



On the Move

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Parkinson's and Movement Disorders Center



VCUHealth™

Diving deeper into the complex world of movement disorders through patient care and research



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“The spectrum of movement disorders is broad and includes many with unique and overlapping characteristics.”

Many times when I tell others about the work we do at the Parkinson’s and Movement Disorders Center (PMDC), they hear only the first word in our name — and overlook the words “movement disorders.”

Treating and researching Parkinson’s disease is critical to our mission, but it is not the only movement disorder on which our team focuses. Every day, we work hard to provide exceptional care to individuals with other neurological disorders that affect movement, and we are further striving to make scientific advances that will bring new treatments and cures to those people living with often complicated and overlooked conditions.

The spectrum of movement disorders is broad and includes many with unique and overlapping characteristics. At the PMDC, we care for individuals with conditions that share some symptoms with Parkinson’s disease, such as Lewy body dementia (LBD), Multiple System Atrophy (MSA), Progressive Supranuclear Palsy (PSP), as well as other more distinct movement disorders including Huntington’s disease, dystonia, essential tremor, and ataxia.

Our efforts and work with these conditions are receiving national recognition. In addition to being a Parkinson Foundation Center of Excellence, CurePSP Center of Care, and a Huntington’s Disease Society of America Center of Excellence, we just became one of the first designated MSA Coalition Centers of Excellence in November. We are also pursuing becoming a Lewy Body Dementia Association Research Center of Excellence.

As you will read in this newsletter, one movement disorder we are increasing our focus on is MSA. It is a degenerative neurological disorder that can cause symptoms that mimic Parkinson’s disease and cause ataxia (loss of coordination) and is frequently associated with autonomic nervous system dysfunction — leading to blood pressure fluctuations and bladder and bowel issues that are difficult to treat.

With the addition of Cameron Miller-Patterson, M.D., to our team, we are not only expanding our research portfolio to include studies in MSA, but in 2024 he will help lead a new Autonomic Clinic designed to help diagnose and treat individuals with these often very challenging symptoms.

While our goal is to provide the highest-quality comprehensive care and carry out cutting-edge research at the PMDC, we also strive to ensure the strides

ON THE COVER:

The 2023 PMDC Research Symposium was held on June 9.

we make in diagnosis and treatment are equitable and accessible to individuals across diverse populations.

So when it comes to diversity, equity and inclusion (DEI), we do more than make statements. For example, we know there are disparities in Parkinson's disease care based on factors such as race, ethnicity, and gender. Through DEI efforts led by Stephanie Bissonnette, D.O., M.P.H., we are evaluating beliefs and factors that influence medical decision-making in individuals with Parkinson's disease across races and ethnicities in order to develop educational resources in the form of videos, pamphlets, or webinars that can address the needs of those diverse populations affected by disparities.

We're also educating our faculty, residents, and students at VCU on the social determinants of health for patients with neurological disorders with a focus on health literacy and how that affects our patients' ability to best care for themselves.

Comprehensive and equitable patient care, collaborative and impactful research, and excellence in education and training of the next generation of movement disorders providers. All of this is led by team members here at the PMDC who have a passion for their work and unceasingly aim to improve the lives of those entrusted to our care. ■

New clinic will aid autonomic symptoms in Parkinson's and MSA patients

A new clinic that will help treat autonomic symptoms experienced by patients with Parkinson's Disease and Multiple System Atrophy (MSA) is expected to get moving in early 2024.

The clinic would bring in specialists from multiple disciplines to care for Parkinson's disease and MSA patients living with autonomic (nervous system-related) symptoms associated with their disease. That includes urinary incontinence, sudden drops or spikes in blood pressure, heat or cold intolerance, sweating profusely (or not enough), and constipation, says Cameron Miller-Patterson, M.D., a VCU assistant professor of neurology.

Those symptoms can be particularly disruptive for patients already experiencing motor symptoms of Parkinson's disease and MSA. A patient already struggling with their gait, for example, can face repeated need to get up and go to the bathroom due to urinary dysfunction, Miller-Patterson says.

Parkinson's disease and MSA (similar to Parkinson's) are characterized by a build-up of the alpha synuclein proteins in the brain and nervous system that not only cause motor symptoms associated with the diseases but also impair the body's

autonomic functions, explains Miller-Patterson, the movement disorders neurologist for the new clinic, part of the VCU Parkinson's and Movement Disorders Center.

"Oftentimes, treatment of these autonomic symptoms is complicated and involves other doctors outside a neurologist," he says.

The PMDC will refer patients to the clinic where there will be a range of specialists, including a urologist, a psychologist, and a physical medicine rehabilitation specialist, Miller-Patterson says. Thomas Chelimsky, M.D., an autonomic neurologist who joined VCU in 2022, will also be at the clinic to recommend ways to treat autonomic symptoms.

"The big benefit of the multidisciplinary clinic is that you have multiple providers all in the same place," Miller-Patterson says. "Patients aren't waiting weeks or months in between appointments to see different providers."

Chelimsky currently runs another autonomic clinic at VCU Health for people with specific autonomic disorders, including Postural Orthostatic Tachycardia Syndrome (POTS). The

"We already have the foundation for this new clinic. It's just establishing a similar care model to a different population."

new clinic will expand that care for Parkinson's disease and MSA patients, Miller-Patterson says.

"We already have the foundation for this new clinic. It's just establishing a similar care model to a different population," he explains.

Miller-Patterson will find ways of treating patients' motor symptoms without worsening some of their autonomic symptoms, such as blood pressure drops.

The new clinic will see patients once a month at VCU Health's Stony Point campus in South Richmond.

"We'll have to see if one clinic a month is enough or whether we have enough patients through the PMDC and VCU at large where we might actually consider expanding the frequency of when it's open," he says. ■

PMDC and CAC earn MSA Center of Excellence designation

The VCU Parkinson's and Movement Disorders Center and the VCU Comprehensive Autonomic Center (CAC) were recently designated as an MSA Center of Excellence by the Multiple System Atrophy (MSA) Coalition after making a joint application for the recognition.

"The designation gives us a national reputation that this is a center where people can come with MSA and know that they're going to get excellent care," says Thomas Chelimsky, M.D., director of the CAC.

MSA is a rare disorder affecting an estimated 15,000 to 50,000 people in the U.S., according to the National Institute of Neurological Disorders and Stroke. MSA is characterized by motor symptoms seen in Parkinson's disease, but those symptoms generally progress more quickly in people with MSA, says Cameron Miller-Patterson, M.D., a VCU assistant professor of neurology.

"MSA patients also tend to have more severe autonomic dysfunction compared to most patients with Parkinson's disease — urinary dysfunction, changes in gastrointestinal function," says Miller-Patterson, a PMDC neurologist.

Joe Lindahl, the chief executive officer of The MSA Coalition, wrote in a letter to Chelimsky that Centers of Excellence like the one at VCU Health will "coordinate care to ensure those impacted by MSA receive a comprehensive, gold-standard continuum of care."

Including PMDC and CAC, about a dozen sites around the U.S. were picked as Centers of Excellence for 2023, the



Cameron Miller-Patterson, M.D.

first year that the MSA Coalition made designations, Chelimsky says.

Miller-Patterson and Chelimsky, who treat patients with specific autonomic disorders at the CAC, are launching a new clinic to treat autonomic symptoms in MSA and Parkinson's disease patients at VCU Health's Stony Point campus (related article on page 3).

That new clinic will allow MSA patients to see multiple specialists during a single visit. That type of cross-disciplinary approach was a key reason the PMDC and CAC earned the Center of Excellence designation, Miller-Patterson says.

"We have the clinician resources. We have urology. We have physical therapy. We have psychology. We have physical medicine. We have autonomic and movement disorders specialists," Miller-Patterson says. "We have the foundation for social work resources for patients and caregivers, and we also have research opportunities for MSA patients here."

Among those research opportunities at VCU Health is a phase 2 clinical study for a potential disease-modifying MSA therapy, Miller-Patterson says.

The Center of Excellence designation includes \$10,000 in funding that will likely help pay for costs associated with the new clinic, Miller-Patterson says.

Chelimsky adds that having an MSA Center of Excellence at VCU Health will help lead to better coordinated care for patients with that disease.



The Parkinson's and Movement Disorders Center partnered with Power Over Parkinson's Disease Foundation for a workshop on techniques for dealing with Parkinson's disease burnout. About 50 people attended the July 13 event, which was facilitated by Sarah K. Lageman, Ph.D., ABPP-CN, a neuropsychologist at PMDC. In October, PMDC also hosted a discussion on how to manage Parkinson's disease's changing symptoms as well as another event by the RVA Huntington's Disease Support Group on what patients with that disorder should do if they encounter law enforcement while driving.

Pilot Grants Program

PMDC funds three interdisciplinary scientific investigations

The VCU Parkinson's and Movement Disorders Center awarded \$50,000 each to three VCU investigators researching neurodegenerative disorders such as Parkinson's disease, Alzheimer's disease, and other types of movement disorders.

Now in its third year, the PMDC Pilot Grants program gained a new philanthropic sponsor, with the Joan and Morgan Massey Foundation providing \$50,000 to the PMDC to fund one of the grants.

"Funding from partners such as the Joan and Morgan Massey Foundation will help us increase the number and amount of grants we are able to offer," says Brian Berman, M.D., M.S., director of the PMDC and a professor in the Department of Neurology. "It increases the potential of our funded research to have a transformative impact on the lives of those at risk or suffering from movement disorders."

Founded in 2021, the PMDC Pilot Grants program provides initial funding to research projects that aim to improve

clinical care for patients with Parkinson's disease and other movement disorders.

The 2023 awardees include faculty conducting research across a broad range of basic and clinical science fields from the School of Medicine, School of Pharmacy and College of Humanities and Sciences.

"By combining expertise across different disciplines, the researchers who receive grants are able to answer more complex scientific questions and ultimately have a greater impact on patients affected by Parkinson's or other types of movement disorders," Berman says. "More research of this kind will ultimately lead to scientific advances that positively impact the quality of life for individuals living with these disorders."

The PMDC Pilot Grants program is supported by funds provided to the center through the Commonwealth of Virginia and philanthropy.

PMDC PILOT GRANT AWARDEES 2023-2024

Examination of a GBA-RTK- α -synuclein axis in cellular models of Parkinson's disease

Santiago Lima, Ph.D., Assistant Professor, Department of Biology, VCU College of Humanities and Sciences

Jason Newton, Ph.D., Assistant Professor, Department of Biology, VCU College of Humanities and Sciences

Mutations in the lysosomal enzyme glucocerebrosidase (GBA) are found in 5-15% of patients with Parkinson's disease. This investigation will study how the mutation alters cell signaling and contributes to the pathogenesis of the disease. The study could help enhance scientific knowledge of how GBA mutations can lead to neurodegeneration and the development of Parkinson's disease and uncover potential therapeutic targets to treat or prevent the disease from developing. This pilot grant was funded through a grant from the Joan and Morgan Massey Foundation.

Epigenetic mechanisms for chronic memory impairment following repeated exposure to organophosphate pesticide chlorpyrifos

Laxmikant Deshpande, Ph.D., Professor, Department of Neurology, VCU School of Medicine

Joseph McClay, Ph.D., Associate Professor, Department of Pharmacotherapy and Outcomes Science, VCU School of Pharmacy

Deshpande and McClay are building on a previous PMDC pilot grant funded study and are investigating the role of organophosphates, a chemical used in pesticides and other products, in neurodegenerative disorders and cognitive decline. They will be assessing the epigenetic and gene expression changes that occur in preclinical models with organophosphate-induced memory deficits. This could help provide critical insight on how pesticide exposure can lead to an increased risk for cognitive decline and Alzheimer's disease and the novel data on the importance of the epigenome in developing and treating pesticide-induced neurological dysfunction.

Group-based intervention for insomnia in Parkinson's disease

Natalie Dautovich, Ph.D., Associate Professor, Department of Psychology, VCU College of Humanities and Sciences

Sarah Lageman, Ph.D., Associate Professor, Department of Neurology, VCU School of Medicine

This investigation will attempt to develop a better way to treat insomnia, a common and bothersome non-motor symptom in Parkinson's disease. In their study, the investigators aim to assess the feasibility, acceptability and effectiveness of a cognitive behavioral intervention for insomnia in Parkinson's disease. This grant will help adapt an established method to treat insomnia to the treatment of patients with Parkinson's disease in a group setting, potentially enabling the development of a novel and effective patient-centered treatment.

Nursing specialty change brings new N.P. to PMDC

The VCU Parkinson's and Movement Disorders Center's designation last year as a Parkinson's Foundation Center of Excellence caught Mairead ("Meg") Basic's attention as she was looking to start the next chapter in her nursing career.

Basic had a career caring for patients undergoing surgery and in need of critical care. In April, she joined the PMDC as a nurse practitioner and advanced practice provider and is working with a team of neurologists, neuropsychologists, neurosurgeons, and physical, occupational, and speech therapists to provide comprehensive evaluations and compassionate care in an outpatient setting for patients with movement disorders, including Parkinson's disease, Huntington's disease, dystonia, ataxia, and essential tremor as well as for patients with dementia.

"I wanted to branch out and work with cutting-edge advancements in other areas of the medical profession," Basic says. "With the PMDC's Center of Excellence designations from the Parkinson's Foundation and Huntington's Disease



Meg Basic, N.P.

Society of America, PMDC seemed like the perfect place to gain that experience."

After completing nursing school at the University of Rhode Island, Basic started her first nursing job at VCU Health's Surgical Trauma Intensive Care Unit in 2013. Most recently, she's been enrolled at the Family Nurse Practitioner Program at VCU while working at the Post-Anesthesia Care Unit.

"In my experience in critical care, I was working with patients who were acutely ill and often in emergency situations. These patients often had little access to care," she explains. "I chose the family nurse practitioner track because I wanted to have a hand in primary and secondary prevention for these patients to deliver early screening, diagnosis, and prompt treatment of their chronic illnesses."

Now on her new career path, she's focused on improving the quality of life for patients living with movement disorders.

"I'm most looking forward to making a meaningful impact on people's day-to-day lives," Basic says.



Bonnie Mahl

A temp job becomes permanent for new PMDC community outreach coordinator

Bonnie Mahl first came to the VCU Parkinson's Movement and Disorders Center at the start of 2023 to fill a temporary administrative role and figured she would be at PMDC for just a couple months.

But that changed after seeing how PMDC helps people living with movement disorders.

"I just found the people at the PMDC to be so kind and so caring," Mahl says. "They're working to ensure that people with movement disorders are living their best lives possible."

Mahl stayed with PMDC, helping organize the monthly educational conference series, working with donors, and taking on other duties. In September, she began a new role as the center's senior community engagement and outreach coordinator.

One of her favorite moments at the center was getting office supplies for a workshop PMDC held with the Power

Over Parkinson's Disease Foundation on how to address Parkinson's disease burnout. Knowing hand tremors can be a symptom of Parkinson's disease, Mahl got triangular-shaped crayons so they would be easier to grip for attendees writing out questions during the workshop.

"I gave a crayon to one of the participants, and she loved it because it worked for her," Mahl says. "That fills my heart, and that's how I measure success."

Mahl came to PMDC with a 20-year background in environmental education. After college, she worked in the Peace Corps for two years in Vanuatu, an archipelago nation in the South Pacific near Fiji. "That was my first eye-opening experience in community development," she says.

At PMDC, Mahl sees more opportunities for in-person gatherings and educational workshops for patients and caregivers.

"My main goal in this role is to help foster even more of a sense of community within the patient population we reach," Mahl says.

Reaching for Center of Excellence status for Lewy Body Dementia

The Parkinson's and Movement Disorders Center is applying for designation as a Research Center of Excellence for Lewy body dementia (LBD), which would help further PMDC's efforts to find better ways to treat people with this disorder.

Matthew Barrett, M.D., M.Sc., recently submitted an application to the Lewy Body Dementia Association seeking Research Center of Excellence designation for PMDC. Barrett, a VCU associate professor of neurology, has been researching LBD and Parkinson's disease for the past decade.

"My overall research goal is to improve the lives of patients with these diseases," Barrett says. "I recognize the importance of accurate and early diagnosis for improving the treatment of Lewy body dementia."

LBD is the second most common cause of dementia and is associated with unrelenting cognitive decline, profound burdens on caregivers, and higher healthcare costs compared with Alzheimer's disease.

Barrett has been conducting research that seeks to detect LBD more quickly by developing a physiological biomarker that uses non-invasive electroencephalography (EEG). That approach seeks to use electrical activity in the brain to identify LBD's distinctive cognitive fluctuations, the instances of impaired attention or reduced arousal that are tell-tale signs of the disease.

Barrett is hopeful the PMDC will receive the Research Center of Excellence designation, explaining that the center brings numerous strengths to the field of LBD research. Among those are an ongoing research grant from the National Institutes of Health, an LBD-specific support group, and two clinical trials for people with the disease, Barrett says.

"We have now enrolled 46 participants and are well on our way to our goal of 70," Barrett says.

The PMDC application notes VCU would be an "ideal place" to be a Research Center of Excellence for LBD because of the university's institutional support for research, the clinical and research staff available here to support studies into the disease, the presence of the caregiver support group, and Barrett's research into LBD.

If PMDC's request is granted, it would be another Center of Excellence designation for the center. The PMDC is already considered a Center of Excellence for Parkinson's disease, Huntington disease, Multiple System Atrophy, and Progressive Supranuclear Palsy.



Matthew Barrett, M.D., M.Sc.



Brian D. Berman, M.D., M.S., and Leslie J. Cloud, M.D., M.Sc., were among 50 School of Medicine faculty recognized at the Oct. 5 VCU Investiture Celebration. That event honored faculty recently appointed to endowed professorships and chairs. Berman, the PMDC director, is the Bermis Chair while Cloud, director of the Parkinson's Disease Program, is the Rogliano Family Chair.

Among the other Neurology and Neuroscience faculty honored were David D. Limbrick Jr, M.D., Ph.D., the James W. and Frances G. McGlothlin Chair in the Harold F. Young Neurosurgery Center; Nicholas E. Johnson, M.D., MSCI, FAAN, the George B. Bliley Research Chair; and Dennis J. Rivet, M.D., the Harold I. Nemuth Distinguished Professorship in Neurosurgery.

Research Symposium



About 40 people attended the 2023 PMDC Research Symposium on June 9 in the McGlothlin Medical Education Center on the VCU Medical Center campus. The goal of the event is to highlight collaborative research focusing on movement disorders (including PMDC Pilot Grant awardees) and to bring members of the research community together to discuss and generate new ideas and connections for future research endeavors.

The afternoon included six short TED-style talk sessions for pilot grant awardees who presented their research and answered questions from attendees. The event then continued into the lobby for poster presentations as well as social and networking opportunities. There were 12 posters with presenters including an area high school student, VCU medical students and residents, clinical research coordinators, and research faculty from across the university.

Part of the idea behind the center (and the pilot grants) has been to develop research connections and ideas across schools and departments in order to generate new ways of thinking about movement disorders and the people impacted by them. The event was very successful, and the PMDC team was excited to feature talks and posters from the departments of Surgery and Neurosurgery, as well as collaborative projects with Biomedical Engineering.

Support the PMDC

Find all the ways you can support our work to transform current treatment models for movement disorders.

Philanthropy plays an important role in bolstering our multidisciplinary clinical team, funding innovative research and supporting our training and outreach efforts. For information about how you can support the VCU PMDC, please contact the Neuroscience Development Team at 804-628-8287 or vcuhealthdevelopment@vcuhealth.org.

parkinsons.vcu.edu/donate

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