RUSH

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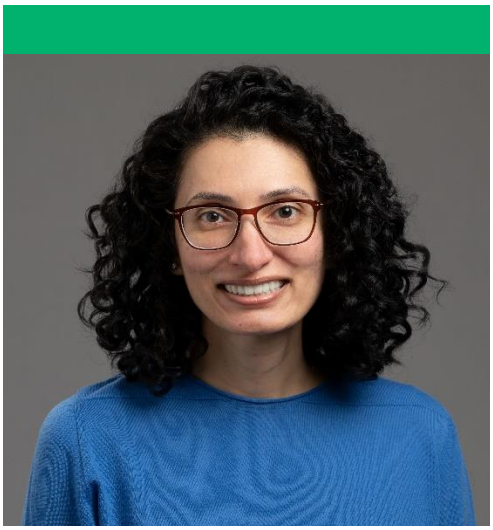
The Richard G. Cole Faculty Scholar



Advancement of Medicine

In 2024, we continued our work seeking neurosurgical advancements in the treatment of movement disorders, specifically deep brain stimulation, or DBS, and MRI-guided focused ultrasound, or MRgFUS. Our center is focused on education and research in outcomes related to these two interventions, specifically with strategies to improve patient experience and reduce neurological complications associated with the surgery. Our primary focus of the past year has been to recruit and evaluate patients for the prospective study for awake-versus-asleep DBS surgery and build a comprehensive movement disorders neurology-neurosurgical database. Our work is well underway.

Research

Over the past year, we have seen significant developments in all areas. We have an established DBS support group for patients that is now providing mentorship and support for patients who are considering DBS surgery and patients who have received it. We have created a patient network for patients who are interested in neurosurgical procedures, where a patient who is considering surgery is paired with a patient who has completed surgery to help provide direct support. I have a contract with Oxford University Press to develop a book educating other practitioners on how to program DBS and integrate new technological advances recently approved by the FDA to improve patient care. This book is a multi-author international collaboration to educate providers on how to best utilize this therapy. A joint movement disorders/neurology and neurosurgical database is being developed. We had two publications and three manuscripts submitted for review in 2024 by our group. We anticipate the three manuscripts will be accepted by peer-reviewed journals in the upcoming months. We continue to recruit for the awake-versus-asleep DBS protocol and anticipate meeting recruitment goals by 2026.

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Clinical Advancements

We changed the workflow and decision-making processes within our clinical program to improve surgery outcomes and improve patient selection for procedure. Our new fast-track Focused Ultrasound Program, which ensures patients traveling from afar can schedule all their evaluations on the same day, has been well-received. Also, we launched a monthly patient-centered lecture series for those considering surgical interventions for movement disorders.

Publication Highlights

- "Loneliness in Parkinson's disease: Subjective experience overshadows objective motor impairment." *Parkinsonism & Related Disorders*. May 10, 2025.
- "Survey of common deep brain stimulation programming practices by experts in Parkinson's disease." *Journal of Neurology* (accepted). 2024.
- "Randomized trial of telegenetic counseling for gene testing in Huntington's disease." *Neurology Clinical Practice*. 2024.
- "Frailty and outcomes after unilateral MRI-guided focused ultrasound thalamotomy for tremor." *Journal of Neurosurgery*. April 1, 2025.
- "Magnetic resonance-guided focused ultrasound without anesthesiologist support." *Stereotactic and Functional Neurosurgery* (published online ahead of print). 2024.

Invited Seminars, Lectures, and Presentations

- Microelectrode Recordings and the Physiology of STN, GPi and ViM Firing with Neurosurgical Considerations for Each Target, Neuroanatomy and Intraoperative Stimulation Testing: Exploring Options in Epilepsy. American Clinical Neurophysiology Conference. Baltimore, MD. March 2025.
- MRI-Guided Focused Ultrasound and Other Interventional Therapies. American Academy of Neurology Annual Meeting. Denver, CO. April 2024.
- Differentiating ET and PD. Rush Neurology Department CME for Non-Neurologists. December 2024.
- Management of Tremor. Rush Neurology Department CME. December 2024.

- Intra-Operative Motor Side Effects High Pulse Width Stimulation During Asleep Deep Brain Stimulation May Predict Post-Operative Motor Side effects. American Academy of Neurology. April 2025.
- Comparative Patient Outcomes Following Awake vs Asleep STN DBS at Rush University Medical Center: A Retrospective Approach. American Academy of Neurology. April 2024.

The Year Ahead: 2024 and Beyond

I will prioritize community outreach and education. I am mentoring a community Pilates studio to develop a Parkinson's disease-specific program with online and in-person options to address balance impairment, apathy and depression. We have submitted a grant application. I am focusing on improving education in the physician community related to movement disorders therapies for tremors and Parkinson's disease.

With Gratitude

Thank you for your generosity, which has helped my group improve quality of life for patients with movement disorders such as Parkinson's disease, essential tremors and dystonia by innovating and advancing the role of surgical therapies. Your support helps to facilitate the national and international presence of our group in the neurology community and within the field of movement disorders.