

UC San Diego Health

THE IMPACT OF YOUR GIVING 2024

AN UPDATE FROM THE PARKINSON AND OTHER MOVEMENT
DISORDERS CENTER AT UC SAN DIEGO HEALTH





MESSAGE FROM THE DIRECTOR

Dear Friends,

Thank you so much for your ongoing commitment to the Parkinson and Other Movement Disorders Center at UC San Diego Health. I am thrilled to share with you some updates and highlights from our team that advance our goal: to improve the lives of individuals with movement disorders and work toward slowing disease progression and finding cures.

I am incredibly proud of what we have accomplished over the past few years, particularly the strong mentorship we provide to our center's talented junior faculty members. Since our last report, several have gone on to obtain federal funding for high-potential projects that will shape our understanding and approach to treating Parkinson's disease and other movement disorders.

Our cross-disciplinary collaborations with UC San Diego bioengineers continue to expand. We are grateful to leverage the expertise of some of the world's foremost researchers in wearable health sensor development, an area that has huge implications for optimizing the care and treatment of patients with neurodegenerative diseases. I encourage you to read more about these exciting projects in this report.

Our team has become deeply involved in the efforts and activities of the broader patient support community. Through our partnerships with other organizations, we learn more about patient experiences, offer our clinical expertise, and broaden access to opportunities such as potentially life-improving clinical trials. We regularly host physician trainings to ensure that neurology specialists across our region and nation are up to date on the very latest treatment approaches. It truly takes a village to fight for better lives for those with Parkinson's disease and related disorders, and I am proud to be a part of it.

Our upward trajectory over the past few decades would not be possible without the generous contributions of donors like you who support our work in large and small ways. Every gift strengthens our team's ability to keep pushing the boundaries of our understanding of these disorders to offer better care to patients. You help fund promising early-stage research and clinical trials and provide fellowships for tomorrow's researchers and health care providers. You are making a true difference. Thank you for taking a moment to learn about what your support is doing for patients at UC San Diego Health, across the nation, and around the world.

With gratitude,

Irene Litvan, MD, FAAN, FANA, MPhil

Tasch Endowed Chair of Parkinson Disease Research

Professor of Neurosciences

Director, Parkinson and Other Movement Disorders Center at UC San Diego Health

TEAM UPDATES AND ACCOLADES

The Parkinson and Other Movement Disorders Center was one of eight centers around the world to receive an **Edmond J. Safra Fellowship in Movement Disorders** from the Michael J. Fox Foundation for Parkinson's Research, which began supporting fellowships at UC San Diego this year. It aims to help close the provider gap for the six million people around the world who live with Parkinson's disease by building a global network of experts to provide high-quality care, fuel research progress, and train future generations.

The center was also named a **Center of Excellence in Multiple System Atrophy** by the Multiple System Atrophy Coalition, in addition to being a Center of Excellence in Parkinson's Disease, a Lewy Body Dementia Research Center of Excellence, and a CurePSP Center of Care.



Center director **Irene Litvan** was awarded the 2023 Movement Disorders Society Honorary Membership Award in recognition of her extraordinary contributions to the field of Parkinson's disease and other movement disorder research. This is the most prestigious award in the field and complements her 2018 American Academy of Neurology Movement Disorders Research Award, which also recognized the impact of her research. For the past five years, she has continued to be named among the world's top 1% of the most-cited publication authors in neuroscience on the Web of Science Group's Highly Cited Researchers list. In 2023, she

was also one of eight UC San Diego researchers cited among the 1,000 Best Female Scientists in the World by Research.com. She currently serves as elected chair of the International Parkinson and Movement Disorder Society, and in two years will chair the Society's Pan American Section.



Movement disorders fellowship co-directors **David Coughlin, MD,** and **Caitlin Mulligan, MD,** received UC



San Diego's Whitehill Award for clinical and research mentorship. They were recognized

for exemplifying compassionate bedside manner for learners to emulate, advocating for trainees, and encouraging and facilitating research projects.

MEET OUR NEWEST TEAM MEMBERS

The center recently welcomed four new members to our multidisciplinary team of physician-scientists, researchers and clinical staff.



Sharona Ben-Haim, MD

Associate Professor, Neurological Surgery

A neurosurgeon who specializes in caring for people with movement disorders such as Parkinson's disease, dystonia, and essential tremor and spasticity, as well as chronic pain and treatment-resistant epilepsy, Sharona performs deep brain stimulation (DBS) surgeries, including "awake" microelectrode-guided DBS and "asleep" MRI- and CT-guided DBS. She completed a

fellowship in epilepsy and functional surgery at Yale School of Medicine and was a visiting fellow in functional neurosurgery at University of Oxford in Oxford, England. She completed residency training in neurosurgery at Mount Sinai Medical Center in New York and earned her medical degree from UC San Diego School of Medicine.

"My approach to patient care is highly patient-centric, meaning I'm constantly trying to push the boundaries to make surgeries more effective, more efficient and more minimally invasive – including the little details that can really improve a patient's experience. It is extremely rewarding when I can help patients realize that a specific surgery can improve their symptoms and then take them through that journey."



Robert Hess, MD

Assistant Professor, Clinical Neurosciences

Robert was born and raised in the suburbs

of Chicago. He completed his undergraduate studies in history and prehealth studies at the University of Notre Dame, attended Rush Medical College, and completed his neurology residency at UC San Diego School of Medicine, serving as chief resident his final year. He continued at UC San Diego, completing his fellowship in movement disorders. His past research projects include immunohistochemical staining of corticospinal neurons and dorsal root ganglia in SOD-1 mouse models of amyotrophic lateral sclerosis (ALS) at Northwestern University, as well as end-of-life care in patients with atypical parkinsonism disorders at UC San Diego Health.

"I was drawn to the field of movement disorders due to our utmost focus on improving our patients' quality of life through a holistic care approach. We have the honor of developing close and longitudinal relationships with our patients and their families. We are lucky to have many tools at our disposal including multidisciplinary teams, pharmaceuticals, nonpharmaceuticals and advanced therapies."



**Gail Reiner, DNP,
FNP-C**

*Nurse Practitioner,
Research Team*

Gail joined the UC San Diego Health Department of Neurosciences in 2009 as a family nurse practitioner with a doctorate in nursing from the University of San Diego. Her research initially focused on dyslipidemia with the School of Public Health at Harvard University. Her recent work centers on basic science and clinical trials in neurometabolic and movement disorders neurology. She conducts patient histories, exams, lab result reviews, and objective measures pertinent to investigator-initiated and clinical trials. In clinical neurology she performs comprehensive behavior intervention for tics (CBIT) therapy for patients with tic disorders and sees clinical patients affected by mitochondrial disorders. She also treats patients affected by Smith-Magenis syndrome at Rady Children's Hospital-San Diego.

"It is a privilege to work with patients whose gift of time through research participation is a wonderful contribution to the field of movement disorders neurology. I see neurology as a combination of helping individuals manage the grief of dealing with declining brain and body functioning while working to encourage them to optimize their overall physical, social, emotional and spiritual health."



David Molina, RN
Nurse, Clinical Team

David joined UC San Diego Health in 2021 as a lead registered nurse in family medicine. He also has experience in nephrology, urology, urgent care, trauma, cardiovascular health and neurology intensive care. Originally from Northern California, David enjoys calling San Diego home and is passionate about patient care and making an impact within our community.

"I am excited to support the Parkinson and Other Movement Disorders Center and our patients at our Chancellor Park Neurology location. I can already say that I love working with this team; they are passionate, engaged and incredibly intelligent. I look forward to working side-by-side to make each patient experience the best I can."

CLINICAL FELLOW



Amy Lin, MD

Post-graduate year 5

Amy completed her undergraduate degree in molecular and cellular biology at Harvard University and earned her medical degree and master's degree in public health from Keck School of Medicine at the University of Southern California. At USC, she earned admission to the Delta Omega Honorary Society for Public Health and to the Medical Student Training in Aging Research Program. She then completed her neurology residency at Washington University/Barnes-Jewish Hospital before joining UC San Diego's movement disorders fellowship program, where she is pursuing her interests in clinical research.

INTERNATIONAL VISITING RESEARCH SCHOLARS



Hamidreza Ghodsi, MD

Hamidreza graduated as a medical doctor from Mashhad University of Medical

Sciences, Iran, and completed a two-year postdoctoral fellowship at the Center of Excellence in Clinical Research at the same university. He has been committed to pursuing a career in neurology since his early years in medical school after completing clinical clerkship rounds in this area. Hamidreza's doctoral thesis was a nine-month randomized controlled trial of Parkinson's disease patients evaluating the efficacy of nano-curcumin, a potential disease-modifying agent which has proven effective in animal models. His current research primarily focuses on the analysis of contributors to Parkinson's disease progression and state-of-the-art clinical trials of patients with different Parkinsonian disorders.



Nahid Olfati, MD

Nahid attended Tabriz University of Medical Sciences, where she studied health care

management and evidence-based medicine. She completed her neurology residency at Mashhad University of Medical Sciences with a focus on movement and neurodegenerative disorders. After her residency, Nahid continued there as an assistant professor of neurology and served as neurology residency program director. Her research interests involve etiopathogenesis and biomarkers of atypical Parkinsonian disorders. She also supported the development of a wearable device that measures factors like blood pressure, heart rate, motion and brain activity to help identify the causes of falls for those with Parkinson's disease and atypical Parkinsonian disorders.

SUPPORT AND RESOURCES

MONTHLY COMMUNITY SYMPOSIUM

Registration open to all community members

Our center presents a series of monthly events that bring together experts from a variety of fields to provide the Parkinson's disease community with the very latest information on diagnosis, treatment and overall well-being. This is the place to learn about the latest research and clinical trial opportunities and gain valuable tips and insights to help patients and their caregivers and family members manage life with Parkinson's disease. Recordings of past events and exercise classes are available on the **Parkinson and Other Movement Disorders Center's YouTube channel**.



¡JUNTOS UNIDOS! (UNITED TOGETHER)

Serving the Spanish-speaking Parkinson's disease community

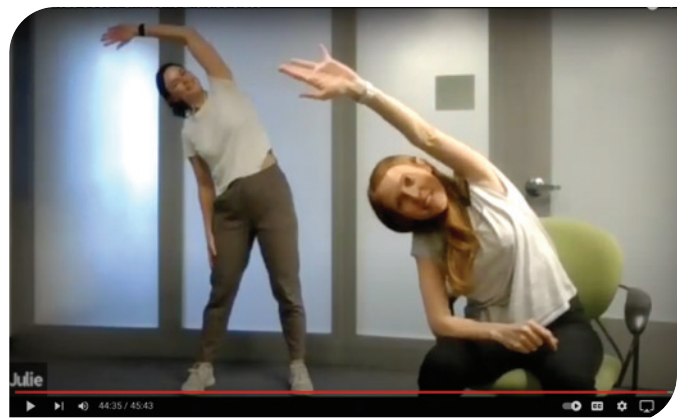
As a natural outgrowth of Spanish-language support groups, five years ago the Parkinson's Foundation awarded our center a grant to establish this outreach program to inform and support patients and their families and caregivers. For information on our half-day seminars, translation services and more, contact program director Adriana Gonzalez at **(858) 822-0791** or **acg008@ucsd.edu**.

¡Juntos Unidos! Un programa dedicado a proporcionar información, educación y apoyo a la comunidad de Parkinson's de habla Hispana. **Para más información acerca de los talleres por favor comuníquese con Adriana González a (858) 822-0791 o acg008@ucsd.edu.**

VIRTUAL GROUP EXERCISE CLASSES

Join us on the first and third Tuesday of each month at 11 a.m.

Our team of physical therapists includes instructors certified by the PWR! (Parkinson Wellness Recovery) program. Join them from the comfort of your home for a research-based physical and cognitive challenge that is emotionally rewarding and can help slow disease progression, improve symptoms and restore function. Please visit **movementdisorders.ucsd.edu/go/outreach** to learn more.





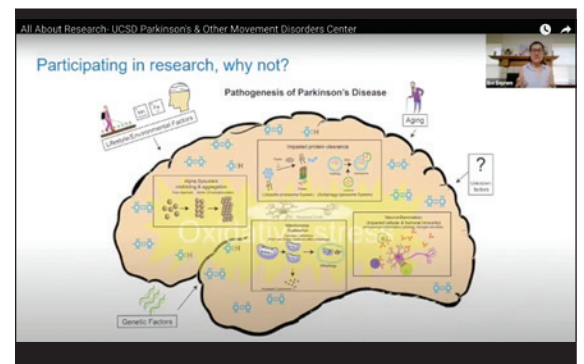
The UC San Diego team at the Parkinson's Revolution event on February 25, 2023

CYCLING FOR A CURE

UC San Diego formed an enthusiastic team to help raise funds and awareness for Parkinson's disease through Parkinson's Revolution, an annual virtual indoor cycling event organized by the Parkinson's Foundation. The team joined cyclists online from 35 other cities in 2023 and 2024 to complete a high-energy, high-intensity ride. Since its launch in 2020, this event has raised more than \$1 million to directly support the foundation's mission of improving care and advancing research toward a cure while also providing local communities with resources that can help improve quality of life.

SHARING OUR EXPERTISE ON LEWY BODY DEMENTIA

Center team members Ece Bayram, Irene Litvan and David Coughlin are featured experts in videos and articles produced by the Lewy Body Dementia Association. Learn about the importance of brain donation for researching potential treatments, the differences in the biological and social experiences of men and women with this disorder (research for which Dr. Bayram received funding from the Association), and much more at lbda.org or mediflix.com/channels/lewy-body-dementia-association.



SUPPORT OUR WELLNESS AND OUTREACH EFFORTS

Strengthen our region's movement disorders community through a gift to our holistic self-care and support programs. These offerings can be life-changing for patients and their caregivers. Philanthropy enables us to expand our reach and bring hope and solutions to more people.

To make a gift, visit ucsd.edu/go/supportMDwellness.

RESEARCH HIGHLIGHTS

Breakthroughs in Parkinson's disease research at UC San Diego

EXPLORING THE POTENTIAL OF WEARABLE DEVICES TO HELP MANAGE SYMPTOMS

Ongoing collaborations with UC San Diego bioengineers and nanoengineers are yielding advancements that leverage technology to help patients more accurately and conveniently treat Parkinson's disease symptoms on a day-to-day basis. UC San Diego Health patients are among the first to test these new approaches to remote monitoring and treatment as we endeavor to make the most of rapidly advancing technologies to help improve the outcomes and well-being of patients everywhere.

A promising meter for optimizing levodopa delivery continues to be refined by a team led by nanoengineer Joseph Wang, PhD, director of the Center for Wearable Sensors at UC San Diego Jacobs School of Engineering, in collaboration with Dr. Litvan and Assistant Professor of Neurosciences Katherine Longardner, MD. The potential uses for such a sensor to monitor and manage human health are vast, but levodopa dosing for Parkinson's disease treatment is the top priority. The team is developing a sensor for Parkinson's patients that measures levodopa levels in blood obtained through a finger prick, modeled on the method used by people with diabetes to measure glucose. The team is also developing an approach that accomplishes the same task less invasively via measurements of human sweat.

Most of these projects — which were initiated thanks to seed funding from generous donors — have already received initial funding from the National Institutes of Health (NIH) for further exploration and have been published in high-impact journals. The research team is now pursuing a multimillion-dollar NIH grant to accelerate the development of these devices and validate their efficacy.

The center's researchers also continue to advance work on a revolutionary noninvasive ultrasonic blood pressure monitor in collaboration with UC San Diego bioengineering professor, Sheng Xu, PhD. The monitor is designed to detect blood pressure fluctuations, a leading cause of falls for Parkinson's disease patients. Ultimately, a continuous blood pressure reading could enable patients to get the most appropriate treatment at the optimal time and decrease the risk of falling.

PROMISING NEW THERAPIES ADVANCING THROUGH CLINICAL TRIALS

The center continues to lead state-of-the-art experimental therapeutic studies aimed at slowing disease progression not only in people with Parkinson's disease but also in those with multiple system atrophy, progressive supranuclear palsy, and dementia with Lewy bodies. We are proud to share that we are beginning to receive positive results from clinical trials of the three therapies we have been studying for neurology patients in recent years. As a result, several are moving on to the next phase of development.

We are currently leading a Phase 1 clinical trial of a novel antisense oligonucleotide (ASO) therapy to treat progressive supranuclear palsy (PSP). ASOs offer a groundbreaking approach that alters the development of specific proteins to slow the progression of neurodegenerative disorders, potentially changing the course of these diseases. They have been approved for the treatment of several other neurological disorders, and the center is among just a few in the country to participate in this novel approach to exploring the safety and optimal dosage to slow the course of PSP.

The center is also studying the efficacy of therapies to treat neurodegenerative diseases that leverage antibodies to target proteins that aggregate and cause disease progression. In addition to Phase 2 clinical trials of antibody-based therapies for Parkinson's disease, we have started therapeutic trials for PSP and multiple system atrophy. For persons with Parkinson's disease, this study involved two distinct patient groups — those who have not yet received any pharmacologic therapies for Parkinson's disease and those who are currently being treated — which has brought a new dimension to the findings. This therapy is expected to move to Phase 3 clinical trials and eventually become commercially available. The center is also conducting studies of therapies aimed at slowing the progression of dementia with Lewy bodies.

To learn more about therapies we are developing and clinical trials open for enrollment, please visit neurosciences.ucsd.edu/centers-programs/movement-disorders.





Multiple types of wearable sensors continuously monitor changes in joint and body position, blood pressure and heart rate during fall-provoking tasks, offering insights that could help predict and ultimately prevent falls.

NOVEL “FALL METER” COULD HELP PATIENTS BETTER PREDICT AND PREVENT FALLS

Each fall event — or the expectation of it — can be very distressing for those living with Parkinson’s disease and their families. It can cause major injuries and greatly increase the risk of disability while limiting their independence. Those with Parkinson’s disease and other movement disorders tend to fall due to multiple causes. Dr. Litvan and her team are collaborating with bioengineers and nanoengineers to develop a “fall meter” — a highly integrated system designed for real-life diagnosis and prediction of falls. They are currently testing the clinical application of this multimodal monitoring system to find the causes of falls in a patient’s real-life setting by measuring blood pressure, heart rate, motion and brain activity.

The long-term goal is to transfer data to caregivers and then to physicians to improve the clinical care of fall-prone people. This information can also help with issuing real-time prefall and presyncope warnings based on data monitoring algorithms and educating patients about the causes and warning signs of their falls.

NEW STUDY EXAMINES THE ROLE OF HEART HEALTH IN COGNITIVE SYMPTOMS LIKE MEMORY

In the United States, Latinos with Parkinson’s disease are more impacted by deteriorating thinking skills like memory and planning than patients from other ethnic backgrounds. The reason is unknown, but researchers theorize that the incidence of diabetes and other cardiovascular conditions in the Latino population or social factors, such as limited access to specialty health care or language barriers, could help explain the inconsistency in cognitive symptoms.

The Michael J. Fox Foundation has awarded the center a research grant to help identify the real reasons. The findings could pave the way for programs designed to address the causes of these disparities and improve cognition among Latino patients. They could also help paint a clearer picture of how vascular factors impact cognitive decline in general, informing new directions for research and treatment.

This study is co-led by center Director Irene Litvan and Maria Marquine, PhD, currently at Duke University. The research team is evaluating people with Parkinson’s disease 40 and older living in the U.S., half of whom are Latino, using tests of memory and other thinking skills in English or Spanish. Blood test results, physical exams and medical histories will also be considered to detect diabetes and other cardiovascular conditions, and Parkinson’s disease symptoms will be assessed. Participants will complete surveys that establish their access to and use of health care and proficiency in English, among other social factors. Study outcomes could guide future efforts to develop culturally appropriate programs that mitigate the causes of increased cognitive decline.

ADDITIONAL PIONEERING RESEARCH PROJECTS AT UC SAN DIEGO

- The Lewy Body Dementia Association has awarded a grant to fund research led by Dr. Bayram to help determine the sex-specific environmental, occupational and reproductive health factors associated with Lewy body dementia.
- The center is among several U.S. sites collaborating to search for biomarkers to make earlier and more accurate diagnoses of Parkinson’s disease, progressive supranuclear palsy, and dementia with Lewy bodies.
- Dr. Coughlin is planning the establishment of a much-needed brain bank specific to Parkinson’s disease and other movement disorders. This resource could be shared among researchers worldwide to help inform studies on a wide variety of treatment approaches, using the successful Alzheimer’s disease brain bank as a model. Dr. Coughlin serves as the movement disorders fellowship co-director and neuropathology core co-director for the Shiley-Marcos Alzheimer’s Disease Research Center.

WITH GRATITUDE

THANK YOU FOR PARTNERING WITH US TO REDEFINE THE WAY THE WORLD UNDERSTANDS AND TREATS MOVEMENT DISORDERS.

Philanthropic contributions enable Dr. Litvan and her team the freedom and the flexibility to fuel the most promising, leading-edge research ideas and deliver exceptional patient care. **To further support our mission, please consider making a gift to:**

The Parkinson and Other Movement Disorders Center Fund, which supports research and strategic priorities identified by leadership as having the highest potential to advance the center's mission.

The Movement Disorder Education, Outreach and Wellness Fund, which supports the center's psycho-social education, outreach and wellness efforts, including support group programming, patient seminars, annual public symposia, and training.



For more information about supporting the Parkinson and Other Movement Disorder Center at UC San Diego Health or making other contributions to advance our vital work, please contact:

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UC San Diego

At UC San Diego, we believe that what we don't know today will forever change our tomorrows. Empowered by generosity and fueled by curiosity, we are unafraid to chase the unknown — to ask the questions no one has asked before and to push the boundaries of possibility. Together with your support for the Parkinson and Other Movement Disorder Center at UC San Diego Health, we will unite diverse people and unconventional perspectives to propel limitless impact. Because we know that when we come together, nothing is beyond us.