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2ND INTERNATIONAL TREMOR CONGRESS

# FROM BENCH TO BEDSIDE TOWARDS TREMOR THERAPY

THURSDAY-FRIDAY  
May 18 & 19, 2023



**International Parkinson and  
Movement Disorder Society**

Endorsed by the International  
Parkinson and Movement  
Disorder Society

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## Program Description and Objectives

Tremor is the most common movement disorder and can be highly disabling. Despite recent advancements in the diagnosis and management, patients with tremor continue to live with tremor-related disability. Current technology has created an opportunity for new diagnostic approaches, surgical procedures, and pharmacologic innovations, which holds promise for treatment of tremor. In addition, the understanding of abnormalities of brain circuitry for tremor will guide us for the development of targeted therapy. Taken together, these advances in the clinical diagnosis and patient management and the basic science of brain circuitry of tremor will synergistically bring us to the forefront of therapy development for tremor.

In addition, there are several tremor disorders. Essential tremor is characterized by kinetic tremor whereas Parkinson's tremor is classically tremor at rest. Dystonia tremor is less rhythmic and is usually associated with sustained muscle twisting movements. Ataxic tremor is associated with cerebellar ataxia and gait imbalance. Therefore, the accurate diagnosis of tremor disorder also poses challenges to neurologists and movement disorders specialists. Neurologists must stay up-to-date on advances in all aspects of patient care, but, unfortunately, many rely on what they learned in medical school or residency.

Moreover, the recent advances in the genetics, pathology, and physiology of tremor disorders, we begin to understand that each tremor disorder has distinct yet over-lapping clinical characteristics and underlying pathomechanism. Emerging molecular and physiological understanding of tremor has recently led investigators to envision some common pathogenic mechanisms with possible shared therapeutic approaches. However, research efforts among investigators are often isolated and there is a demand for better communication and collaborations among scientists and clinicians so that therapeutic targets will be rapidly translated into clinical trials, and the pipeline therapy development will enter robustly designed trials. Given these important challenges in the field, a need to bring together movement disorders specialists who diagnose and manage tremor patients and basic scientists who study the abnormal brain circuits of tremor is critically important to advance the field. In addition, there is a need to educate the next-generation clinicians and scientists in the knowledge of tremor and to inspire the next-generation to go into tremor field.

To address these gaps, the Movement Disorders Division within the Department of Neurology of the Columbia University Vagelos College of Physicians and Surgeons will be conducting 2nd International Tremor Congress, a comprehensive meeting on advances in the diagnosis and management of tremor and the science of tremor disorders. The meeting addresses an important need for a comprehensive, academic educational program providing the latest information on innovations, insights on the latest science, and translation of the science to patient care. The conference is also consistent with the national call of the Precision Medicine Initiative for health care providers to pursue new approaches that tailor treatment to the individual patient's characteristics because patient response to conventional treatments for tremor is often variable; therefore, education on new surgical and medical advancements that account for individual differences can optimize outcomes for patients with tremor. In addition, understanding the heterogeneity of tremor disorders will help to design and conduct robust clinical trials to push forward therapy development.

At the conclusion of this activity, participants will be better able to:

- Formulate an evidence-based approach to optimize the treatment for tremor disorders.
- Develop evidence-based scientific knowledge for the future clinical study design in tremor disorders.
- Describe the up-to-date clinical diagnosis and treatment in each tremor disorder.
- Indicate the cutting-edge scientific discovery for tremor and also current tremor therapy development.

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 COLUMBIA

 NewYork-Presbyterian

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## LOGISTICS

### Meeting Location

#### **The New York Academy of Medicine**

1216 Fifth Avenue  
New York, NY 10029

The Academy is located at the corner of Fifth Avenue and 103rd Street.  
The entrance is on 103rd Street.

### Meals/Refreshments

#### **Thursday, May 18, 2023**

- 7:45 a.m. Registration; Continental Breakfast – 3<sup>rd</sup> Floor
- 9:55 a.m. Refreshment Break – 3<sup>rd</sup> Floor
- 11:30 a.m. Tremor Research Group sponsored Lunch – 3<sup>rd</sup> Floor
- 2:50 p.m. Refreshment Break – 3<sup>rd</sup> Floor
- 5:10 p.m. Posters and Reception– 2nd Floor

#### **Friday, May 19, 2023**

- 7:45 a.m. Registration; Continental Breakfast – 3<sup>rd</sup> Floor
- 9:45 a.m. Refreshment Break – 3<sup>rd</sup> Floor
- 11:45 a.m. Lunch/Parallel Lunch for Young Investigators – 3<sup>rd</sup> Floor

### Internet Access

The New York Academy of Medicine has free public Wi-Fi. Please connect to the Wi-Fi network “ECC,” and the password is “ecc45678.”



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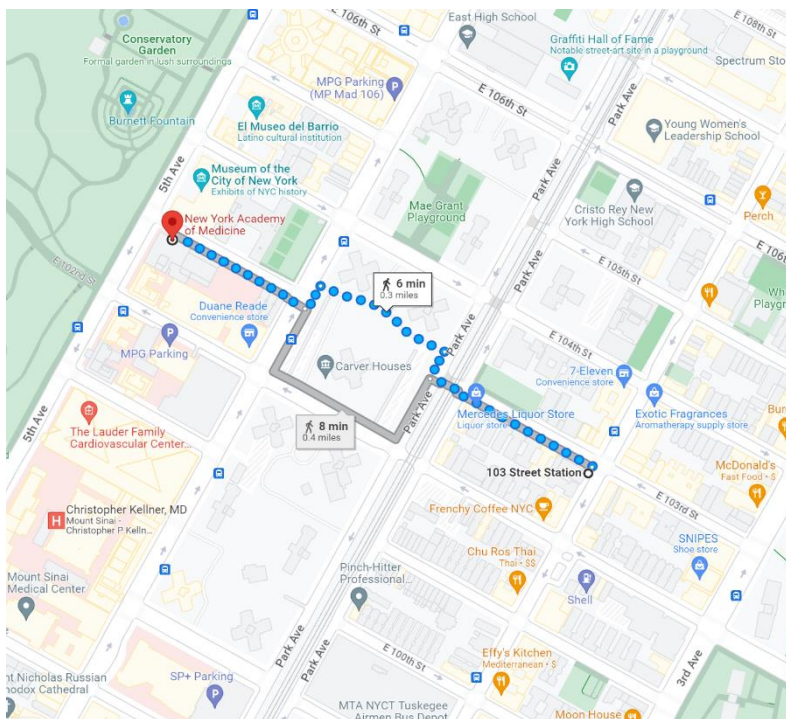
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## LOGISTICS

### Directions to the Academy



#### By Subway

Take the 6 train to 103rd Street. Walk west on 103rd Street; after crossing Park Avenue, turn right, walk a few yards, and then turn left onto the path through the garden of Carver Houses to Madison Avenue. Continue west on 103rd Street to Fifth Avenue. The entrance to the Academy is on 103rd Street. Or take the 2/3 train to Central Park North/110th Street. Walk one block east to Fifth Avenue, then south to 103rd Street.

#### By Bus

##### From South of 103rd Street:

On Madison Avenue, take a northbound M1, M2, M3, or M4 bus to 103rd Street. Walk west on 103rd Street towards Fifth Avenue. The entrance to the Academy is on 103rd Street.

##### From North of 103rd Street:

On Fifth Avenue, take a southbound M1, M2, M3, or M4 bus to 103rd Street. The entrance to the Academy is on 103rd Street, on the southeast corner of the intersection of 103rd Street and Fifth Avenue.

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## LOGISTICS

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### By Car

#### **From South of 96th Street:**

From the FDR Drive North, take the 96th Street exit. Turn left onto 96th Street and drive straight until Madison Avenue. Turn right on Madison Ave. and drive north to 103rd Street. Turn left, and the Academy is at the block's end on the street

#### **From North of 96th Street:**

From the FDR Drive South, take the 96th Street exit. Turn right onto E. 96th Street and drive straight until Madison Avenue. Turn right on Madison Ave and drive north to 103rd Street. Turn left, and the Academy is at the end of the block on the south side of the street.

### Parking Information

There are several public parking lots in the area, including the following:

#### Manhattan Parking

10 East 102nd St. (Between Fifth and Madison Aves)

#### Standard Parking

14 East 103rd St. (Between Fifth and Madison Aves) -- limited availability due to construction on 103rd Street (as of Sept 2022)

#### Merit Parking

12 East 107th St. (Between Fifth and Madison Aves)

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## ACCREDITATION AND DISCLOSURES

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### Accreditation Statement

The Columbia University Vagelos College of Physicians and Surgeons is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

### AMA Credit Designation Statement

The Columbia University Vagelos College of Physicians and Surgeons designates this live activity for a maximum of 10.75 *AMA PRA Category 1 Credits*<sup>™</sup>. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### Disclosure

All those involved with the planning and delivery of this education will disclose all financial relationships in the past 24 months with ineligible companies. An ineligible company is any entity whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients. For each financial relationship, disclosure will include the name of the ineligible company and the nature of the financial relationship(s).

**Gordon H. Baltuch, MD, PhD**

*Investigator on Funded Trial. The institution received funds.*

INSIGHTEC Ltd.

**Alfonso Fasano, MD, PhD**

*Speaker*

Abbott Laboratories

*Speaker & Research funds*

Boston Scientific Corporation

*Consultant, Speaker & Research funds*

Medtronic

All of the relevant financial relationships listed have been mitigated.

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## ACKNOWLEDGMENTS

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This activity is supported by independent educational grants from:

Platinum

**PRAXIS PRECISION MEDICINES**

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NATIONAL INSTITUTES OF HEALTH  
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Silver

**LUNDBECK**

Bronze

**INTERNATIONAL ESSENTIAL TREMOR FOUNDATION  
JAZZ PHARMACEUTICALS  
KYOWA KIRIN  
SAGE THERAPEUTICS**

We would like to thank the following organizations for their support:

**NATIONAL INSTITUTES OF HEALTH  
TREMOR RESEARCH GROUP**



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## AGENDA

### Thursday, May 18, 2023

7:45 a.m. Registration; Continental Breakfast

8:30 a.m. Welcome: 2nd Tremor Congress:  
From Bench to Bedside Towards Tremor Therapy Development  
Sheng-Han Kuo, MD

#### SESSION 1 NOVEL BRAIN PATHOLOGY AND GENETICS OF TREMOR MODERATOR: Sheng-Han Kuo, MD

8:40 a.m. Pathological Signatures in Essential Tremor  
Phyllis L. Faust, MD, PhD

9:05 a.m. Genetic Update on Essential Tremor  
Charles-Etienne Castonguay

9:30 a.m. Genetics of Tremor Predominant Parkinson's Disease  
Joshua M. Shulman, MD, PhD

9:55 a.m. Refreshment Break

#### SESSION 2 ANIMAL STUDIES OF TREMOR: WHAT DO WE LEARN? MODERATOR: Pravin Khemani, MD

10:15 a.m. Frequency Control of the Cerebellum for Tremor Generation  
Ming-Kai Pan, MD, PhD

10:40 a.m. Anatomical and Physiological Underpinnings of Dystonia, Ataxia, and Tremor  
Roy V. Sillitoe, PhD

11:05 a.m. GABAergic Transmission of Purkinje Cells in Tremor  
Esther Krook-Magnuson, PhD

11:30 a.m. Tremor Research Group sponsored Lunch

#### SESSION 3 CONTROVERSIES IN THE TREMOR FIELD DEBATE: ET PLUS- HOW SHOULD WE DEAL WITH CLINICAL HETEROGENEITY OF ET? MODERATOR: Hyder Jinnah, MD, PhD

12:30 p.m. Yes, We Should Use the Term, ET Plus  
Rodger J. Elble, MD, PhD

12:50 p.m. No, We Should Drop the Term, ET Plus  
Elan D. Louis, MD, MS

1:10 p.m. Discussion  
DEBATE: WHAT IS THE BEST INTERVENTIONAL APPROACH FOR ESSENTIAL  
TREMOR?  
MODERATOR: Sijetlana Miocinovic, MD, PhD

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### Thursday, May 18, 2023 *(continues)*

- 1:40 p.m. Deep Brain Stimulation  
Nora Vanegas-Arroyave, MD
- 2:00 p.m. Focused Ultrasound-Mediated Thalamotomy  
Gordon H. Baltuch, MD, PhD
- 2:20 p.m. Discussion
- 2:50 p.m. Refreshment Break

#### SESSION 4 ORAL PRESENTATIONS OF SELECTED POSTERS (NON-CME) MODERATOR: Mark Hallett, MD

3:20 p.m. 8 mins each presentation, 7 presentations total

1. The Effect of Rhythmic Vibrotactile Stimulation on Parkinson's Tremor: Franziska Goltz, MSc
2. Elbow Flexors and Wrist Extensors are Most Coherent with Hand Tremor in Essential Tremor Patients: Daniel Free
3. Using System Identification to Determine Which Muscles are Most Responsible for a Patient's Hand Tremor: Nolan Howes, BS
4. Temporal Onset Dynamics of Deep Brain Stimulation for Essential Tremor: Rebecca Butler, MS
5. Feasibility Study of Phase-Locked Transcranial Magnetic Stimulation of Cerebellum for the Treatment of Essential Tremor: Xu Zhang, Beng
6. Visualization of Spatial Synchrony in Cerebellum of Tremor Mice Models: Jou-Yu Ho
7. Circadian Rhythm and Adaptive Deep Brain Stimulation in Essential Tremor: Jun Yu, MD, MS

#### SESSION 5 CURRENT THERAPY FOR TREMOR: INDUSTRY PERSPECTIVE (NON-CME) MODERATOR Sheng-Han Kuo, MD

4:20 p.m. Pipeline Development for Selective Industry Partners

1. Optimization of Non-invasive Transcutaneous Afferent Patterned Stimulation (TAPS) Therapy in Essential Tremor: Alex Li, MS
2. Preclinical Characterization of Suvecaltamide for Essential Tremor: Elizabeth F. Brigham, BS
3. Translational Pharmacology in Essential Tremor: Relevance of Electrophysiological Biomarkers: Julien Volle, PhD
4. An Evaluation of NBI-827104 for Essential Tremor: Results from a Randomized, Double-Blind, Placebo-Controlled, Dose-Escalation, Crossover Study: Catherine de Cuba, MD
5. A Phase 2b, Randomized, Dose-Response Study of SAGE-324/BIIB124 for the Treatment of Essential Tremor: KINETIC 2 Trial in Progress: Rosalind Chuang, MD

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### Thursday, May 18, 2023 *(continues)*

6. Essential 1: Results from a Phase 2 Randomized, Double-Blind, Placebo-Controlled Dose Range Finding Clinical Trial to Evaluate the Tolerability, Safety, and Efficacy of Ulixacaltamide in the Treatment of Adults with Essential Tremor: Richard Able

#### SESSION 6 POSTER SESSION (NON-CME)

5:10 p.m. Posters and Reception

6:30 p.m. Adjourn

### Friday, May 19, 2023

7:45 a.m. Registration; Continental Breakfast

#### SESSION 7 CEREBELLAR PHYSIOLOGY AND TREMOR MODERATOR: Ming-Kai Pan, MD, PhD

8:30 a.m. Purkinje Cell Synchrony for Tremor Generation  
Eric J. Lang, PhD

8:55 a.m. Complex Spike Modulation for Tremor  
Wade Regehr, PhD

9:20 a.m. Consequences of Purkinje Cell Axonal Swelling: Implications in Tremor  
Alanna Watt, PhD

9:45 a.m. Refreshment Break

#### SESSION 8 NEUROIMAGING OF TREMOR: USEFUL BIOMARKERS? MODERATOR: Tabish Saifee, MD

10:05 a.m. Basal Ganglia and Cerebellar Circuit in Parkinsonian Tremor  
Rick C.G. Helmich, MD, PhD

10:30 a.m. Brain Network Changes in Parkinson's Disease and Essential Tremor  
Daniel O. Claassen, MD, MS

10:55 a.m. Distinct Brain Circuitry of Essential Tremor and Dystonic Tremor  
Aparna Wagle Shukla, MD

#### SESSION 9 COGNITION IN TREMOR MODERATOR: Katherine Longardner, MD

11:20 a.m. Cognitive Impairment in Essential Tremor  
Stephanie Cosentino, PhD

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## AGENDA

### Friday, May 19, 2023 *(continues)*

- 11:45 a.m. Lunch/Parallel Lunch for Young Investigators  
Mentor Table 1: Mark Hallett & Rick Helmich  
Mentor Table 2: Ming-Kai Pan & Wade Regehr  
Mentor Table 3: Elan Louis & Hyder Jinnah  
Mentor Table 4: Daofen Chen
- SESSION 10 CLINICAL CHARACTERISTICS AND VIDEO DEMONSTRATION OF DIVERSE TREMOR DISORDERS  
MODERATOR: Steven Charles, PhD
- 12:45 p.m. Clinical Characteristics of Tremor Disorders  
Vicki Shanker, MD
- 1:10 p.m. Overlapping Phenotypes of Tremor and Dystonia  
Aasef Shaikh, MD, PhD
- SESSION 11 NOVEL DBS APPROACHES FOR TREMOR  
MODERATOR: Kimberley Kwei, MD
- 1:35 p.m. Closed Loop DBS for Tremor  
Kevin Wilkins
- 2:00 p.m. New DBS Targets for Tremor  
Ludy Shih, MD, MMSc, FAAN, FANA
- 2:25 p.m. Tremor Habituation/Relapse after DBS and Lesion-based Therapies  
Alfonso Fasano, MD, PhD
- SESSION 12 NOVEL PHARMACOLOGICAL AND TOXIN THERAPIES FOR TREMOR  
MODERATOR: David Peterson, PhD
- 2:50 p.m. Recent Pharmacological Therapy Development for Tremor  
Peter A. LeWitt, MD
- 3:15 p.m. Toxin Therapy and Peripheral Modulation for Tremor  
Seth L. Pullman, MD
- 3:40 p.m. Closing Remarks  
Ming-Kai Pan, MD, PhD
- 4:00 p.m. Adjourn



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## FACULTY AND SPEAKER BIOGRAPHIES



### **Gordon H. Baltuch, MD, PhD**

*Professor of Neurological Surgery  
Columbia University Vagelos College of Physicians and Surgeons  
New York, New York*

Gordon Baltuch MD, PhD, FACS, FRCS(C) is the Co-Chief of Functional Neurosurgery Division at Columbia Neurosurgery. Dr. Baltuch specializes in the surgical treatment of movement disorders. Dr. Baltuch was one of the first neurosurgeons in the United States to use deep brain stimulation to reduce tremor and other motor symptoms in people with Parkinson's disease and other movement disorders. After training in Montreal, Switzerland, and France, Dr. Baltuch moved to Penn Center, where he led as Director for Functional and Restorative Neurosurgery, to develop one of the first deep brain stimulation programs in the United States. He has treated more than 1,600 patients using the procedure, making him one of the most experienced neurosurgeons in functional neurosurgery. He also pioneered the use of the technology to treat epilepsy, depression, and Alzheimer's disease.

More recently, Dr. Baltuch also became a pioneer in the use of focused ultrasound, a nonsurgical procedure approved in 2016 to treat essential tremor. Since 2017, he has successfully performed hundreds of these procedures and developed Penn's focused ultrasound program into one of the largest such practices in the country. As a researcher, Dr. Baltuch is at the forefront in the testing of new restorative approaches, including gene therapy for Parkinson's disease and, more recently, stem cell therapy for stroke. He also conducts fundamental neuroscience studies of the human brain supported by federal funding, including the White House Brain Initiative.



### **Charles-Etienne Castonguay**

*MD-PhD Candidate  
Rouleau Lab Montreal Neurological Institute-Hospital*

Charles-Etienne Castonguay is an MD-PhD candidate at Université de Montréal and McGill University. He is interested in using single-cell sequencing technologies to understand the pathophysiology underlying Essential Tremor. He is also interested in understanding the transcriptomic effects of commonly used drugs, such as propranolol, on cells of the cerebellum in Essential Tremor.



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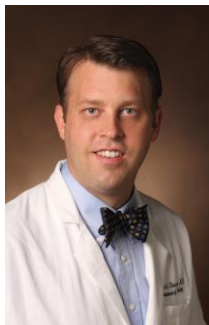
## FACULTY AND SPEAKER BIOGRAPHIES



### **Steven Charles, PhD**

*Associate Professor of Mechanical Engineering and Neuroscience  
Brigham Young University*

Steven Charles, PhD is an Associate Professor of Mechanical Engineering and Neuroscience at Brigham Young University. Dr. Charles worked as a Post-doctoral Research Fellow at Johns Hopkins University and Kennedy Krieger Institute. During this time, he investigated the role of cerebellum in motor control. He studied the current hypotheses regarding the role of the cerebellum in motor control to suggest that the cerebellum holds an internal model of limb dynamics. He proposed and tested an alternative hypothesis, namely that the role of the cerebellum is to control or implement muscle force downstream of any computation of limb dynamics. Today, his Neuromechanics Research Group at Brigham Young University focuses on motor control of wrist and forearm movements, essential tremor, traumatic brain injury, and low-cost technology for evaluation, assistance, and rehabilitation. Dr. Charles is also an author, and co-author, of numerous publications including Essential Tremor accentuates the pattern of tremor-band coherence between upper-limb muscles and Movement preferences of the wrist and forearm during activities of daily living.



### **Daniel O. Claassen, MD, MS**

*Associate Professor of Neurology  
Vanderbilt University Medical Center  
Nashville, Tennessee*

Dr. Claassen is a professor of Neurology at Vanderbilt University Medical Center, who specializes in the diagnosis and treatment of neurodegenerative disorders characterized by disruptions to cognition, behavior, and movement. The theme of his work is to understand the biologic basis of behavioral and motor regulation. His current studies assess the phenotypes and treatments of neurodegenerative disorders, employing innovative cognitive neuroscience, neuroimaging tools, and biomarker discovery methods. His specific focus on understanding cerebellum anatomical delineations in persons with Essential tremor has yielded new insights into the role of the cerebellum and related networks. These approaches incorporate region-of-interest, texture-based analysis, and diffusion imaging methods, and will be the basis of his talk.

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### **Stephanie Cosentino, PhD**

*Associate Professor of Neuropsychology  
Columbia University Vagelos College of Physicians and Surgeons  
New York, New York*

Stephanie Cosentino is Professor of Neuropsychology in the Cognitive Neuroscience Division of the Department of Neurology, Taub Institute for Research on Alzheimer's Disease and the Aging Brain, and the Gertrude H. Sergievsky Center at Columbia University Medical Center (CUMC). Dr. Cosentino joined the faculty at CUMC in 2008 after completing her postdoctoral training in the Sergievsky Center.

Dr. Cosentino earned her B.A. in Psychology from Georgetown University in 1998 and her Ph.D. in Clinical Psychology with specialization in Neuropsychology from Drexel University in 2004. Dr. Cosentino's research program integrates methods from clinical neuropsychology and cognitive neuroscience to study how cognition deteriorates in the course of neurodegenerative diseases.



### **Rodger J. Elble, MD, PhD**

*Professor, Department of Neurology  
Southern Illinois University School of Medicine  
Springfield, Illinois*

Rodger Elble is a neurologist at Southern Illinois University. He specializes in movement disorders and has studied the pathophysiology of tremor since 1971. He has a career-long passion for using time series analysis and control systems theory in studies of tremor. His current primary interest is the clinical and electrophysiologic classification and measurement of tremor disorders.

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### **Alfonso Fasano, MD, PhD**

*Professor of Neurology  
University of Toronto*

Dr. Alfonso Fasano holds the Chair in Neuromodulation and Multi-Disciplinary Care at the University of Toronto and University Health Network. He is a Professor in the Department of Medicine, Neurology Division, at the University of Toronto. He is a staff neurologist and co-director of the Surgical Program for Movement Disorders at Toronto Western Hospital, University Health Network. He is also a staff neurologist at the Hospital of Sick Children in Toronto. Dr. Fasano is a Clinician

Investigator at the Krembil Research Institute and Affiliate Scientist at KITE Research Institute – Toronto Rehabilitation Institute. Dr. Fasano leads the Core E (closed-loop capabilities) of the Center for Advancing Neurotechnological Innovation to Application (CRANIA) and serves on the scientific advisory board of the Dystonia Medical Research Foundation and International Essential Tremor Foundation. He is the chair of the Normal Pressure Hydrocephalus study group and member of the study group on tremor of the International Parkinson Movement Disorders Society; he is also a member of the Tremor Research Group and the Parkinson Study Group.

His primary areas of interest are the treatment of movement disorders with advanced technology (infusion pumps and neuromodulation), pathophysiology, and treatment of tremor and gait disorders. He has authored more than 300 scientific papers and book chapters. Dr. Fasano is the co-editor of the section “Gaps and Controversies” of Movement Disorders Journal and an editorial board member of Annals of Neurology, Movement Disorders Journal, Movement Disorders Clinical Practice and Parkinsonism and Related Disorders. He is also the principal investigator of several clinical trials.



### **Phyllis L. Faust, MD, PhD**

*Professor, Department of Pathology and Cell Biology  
Columbia University  
New York, New York*

Dr. Phyllis Faust is a neuropathologist and neurobiologist who has pioneered studies on the biology of essential tremor (ET), one of the most common tremor disorders of humans. Her investigations on ET pathology in human autopsy brains, acquired through the Essential Tremor Centralized Repository at the NY Brain Bank (in collaboration with Dr. Elan Louis), have been seminal in defining that the

cerebellum is a major brain region that may drive tremor generation in ET. Her laboratory has identified degenerative changes centered on the cerebellar Purkinje cell and adjacent neuronal populations (basket cells, climbing fibers) as core pathological features in ET. Comparing the pathological changes seen in ET with that in several human cerebellar degenerative disorders identifies both a spectrum of pathological changes and some distinctive disease patterns. Ongoing studies continue to define morphological and molecular maps of biological changes in the human ET brain across the tremor circuit.

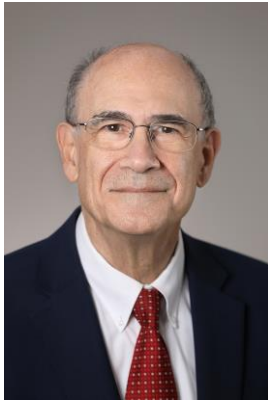


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### **Mark Hallett, MD**

*Investigator Emeritus  
National Institutes of Health*

Dr. Hallett is a National Institutes of Health (NIH) Distinguished Investigator Emeritus after leading the National Institute of Neurological Disorders and Stroke (NINDS) Human Motor Control Section from 1984 to 2022. He is currently the immediate Past-President of the Functional Neurological Disorder Society. Dr. Hallett is also a past President of the International Parkinson and Movement Disorder Society, a past President of the International Federation of Clinical Neurophysiology, and past Editor-in-Chief of Clinical Neurophysiology. He has won many awards including the World Federation of Neurology Medal

for Contributions to Neuroscience and the International Brain Stimulation Award from the Brain Stimulation journal in 2019. His work mainly deals with principles of motor control and the pathophysiology of movement disorders.



### **Rick C.G. Helmich, MD, PhD**

*Consultant Neurologist  
Radboud University Nijmegen Medical Center  
The Netherlands*

Dr. Rick Helmich is a consultant neurologist at the Neurology department of Radboud university medical center (RUMC), associate professor at the Radboud University, and a principal investigator at the Donders Centre for Cognitive Neuroimaging of the RUMC. He received his MD degree at the Radboud University in 2005, and his PhD thesis (“Cerebral reorganization in Parkinson’s disease”) in 2011. He was trained as a neurologist between 2010 and 2017 at the RUMC. In 2015 he worked as a research fellow at the National Institutes of Health (NIH), in the Human Motor Control section headed by Dr. Mark Hallett. He specializes in movement disorders, with a specific focus on tremor and on Parkinson’s disease. In his research, he uses advanced neuroimaging methods, such as functional and structural MRI, nuclear imaging, magnetic resonance spectroscopy, as well as neurophysiology, to study the cerebral mechanisms of movement disorders.

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### Hyder Jinnah, MD, PhD

*Departments of Neurology and Human Genetics  
Emory University School of Medicine  
Atlanta, Georgia*

Dr. Jinnah's research program addresses two different but overlapping topics. The first topic is the primary dystonias. Dr. Jinnah is the PI of a program funded by the NIH and involves multiple centers across Europe and North America. This program is called "The Dystonia Coalition" and is devoted to accelerating clinical and translational research in primary dystonias. Our projects are designed to better understand the natural history of all forms of primary dystonia, develop practical clinical instruments for rating severity, and establish biobanks for biomarker studies such as genes. Dr. Jinnah also has a basic science research program, also funded by the NIH and several Private Foundations, that focuses on the neuroscientific aspects of dystonia, particularly its neuroanatomical basis.

The second topic is Lesch-Nyhan disease, which is classified as one of many forms of secondary dystonia. For many years, Dr. Jinnah has used this disorder as a model to trace how a single gene defect can result in a complex neuropsychiatric phenotype. Dr. Jinnah has NIH funded projects that address its natural history, genetics, biochemical and anatomical bases. Dr. Jinnah also has a basic sciences research program that addresses cell and animal models of the disorder, focusing mainly on understanding the relationship between the known defect and developmental defects in brain dopamine pathways.



### Pravin Khemani, MD

*Medical Director of Movement Disorders  
Swedish Neuroscience Institute  
Seattle, Washington*

Dr. Khemani completed medical school from Wayne State University, Detroit, MI, his neurology residency from University of Texas Southwestern, Dallas, TX and fellowship in Movement Disorders from Stanford University, Palo Alto. He is fellowship trained in Neuromuscular disorders as well but focuses primarily on clinical treatment of Movement disorders including Parkinson disease, atypical parkinsonian disorders, tremors, dystonia, and degenerative cerebellar ataxias

He is medical director of the Movement Disorders clinic at Swedish Neuroscience Institute, Seattle WA. He treats patients with movement disorders, educates trainees, and participates in clinical research. He is passionate about health literacy and is active in community outreach in the Seattle area. He has received caregiver appreciation awards, teaching awards and most recently the 2023 AAN Quality Improvement Award. He is the author of several publications, book chapters, a book on Deep Brain Stimulation, and serves as a consultant for pharmaceutical and neuro-device companies.

Outside of work, Dr. Khemani's interests include traveling, hiking, exploring wildlife parks, reading, cinema, advocacy and listening to public radio.



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### **Esther Krook-Magnuson, PhD**

*Associate Professor  
Department of Neuroscience  
University of Minnesota  
Minneapolis, Minnesota*

Dr. Krook-Magnuson is an Associate Professor in the Department of Neuroscience at the University of Minnesota. Her lab studies neuronal circuitry in health and disease using various rodent models. She has a particular interest in Essential Tremor and is actively investigating the role of inhibition in the cerebellum in shaping cerebellar function and how dysregulation of cerebellar activity can produce different phenotypes, including tremor.



### **Sheng-Han Kuo, MD**

*Associate Professor of Neurology  
Columbia University  
New York, New York*

Dr. Kuo is Associate Professor of Neurology at Columbia University, and he is also a physician-scientist in Movement Disorders. He received his neurology residency training at Baylor College of Medicine and his fellowship training at Columbia University where he stayed as a faculty member. Dr. Kuo has published extensively in the field. He serves as the Vice Chair for the Movement Disorders Section at American Neurological Association. His research focuses on the cerebellar circuit in ataxia and tremor, using multidisciplinary approaches, including postmortem pathology, mouse models, optogenetics, in vivo physiology recording, and human cerebellar electroencephalogram. He is also leading the Clinical research Consortium for Spinocerebellar Ataxias, constituting 15 medical centers to study the natural history and biomarkers for spinocerebellar ataxia.

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### **Kimberly Kwei, MD**

*Board-certified Neurologist  
Columbia University, Department of Neurology  
New York, New York*

Kimberly Kwei is a board-certified neurologist with sub-specialty training in movement disorders. She finished a fellowship in movement disorders at Columbia University Irving Medical Center, during which time she was the Edmond J. Safra Fellow in Movement Disorders. Before that, she completed a residency in neurology at the Mount Sinai Hospital, where she also earned her MD and PhD in neuroscience degrees as a graduate of their NIH-funded medical scientist training program. She pursued undergraduate studies at Amherst College. In addition to her clinical and research responsibilities, she co-directs the neuromodulation program in the movement disorders division at CUIMC.



### **Eric J. Lang, PhD**

*Associate Professor  
Department of Neuroscience and Physiology  
NYU School of Medicine  
New York, New York*

Eric Lang received his PhD and MD from New York University, School of Medicine where he did his PhD in the laboratory of Rodolfo Llinás. He then did his postdoctoral training in Denis Paré's laboratory at Laval University. After his postdoctoral training he joined the faculty of New York University, School of Medicine where he is currently an associate professor in the Department of Neuroscience and Physiology and a member of the Neuroscience Institute.

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### **Peter A. LeWitt, MD**

*Departments of Neurology  
Henry Ford Hospital and Wayne State University School of Medicine  
Detroit, Michigan*

Dr. LeWitt was appointed Professor of Neurology at Wayne State University School of Medicine in 1990. A graduate of Brown University School of Medicine (awarded M.Med.Sc. in Biochemical Pharmacology), his neurology residency training was at Stanford University School of Medicine. He completed fellowship training in experimental therapeutics at the National Institute of Neurological and Communicative Disorders. Dr. LeWitt was a founding member of the Parkinson Study Group and was elected in 1998 to serve as secretary of the Movement Disorder Society. He is a member of that organization's Task Force for the Development of Rating Scales for Parkinson's Disease. Since 2003, he has been editor-in-chief of *Clinical Neuropharmacology* and served on the editorial boards of *Movement Disorders*, *Journal of Neural Transmission*, *Journal of Parkinson's Disease*, and *Translational Neurodegeneration*. In addition to conducting clinical trials for Parkinson's disease and other neurological disorders, his research interests have included animal models and biomarkers of neurological disease, pharmacokinetic analysis, and gene therapy for Parkinson's disease. He is the author of more than 300 publications in basic and clinical neuroscience. Dr. LeWitt has been a recipient or reviewer of research grants from the National Institutes of Health, the Michael J. Fox Foundation for Parkinson's Research, the National Parkinson Foundation, the U.S.-Israel Bi-National Science Foundation, and others.



### **Katherine Longardner, MD**

*Neurologist  
University of California San Diego*

Katherine (Katie) Longardner, MD, is a movement disorders neurologist and clinical researcher at University of California San Diego. Her research focuses on parkinsonian non-motor symptoms, especially the relationship between orthostatic hypotension and cognitive impairment in Parkinson's disease. Her other main research interests are using biological sensors to improve quality of life for people with movement disorders and utilizing electrophysiological techniques for tremor disorders.



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### **Elan D. Louis, MD, MS**

*Professor of Neurology  
Linda and Mitch Hart Distinguished Chair in Neurology  
University of Texas Southwestern Medical Center*

Elan Louis, M.D., is Professor and Chair of the Department of Neurology at UT Southwestern Medical Center. He specializes in disorders of involuntary movement and is considered the world's leading scholar in essential tremor (ET). Dr. Louis earned his medical degree at Yale University and a master's degree in epidemiology at Columbia University. He completed a residency in neurology at Columbia-Presbyterian Medical Center and then received advanced training in movement disorders and neuroepidemiology through fellowships at Columbia University. Dr. Louis's research focuses on the genetics, epidemiology, and pathophysiology of tremor disorders. His work on essential tremors has been cited in the New York Times as "pioneering," and, in fact, his research has challenged many of the prevailing notions about ET and has substantially recreated the dialogue in the ET field. Dr. Louis established the Essential Tremor Centralized Brain Repository – a national centralized brain bank for the study of ET. He has authored more than 700 peer-reviewed scientific articles and book chapters and written invited editorials and reviews for *Annals of Neurology*, *New England Journal of Medicine*, and *Lancet Neurology*. He is the founding Editor-in-Chief of *Tremor and Other Hyperkinetic Movements*, and he serves on the editorial board of more than 10 other scholarly journals. He is also the editor of Merritt's *Textbook of Neurology*, one of the premier general neurology textbooks in the country.



### **Svjetlana Miocinovic, MD, PhD**

*Associate Professor, Department of Neurology  
Emory University School of Medicine  
Atlanta, Georgia*

Svjetlana Miocinovic is a board-certified neurologist specializing in Parkinson's disease, dystonia, tremor, and other movement disorders. She graduated from medical school in 2009 at Case Western Reserve University (Cleveland, Ohio) where she also obtained a PhD in biomedical engineering. She completed neurology residency and clinical movement disorders fellowship at University of Texas Southwestern Medical Center (Dallas, Texas). Her post-doctoral training and clinical research fellowship were at the University of California San Francisco Movement Disorder and Neuromodulation Center. In 2016, she joined the Department of Neurology at Emory University (Atlanta, Georgia). Her clinical focus is on using deep brain stimulations (DBS) to treat movement disorders. She also directs an NIH-funded human electrophysiology laboratory and is an investigator with Emory's Udall Parkinson's Disease Research Center of Excellence. The research focus of her laboratory is on electrophysiology of human motor and non-motor circuits, and development of new device-based therapies.

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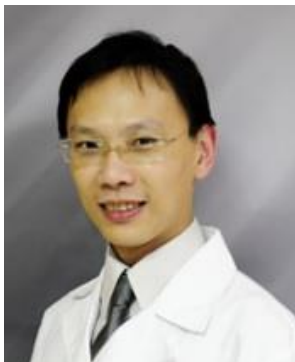
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### **Ming-Kai Pan, MD, PhD**

*Assistant Professor of Pharmacology Institute and Molecular Imaging Center  
National Taiwan University  
Taipei, Taiwan*

Dr. Ming-Kai Pan is an Associate Professor in the Institute of Pharmacology at National Taiwan University College of Medicine, and a Neurologist specializing in movement disorders with a focus on cerebellar and tremor disorders. His lab aims to bridge the gap between clinical neurophysiology and neuronal coding in the tremor and cerebellar field using a range of approaches, including optic and electrophysiological techniques for spatiotemporal neural dynamics in animal studies, and EEG, non-invasive brain stimulation, and MRI-tractography in clinical neurophysiology. Dr. Pan's previous work has identified a tremor pathophysiology related to cerebellar climbing fiber overgrowth, with mutually referenced mouse and human evidence spanning molecular, structural, functional, and behavioral levels. He is also actively involved in several international committees on tremor research.



### **David Peterson, PhD**

*Associate Research Scientist  
Institute for Neural Computation, University of California San Diego  
San Diego, California*

David Peterson is an Associate Research Scientist with the Institute for Neural Computation at UCSD and the Computational Neurobiology Laboratory at the Salk Institute for Biological Studies. He received bachelor's degrees in electrical engineering and business from the University of Colorado, Boulder, did a brief stint in management consulting for Accenture, he completed his PhD in computer science at Colorado State University applying AI to neuroscience. His research applies computational methods to dystonia. His long-term goal is to develop better treatments for focal dystonia through an improved, mechanistic understanding of the pathophysiology. At the mechanistic level, he integrates molecular, cellular, circuit, and behavioral experimental research using theoretical and computational frameworks. At the clinical level, he leverages advances in computer vision and AI for characterizing and quantifying dystonia symptoms objectively.



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### **Seth L. Pullman, MD**

*Professor of Neurology  
Columbia University Irving Medical Center  
New York, New York*

Dr. Pullman has been involved in basic and clinical motor physiology research since 1988 in the Clinical Motor Physiology Laboratory at the Neurological Institute of Columbia University. He had been performing quantitative motor and other neurophysiological assessments to diagnose and treat Parkinson's disease, essential tremor, other hyperkinetic disorders, myoclonus, dystonia and gait dysfunction. Tests developed and implemented over the years included tremor analysis, multichannel polymyography, extracellular single unit neuronal mapping for stereotactic surgery, reaction time analysis, backaveraging EEG to EMG, reflex studies and transcranial magnetic stimulation, and spiral analysis, a non-invasive computational method that quantifies upper limb kinematics and dynamics. Additionally, Dr. Pullman has been diagnosing and caring for patients with limb dystonia, particularly musician's dystonia, complex head/neck/trunk spasms, tremors and myoclonus using EMG-guided botulinum toxin injections.



### **Wade Regehr, PhD**

*Professor  
Department of Neurobiology  
Harvard Medical School  
Boston, Massachusetts*

Wade G. Regehr, PhD, is a Professor in the Department of Neurobiology at Harvard Medical School. Dr. Regehr received his undergraduate degree from the University of Regina in Canada. As an undergraduate student he was awarded the Governor General's Award. He also received the Senator Jacob Javits Award in Neurosciences. He has long studied synapses in the cerebellum. These studies initially focused on calcium regulation of neurotransmitter release and short-term synaptic plasticity. Dr. Regehr's lab described endocannabinoid release by Purkinje cells and interneurons and retrograde regulation of synapses. His lab then focused on Purkinje cell collaterals that allow the cerebellar cortex's output to provide feedback to other Purkinje cells, granule cells and inhibitory interneurons. His research focuses on determining how presynaptic neurons influence the firing of their targets and to understand how physiologically significant computations are performed by synapses. Dr. Regehr has over 100 papers and an extensive list of selected peer-reviewed publications.

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### **Tabish Saifee, MD**

*Consultant Neurologist  
The National Hospital of Neurology  
Queen Square, London*

Dr Saifee is a consultant neurologist in the movement disorders centre at The National Hospital for Neurology and Neurosurgery, Queen Square, London. He qualified from UCL Medical School and undertook higher specialist training on the NIHR academic scheme in London. He was awarded a fellowship from NIHR and completed a PhD at UCL on work relating to the clinical aspects and pathophysiological mechanisms of tremor. He has published > 50 papers in peer-reviewed journals relating to movement disorders, particularly tremor, dystonia, FND and Parkinson's. He has leadership roles in education at Imperial College and UCL. He is a member of the ABN and the MDS and recent member of the movement disorder advisory panel to the ABN. He has advised NICE and NCEPOD on technology appraisals and national audits in the treatment of movement disorders. He is a principal investigator in multiple clinical trials for Parkinson's disease.



### **Aasef Shaikh, MD, PhD**

*Penni and Stephen Weinberg Chair in Brain Health  
Vice Chair for Research  
Department of Neurology  
University Hospitals, South Euclid, Ohio*

Aasef Shaikh is a neurologist and neuroscientist from Daroff-Dell'Osso Ocular Motility Laboratory at Cleveland VA Medical Center. His research focuses on the application of control systems engineering to approach complex disorders of the vestibular system, eye movements, head movements, gait, and balance. The overarching goal is to discover novel network connections and leverage their influence to modulate the motor circuits artificially for the treatment of intractable neurological conditions. Dr. Shaikh was the recipient of the prestigious American Academy of Neurology Alliance Founders Award and The American Neurological Association Grass Foundation Award in Neuroscience.

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### **Vicki Shanker, MD**

*Associate Professor of Neurology  
Icahn School of Medicine at Mount Sinai  
New York, New York*

Vicki Shanker is an Associate Professor at the Icahn School of Medicine at Mount Sinai. She completed her Neurology training/ Chief Residency at Albert Einstein College of Medicine in addition to a two- year fellowship in Movement Disorders at Beth Israel Medical Center. She is the Program Director of the Neurology Residency (MSBI/MSW) and the Site Director for the Student Neurology Clerkship. She received the 2017 ACGME "Courage to Teach" Award and the 2017 AAN Program Director Award. She is a Fellow of the American Academy of Neurology and serves as the Chairperson of the AAN Conference Sub-Committee. She received a PSG fellowship grant and served on the PSG Mentorship Committee. She has contributed to several articles in peer-reviewed journals and authored several book chapters.



### **Ludy Shih, MD, MMSc, FAAN, FANA**

*Associate Professor of Neurology  
Director  
Deep Brain Stimulation Program Boston University School of Medicine  
Boston, Massachusetts*

Ludy Shih, MD, MMSc is Associate Professor of Neurology at Boston University School of Medicine in the Parkinson's Disease and Movement Disorders Center at Boston Medical Center and was previously Director of the Deep Brain Stimulation Program at Beth Israel Deaconess Medical Center, and Assistant Professor of Neurology at Harvard Medical School. Dr. Shih's research interests focus on the relationships between brain aging and cognitive and motor function (tremor, gait, and ambulation) in diverse populations. She is a member of the BU Alzheimer's Disease Research Center and a Framingham Heart Study investigator. She is also a member of the Medical Advisory Board for the International Essential Tremor Foundation and the American Society for Experimental Therapeutics.



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### **Joshua M. Shulman, MD, PhD**

*Professor*

*Neurology, Neuroscience, and Molecular & Human Genetics  
Baylor College of Medicine  
Houston, Texas*

Joshua M. Shulman MD, PhD is Professor of Neurology, Neuroscience, and Molecular & Human Genetics at Baylor College of Medicine; Co-Director of the Jan and Dan Duncan Neurological Research Institute at Texas Children's Hospital; and Director of the Baylor Center for Alzheimer's and Neurodegenerative Diseases. He received his A.B. in Biochemical Sciences from Harvard College, and his Ph.D. in Genetics from Cambridge University. He subsequently studied at Harvard Medical School and the Massachusetts Institute of Technology, Division of Health Sciences and Technology, where he received his M.D., and later, an M.M.Sc. in clinical investigation. Dr. Shulman completed his neurology residency and fellowship training in the Harvard/Partners Program at Brigham & Women's Hospital and Massachusetts General Hospital in Boston. Dr. Shulman's research focuses on understanding the genetics and pathogenesis of neurodegenerative disorders, including Alzheimer's and Parkinson's disease.



### **Roy V. Sillitoe, PhD**

*Professor*

*Department of Pathology & Immunology  
Department of Neuroscience, Development, Disease Models & Therapeutics Program  
Baylor College of Medicine  
Houston, Texas*

Dr. Sillitoe is currently a professor of Pathology and Immunology, Neuroscience, and Pediatrics at Baylor College of Medicine. He completed his PhD in Neuroscience at the University of Calgary. He received postdoctoral training at the University of Oxford, New York University, and Memorial Sloan-Kettering Cancer Center. The focus of his research is to understand how cerebellar circuits contribute to different diseases. The canonical cerebellar circuit, with Purkinje cells at the center, plays a role in ataxia, tremor, and dystonia. His goal is to determine how the same circuit contributes to different diseases. In addition, he is using the mouse models that his lab generated to test whether cerebellar deep brain stimulation might be an effective therapeutic strategy for treating motor and non-motor diseases. He is a past member of the medical and scientific advisory board of the DMRF and a founding co-editor in chief of the foundation's flagship journal, *Dystonia*.



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### **Nora Vanegas-Arroyave, MD**

*Assistant Professor of Neurology and Director of Neuromodulation Research  
Baylor College of Medicine  
Houston, Texas*

Dr. Vanegas is an Associate Professor of Neurology at Baylor College of Medicine. She completed a combined clinical-research fellowship in Movement Disorders at the National Institutes of Health (NIH). She spent four years as faculty at Columbia University where she was primarily dedicated to Deep Brain Stimulation. She transitioned to Baylor College of Medicine as Director of Neuromodulation Research in 2020. Her clinical and research efforts focus on the use of neuromodulation therapies, including deep brain stimulation, focused ultrasound, and spinal cord stimulation, for the treatment of movement disorders. She is the principal investigator for several investigator-initiated studies in neuromodulation and supports collaborative efforts on precision medicine and deep-phenotyping. As an underrepresented minority clinician-scientist, it is also her priority to promote diversity in clinical research.



### **Aparna Wagle Shukla, MD**

*Associate Professor  
Neurology  
University of Florida Health  
Gainesville, Florida*

Dr. Aparna Wagle Shukla, MD, is a Professor of Neurology at the University of Florida. Her clinical area of interest is providing the highest level of care for patients with tremors, dystonia, and Parkinson's disease through oral medications, botulinum toxin injections, and DBS care/programming. Her research has been awarded numerous grants through the Dystonia Coalition, DMRF, Brain and Spinal Cord Injury Research Trust Fund, American Brain Foundation, Blepharospasm Research Foundation, NORD, and the NIH (NINDS K23 and PI for R01NS122943). She has nearly 150 publications in prestigious peer-reviewed journals, including Brain, Neurology, JAMA Neurology, JNNP, Brain stimulation, and Movement Disorders. She is the Research chief for the movement disorders division at the University of Florida. She is the clinical director for Tyler's Hope Foundation for Dystonia, and the Vice President for the Tremor Research Group. She is also currently serving the role of an associate editor for Nature Parkinson's disease journal and the Drugs in Context journal.

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### **Alanna Watt, PhD**

*Associate Professor  
Department of Biology  
McGill University*

Alanna Watt, PhD is an Associate Professor in the Biology Department at McGill University. Her work focuses on the cerebellum, and how it changes across the lifespan, both in health and in disease. Her lab uses mouse models of human ataxias, including SCA6 and ARSACS, to understand the pathophysiological changes that underlie disease onset, with a goal of reversing these changes to promote health. Techniques used in the Watt lab to address these questions include electrophysiology, two-photon imaging, immunocytochemistry, optogenetics and chemogenetics to manipulate network activity, as well as behavioral assays for motor coordination and learning.



### **Kevin Wilkins**

*Science and Engineering Associate in the Department of Neurology  
Stanford University School of Medicine  
Stanford, California*

Kevin Wilkins received his PhD in Neuroscience from Northwestern University under Dr. Jun Yao in the Physical Therapy and Human Movement Sciences Department investigating stroke neurorehabilitation. He then completed a postdoctoral fellowship with Dr. Helen Bronte-Stewart at Stanford University in the Neurology and Neurological Sciences Department where he now continues to work as a Research Scientist. His work at Stanford focuses on closed-loop deep brain stimulation, as well as the development of a novel deep brain stimulation approach aimed at cognitive and cognitive-motor symptoms in Parkinson's disease.

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<b>Abstract number</b>	<b>Presenter name</b>	<b>Abstract title</b>	<b>Affiliation</b>
1	Richard Able	Essential1: Results from a Phase 2 Trial Evaluating the Efficacy, Safety and Tolerability of Ulixacaltamide in Adults with Essential Tremor	Praxis Precision Medicines
2	Richard Able	The Hidden Disease Burden and Treatment Experience of Patients with Essential Tremor: A Retrospective US Claims Analysis	Praxis Precision Medicines
3	Christian Johannes Amlang	Impaired Reward-Based Learning in Patients with Cerebellar Ataxia	Columbia University
4	Katrina Badiola-Lim	Eyelid Tremor in Parkinson's Disease	University of Connecticut School of Medicine
5	James Borders	Effects of Cough Skill Training in Spinocerebellar Ataxia: A Preliminary Investigation	Teachers College, Columbia University
6	Elizabeth Brigham	Preclinical Characterization of Suvecaltamide for Essential Tremor	Jazz Pharmaceuticals
7	Rebecca Butler	Temporal Onset Dynamics of Deep Brain Stimulation for Essential Tremor	University of Minnesota

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<b>Abstract number</b>	<b>Presenter name</b>	<b>Abstract title</b>	<b>Affiliation</b>
8	Steven Charles	Brief, Synchronous, Submotor-Threshold Electrical Stimulation of Antagonist Muscles Does Not Suppress Essential Tremor, Independent of Stimulation Frequency	Brigham Young University
9	Lih-Chu Chiou	Cerebellar $\alpha 6$ GABA <sub>A</sub> Receptor as a Novel Drug Target for Essential Tremor	Department of Pharmacology, College of Medicine, National Taiwan University
10	IJsbrand de Lange	Essential Tremor Suppression Using a Novel Anti-tremor Orthosis	STIL
11	Christopher Driscoll & Alexander Fanning	A Mouse Model of Adult-Onset Essential Tremor	Columbia University
12	Daniel Free	Elbow Flexors and Wrist Extensors are Most Coherent with Hand Tremor in Essential Tremor Patients	Brigham Young University
13	Franziska Goltz	The Effect of Rhythmic Vibrotactile Stimulation on Parkinson's Tremor	Radboud University, Donders Institute for Brain, Cognition and Behaviour, Nijmegen, the Netherlands; Radboud university medical centre, Department of Neurology, Nijmegen, the Netherlands.
14	Jou-Yu Ho	Visualization of Spatial Synchrony in Cerebellum of Tremor Mice Models	Institute of Pharmacology, College of Medicine, National Taiwan University Hospital, Taipei City 10051, Taiwan.



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15	Phuong Hoang	Case Report: A 78-Year-Old Man with Progressive Ataxia, Palatal Tremor, Parkinsonism and Motor Neuron Disease.	UCSF
16	Nolan Howes	Using System Identification to Determine Which Muscles are Most Responsible for a Patient's Hand Tremor	Mechanical Engineering, Brigham Young University; Provo, UT
17	Nathan Intrator	Prediction of F-DOPA based Diagnosis of Parkinson's Disease Using Single-Channel EEG Features and Auditory Cognitive Assessment, A Pilot Study	Neurosteer Inc.; Tel Aviv University
18	Ami Kumar	Frequency Tuning of the Cerebellum in Essential Tremor Patients	Columbia University Irving Medical Center
19	TinaMarie Lieu	A Phase 2b, Randomized, Dose-Response Study of SAGE-324/BIIB124 for the Treatment of Essential Tremor: KINETIC 2 Trial in Progress	Sage Therapeutics, Inc.
20	Chia-Wei Liu	Cerebellum Engages in the Frequency Generation of Rhythmic Movement	Department and Graduate Institute of Pharmacology, National Taiwan University College of Medicine, Taipei, Taiwan.
21	Katherine Longardner	Double-Blind, Placebo-Control, Crossover, Efficacy and Tolerability Study of Oral Cannabidiol and Tetrahydrocannabinol for Essential Tremor	University of California San Diego

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<b>Abstract number</b>	<b>Presenter name</b>	<b>Abstract title</b>	<b>Affiliation</b>
22	Emilie Lowell	Disease Severity and Sensorimotor Cough Outcomes in Spinocerebellar Ataxia: A Cross-Sectional Study	Teachers College, Columbia University
23	Emilie Lowell	Patient-reported Experience of an Interdisciplinary Telehealth Model to Rehabilitate Airway Protection in Neurodegenerative Disease	Teachers College, Columbia University
24	Alfonso E Martinez-Nunez	A Case of Hemorrhagic Pallidal Necrosis with Inflammatory CSF Pleocytosis after COVID-19 Infection.	Henry Ford Hospital
25	Regina Martuscello	Role of Defective Cerebellar Ryanodine Receptor Type 1 and ER Calcium Leak in Tremor Pathophysiology	Columbia University
26	Chun-Lun Ni	Tracking Motion Kinematics and Tremor with Intrinsic Oscillatory Property of Instrumental Mechanics	Indiana University School of Medicine
27	eMalick Njie	Algorithmic Virtual Reality Reduces Parkinsonian Tremor	NeuroStorm
28	Catherine de Cuba	An Evaluation of NBI-827104 for Essential Tremor: Results from a Randomized, Double-Blind, Placebo-Controlled, Dose-Escalation, Crossover Study	Neurocrine Biosciences, Inc.

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29	David Ruff	Reduced Bergmann Glia Branch Terminations and Lateral Appendages in Essential Tremor	Columbia University
30	Junji Lin	Diagnosed and Drug-Treated Prevalence of Essential Tremor in Adult Patients: Retrospective Analyses of Two US Healthcare Claims Databases	Former employee, Jazz Pharmaceutical
31	Shirin Sadeghpour	Holmes Tremor and Alien Hand Syndrome Following Thalamic Stroke: A Case Report	Baylor Scott and White
32	Ian Syndergaard	The Effect of Afferent Feedback on Tremor Propagation: A Modeling Study	Brigham Young University
33	Saikrishna Vallamchetla	Drug-Induced Tremor: Analysis of FDA Adverse Event Reporting System (FAERS).	All India Institute of Medical Sciences, Bhopal, India
34	Kevin Van den Berg	Cerebral Mechanisms Underlying Tremor Progression in Parkinson's Disease	Radboud University, Donders Institute for Brain, Cognition and Behaviour, Centre for Cognitive Neuroimaging, Nijmegen, the Netherlands
35	Anouk van der Heide	The Role of The Noradrenergic System in Parkinson's Disease Tremor	Donders Institute for Brain, Cognition, and Behavior, Centre for Cognitive Neuroimaging, Radboud University, Nijmegen, the Netherlands.

# 2nd International Tremor Congress

## FROM BENCH TO BEDSIDE TOWARDS TREMOR THERAPY

May 18-19, 2023  COLUMBIA |  NewYork-Presbyterian

### ABSTRACTS

<b>Abstract number</b>	<b>Presenter name</b>	<b>Abstract title</b>	<b>Affiliation</b>
36	Julien Volle	Translational Pharmacology in Essential Tremor: Relevance of Electrophysiological Biomarkers	SynapCell SAS
37	Jeanne Vu	Head Tremor Patterns in Cervical Dystonia: Assessments from Clinicians and Computer Vision	Institute for Neural Computation, UCSD
38	Alexander White	Desynchronizing the Olivo-Cerebellar Loop: A Computational Study of Pharmacological Intervention for Climbing Fiber Overgrowth Induced Essential Tremor.	National Tsing Hua University
39	Shi-Bing Wong	Cerebellar EEG Power in Children with Developmental Disorders	Department of Pediatrics, Taipei Tzu Chi Hospital
40	Jun Yu	Circadian Rhythm and Adaptive Deep Brain Stimulation in Essential Tremor	University of Florida
41	Xu Zhang	Feasibility Study of Phase-Locked Transcranial Magnetic Stimulation of Cerebellum for the Treatment of Essential Tremor	University of Connecticut
42	Doug White	Virtual Digital Therapeutics-based EMG Biofeedback for Tremor Reduction in Individuals with Parkinson's Disease (PD) - A Pilot Study	Hunter College, New York



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## ACKNOWLEDGMENTS

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