

Movement Disorder Digest

The Center's Fight Against Parkinson's

Pacing 4 Parkinson's was established in 2009 to help raise awareness of Parkinson's disease and funds for the Johns Hopkins Parkinson's Disease and Movement Disorders Center. The funds raised support the center's tripartite mission of patient care, research, and education and outreach. This event has become an annual tradition allowing us to bring together the local community and hundreds of patients and their families and friends.

Over the years, Pacing 4 Parkinson's (P4P) has raised over \$600,000 and has become one of the largest charity teams at the Baltimore Running Festival. As a result, the center has been able to expand the multidisciplinary team that provides comprehensive clinical care and train numerous professionals on movement disorders. The center has expanded and initiated research projects to include the Parkinsonics (*page 4*) and numerous others (*page 3*). P4P has helped support the center's robust outreach and education program (*page 7*); to include the creation of 8 new support groups, community education programs, symposiums, and educational materials.

The center invites you to participate in the **8th Annual Pacing 4 Parkinson's** at the Baltimore Running Festival on **Saturday, October 15, 2016**. The highlight of the event is the



The JH PDMD Team from Left to Right: Arita McCoy, Becky Dunlop, Dr. Martin Kronenbuerger, Nadine Yoritomo, Dr. Alexander Pantelyat, Dr. Zoltan Mari, Bailey Vernon; Dr. Kelly Mills, Dr. Liana Rosenthal, Eleni Georgantonis, Nicola Mennucci, Aathman Swaminathan

P4P tent in front of the M&T Bank Stadium that supports the runners and walkers. Join the fight by running or walking (*full marathon, half marathon, 4-person marathon relay, 5k, and kids fun run*), volunteering with the committee, or supporting the cause. To learn more, please visit www.pacing4parkinsons.org or email pacing4parkinsons@gmail.com.

Center Focuses on Training the Next Generation

Movement disorders are complex neurological conditions that encourage diverse allied health professionals to receive specialty training. Our center values the importance of providing specialty training in Parkinson's disease (PD) and related movement disorders to provide the best ongoing comprehensive care possible. One way this goal is achieved is through hiring both short and long-term research assistants and providing a Movement Disorder Clinical Fellowship Program that meets the Accreditation Council for Graduate Medical Education (ACGME).

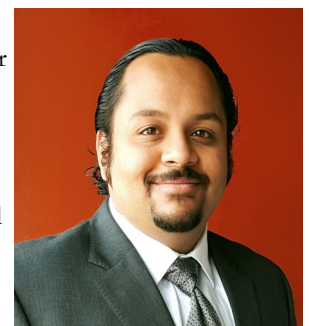
The training of fellows is an important piece of the center's mission and their contributions are interminable. Dr. Zoltan Mari explains, "Our center helps train the next generation of movement disorder experts by offering a formal two year fellowship subspecialty training program to young neurologists, typically freshly out of their neurology residency training. Our fellows are highly recommended very bright young individuals, who committed their careers to the subspecialty field of Parkinson's & movement disorders. They work alongside our expert faculty and movement disorder team to provide the best possible care."

The center currently has three fellows, Dr. Laura Tochen, Dr. Martin Kronenbuerger, and Dr. Ankur Butala. Dr. Laura Tochen joined the team as the first pediatric movement disorder fellow in July of 2014. She completed her residency at Johns

Hopkins where she developed a particular interest in movement disorders. Dr. Martin Kronenbuerger, a former movement disorder attending from Germany, joined us for a formal fellowship training in July of 2014.

FELLOW HIGHLIGHT

Dr. Ankur Butala joined the center for his two year fellowship in July of 2015. He is a 2008 graduate of a combined BS-MD Physician Scientist Accelerated Program through the Rensselaer Polytechnic Institute and Albany Medical College. He then completed residencies in both Psychiatry and Neurology at UMass Memorial Medical Center from 2008 to 2014.



Ankur Butala, MD

He has a variety of other medical experiences to include a movement disorder rotation with world-renowned Dr. Michael Okun of University of Florida at Gainesville; a functional neuroimaging rotation at King's College in London; and positions as a neurohospitalist and addiction psychiatrist. Dr. Butala has six published abstracts and has presented at numerous international, national, and local meetings.

CENTER UPDATE

Continued from front page

His primary research interests are utilizing invasive and non-invasive neuromodulation techniques to better understand and or otherwise treat refractory neuropsychiatric conditions including non-motor aspects of PD, dementia, psychosis, and traumatic brain injury. In addition, he has parallel interest in the biology and modulation of endogenous cannabinoids and how it might impact these neuropsychiatric conditions.

Dr. Butala is fully embracing his Movement Disorder Fellowship at Johns Hopkins and the opportunity to not only undergo a specialized training, but follow patients clinically, pursue his research interests, and support the local movement disorder community.

RESEARCH ASSISTANT HIGHLIGHT

Research Assistants play a vital role at the center as they assist with the details of multiple research studies and provide support to the nurses, physicians, and all team members.

Nicola “Nikki” Mennucci graduated in May of 2015 from Virginia Tech with a Bachelors in Health and Nutrition. She joined the team in September of 2015 and has been assisting with the PPMI study, National Parkinson Foundation Parkinson’s Outcomes Project, and also outreach and education

efforts. Nikki is excited to start her career in neurology and help those living with movement disorders.

Aathman Swaminathan graduated in May of 2015 from the University of Vermont with a Bachelors in Science. He joined the team in August of 2015 and has contributed to the success of the Parkinsonics, in addition to several other projects. Aathman plans to attend medical school in 2018 and aspires to be a neurologist.

Angela Zhang graduated in May of 2015 from Duke University with a Bachelors of Arts in Mass Media and Cross-Cultural Perception. She has worked as the sole Research Assistant on the Mark-PD study to support Nadine Yoritomo and Dr. Liana Rosenthal. Angela will be starting medical school in August of 2016 and hopes to focus on health disparities.



Aathman Swaminathan and Nicola Mennucci



Angela Zhang

OUTREACH

National Parkinson Foundation Moving Day® DC



Johns Hopkins is one of forty-one leading medical centers worldwide that has been identified by the National Parkinson Foundation (NPF) as a site with outstanding performance in Parkinson’s research, care, and outreach. As a Center of Excellence (COE), the center has been actively participating in their research study, Parkinson’s Outcomes Project, delivering valuable educational resources, and supporting Moving Day®.

Moving Day® is the National Parkinson Foundation’s annual awareness and fundraising walk event. This year it will be held on **Saturday, June 4, 2016** at the National Mall in Washington, D.C. It is a fun and inspiring fundraising event that unites families, friends, and communities in the fight against PD. To become involved in this great initiative, you can volunteer with NPF, sign up to participate, or support the cause. To learn more about Moving Day®, please visit www.MovingDayDC.org or call **1-800-4PD-INFO (1-800-473-4636)**.



Community Non-Profit Underway! Maryland Association for Parkinson Support, Inc.



Maryland Association for Parkinson Support, Inc. (MAPS) was formed in June of 2014 as a local non-profit organization dedicated to providing meaningful programs that will support the entire PD community. Currently MAPS is supporting several local exercise classes, support groups, and educational programs. In 2016, MAPS will be hosting a variety of events to raise more funds for local programs, to include *Mindful Motion: A Community Yoga and Pilates Event* on **Sunday, April 17 (Page 7)**. To learn more about MAPS, please visit www.marylandparkinsonsupport.org, email info@marylandparkinsonsupport.org, or call **443-470-3223**.

Support Groups

A diagnosis of PD or a related movement disorder can lead to many difficult emotions. It is a challenge to learn how to cope with those feelings along with the stress of diagnosis and treatment. Education and support groups can be an essential key to successfully coping and managing the disease. Our community offers a variety of specialty groups, including groups for women, young or early onset, newly diagnosed, atypical parkinsonism, and caregivers. The community even offers a variety of exercise programs specifically for people with PD. If you are interested in finding a group locally, starting a new group, or volunteering; please contact our center at **410-955-8795** or visit our website www.hopkinsmedicine.org/neuro/movement for a full listing.

RESEARCH STUDIES

Condition	Title	Objective	Eligibility	PI	Contact
Parkinson's disease	National Parkinson Foundation	Develop quality care standards for PD	All PD patients and care partners seen at the center	Zoltan Mari, MD (NA_00036863)	Becky Dunlop 410-955-8795
Parkinson's disease	MARK-PD	Identify biomarkers for PD and PD-related cognitive impairment	Individuals diagnosed with PD or atypical PD and those without a neurological diagnosis	Liana Rosenthal, MD (NA_00031749)	Nadine Yoritomo 410-616-2822
Parkinson's disease	Genetic Cohort	Identify genetic links to PD and learn how the LRRK2 mutation affects certain populations of people (<i>Part of the Michael J. Fox Foundation Parkinson's Progression Markers Initiative</i>)	1.) Individuals diagnosed with PD who are of Ashkenazi Jewish descent 2.) Individuals without PD who are of Ashkenazi Jewish descent AND have a first degree relative with PD	Zoltan Mari, MD (NA_00039232)	Arita McCoy 410-955-2954
Parkinson's disease	APL-130277 for the Acute Treatment of OFF Episodes	Evaluate APL-130277 (sublingual version of Apokyn medication) in treatment of sudden "off-time" in PD	Individuals with PD, taking levodopa and having at least 2 hours of "off-time" daily	Zoltan Mari, MD (NA_00076661)	Arita McCoy 410-955-2954
Parkinson's disease	Anxiety in Parkinson's	One day visit to assess anxiety symptoms in PD	All individuals diagnosed with PD	Gregory Pontone, MD (NA_00092051)	Kate Perepezko 410-614-1242
Parkinson's disease	Rotigotine for Anxiety in PD	8 week study of Rotigotine for the treatment of anxiety disorders in PD	Individuals diagnosed with PD experiencing anxiety	Gregory Pontone, MD (NA_00092051)	Kate Perepezko 410-614-1242
Parkinson's disease	MRI PD Study	One day visit to explore the relationship between cognition (e.g. memory) and emotion in PD	Individuals diagnosed with PD and those without PD	Gregory Pontone, MD (NA_00087276)	Kate Perepezko 410-614-1242
Parkinson's disease	Rhythmic Entrainment in Health and PD	Investigate if rhythmic sounds and non-invasive brain stimulation can change the brain's activity and improve hand coordination and walking in people with PD	Individuals diagnosed with PD and those without PD who are right handed and aged 18-89	Alexander Pantelyat, MD (NA_00078328)	Anthony Gonzalez 443-923-2716
Parkinson's disease and related disorders	Udall Center Longitudinal Study	Examine the relationship between the clinical symptoms of PD and the disease process in brain tissue (participation includes eventual brain donation)	Individuals diagnosed with PD or atypical PD and those without a neurological diagnosis	Liana Rosenthal, MD (NA_00032761)	Catherine Bakker 410-616-2814
Parkinson's disease and related disorders	Udall Center Brain Donation Program	Examine the pathological changes in the brain tissue of individuals diagnosed with PD or related disorders as compared to controls	Individuals diagnosed with PD or atypical PD and those without a neurological diagnosis	Liana Rosenthal, MD (NA_00032761)	Catherine Bakker 410-616-2814
Parkinson's Disease	Cerebellar Hyperactivity in PD	Study how cerebellar hyperactivity influences gait and balance in individuals with PD with transcranial direct current stimulation	Individuals with PD who have gait and balance difficulties	Amy Bastian, PhD (NA_00052263)	Tjitske Boonstra 443-923-2716
Movement Disorders	Genetic Characterization	To study the genetic risk factors involved in movement disorders	Individuals with PD, atypical parkinsonism, dystonia, ataxia, and Lewy body dementia	Jeffery Rothstein, MD, PhD (NA_00055442)	Sonja Scholz, MD 240-271-5297
Dystonia	Dystonia Coalition	Create repository to learn more about dystonia	Individuals over the age of 18 who have primary dystonia	Zoltan Mari, MD (NA_00074297)	Becky Dunlop 410-955-8795
Sialorrhea (drooling)	OPTIMYST	Investigate the efficacy of Botulinum toxin type B injection to treat troublesome sialorrhea	Individuals who have untreated excessive salivation due to any cause	Joseph Savitt, MD, PhD (SN_SIAL_301) (<i>Howard County</i>)	Erica Stacy 443-755-0030
PSP	CN002003	Investigate safety and tolerability of an investigational drug for PSP	Individuals who have a diagnosis of PSP or probable PSP	Joseph Savitt, MD, PhD (SN_SIAL_301) (<i>Howard County</i>)	Erica Stacy 443-755-0030

RESEARCH STUDIES

Condition	Title	Objective	Eligibility	PI	Contact
Parkinson's Disease	A Randomized Controlled Trial of OnabotulinumtoxinA for Depression in PD	To study if the drug onabotulinumtoxinA (BOTOX®) is helpful for the treatment of depression in PD	All individuals diagnosed with PD who have symptoms of depression	Alex Pantelyat, MD (NA_00082708)	Becky Dunlop 410-955-8795
Parkinson's disease	Exploring Mechanisms for Neuropsychiatric Symptoms of PD using Transcranial Direct Current Stimulation (tDCS)	To study if tDCS helps depression, cognition, or other non-motor PD symptoms	All individuals diagnosed with PD who have symptoms of depression	Kelly Mills, MD (NA_00087957)	Yousef Salimpour 410-502-2666

RESEARCH UPDATE

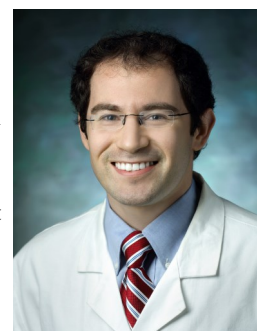
Parkinsonics: Study of Group Singing Underway

Alexander Pantelyat, MD

The loss of voice volume and clarity is a common problem in Parkinson's disease. Several studies have evaluated the effects of singing in a choir on patient's voice quality and several other outcomes. Our center is currently executing the Parkinsonics, a 24-week research study that aims to study the impact of group singing on quality of life in people with Parkinson's disease.

The study includes 32 participants, divided into 2 groups, and was launched in December of 2015 and will be completed in

May of 2016. As a cross-over study, one group is partaking in weekly discussions and the other is learning choir-based singing. The participants will switch groups halfway through. The center hopes to determine that group singing is a helpful intervention in the management of PD. We hope to have preliminary results to share this fall.



Non-Invasive Brain Stimulation Method for Improvement of Motor Symptoms in PD

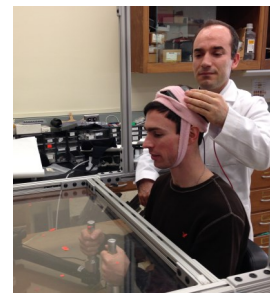
Yousef Salimpour, PhD

The primary methods of treatment for those suffering from Parkinson's disease (PD) currently include medication, exercise, and in some cases, deep brain stimulation (DBS). In the Department of Biomedical Research, a new approach based on transcranial electrical stimulation (TES) has produced promising results in the management of PD symptoms. In this method, transcranial direct current stimulation (tDCS) over the motor cortex has been explored for reducing motor symptoms.

In PD, individuals are less willing to assign force to their affected arm. An isometric task was used in which people with PD produced a goal force by engaging both arms, but were free to assign any fraction of that force to each arm. It was discovered that the participants preferred their less-affected arm, but only in some directions. We found that this preference is direction dependent. The direction for which the arm is noisier coincides with direction for which the brain is less willing to assign force.

We hypothesized that if we could reduce the noise on the affected arm, then we may increase the willingness for the brain to assign force to that arm. We found a way to do this via noninvasive cortical stimulation. In addition to reducing effort costs associated with the affected arm, the cortical stimulation also improved clinical motor symptoms.

To continue our research, we are planning to investigate the effect of tDCS treatment on non-motor symptoms such as depression, anxiety, and cognitive symptoms. Please contact Dr. Salimpour at 410-502-2666 to learn more.



Cognition and Deep Brain Stimulation

Kelly Mills, MD

Deep brain stimulation (DBS) is a FDA-approved neurosurgical procedure that can help alleviate the symptoms caused by Parkinson's disease and other movement disorders. Dr. Mills is investigating how DBS might affect memory, language, problem-solving, or changes in thinking or behavior. A questionnaire is

conducted after DBS surgery to assess cognitive changes. Those with Parkinson's disease who have received DBS at Johns Hopkins Hospital are eligible to participate. If you are interested in learning more, please contact Aathman Swaminathan at 410-955-8795.



RESEARCH UPDATE

Motor Fluctuations and Anxiety in Parkinson's Disease

Gregory Pontone, MD

Motor fluctuations are changes in the severity of Parkinson's disease (PD) symptoms that vary with the level of dopamine medication active in the body. For example, when carbidopa/levodopa is swallowed and absorbed it starts working to decrease the severity of the movement symptoms (e.g. tremor, slowness, rigidity). However, as the drug begins to wear off the symptoms return and increase in severity. These changes in PD symptom severity between the on and off medication state are called motor fluctuations. Up to 80% of people with PD develop some degree of motor fluctuations within 5 to 10 years of starting levodopa therapy.

Motor fluctuations are often accompanied by a number of non-motor symptoms during the off periods such as hot flashes, sweating, pain, anxiety, sadness, or mild confusion. Anxiety is by far the most common non-motor fluctuation, occurring in up to two-thirds of those who experience motor fluctuations.

The anxiety during the off period can be extreme, sometimes causing panic in those who experience it and is often so intense that one may think he or she is dying. It is not uncommon that fluctuation-associated anxiety is first recognized in the emergency room because the anxiety is mistaken for an acute medical condition.

Although there are several effective treatments for motor fluctuations, it is not clear how to best treat anxiety and other non-motor symptoms associated with on-off fluctuations. If you have PD and are experiencing motor or non-motor fluctuations and are interested in participating in research to help better understand and treat these symptoms, please see the listing on *page 3* or call Kate Perepezo at 410-614-1242.



Is c-Abl Inhibition a Magic Elixir for Parkinson's Disease?

Ted M. Dawson, MD, PhD

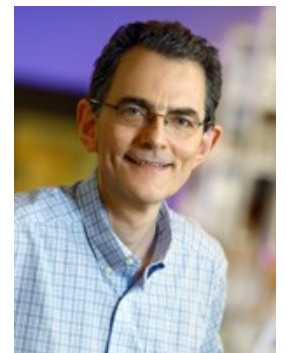
In 2010, scientists in Valina Dawson and my laboratories discovered that c-Abl plays a role in Parkinson's disease (PD). Quickly thereafter several other researchers replicated our findings laying the groundwork for testing the efficacy of blocking c-Abl in PD. The c-Abl inhibitor plays a role in blood cancer and drugs that block c-Abl's activity are effective against certain forms of leukemia and gastrointestinal tumors. There is almost 15 years of clinical experience with inhibitors of c-Abl and they are for the most part safe and well tolerated.

Doctors at Georgetown University used the c-Abl inhibitor (nilotinib) to treat 12 PD patients and reported their findings at the 2015 Society for Neuroscience meeting. Ten of the PD patients had dramatic improvements. As exciting as these results are, one needs to be cautious about these results as many of the details of the study have not been disclosed.

Moreover, the doctors at Georgetown did not give a placebo (inactive) drug to another group of PD patients to truly test the

efficacy of c-Abl inhibition. The lack of inclusion of a placebo group raises substantial reservations about these initial findings. It is well known that PD patients that receive a placebo can have similar dramatic responses. Thus, the improvements reported by Georgetown may simply be due to the placebo effect.

Despite these caveats, the solid and reproducible laboratory work establishing c-Abl as a target for PD treatment and this early study from Georgetown warrants further studies of c-Abl inhibitors as disease modifying therapies for PD. Doctors at Johns Hopkins Medicine are currently gearing up to do a trial of c-Abl inhibition in PD with a safer new generation c-Abl inhibitor. Please stay tuned for further information on this potentially game-changing therapy for PD.



Advancing Research: The Need for Study Controls

Over the last several decades, the health of millions of individuals with PD and other movement disorders has been improved by therapies that were discovered as a result of biomedical research. Biomedical research includes the evaluation of new treatments for both safety and efficacy through clinical trials and all other research that contributes to the development of new treatments.

In order to realize future discoveries in the field of movement disorders, it is vital that both individuals with and without movement disorders volunteer to participate in research. Especially in clinical trials and natural history studies, the participation of healthy volunteers is important to define the limits of "normal." These volunteers are recruited to serve as controls for patient groups. They are often matched to patients

on characteristics such as age, gender, or family relationship. They are then given the same test, procedure or drug the patient group receives. Investigators learn about the disease process by comparing the patient group to the healthy control group.¹

Participating in research as a healthy control can be a great way to get involved and make a contribution towards identifying new treatments for those affected by movement disorders. Here at Johns Hopkins we are lucky to have multiple movement disorder studies taking place that are currently recruiting healthy controls.

If you or someone you know may be interested in learning more about serving as a healthy volunteer in one of our current research trials, please refer to the list on *page 3*.

^[1] NIH Clinical Center (February 25, 2014). *NIH Clinical Center: Patient Recruitment: Healthy Volunteers*. Retrieved from <http://clinicalcenter.nih.gov/recruit/volunteers.html>.

ATYPICAL PARKINSONISM CENTER

The atypical parkinsonian disorders include **corticobasal syndrome (CBS)**, **dementia with Lewy bodies (DLB)**, **progressive supranuclear palsy (PSP)**, and **multiple system atrophy (MSA)**. These “cousins” of Parkinson disease (PD) share some of the same symptoms, but generally do not respond well to available PD treatments and progress faster than PD. This leads to significant disability and shortens patients’ lifespans.



While these disorders are less common than PD, they are often more difficult to diagnose, leading to delays in access to necessary care. The **Johns Hopkins Atypical Parkinsonism Center**, led by Dr. Alexander Pantelyat, is dedicated to the provision of the best care possible to the patients and families living with atypical parkinsonism. We endeavor to provide multidisciplinary, state of the art care to these individuals while advancing the science and knowledge of atypical parkinsonism through research initiatives, professional education, and outreach. Our monthly multidisciplinary atypical parkinsonism research clinic is truly patient centered: as the patients and their family members stay in the same room, they are seen by members of a dedicated team.

Our community outreach and educational programs offer additional support, and aid in raising much-needed awareness of these disorders in our society. Please contact Becky Dunlop at 410-955-8795 to be added to our database for information on future programs.

Community Programs

NEW! Atypical Parkinsonism Community Support Group

4th Thursday of Every Month

2:00 p.m. - 4:00 p.m.

St Thomas Episcopal Church

1108 Providence Road, Towson, MD 21286

Becky Dunlop, 410-955-8795 or rdunlop@jhmi.edu

Patients and Family Awareness Day:

Atypical Parkinsonism

Saturday, April 9

Presented in conjunction with CurePSP

8:30 a.m. - 12:00 p.m.

Towson Marriott, 10 Burke Avenue, Towson, MD 21204

Jaclyn Zendrian, 443-578-5669 or zendrian@curepsp.org

Medical Professionals Education Day:

Focus on Atypical Parkinsonism

Monday, May 16

Presented in conjunction with CurePSP

8:30 a.m. - 12:00 p.m.

Johns Hopkins Hospital, Chevy Chase Conference Center

1800 Orleans Street, Baltimore, MD 21287

Jaclyn Zendrian, 443-578-5669 or zendrian@curepsp.org

Personal Journey with Corticobasal Syndrome

By Randy Fahs

I was working as an engineering geologist when I discovered in late 2010, that there were changes in my vision and I had trouble seeing numbers; they began to look like spaghetti. My family doctor said I was in good physical health and my eye doctor claimed my vision was fine. I was at a loss of what was going on and decided to seek an evaluation from a psychiatrist, Dr. Elizabeth Winter, who recommended a neurologist at Johns Hopkins. After several evaluations, I ended up at the Johns Hopkins Parkinson’s Disease and Movement Disorders Center under the care of Dr. Zoltan Mari and Dr. Alexander Pantelyat. When the diagnosis was finally made of Corticobasal Degeneration (CBD), I experienced so many emotions and was in shock and disbelief.

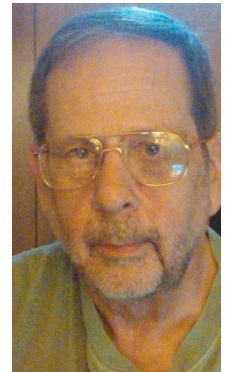
It took several weeks for my diagnosis of this neurodegenerative disease to sink in and it was at that point I decided to be as proactive as possible. I had the very good fortune to have doctors who were able to make the diagnosis of this atypical parkinsonism disease and I was able to utilize the resources of the Atypical Parkinsonism Clinic at Johns Hopkins at Bayview. They have a multidisciplinary clinical team in place that worked together to offer help and support to me.

In addition to seeing an excellent neurologist, I also see a variety of professionals that provide strategies to help me live well and manage this disease; these specialists include a physical therapist, speech therapist, occupational therapist, and

nurse. To help with my stiffness, the neurologist gives me Botox injections to allow my limbs and fingers to relax. I receive ongoing physical therapy to help with eating, sitting, standing, and walking. My speech was particularly affected (a problem common for many atypical parkinsonism patients), and speech therapy provided me with skills to talk louder and improve diction. The nurse and community outreach team have connected me to various support groups that have provided me the opportunity to learn from others and share my experiences. These professionals have done a tremendous job in keeping me focused on overcoming or compensating for the symptoms of this terrible disease.

I don’t want to leave out a very important individual, Dr. Michael McCloskey from Johns Hopkins University’s Cognitive Science Department who developed a surrogate numbering system that allowed me to keep working until October 2014. Mike’s system converts Arabic numbers to my special numbering system. It has been very helpful utilizing adaptive technologies to assist with every day activities.

Even though the disease slowly progresses I refuse to give up. I am grateful to have this one-of-a-kind team, not only have they provided me with helpful treatments, but they have helped bolster my own desire to try to fight this disease.



Randy Fahs

PARKINSON'S PROGRAM CALENDAR

These programs are presented by the *Johns Hopkins Parkinson's Disease and Movement Disorders Center* and made possible through the center's Dunlop Outreach and Education Fund, Pacing 4 Parkinson's, and our generous donors. Pre-registration is encouraged for all programs listed below. Please contact our center at **410-955-8795** to learn more about these programs. Visit our website at www.hopkinsmedicine.org/neuro/movement for a full listing.

◆ Parkinson's Disease Educational Series

3rd Wednesday of Every Month

7:00 p.m. - 9:00 p.m.

St. Thomas Episcopal Church, 1108 Providence Road, Towson, MD 21286

March 16 - *Anneliese Massey, MPT, Exercise & Physical Therapy*

April 20 - *Celia Bassich, PhD, CCC-SLP, Voice Health*

May 18 - *Dan Gold, DO, Vision*

June 15 - *Gregory Pontone, MD, Depression & Anxiety*

July 20 - *Kelly Mills, MD, Advanced Treatments*

August 17 - *Valina Dawson, PhD & Weiyi Mu, ScM, CGC, Genetics*

September 21 - *Jason Frank, CELA, Legal Planning*

October 19 - *Jan Crye, OTR/L, CDRS, Driving*

November 16 - *Liana Rosenthal, MD, Memory & Cognition*

December 21 - *Q & A Panel*

◆ Surgical Therapeutics for Parkinson's:

Deep Brain Stimulation & Duopa Information Session

Wednesday, April 6

Wednesday, November 9

6:00 p.m. - 8:30 p.m.

St. Thomas Episcopal Church, 1108 Providence Road, Towson, MD 21286

Register online - <http://tinyurl.com/hopkinsoutreach>

◆ Patients and Family Awareness Day: Atypical Parkinsonism

Saturday, April 9

Presented in conjunction with CurePSP

8:30 a.m. - 12:00 p.m.

Towson Marriott, 10 Burke Avenue, Towson, MD 21204

Jaclyn Zendrian, 443-578-5669 or zendrian@curepsp.org

◆ Newly Diagnosed Parkinson's Disease Educational Forum

Friday, July 15

Friday, November 18

9:00 a.m. - 12:00 p.m.

St. Thomas Episcopal Church, 1108 Providence Road, Towson, MD 21286

Register online - <http://tinyurl.com/hopkinsoutreach>

◆ Pacing 4 Parkinson's

Saturday, October 15

7:00 a.m.

Baltimore Running Festival, M&T Bank Ravens Stadium

www.pacing4parkinsons.org



Community Events

◆ Parkinson's Symposium: Taking Steps to Live Well with Parkinson's AND Allied Health Professionals Conference

Saturday, March 19

Presented by PFNCA

10:00 a.m. - 4:15 p.m.

Fairview Park Marriott, Falls Church, VA

PFNCA, 703-734-1017 or www.parkinsonfoundation.org

◆ Move and be Moved: Annual Parkinson's Community Symposium

Friday, April 1

Presented by the University of Maryland

8:30 a.m. - 2:45 p.m.

BWI Airport Marriott, Linthicum, MD

Michelle Cines, 410-328-0157

◆ Party 4 Parkinson's

Saturday, April 9

To benefit JHU PDMD Pacing 4 Parkinson's

7:00 p.m. - 11:00 p.m.

Wise Avenue Volunteer Fire Company, Baltimore, MD

Laurie Kimbel, 410-285-6207 or lkimbel421@gmail.com

◆ Mindful Motion: A Yoga & Pilates Event

Sunday, April 17

To benefit MAPS, Inc.

10:00 a.m. - 1:00 p.m.

Four Seasons Hotel, Baltimore, MD

<http://mindfulmotion.eventbrite.com>

◆ Parkinson's Caregiver Conference

Tuesday, April 19

Worcester County Support Group

10:00 a.m. - 3:30 p.m.

Ocean Pines Library, Berlin, MD

www.delmarvaparkinsonsalliance.org

◆ Moving Day® DC

Saturday, June 4

To benefit the National Parkinson Foundation

National Mall, Washington, D.C.

www.movingdaydc.org or 1-800-4PD-INFO



April is Parkinson's Awareness Month!

April 11th is celebrated annually as World Parkinson's Day to commemorate the birthday of Dr. James Parkinson's. This is a special day to increase awareness of PD. On April 11, 2005, the red tulip was announced as the worldwide symbol of Parkinson's disease.

World Parkinson Coalition. (2013). www.worldpdcoalition.org

The Johns Hopkins Parkinson's Disease and Movement Disorders Center

The Johns Hopkins Parkinson's Disease and Movement Disorders Center is dedicated to the tripartite mission of education, research, and excellent care of those living with movement disorders.

Johns Hopkins Outpatient Center
601 North Caroline Street, Suite 5064, Baltimore, MD 21287

410.502.0133

www.hopkinsmedicine.org/neuro/movement

Zoltan Mari, MD, *Director*

Becky Dunlop, RN, MS, *Associate Director*

Please consider supporting our center! The work of the Johns Hopkins Parkinson's Disease and Movement Disorders Center would not be possible without the generous support from our patients and the community. For more information about supporting the center, please contact the Development Office at **443-287-7877**.

Physicians

Zoltan Mari, MD
Kelly Mills, MD
Alex Pantelyat, MD
George Ricaurte, MD, PhD
Liana Rosenthal, MD

Fellows

Ankur Butala, MD
Martin Kronenbuerger, MD
Laura Tochen, MD

Additional Faculty

Jason Brandt, PhD
Ted Dawson, MD, PhD
Valina Dawson, PhD
Daniel Gold, DO
Stephen Grill, MD, PhD
Gregory Pontone, MD
Joseph Savitt, MD, PhD
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