders in Nigeria, West Africa and Africa. I also want to improve/drive health services and policy in my country through my research.

**Margherita:** MDS has made targeted and successful efforts to increase the knowledge and interest in movement disorders in underserved areas around the world, including Africa, and has expressed its interest in intensifying these efforts. Do you have any suggestions in line with this specific purpose?

**Biniyam:** I would like to thank MDS for creating the MDS Task Force on Africa and the MDS Africa Section. A regional section like this will create an opportunity for physicians in underserved countries to upgrade and acquire new knowledge and skills in movement disorders. To further strengthen and maintain current momentum, it's important to train young neurologists in Africa in movement disorders via short trainings or fellowships. This way we can create someone who is fully dedicated to movement disorders and able to establish and maintain the existing service in his/her institute. Finally, I would like to thank *Moving Along* for inviting me for this interview, the MDS LEAP program and Dr. Jim Bower, my MDS LEAP mentor, for his continuous guidance.

**Oluwadamilola:** Yes, the MDS has increased the interest in Movement Disorders in underserved areas of the world, my country inclusive, through partnership with the African Academy of Neurology, sponsoring Developing World Education Programs (we have had two of such), the MDS Summer and Winter School travel grants and the visiting trainee grants, etc. To intensify these efforts, I think MDS should plan towards a phased partnership with regional and national (country) neurologic societies, with an aim to identify individuals who have a working knowledge of the needs and gaps in their specific locations and who are willing to be mentored to acquire the knowledge and skills, not just for personal improvement or career development, but to make positive changes within their systems. The attention of members from these underserved areas can also be drawn periodically to the online courses on the MDS website (e.g. the Fundamentals courses). MDS can also target attendees from underserved areas at neurology meetings, such as the American Academy of Neurology.

## MDS-AOS Regional Education Courses

MDS-AOS Basic and Clinical Science School – Seoul, Korea, August 8-9, 2019

Treatment for Advanced Parkinson's Disease – Seoul, Korea, August 10, 2019

In August 2019, two educational courses were held in Seoul, Korea. The first course, the MDS-AOS Basic and Clinical Science School, had the aim of inspiring young scientists and clinicians with recent advances of preclinical and clinical approaches. In addition, it was believed to generate new ideas and boost new translational research projects among the MDS-AOS investigators of various backgrounds. The School had 88 attendees from 15 countries, and focused on learning principles and practical applications of various scientific tools that can be used in the field of Movement Disorders. An interesting session featured a virtual lecture between Germany and Korea. Dr. Sonja Petkovic (Germany) gave the participants in Seoul the real-time talk under the title of "How to Use the MDS Gene Website." The Course Director, Prof. Beom Jeon, suggested that it could be an alternative way of breaking down the walls of time and distance between different regions.

The second course, Treatment for Advanced Parkinson's Disease, was an excellent opportunity for studying interventional options for advanced Parkinson's disease patients and sharing practical tips with various cases. The course had 74 attendees from 18 countries. One session featured three treatment options (DBS, LCIG, and Apomorphine), and many attendees participated in the open discussion.



## Neuroimaging and Neurophysiology of Movement Disorders

Brno, Czech Republic, November 7-8, 2019

— Irena Rektorova, MD, PhD; Course Director, MDS-ES Executive Committee Member

The two-day advanced MDS-ES course on Neuroimaging and Neurophysiology of Movement Disorders took place in Brno, Czech Republic, November 7-8, 2019. It was coordinated by Irena Rektorova, head of the Movement Disorders Centre, Department of Neurology, St. Anne's University Hospital, Masaryk University in Brno with a great support of Antonio Strafella, head of the MDS Neuroimaging Study Group, and Heather Vitale, MDS-ES Senior Program Manager. The course topic was novel in that it combined quite focused fields that require specific knowledge and expertise and are relevant for both clinical practice and research. We had 14 very distinguished faculty members and 52 participants from 21 mostly European countries, but also from Canada, Chile, and Taiwan.

On the first day, Drs. Daniela Berg, Zuzana Walker and Alessandro Tessitore showed how transcranial ultrasound, dopaminergic imaging and iron and neuromelanin sensitive MRI may help to identify individuals at risk of Parkinson's disease (PD) and Lewy body diseases. Drs. Angelo Antonini and Alessandro Tessitore discussed the role of structural and resting state functional MRI in explaining mechanisms of PD symptoms. Antonio Strafella presented novel PET ligands and showed how tau PET may be used to diagnose progressive supranuclear palsy and other tauopathies. Laura Bonanni gave a lecture on EEG for differential diagnosis of degenerative dementia syndromes. The faculty then presented three interactive workshops with video cases to teach participants how to use clinical imaging and EEG for differential diagnosis of parkinsonism, degenerative dementia with parkinsonism, and hyperkinetic movement disorders in clinical practice.



On the second day, the faculty members addressed electrophysiological aspects of tremor (Evžen Růžička), dystonia (Martin Bares), myoclonus (Ivan Rektor), parkinsonism (Angelo Quartarone), and functional movement disorders (Tereza Serranova). The speakers showed how electrophysiology can help clinicians diagnose distinct movement disorders and enhance understanding of their pathological mechanisms. Electrophysiological aspects of deep brain stimulation in PD (Marek Balaz) and in dystonia and gait disorders (Dr. Elena Moro) were discussed, and update on how non-invasive brain stimulation can modulate specific symptoms in hyperkinetic movement disorders (Angelo Quartarone) and Parkinson's disease (Irena Rektorova) was also provided.

The course was successful in meeting its learning objectives. Special thanks to the faculty, sponsors Abbott, Deymed Diagnostics, GE Healthcare and Medtronic, and MDS-ES for the course support and perfect organization.

## MDS-AOS Deep Brain Stimulation in Movement Disorders

Hyderabad, India, November 8-10, 2019

The first MDS-AOS education course in India was held in Hyderabad from November 8-10, 2019. The course, Deep Brain Stimulation in Movement Disorders, was led by Course Directors, Prof. Rupam Borgohain and Dr. Rukmini Mridula Kandadai, neurologists from Nizam's Institute of Medical Sciences, Hyderabad. The two- and half-day course covered topics ranging from basics of deep brain stimulation in various movement disorders to the latest developments in the field, with insights into the probable mechanisms involved and future possibilities. The lectures by eminent international faculty (Elena Moro, Chun Hwei Tai and Albert Fenoy) as well as national faculty (Aditya Gupta, Anand Balasubramyam, Asha Kishore, Charulatha Sankhla, Hrishikesh Kumar, Pettarusp Wadia, Pramod Pal, Prashanth L. Kukkle, Rajesh Alugolu, Ravi Gopal Varma, Rukmini M. Kandadai, Rupam Borgohain and Vinay Goyal) were intellectually stimulating, interactive and included many videos and demonstrations. The course had live transmission of a surgery – DBS of bilateral subthalamic nuclei in Parkinson's disease from the operation theatre in NIMS with the permission of the patient and the surgical team on the morning of the second day. The last day 'hands on' patient programming session with direct interaction with patients who had already undergone DBS elicited huge enthusiasm for the procedure among the Neurologists, while a 'hands- on' workshop with stereotactic frames and neuronavigation systems helped dispel doubts among neurosurgeons. The program was well attended by more than 170 delegates from all over India and other countries.



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## Health Professional (Non-Physician) Special Interest Group (HP-SIG): Physiotherapy in Parkinson's Disease - Clinical Implications of Current and Emerging Evidence

On November 13 - 14, 2019, the Scientific Department of Physiotherapy in Movement Disorders of the Brazilian Association of Neurofunctional Physiotherapy (Associação Brasileira de Fisioterapia Neurofuncional - ABRAFIN) hosted a special educational session in Salvador, Bahia, Brazil for physiotherapists throughout the country working with Parkinson's. Support for the session was provided by the International Parkinson and Movement Disorder Society via the Developing World Education Program.

The event, led by course director Lorena Rosa Almeida, PT, PhD included a faculty comprised of MDS HP-SIG members Clynton Correa, PT, PhD, John Dean, MA CCC-SLP, Josefa Domingos, PT, MsC and Maria Elisa Piemonte, PT, PhD as well as movement disorders specialist, Guilherme Valença, MD, PhD.

Dr. Almeida began with a timely review of rehabilitation for individuals with Parkinson's, highlighting current research on the topic and future directions. Dr. Almeida also had the opportunity to discuss her extensive research regarding falls in Parkinson's, a topic of paramount importance within this population.

Dr. Valença followed with an engaging discussion on the medical aspects of the Parkinson's. In addition to being highly responsive to the numerous inquiries from the physiotherapists in attendance, Dr. Valença highlighted the influence of cognition on movement, belying his close work with the physiotherapy team at the Movement Disorders and PD Clinic at Roberto Santos General Hospital in Bahia and his close work with Dr. Almeida in particular.

Dr. Correa presented a solid overview of the neurobiology of physical exercise in Parkinson's disease, including his earlier research on animal models and applications within the clinical environments, highlighting his recent work on functional assessments of cognition and intervention.

Dr. Piemonte, who also serves as one of the co-chairs of the MDS Health Professionals Special Interest Group (HP-SIG), presented a lecture about interprofessional care in Parkinson's disease based on ICF model, laying out the essential elements for interdisciplinary teams and development for optimal care in Parkinson's and related disorders.

Portuguese physiotherapist Josefa Domingos delivered a lecture that was a deep dive into the emerging hot topic of dual task interventions that combine movement, voice and cognition. These slides were complemented throughout by Ms. Domingos' extensive library of videos featuring her direct clinical implementation of these approaches with individuals with Parkinson's in addition to careful implementation with individuals with multiple system atrophy and even progressive supranuclear palsy, the significance of which was further bolstered by Dr. Valença's second lecture on atypical parkinsonism.

Ms. Domingos, currently completing her PhD at Radboud University under Prof. Bastiaan Bloem, also presented an in-depth review of the



European guidelines for physiotherapy in Parkinson's, of which she was one of the coeditors, working on the Portuguese translation with Dr. Almeida (Movement Disorders and PD Clinic, Roberto Santos General Hospital) and Tamine Capato (University of São Paulo).

John M. Dean, the sole speech language pathologist at the event, presented a lecture highlighting how to incorporate breath, voice and language components into cognitive and physical interventions. His lecture also included a discussion of "cross-pollination" among the rehab clinicians, integrating aspects of each discipline's intervention approaches into the different sessions in order to "prime" key concepts and enhance carryover while reinforcing goals specific to each discipline. Mr. Dean also presented a session on rehab technologies in Parkinson's, focusing on free and inexpensive tools that clinicians can implement in the clinical environment to improve outcomes and engagement with their patients.

One of the highlights of the two-day program was a practical session that included individuals with Parkinson's, allowing the clinician to implement some of the concepts from the lectures. Not only was this an opportunity for collaboration and hands-on application of learning from the session, the demonstration segment engendered a lively discussion among the clinicians in attendance with valuable feedback the volunteers in their care partners.

The program, which was attended by 44 physiotherapists from all over Brazil, represents the strength of partnerships between the International Parkinson and Movement Disorder Society and national entities such as ABRAFIN as a tool for increasing expertise and clinical competence among allied health professionals in the field of Movement Disorders.

## 2nd School on Neuromodulation for Movement Disorders

Gainesville, FL, USA, December 12-13, 2019

The 2nd School on Neuromodulation for Movement Disorders took place at the Fixel Neurological Institute, Center for Movement Disorders, at the University of Florida Gainesville on December 12-13, 2019. The course was an outstanding opportunity to bring together practitioners from different disciplines and backgrounds to discuss advances in neuromodulation and learned basic principles of management and troubleshooting. The course attracted academic and private practice neurologists, neurosurgeons, nurses, psychiatrists and movement disorder fellows to review current neuromodulation techniques, challenging cases and provided an opportunity for real time programming sessions and discussion of practical management approaches. The course covered a variety of topics in the area of deep brain stimulation from patient selection, surgical techniques, use of microelectrode recordings, initial and long-term programming considerations, functional anatomy and approaches to troubleshooting. The course focused on all aspects of movement disorders including Parkinson's disease, dystonia, and tremor. Didactic sessions took place in the morning followed by small group discussions and "hands on" case presentations in the afternoon. Fifty-

three participants travel to Gainesville, FL, USA, to attend the two-day course. Basic stereotactic lessons and discussion regarding DBS targeting, hardware complications, lead placement and microelectrode recordings were covered by Drs. Joseph S. Neimat, Suneil Kalia and Kelly Foote. Drs. Michael Okun, Ethan Brown, Gabriel Arango Uribe, Joohee Jimenez-Shahed, Tiago Mestre, Leonardo Almeida and Adolfo Ramirez-Zamora presented patient selection, programming strategies, troubleshooting algorithms and discussion of challenging cases. Dr. Dawn Bowers and Herbert Ward discussed important neuropsychological and neuropsychiatric aspects of patients' selection and management related to DBS and Matthew Barabas, PA-C, Janet Romrell, PA-C and Pam Zeilman, APRN reviewed the specific capabilities of all available neurostimulators in the USA. MDS provided travel grant funding to invite five neurologists from the MDS Pan-American Section to attend the course, including neurologists from Brazil, Chile and Columbia. The course was supported by MDS and unrestricted medical education grants from Abbott Laboratories Boston Scientific Corporation and Medtronic, Inc.

