

2ND INTERNATIONAL TREMOR CONGRESS

FROM BENCH TO BEDSIDE TOWARDS TREMOR THERAPY

FRIDAY-SATURDAY
June 12 – 13, 2020



**International Parkinson and
Movement Disorder Society**

*Endorsed by the International
Parkinson and Movement
Disorder Society*

COURSE DIRECTORS

Sheng-Han Kuo, MD

Assistant Professor of Neurology, Columbia University, New York, New York

Elan D. Louis, MD, MS

Professor of Neurology and of Epidemiology; Chief, Division of Movement Disorders; Yale University, New Haven, Connecticut

Ming-Kai Pan, MD, PhD

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

FACULTY

Su-youne Chang, PhD

Associate Professor, Department of Neurologic Surgery, Department of Biomedical Engineering, Mayo Clinic, Rochester, Minnesota

Daniel O. Claassen, MD, MS

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

Stephanie Cosentino, PhD

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

William Dauer, MD

Director, Peter O'Donnell Jr. Brain Institute; Lois C.A. and Darwin E. Smith Distinguished Chair in Neurological Mobility Research, University of Texas, Southwestern Medical Center, Dallas, Texas

Rodger J. Elble, MD, PhD

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

Stanley Fahn, MD

H. Houston Merritt Professor of Neurology; Director Emeritus, Center for Parkinson Disease and Other Movement Disorders, Department of Neurology, Columbia University, New York, New York

Alfonso Fasano, MD, PhD

Professor of Neurology, University of Toronto, Toronto, Canada

Phyllis Faust, MD, PhD

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

Deborah A. Hall, MD, PhD

Professor, Department of Neurological Sciences; Director, Movement Disorders Program, Rush Medical College, Chicago, Illinois

Mark Hallett, MD

Distinguished Investigator, Chief, Human Motor Control Section, NIH, National Institute of Neurological Disorders and Stroke, Bethesda, Maryland

Rick C.G. Helmich, MD, PhD

Consultant Neurologist, Radboud University Nijmegen Medical Center, The Netherlands

Joohee Jimenez-Shahed, MD

Associate Professor, Department of Neurology, Mount Sinai, New York, New York

Hyder Jinnah, MD, PhD

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

Un Jung Kang, MD

Founders Professor, Department of Neurology; Director of Translational Research, NYU Langone Health, New York, New York

Christine Kim, MD

Assistant Professor, Yale School of Medicine, New Haven, Connecticut

Eric J. Lang, PhD

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

William G. Ondo, MD

Professor of Neurology; Director of Movement Disorder Clinic, Houston Methodist, Houston, Texas

Pattamon Panyakaew, MD

Faculty, Department of Medicine,
Chulalongkorn University and King
Chulalongkorn Memorial Hospital, Thai
Red Cross Society, Bangkok, Thailand

Serge Przedborski, MD, PhD

Page and William Black Professor of
Neurology, Columbia University Vagelos
College of Physicians and Surgeons, New
York, New York

Wade Regehr, PhD

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

David M. Simpson, MD

Director, Clinical Neurophysiology
Laboratories; Director, Neuromuscular
Division; Professor of Neurology, Icahn
School of Medicine at Mount Sinai,
New York, New York

Roy V. Sillitoe, PhD

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

Sule Tinaz, MD, PhD

Assistant Professor, Yale School of
Medicine, New Haven, Connecticut

Nora Vanegas-Arroyave, MD

Assistant Professor of Neurology,
Columbia University, New York, New York

Aparna Wagle Shukla, MD

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

Ruth H. Walker, MB, ChB, PhD

Professor of Neurology, Mount Sinai
School of Medicine, New York, New York;
Director, Movement Disorders Clinic,
James J. Peters Veterans Affairs Medical
Center, Bronx, New York

ABSTRACT SUBMISSION GUIDELINES

Abstracts of original work may be submitted for poster presentation. Work submitted early and work by trainees will receive special consideration. Please carefully follow the instructions for abstract submission.*

INSTRUCTIONS

The abstract must be in the form of a Microsoft® Word Document (preferred) or in Adobe® portable document format (PDF) with the following specifications:

- **ONE PAGE ONLY** 8.5"x11" with 1" margins on all sides.
- **FONT** Times New Roman, 12 point.
- **TITLE** Centered, Bold, Title case.
- **AUTHORS** Centered. Last name followed by first and middle initials only (without comma or periods—as on PubMed). Degree (MD, RN, RRT, PhD) may be included. Names separated by a comma with a period at the end (as on PubMed).
- **AFFILIATION** Centered. Include Department(s), University/Hospital, City, State/Province. Use standard abbreviations where applicable.
- **ABSTRACT** Include four sections: Introduction, Methods, Results, and Conclusions. Case reports should include three sections: Introduction, Report, and Conclusion. Start each section on a different line with the title in boldface followed by a semicolon. There is a maximal 300 words per abstract.

Submissions that do not strictly conform to these specifications will be rejected. Abstracts will not be reformatted before printing/publication. Please minimize the use of special fonts, characters, and extraneous formatting. If formatting problems are likely but unavoidable, submit a properly formatted PDF copy.

Submit abstracts as an attachment to: cme@columbia.edu

Abstracts must be received by April 1, 2020, 5 p.m. EDT. All notifications will be sent on **April 10, 2020**.

**Please note that previously published abstracts may be submitted for consideration.*

FRIDAY, JUNE 12, 2020

7:30 a.m. Registration; Continental Breakfast

8:25 a.m. **Welcome: 2nd Tremor Congress:
From Bench to Bedside Towards Tremor Therapy Development**
Sheng-Han Kuo, MD

SESSION 1 TREMOR OVERVIEW

MODERATOR: Sheng-Han Kuo, MD

8:30 a.m. **History of Tremor Research: From Past to Present**
Stanley Fahn, MD

8:55 a.m. **Current Understanding of Tremor Physiology**
Mark Hallett, MD

9:20 a.m. **Challenges in Tremor Research Field**
Elan D. Louis, MD, MS

SESSION 2 BRAIN PATHOLOGY OF TREMOR

MODERATOR: Elan D. Louis, MD, M.S.

9:45 a.m. **Molecular Signatures for Postmortem Tremor Brains:
PD, ET, Dystonia and SCA**
Phyllis Faust, MD, PhD

10:10 a.m. **Cerebellar Climbing Fiber Synaptic Pathology in Tremor**
Sheng-Han Kuo, MD

10:35 a.m. Refreshment Break

SESSION 3 ANIMAL MODELS OF TREMOR

MODERATOR: Sheng-Han Kuo, MD

11:00 a.m. **Mouse Models of Essential Tremor**
Ming-Kai Pan, MD, PhD

11:25 a.m. **Mouse Models with Tremor and Other Cerebellar Phenotypes**
Roy V. Sillitoe, PhD

11:50 a.m. **Mouse Models of Dystonia, Implication in Tremor**
William Dauer, MD

12:15 p.m. **Large Animal Models in Tremor**
Su-youne Change, PhD

12:50 p.m. Lunch

SESSION 4 NEUROIMAGING AND NEUROPHYSIOLOGY OF TREMOR

MODERATOR: Sule Tinaz, MD, PhD

2:00 p.m. **Stress Modulation of Tremor Circuitry in Parkinsonian Tremor**
Rick C.G. Helmich, MD, PhD

2:25 p.m. **Neurophysiology of Dystonic Tremor**
Pattamon Panyakaew, MD

2:50 p.m. **Distinct Brain Circuitry for Essential Tremor and Dystonic Tremor**
Aparna Wagle Shukla, MD

3:15 p.m. **Brain Network Changes in Parkinson's Disease and Essential Tremor**
Daniel Claassen, MD

3:40 p.m. Refreshment Break

SESSION 5 DEBATE: ET PLUS- HOW SHOULD WE DEAL WITH CLINICAL HETEROGENEITY OF ET?

MODERATOR: Sheng-Han Kuo, MD

4:00 p.m. **Yes, We Should Use the Term, ET Plus**

Rodger J. Elble, MD, PhD

4:15 p.m. **No, We Should Drop the Term, ET Plus**

Elan D. Louis, MD, MS

4:30 p.m. **Discussion**

SESSION 6 ORAL PRESENTATIONS

MODERATOR: TBD

4:40 p.m. **Oral Presentation of Selected Posters (NON-CME)**

SESSION 7 POSTER SESSION (NON-CME)

MODERATOR: TBD

5:30 p.m. **Posters and Reception**

7:30 p.m. Adjourn

SATURDAY, JUNE 13, 2020

7:50 a.m. Registration; Continental Breakfast

SESSION 8 CEREBELLUM AND BASAL GANGLIA CIRCUITRY FOR TREMOR

MODERATOR: Ming-Kai Pan, MD, PhD

8:30 a.m. **Purkinje Cell Synchrony for Tremor Generation**

Eric Lang, PhD

8:55 a.m. **Complex Spike Modulation for Tremor**

Wade Regehr, PhD

9:20 a.m. **Basal Ganglia Circuitry for Tremor**

Un Kang, MD

9:55 a.m. Refreshment Break

SESSION 9 CLINICAL CHARACTERISTICS AND VIDEO DEMONSTRATION OF DIVERSE TREMOR DISORDER

MODERATOR: Christine Kim, MD

10:20 a.m. **Essential Tremor**

Joohi Jimenez-Shahed, MD

10:40 a.m. **Ataxia and Tremor**

Deborah Hall, MD, PhD

11:00 a.m. **Dystonia and Tremor**

Hyder Jinnah, MD, PhD

11:40 a.m. **Cognitive Aspect of Essential Tremor**

Stephanie Cosentino, PhD

SESSION 10 THERAPY DEVELOPMENT FOR TREMOR

MODERATOR: Ruth H. Walker, MB, ChB, PhD

1:00 p.m. **Pharmacological Therapy Development for Tremor**

William Ondo, MD

1:25 p.m. **Botulinum Toxin for Tremor**

David Simpson, MD

1:50 p.m. **Advances of Surgical and Ablative Therapies for Tremor**

Nora Vanegas-Arroyave, MD

2:15 p.m. **Tolerance and Circuitry Re-organization of Tremor**

Alfonso Fasano, MD, PhD

2:40 p.m. Refreshment Break

SESSION 11 CURRENT THERAPY DEVELOPMENT FOR TREMOR: INDUSTRY PERSPECTIVE (NON-CME)

MODERATOR: William Ondo, MD

3:00 p.m. **Pipeline Development for Selective Industry Partners**

SESSION 12 FUNDING OPPORTUNITIES FOR TREMOR (NON-CME)

MODERATOR: Serge Przedborski, MD, PhD

4:00 p.m. **NINDS and Foundations for Funding Opportunities**

4:55 p.m. **Closing Remarks**

Ming-Kai Pan, MD, PhD

5:00 p.m. Adjourn

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™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

PROGRAM DESCRIPTION & 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 also 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 also 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 also 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, to understand 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.

MEETING LOCATION

Roy and Diana Vagelos Education Center
104 Haven Avenue
New York, NY 10032

Parking is available at the NewYork-Presbyterian/Columbia University Medical Center parking lot, located on the southwest corner of Fort Washington Avenue and West 165th Street.

REGISTRATION FEE

Registration Fee: \$100; Residents and Fellows, Graduate Students and Postdoctoral Fellows: \$30. The fee includes the plenary presentations, continental breakfasts, lunches, and refreshment breaks. Confirmation of registration will be sent upon receipt of the registration form. Refund of registration fee will be made if written notice of cancellation is received by **June 2, 2020**. No refunds can be made thereafter.

REGISTRATION

SPACE IS LIMITED. EARLY REGISTRATION IS ENCOURAGED.

By Mail: Complete the registration form and mail with full payment to:

**Columbia University
Vagelos College of Physicians and Surgeons
Center for Continuing Medical Education
630 West 168th Street, Unit 39
New York, NY 10032**

Online: tremorcongress.org

Telephone registrations and/or cancellations are not accepted.

AMERICANS WITH DISABILITIES ACT

The Columbia University Vagelos College of Physicians and Surgeons fully complies with the legal requirements of the ADA and the rules and regulations thereof. Any participant with special needs must submit a written request to our office at least one month prior to the course date.

ADDITIONAL INFORMATION

Center for Continuing Medical Education
Columbia University Vagelos College of Physicians and Surgeons
630 West 168th Street, Unit 39
New York, NY 10032
Telephone: (212) 305-3334
Fax: (212) 305-5740
email: cme@columbia.edu

REGISTRATION FORM

Columbia University • Tremor Congress 2020

(Please print or type)

LAST NAME

DEGREE

FIRST NAME

MIDDLE INITIAL

ADDRESS

CITY

STATE

ZIP

DAYTIME PHONE

DAYTIME FAX

EMAIL

PLEASE NOTE: ***Your email address is used for critical information about the course including: registration confirmation, course evaluation and certificate. Please be sure to include an email address you check daily or frequently.***

INSTITUTION

SPECIALTY/AREA OF INTEREST

NEUROLOGY PM 90

June 12 & 13, 2020

UR011107/10.75

- ☐ \$100 Registration fee
- ☐ \$30 Residents and Fellows, Graduate Students and Postdoctoral Fellows (limited spots available)
- ☐ Enclosed is a check or money order made payable to:
Columbia University. Checks must be in U.S. Dollars drawn on a U.S. bank. Money orders must be in U.S. Dollars.

For security purposes, credit card payments cannot be accepted by mail or fax.



VAGELOS COLLEGE OF
PHYSICIANS AND SURGEONS

Vagelos College of Physicians and Surgeons
630 West 168th Street, Unit 39
New York, NY 10032



**International Parkinson and
Movement Disorder Society**
*Endorsed by the International
Parkinson and Movement
Disorder Society*

2ND INTERNATIONAL TREMOR CONGRESS FROM BENCH TO BEDSIDE TOWARDS TREMOR THERAPY

FRIDAY-SATURDAY, JUNE 12 – 13, 2020