For the 2024 BIENNIAL MEETING, Nashville, TN • June 1-4, 2024

SCIENTIFIC PROGRAM

Forging Connections and Collaborations in Functional Neurosurgery and Beyond

Jointly provided by the Congress of Neurological Surgeons and the American Society for Stereotactic and Functional Neurosurgery
BOSTON SCIENTIFIC LUNCH SYMPOSIUM DURING THE 2024 ASSFN BIENNIAL MEETING

BIOLOGICALLY INSPIRED PALLIDAL BURST STIMULATION FOR PARKINSON’S DISEASE

Presented by:
Nader Pouratian, M.D., Ph.D.
UT Southwestern Medical Center
Dallas, Texas

Sunday, June 2, 2024
12:00 PM – 12:55 PM
Summit Ballroom E, Level 4

While at ASSFN join us at booth 201
Stay up to date with Boston Scientific at ASSFN by scanning the QR code.

Lunch is provided as a courtesy for persons attending this reception. While you are welcome to attend, due to restrictions imposed by Vermont law, we ask that healthcare professionals who are licensed in Vermont not partake in the food.

U.S. Federal Government Employees – U.S. Federal Government Employees may be required to obtain approval from their agency’s or institution’s ethics officer or ethics committee or from a supervisor to attend the program. For more details, please contact your ethics officer or supervisor.

Vermont-Licensed HCPs – Vermont law prohibits Boston Scientific from providing any food, meals or refreshments to any change to healthcare professionals licensed by and regularly practicing in Vermont. Accordingly, healthcare professionals licensed by and regularly practicing in Vermont are requested not to take in any food, meals or refreshments offered at the event.

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These materials are intended to describe common clinical considerations and procedural steps for the use of referenced technologies, but may not be appropriate for every patient or case. Decisions surrounding patient care depend on the physician’s professional judgment in consideration of all available information.

The Boston Scientific Vercise Deep Brain Stimulation System is indicated for use in:

- Bilateral stimulation of the subthalamic nucleus (STN) as an adjunctive therapy in reducing some of the symptoms of moderate to advanced levodopa-responsive Parkinson’s disease (PD) that are not adequately controlled with medication.

- Bilateral stimulation of the ventral intermediate nucleus (VIM) of the thalamus as an interventional therapy in reducing some of the symptoms of moderate to advanced essential tremor.

- Bilateral stimulation of the globus pallidus (GP) as an interventional therapy in reducing some of the symptoms of advanced essential tremor.

- Bilateral stimulation of the internal globus pallidus (GPi) as an interventional therapy in reducing some of the symptoms of advanced Parkinson’s disease (PD) that are not adequately controlled with medication.

- Bilateral stimulation of the ventral intermediate nucleus (VIM) of the thalamus for the suppression of disabling upper extremity tremor in adult essential tremor patients whose tremor is not adequately controlled by medications and where the tremor constitutes a significant functional disability.

- Bilateral stimulation of the subthalamic nucleus (STN) of the basal ganglia as an interventional therapy in reducing some of the symptoms of Parkinson’s disease (PD) that are not adequately controlled with medication.

- Bilateral stimulation of the globus pallidus (GP) for the suppression of disabling upper extremity tremor in adult essential tremor patients whose tremor is not adequately controlled by medications and where the tremor constitutes a significant functional disability.

- Bilateral stimulation of the subthalamic nucleus (STN) as an interventional therapy in reducing some of the symptoms of moderate to advanced essential tremor.

- Bilateral stimulation of the globus pallidus (GP) for the suppression of disabling upper extremity tremor in adult essential tremor patients whose tremor is not adequately controlled by medications and where the tremor constitutes a significant functional disability.

- Bilateral stimulation of the internal globus pallidus (GPi) as an interventional therapy in reducing some of the symptoms of advanced Parkinson’s disease (PD) that are not adequately controlled with medication.

- Bilateral stimulation of the globus pallidus (GP) for the suppression of disabling upper extremity tremor in adult essential tremor patients whose tremor is not adequately controlled by medications and where the tremor constitutes a significant functional disability.

- Bilateral stimulation of the subthalamic nucleus (STN) as an interventional therapy in reducing some of the symptoms of moderate to advanced essential tremor.

- Bilateral stimulation of the globus pallidus (GP) for the suppression of disabling upper extremity tremor in adult essential tremor patients whose tremor is not adequately controlled by medications and where the tremor constitutes a significant functional disability.
The American Society for Stereotactic and Functional Neurosurgery (ASSFN) serves as an affiliate joint section of the CNS and AANS, and remains deeply involved in a variety of educational, organizational, and advocacy activities on behalf of North American functional neurosurgeons.

Jointly provided by the Congress of Neurological Surgeons and the American Society for Stereotactic and Functional Neurosurgery.
WELCOME TO THE 2024 ASSFN BIENNIAL MEETING IN NASHVILLE!


We welcome you to visit the Exhibit Hall to engage with exhibitors, view state-of-the-art products, and enjoy a beverage as you discover the latest advancements in the field.

The 2024 ASSFN Biennial Meeting offers an unparalleled opportunity to stay at the forefront of stereotactic and functional neurosurgery, collaborate with colleagues, and connect with renowned faculty from around the world. We look forward to your presence at this enriching event, and we trust it will be both professionally rewarding and personally enjoyable.

Thank you again for joining us at the 2024 ASSFN Biennial Meeting! While in downtown Nashville, immerse yourself in the city’s vibrant culture, enjoy local cuisine, and experience the unique charm of Music City.

Sincerely,

Joseph Neimat, MD, MS
Meeting Chair, ASSFN

Dario J. Englot, MD, PhD
Scientific Program Chair, ASSFN

Andre Machado, MD
President, ASSFN
MEETING DIRECTORS

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ASSFN President  
Cleveland Clinic  
Cleveland, Ohio

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Scientific Program Committee  
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University of California, San Francisco  
San Francisco, California
Ronald R. Tasker

Ronald R. (Ron) Tasker, 95, died peacefully on April 19, 2023, near his home of 50 years in Toronto, following a long and productive life. He was predeceased by his beloved wife Mary M. Tasker, née Craig, in 2003. Having a precocious mind, Ron entered U of T at 16 on a classics scholarship, where he studied Honour Science (Lt. Governor’s Medal, 1948). This led to the lab of Dr. Charles Best, the co-discoverer of insulin. Dr. Best and Ron’s mother counselled him to study medicine, where he won the 1950 Saddington Medal in Pathology, and the 1952 Cody Silver Medal. Ron was a classically trained scientist in the analog methods of early modern medicine. He pioneered clinical neurophysiology by adopting digital technology and instrumentation in the operating room, and by melding his training in neurophysiology and stereotactic neurosurgery. Ron joined the Division of Neurosurgery at Toronto General Hospital (TGH) in 1961 and was distinguished as a Markle Scholar (1961-1966). He traveled the world training neurosurgeons in the field of Stereotactic and Functional Neurosurgery and later became Head of Neurosurgery at TGH from 1979 to 1988. Ron taught in the Faculty of Medicine at U of T for more than 40 years, becoming Full Professor in 1978, and honoured with the title of Professor Emeritus – Neurosurgery in 2005, along with Officer of the Order of Canada. Ron was the recipient of Spiegel & Wycis Medal, World Society Stereotactic and Functional Neurosurgery (WSSFN), 1993. The R.R. Tasker Chair in Functional Neurosurgery was endowed in the Department of Surgery at U of T in 1999 to mark his many contributions to this field of medicine. Ron established a world-renowned reputation in clinical research as a brilliant surgeon, teacher, mentor, and professional role model, highly regarded for his clarity of thinking and plain spoken voice. Ron was a man of indisputable professional honesty and integrity, highly regarded as a gentle, courteous and approachable teacher.
Jerome Engel, Jr. is Director of the Seizure Disorder Center, The Jonathan Sinay Distinguished Professor of Neurology, Neurobiology, and Psychiatry and Biobehavioral Sciences, and a member of the Brain Research Institute at UCLA. He received his undergraduate degree from Cornell University, his advanced degrees from Stanford University, and completed his training in neurology at Albert Einstein College of Medicine. He has received numerous awards and honors, including a Fulbright Scholarship, a Guggenheim Fellowship, a Javits Award from the National Institutes of Health, and the Life-Time Achievement Award from the International League against Epilepsy.

George Ojemann received his undergraduate and doctorate degrees at the University of Iowa College of Medicine. After completing his neurological surgery residency at the University of Washington medical centers, he began a distinguished career as a neurosurgeon and researcher specializing in epilepsy, joining the University of Washington faculty in 1966. He retired from clinical practice in 2005 but has continued this research and teaching. For his research, he received the 1984 Grass Prize from the Society of Neurological Surgeons, a Javitts award from the National Institute of Neurological Diseases and Stroke, and multiple other prestigious honors.
FEATURING SPEAKERS

Ed Boyden
Neurotech Innovator, MIT Professor, Award-Winning Researcher

György Buzsáki
Neuroscience Pioneer, Brain Rhythm Researcher, Award Recipient

Lee Thomas Miller
Chart-Topping Songwriter with Three Grammy Nominations

David Owens
Innovation Expert, Acclaimed Speaker, Global Consultant

The Warren Brothers
Nine #1 Hits; Acclaimed Songwriters for Country’s Finest

Pete Weber
Nashville Predators Voice for 24 Seasons, Award-Winning Announcer
Go beyond clinic walls and extend movement disorder patient care, with first-of-its-kind remote neurostimulation programming in the U.S.¹ and secure in-app video chat directly from Abbott’s Clinician Programmer.

¹ Abbott. Data on File. MAT-2101330 v1.0.

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Brief Summary: Prior to using Abbott devices, please review the Instructions for Use for a complete listing of indications, contraindications, warnings, precautions, potential adverse events and directions for use.

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INVITED SPEAKERS

Taylor Abel  
University of Pittsburgh Medical Center Pittsburgh, PA

Ellen Air  
Henry Ford Hospital Detroit, MI

Rushna Ali  
Mayo Clinic Rochester, MN

Elsa Arocho-Quinones  
Medical College of Wisconsin Milwaukee, WI

Wael Asaad  
Brown University Westwood, MA

Tyler Ball  
Vanderbilt University Nashville, TN

Ausaf Bari  
UCLA Los Angeles, CA

Kara Beasley  
Boulder Neurosurgical Associates Boulder, CO

Sharona Ben-Haim  
University of California San Diego Cardiff-by-the-Sea, CA

Nicole Bentley  
University of Alabama at Birmingham Birmingham, AL

Sarah Bick  
Vanderbilt University Nashville, TN

Kelly Bijanki  
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Hal Blumenfeld  
Yale University New Haven, CT

Jennifer Blumenthal-Barby  
Baylor College of Medicine Houston, TX

Ed Boyden  
Massachusetts Institute of Technology Cambridge, MA

David Burdette  
Spectrum Health Grand Rapids, MA

György Buzsáki  
NYU Langone New York, NY

Iahn Cajigas  
University of Pennsylvania Philadelphia, PA

Lola Chambless  
Vanderbilt University Nashville, TN

Edward Chang  
University of California, San Francisco San Francisco, CA

Erin Conrad  
University of Pennsylvania Philadelphia, PA

Christos Constantinidis  
Vanderbilt University Nashville, TN

G. Rees Cosgrove  
Brigham and Women’s Hospital, Harvard Medical School Boston, MA

Arthur Cukiert  
Sao Paulo Epilepsy Clinic Sao Paulo, Brazil

Ashley Dalrymple  
University of Utah Salt Lake City, UT

Eyiyemisi Damisah  
Yale School of Medicine New Haven, CT
<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tr>
<td><strong>Shabbar Danish</strong></td>
<td>Rutgers Robert Wood Johnson Medical School</td>
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<td>Neptune, NJ</td>
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<td><strong>David Darrow</strong></td>
<td>University of Minnesota</td>
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<td>Minneapolis, MN</td>
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<td><strong>Kate Davis</strong></td>
<td>University of Pennsylvania</td>
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<td><strong>Benoit Dawant</strong></td>
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<td><strong>Pierre D’Haese</strong></td>
<td>Vanderbilt University</td>
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<tr>
<td><strong>Darin Dougherty</strong></td>
<td>Massachusetts General Hospital</td>
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<td><strong>W. Jeffrey Elias</strong></td>
<td>University of Virginia</td>
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<td>Charlottesville, VA</td>
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<tr>
<td><strong>Jerome Engel, Jr.</strong></td>
<td>University of California, Los Angeles</td>
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<td><strong>Dario J. Englot</strong></td>
<td>Vanderbilt University</td>
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<tr>
<td><strong>Kelly Foote</strong></td>
<td>University of Florida College of Medicine</td>
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<td>and McKnight Brain Institute</td>
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<td>Gainesville, FL</td>
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<tr>
<td><strong>Michael Fox</strong></td>
<td>Berenson-Allen Center for Non-Invasive Brain Stimulation, Beth Israel Deaconess Medical Center, Harvard Medical School</td>
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<td><strong>Jason Gerrard</strong></td>
<td>University of Tennessee</td>
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<td><strong>Shawn Glinter</strong></td>
<td>Pendant Biosciences, Inc.</td>
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<td><strong>Jorge González-Martínez</strong></td>
<td>University of Pittsburgh</td>
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<td><strong>Robert Gross</strong></td>
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<td><strong>Ayse Gunduz</strong></td>
<td>University of Florida</td>
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<td><strong>Kunal Gupta</strong></td>
<td>Indiana University</td>
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<td>Indianapolis, IN</td>
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<td><strong>Ryder Gwinn</strong></td>
<td>Eastside Neuroscience Institute</td>
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<td>Seattle, WA</td>
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<td><strong>Mallory Hacker</strong></td>
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<td><strong>Casey Halpern</strong></td>
<td>University of Pennsylvania</td>
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<td><strong>Clement Hamani</strong></td>
<td>University of Toronto</td>
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<td>Toronto, ON Canada</td>
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<td><strong>Travis Hassell</strong></td>
<td>Vanderbilt University</td>
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<tr>
<td><strong>Leigh Hochberg</strong></td>
<td>Massachusetts General Hospital</td>
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<td>Brookline, MA</td>
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<tr>
<td><strong>Kathryn Holloway</strong></td>
<td>VCU Health System</td>
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<td><strong>Kullervo Hynynen</strong></td>
<td>University of Toronto</td>
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<td><strong>Kara Johnson</strong></td>
<td>University of Florida</td>
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**INVITED SPEAKERS**
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Lora Kahn
Ochsner Medical Center
New Orleans, LA

Lorraine Kalia
University of Toronto
Toronto, ON Canada

Suneil Kalia
University of Toronto
Toronto, ON Canada

Michael Kaplitt
Weill Cornell Medicine
New York, NY

Patrick Karas
University of Texas
Houston, TX

Zelma Kiss
University of Calgary
Calgary, AB Canada

Andrew Ko
University of Washington
Seattle, WA

Peter Konrad
West Virginia University
Morgantown, WV

Vibhor Krishna
The Ohio State University
Columbus, OH

Bornali Kundu
University of Utah
Salt Lake City, UT

Nandan Lad
Duke University Medical Center
Durham, NC

Paul Larson
University of Arizona
Tucson, AZ

Brian Lee
University of Southern California
Los Angeles, CA

Darrin Lee
Keck School of Medicine of USC
Los Angeles, CA

Emily Levin
University of Michigan
Ann Arbor, MI

Nir Lipsman
University of Toronto
Toronto, ON Canada

Andres Lozano
University of Toronto
Toronto, ON Canada

Timothy Lucas
University of Pennsylvania
Philadelphia, PA

André Machado
Cleveland Clinic Foundation
Cleveland, OH

Neena Marupudi
University of Michigan
Ann Arbor, MI

Helen Mayberg
Mount Sinai School of Medicine
New York, NY

Cameron McIntyre
Duke University
Durham, NC

Guy McKhann
Columbia University
New York, NY

Jonathan Miller
SUNY
Syracuse, NY

Kai Miller
Mayo Clinic, Minnesota
Rochester, MN

Lee Thomas Miller
Nashville, TN

Alon Mogilner
NYU Grossman School of Medicine
New York, NY

Vicky Morgan
Vanderbilt University
Nashville, TN
INVITED SPEAKERS

Ian Mutchnick  
Norton Neuroscience Institute  
Louisville, KY

Robert Naftel  
Vanderbilt University Medical Center  
Nashville, TN

Joseph Neimat  
University of Louisville  
Louisville, KY

Michael Okun  
University of Florida College of Medicine and McKnight Brain Institute  
Gainesville, FL

David Owens  
Vanderbilt University  
Nashville, TN

Fedor Panov  
Mount Sinai Health System  
New York, NY

Parag Patil  
University of Michigan  
Ann Arbor, MI

Sanjay Patra  
Spectrum Health  
East Grand Rapids, MI

Danika Paulo  
Vanderbilt University  
Nashville, TN

Erika Petersen  
University of Arkansas  
Little Rock, AR

Richard Pierce  
Vanderbilt University  
Nashville, TN

Julie Pilitsis  
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Banner Health  
Tucson, AZ

Nader Pouratian  
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Dallas, TX

Shervin Rahimpour  
University of Utah  
Salt Lake City, UT

Richard Rammo  
Cleveland Clinic  
Cleveland, OH

Abigail Rao  
Norton Neuroscience Institute  
Louisville, KY

Ahmed Raslan  
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Ali Rezai  
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Joshua Rosenow  
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Nathan Rowland  
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Charleston, SC

Uzma Samadani  
Hennepin Healthcare Research Institute  
Minneapolis, MN

Sridevi Sarma  
Johns Hopkins University  
Baltimore, MD

Demitre Serletis  
Cleveland Clinic  
Cleveland, OH

Ashwini Sharan  
Thomas Jefferson University Hospital  
Philadelphia, PA

Sameer Sheth  
Baylor College of Medicine  
Houston, TX
INVITED SPEAKERS

Konstantin Slavin
University of Illinois at Chicago
Chicago, IL

Michael Staudt
University Hospitals Cleveland Medical Center
Cleveland, OH

Jennifer Sweet
University Hospitals Cleveland Medical Center
Cleveland, OH

Viviane Tabar
Memorial Sloan Kettering Cancer Center
New York, NY

Nitin Tandon
McGovern Medical School
Houston, TX

Nicole Toth
Henry Ford Hospital
Detroit, MI

Elizabeth Tyler-Kabara
University of Texas, Austin
Austin, TX

Meena Vessell
Texas Children’s Hospital
Austin, TX

Doris Wang
University of California, San Francisco
San Francisco, CA

Brett Warren
Nashville, TN

Brad Warren
Nashville, TN

Peter Weber
Nashville Predators
Nashville, TN

Ziv Williams
Massachusetts General Hospital
Boston, MA

Jon Willie
Washington University School of Medicine
St Louis, MO

Chengyuan Wu
Thomas Jefferson University Hospital
Philadelphia, PA

Ajmal Zemmar
University of Louisville
Louisville, KY
Go beyond clinic walls and extend movement disorder patient care, with first-of-its-kind remote neurostimulation programming in the U.S.¹ and secure in-app video chat directly from Abbott’s Clinician Programmer.

¹ Abbott. Data on File. MAT-2101330 v1.0.
PROGRAM SCHEDULE

SATURDAY, JUNE 1, 2024

8:00 am–4:00 pm  GRAND HALL FOYER
Registration

8:30 am–12:00 pm  GRAND HALL A

Special Course 1
Epilepsy Surgery Fundamentals and Challenges
Course Directors: Andrew Ko, Kai Miller

Part 1: Video Sessions

8:30–9:10 am
sEEG-guided LITT
Eyiymisi Damisah, Robert Naftel, Demitre Serletis

9:10–9:50 am
Patient with Extensive Heterotopia: Discussion of RNS at Heretopia vs. DBS/RNS Thalamus vs. VNS
Arthur Cukiert, Fedor Panov, Sanjay Patra

9:50–10:30 am
Patient with Drop Attacks with Thin CC: Open vs. LITT vs. Endoscopic Callosotomy
Taylor Abel, Neena Maripudi, Jorge Gonzalez Martinez

10:30–10:45 am
Beverage Break

Part 2: Hands On Session

10:45–11:20 am
Robotic vs. StarFix sEEG with Demonstration of RF via sEEG Electrodes
Andrew Ko, Kai Miller, Ian Mutchnick, Jon Willie, Chengyuan Wu

11:20 am–12:00 pm
Endoscope and LITT Demonstration of Callosotomy
Taylor Abel, Neena Maripudi, Jorge Gonzalez Martinez

Educational Grant provided by
Brainlab, Monteris Medical and Zimmer Biomet

In-Kind Equipment provided by
Brainlab, FHC Inc., Monteris Medical and Zimmer Biomet
Special Course 2
Movement Disorder Surgery Fundamentals and Challenges
Course Directors: Rushna Ali, Alon Mogilner

8:30–8:35 am
Introduction
Rushna Ali, Alon Mogilner

8:35–9:00 am
Advanced Imaging and Connectomics for DBS Planning
Mallory Hacker, Shervin Rahimpour

9:00–9:25 am
Hands-on: Pitfalls and Principles of Planning
All Faculty

9:25–9:50 am
iMRI vs. ICT vs. Robotic vs. MER Overview
Kathryn Holloway, Paul Larson, Richard Rammo

9:50–10:15 am
Hands-on: iMRI vs. ICT vs. Robotic
All Faculty

10:15–10:40 am
Beverage Break

10:40–11:05 am
Focused Ultrasound vs DBS: When, Why, Who
Rees Cosgrove, Peter Konrad

11:05–11:30 am
Directional and Closed Loop DBS
Nandan Lad, Joshua Rosenow

11:30 am–12:00 pm
Challenging Cases Discussion
Abigail Rao, Ashwini Sharan

Educational Grant provided by
Alpha Omega USA, Brainlab and Zimmer Biomet

In-Kind Equipment provided by
Alpha Omega USA, Brainlab, FHC Inc. and Zimmer Biomet
Special Course 3
Business of Functional Neurosurgery and Choosing a Job for Residents (for Residents and Fellows)
Course Director: Ellen Air

1:00–1:05 pm
Overview
Ellen Air

1:05–1:25 pm
Exploring the Academic to Practice-Based Spectrum
Jason Gerrard

1:25–1:45 pm
Prioritization and Job Fit
Rushna Ali

1:45–2:05 pm
Negotiating the Package
Kunal Gupta

2:05–2:25 pm
Building and Growing an Interdisciplinary Team
Michael Staudt

2:25–2:40 pm
Beverage Break

2:40–3:00 pm
Infrastructure
Lora Kahn

3:00–3:20 pm
Building an “Outside” Referral Base
Paul Larson

3:20–3:40 pm
Who Bills and Where does the Money Go?
Ellen Air, Nicole Toth

3:40–4:00 pm
Integrating Research Without Breaking the Bank
Wael Asaad

Gold Sponsor: Alpha Omega USA
PROGRAM SCHEDULE

1:00–4:00 pm  GRAND HALL B

**Special Course 4**
*Mentorship for Medical Students*

**Course Director:** Nathan Rowland

1:00–1:05 pm
*Overview*
Nathan Rowland

1:05–1:30 pm
*Evolution of the Neurosurgery Residency Match Process*
Lola Chambless

1:30–1:55 pm
*The Role of Research for the Neurosurgical Candidate*
Patrick Karas

1:55–2:20 pm
*Choosing the Ideal Sub-Internships*
Nicole Bentley

2:20–2:45 pm
*Successful Interviewing Strategies for the Neurosurgery Match*
Emily Levin

2:45–3:10 pm
*Beverage Break*

3:10–3:35 pm
*The Role of ASSFN in Supporting URM Neurosurgical Candidates: The AMPLify Model*
Nathan Rowland

3:35–4:00 pm
*Organized Neurosurgery and Neurosurgical Societies*
Danika Paulo

1:00–4:00 pm  GRAND HALL C

**Special Course 5**
*Entrepreneurship and Innovation*

**Course Directors:** Shawn Glitner, Cameron McIntyre, Joseph Neimat, David Owens

1:00–4:00 pm  GRAND HALL FOYER

**WINS Networking Event**

**Gold Sponsor:** Abbott  **Bronze Sponsor:** Alpha Omega USA
SUNDAY, JUNE 2, 2024

6:30 am–6:00 pm  GRAND HALL FOYER

Registration

7:00–7:55 am  GRAND HALL FOYER

Continental Breakfast

7:00–7:55 am  SUMMIT D

Breakfast Session 1
Neurorehabilitation
Moderator: David Darrow, Andre Machado

7:00–7:15 am
VNS for Neurorehabilitation
Darrin Lee

7:15–7:30 am
Spinal Cord Stimulation for Spinal Cord Injury
Uzma Samadani

7:30–7:45 am
Spinal Cord Stimulation to Restore a Sense of Touch
Ashley Dalrymple

7:45–7:55 am
Panel Discussion
All Faculty

7:00–7:55 am  SUMMIT E

Breakfast Session 2
Personalized Neuromodulation Biomarkers
Moderator: Shabbar Danish, Doris Wang

7:00–7:15 am
Personalized DBS for Binge-Eating Disorder
Casey Halpern

7:15–7:30 am
Personalized DBS for Parkinson’s Disease
Kara Johnson

7:30–7:45 am
Personalized Visualization for DBS Planning
Cameron McIntyre
7:45-7:55 am
Panel Discussion
All Faculty

8:00–9:50 am GRAND HALL D

Plenary Session 1
Innovation in Neurosurgery: Possibilities and Pitfalls
Moderators: Brian Lee, Jonathan Miller, Joseph Neimat

8:00–8:05 am
Introduction
Joseph Neimat

8:05–8:35 am
Keynote on Innovation
David Owens

8:35–8:50 am
Brain Stimulation for Stroke
André Machado

8:50–9:05 am
Intermittent DBS: From Animal Studies to Application
Christos Constantinidis

9:05–9:20 am
Recent Innovations in Neural Interfaces
Leigh Hochberg

9:20–9:50 am
Roundtable Discussion
Christos Constantinidis, Leigh Hochberg, André Machado, Joseph Neimat, David Owens

9:30 am–4:30 pm GRAND HALL E

Exhibit Hall Open

9:50–10:20 am GRAND HALL E

Beverage Break – Visit the Exhibits!
Parallel Session 1
Big Data and AI
Moderators: Pierre D’Haese, Chengyuan Wu

10:20–10:35 am
Understanding Complex Brain Networks with AI
Kai Miller

10:35–11:05 am
Big Data and AI in Movement Disorders
Benoit Dawant, Pierre D’Haese, Peter Konrad

11:05–11:20 am
AI Applications in Intracranial EEG for Epilepsy
Erin Conrad

11:20 am–12:00 pm
Open Papers

11:20–11:25 am
An Intracortical Brain Computer Interface to Restore Communication in a Person with ALS
Nicholas Card; Maitreyee Wairagkar; Carrina Iacobacci; Xianda Hou; Tyler Singer-Clark; Francis Willett; Erin Kunz; Chaofei Fan; Maryam Vahdati Nia; Darrel Deo; Eun Young Choi; Matthew Glasser; Leigh R. Hochberg; Jaimie M. Henderson; Kiarash Shahlaie; Sergey Stavisky; David M. Brandman

11:26–11:31 am
Unveiling Phonological Processing: sEEG Insights in Natural Speech Tasks
Aditya Singh; Nitin Tandon; Jinlong (Torres) Li

11:32–11:37 am
One-Shot Learning in the Human Brain
Megha Ghosh; Sophia Lowe-Hines; Adam Crandall; Andrew Lin Ko; Jeffrey Ojemann; Ben L. Grannan

11:38–11:43 am
Capturing Synchronized Neural and Experiential Data in the Wild with The Neuropace Responsive Neurostimulator
Cory Inman; Luis Garcia; Uros Topalovic; Mauricio Vallejo; Matthias Stangl; Tyler Davis; Martina Holleman; Justin Michael Campbell; Lensky Augustin; Dawn Eliashiv; Vikram Rao; Itzhak Fried; Nicholas Hasulak; Sonja Hiller; Nanthia Suthana
11:44-11:49 am
Timing of Spiking Activity Suggests a Role in Reach Braking Control and Error Monitoring for the Ventral Intermediate Nucleus of the Thalamus in Essential Tremor Patients
Rex Tien; Jonathan Platt; Madelyn Mendlen; Drew Kern; Steven Ojemann; John Thompson; Daniel Kramer

11:50-11:55 am
Recordings of Anterior Cingulate Cortex Dopamine Activity in Sub-second Time During Working Memory Tasks
Priya Ramaiah; Seth Batten; Thomas Twomey; Natalie Melville; Jason White; Alexis Torres; Xavier Celaya; Dan Bang; Yi Luo; Leonardo Barbosa; Gi-Yeul Bae; Samuel McClure; Gene Brewer; Terry Lohrenz; Read Montague; Robert Wagner Bina

11:56 am-12:01 pm
An Implantable AI Enabled Device Can Predict Seizures with High Accuracy Up to 1 Hour Before Events
Ali Saeizadeh; Daniel Uvaydov; Douglas Schonholtz; Jorge M. Jimenez; Joseph Neimat; Raja N. Jani; Tommaso Melodia

10:20 am-12:00 pm
GRAND HALL ABC
Parallel Session 2
Pediatric Surgical Advances
Moderators: Tyler Abel, Elizabeth Tyler-Kabara

10:20-10:35 am
RNS in the Pediatric Population
Meena Vessell

10:35-10:50 am
Cerebellar Deep Nuclei DBS for Acquired Dystonias in Children
Iahn Cajigas Gonzalez

10:50-11:05 am
Laser Ablation for Pediatric Epilepsies
Elsa Arrocho Quinones

11:05-11:20 am
Multimodal Approaches to Pediatric Spasticity
Robert Naftel

11:20 am-12:00 pm
Open Papers
11:20–11:25 am  
Modeling Aberrant Hemodynamic Autoregulation and Infraslow Modulation of Neural Activity  
Maren Loe; Michael Morrissey; Rebekah Landre; Stuart Tomko; Rejean Guerriero; ShiNung Ching

11:26–11:31 am  
Outcomes of Stereoelectroencephalography Following Failed Epilepsy Surgery in Children  
Georgia Wong; Ashley McCray; Kara Horn; Saige Teti; Nathan Cohen; William Gaillard; Chima Oluigbo

11:32–11:37 am  
Revealing the Functional and Physiological Properties of Human Single Neurons in a Temporal Cortical Microcircuit Using Neuropixels  
Shraddha Shah; Kalman Katlowitz; Joshua Adkinson; Raissa Mathura; Nicole Provenza; Nisha Giridharan; Garrett P. Banks; Lan Luan; Chong Xie; Alica Goldman; Atul Maheshwari; Sarah Heilbroner; Andrew Watrous; Benjamin Hayden; Sameer A. Sheth

11:38–11:43 am  
Neural Evidence Accumulation in the Dorsolateral Prefrontal Cortex Mediates Working Memory-based Decision-making  
David P. Darrow; Seth Koenig; Xiyuan Yan; Alexander Herman

11:44–11:49 am  
Electric Field Stimulation Collaborates with mTOR to Direct Retinal Ganglion Cell Axon Regeneration and Partial Restoration of Vision After Optic Nerve Crush Injury  
Kimberly K. Gokoffski; Connie Huang; Anahit Simonyan; Sasha Medvidovic; Timothy Silliman; Timothy Kim; Pooyan Pahlavan; Gengle Niu; Ege Iseri; Mahnaz Shahidi; Biju Thomas; Gianluca Lazzi; Darrin J. Lee

11:50–11:55 am  
Ultra-High-Frequency Deep Brain Stimulation of the Medial Septal Nucleus Demonstrates Unique Septohippocampal Circuit Cerebral Blood Volume Activation Compared to Standard High Frequency Stimulation  
Kevin Wu; Jack Yu Tung Lo; Aafreen Qureshi; Rebecca Chow; Avinash Pandit; Kofi Agyerman; Wooseong Choi; Robert G. Briggs; Matthew Bergosh; Nancy Zepeda; Lindsey Crown; Charles Y. Liu; Vasileios Christopoulos; Darrin J. Lee
11:56 am–12:01 pm
Beta Wave Analysis on Two Public Data Sets with Open-source Frequency Range Explorer to Assist Epileptogenic Zone Localization (FREEZ) Module
Anne-Cecile Lesage; Sean O’Leary; Liliana Camarillo Rodríguez; Patrick J. Karas; Zhengjia Wang; John F. Magnotti; Michael S. Beauchamp; Sameer A. Sheth

12:00–12:55 pm  SUMMARY D

Medtronic
_non-CME Sponsored Lunch Session_
Insight-Driven Strategies: Tools and Innovations for Refractory Epilepsy
Ausaf Bari, Jon T. Willie

12:00–12:55 pm  SUMMARY E

Boston Scientific
_non-CME Sponsored Lunch Session_
Biologically Inspired Pallidal Burst Stimulation for Parkinson’s Disease
Nader Pouratian

1:00–3:00 pm  GRAND HALL D

Plenary Session 2
Collaboration in Music, Sports, and Neurosurgery
Moderators: Dario J. Englot, Joseph Neimat

1:00–1:05 pm
Introduction of Musicians
Joseph Neimat

1:05–1:55 pm
Collaboration in Music: Performance and Discussion
Lee Thomas Miller, The Warren Brothers

1:55–2:00 pm
Introduction of Pete Weber
Dario J. Englot, Richard Pierce
PROGRAM SCHEDULE

2:00–2:20 pm
Collaborations in Sports: A Conversation with a Sportscaster and Patient
Dario J. Englot, Richard Pierce, Pete Weber

2:20–2:30 pm
Honoring Ronald R. Tasker
Andres Lozano

2:30–2:35 pm
Introduction of ASSFN President
Joseph Neimat

2:35–3:00 pm
Presidential Address
André Machado

3:00–3:30 pm GRAND HALL E
Beverage Break – Visit the Exhibits!

3:30–6:00 pm GRAND HALL D
Parallel Session 3
The Evolution of Epilepsy Surgery
Moderators: Sharona Ben-Haim, Guy McKhann

3:30–3:45 pm
Standardization of the Epilepsy Surgical Evaluation
Kate Davis

3:45–4:00 pm
Measuring Benefit Beyond Engel Outcome
Dario J. Englot

4:00–4:15 pm
Evolving from Resection to Ablation
Robert Gross

4:15–4:30 pm
Thalamic Neuromodulation for Primary Generalized Epilepsy
David Burdette

4:30–4:45 pm
FUS as a Novel Tool for Epilepsy
Vibhor Krishna
4:45–5:05 pm
Panel Discussion
All Faculty

5:05–6:00 pm
Open Papers

5:05–5:10 pm
Focal Seizures Induce Spatiotemporally Organized Spiking Activity in the Human Cortex
Joshua M. Diamond; Julio Chapeton; Weizhen Xie; Samantha Jackson; Sara Inati; Kareem A. Zaghloul

5:11–5:16 pm
Peri-Ictal Dynamics of The Interictal Suppression Hypothesis: An SEEG Study
Graham Walter Johnson; Derek Doss; Ghassan Makhoul; Leon Cai; Camden Bibro; Addison Cavender; Danika Lea Paulo; Baxter Rogers; Shilpa Reddy; Robert Partlow Naftel; Benoit Dawant; Catie Chang; Mark Wallace; Shawniqua Williams Roberson; Vicky Morgan; Sarah Bick; Dario J. Englot

5:17–5:22 pm
Thalamo-Cortical Connectivity Deterioration in Focal Epilepsy
Camden Bibro; Derek Doss; Graham Walter Johnson; Ghassan Makhoul; Sarah Goodale; Lucas Sainburg; Dingjie Su; Danika Lea Paulo; Sarah Bick; Catie Chang; Vicky Morgan; Dario J. Englot

5:23–5:28 pm
The Interictal Suppression Hypothesis is the Dominant Differentiator of Seizure Networks in Focal Epilepsy
Jared Shless; Derek Doss; Sarah Bick; Ghassan Makhoul; Aarushi Negi; Camden Bibro; Rohan Rashingkar; Abhijeet Gummadavelli; Catie Chang; Martin Gallagher; Robert Partlow Naftel; Shilpa Reddy; Shawniqua Williams Roberson; Vicky Morgan; Graham Walter Johnson; Dario J. Englot

5:29–5:34 pm
Disrupting the Epileptogenic Network with Stereoelectroencephalography-guided Radiofrequency Thermocoagulation
Ana Suller; Hellen Kreinter; Poul Espino; Sonia Mejia; Jorge Burneo; Seyed Mirsattari; Michelle-Lee Jones; Giovanni Pellegino; David Diosy; David A. Steven; Keith MacDougall; Jonathan C. Lau
5:35–5:40 pm
Convergent Hierarchical Dynamics Within the Language Network for Speech Listening and Silent Reading
Kathryn Snyder; Kiefer Forseth; Oscar Woolnough; Elliot Murphy; Nitin Tandon

5:41–5:46 pm
Hippocampal Closed-loop Electrical Stimulation Augments Hippocampal-neocortical Memory Network Activity
Kathryn Snyder; Kiefer Forseth; Oscar Woolnough; Elliot Murphy; Nitin Tandon

5:47–5:52 pm
Consistent Stimulation Response May Help Define Epileptic Networks: A Single Pulse Electrical Stimulation Study
Ghassan S. Makhoul; Bruno Hidalgo Monroy Lerma; Derek J. Doss; Graham W. Johnson; Addison C. Cavender; Camden Bibro; Daniika E. Paulo; Catie Chang; Mark Wallace; Shawniqua Williams Roberson; Sarah Bick; Vicky Morgan; Dario J. Englot

5:53–5:58 pm
A First-In-Human Study of Interneuron Transplantation for Drug-Resistant Focal Epilepsy
Derek Southwell; Harish Babu; Robert Beach; Sharona Ben-Haim; Kim J. Burchiel; Matthew Luedke; Rebecca O’Dwyer; Sepehr Sani; Jerry Shih; David Spencer; Gautam Banik; Marina Bershteyn; David Blum; Brianna Feld; Holly Finefrock; Luis Fuentealba; John Hixson; Ji-Hye Jung; Tia Kowal; Sonja Kriks; Rose Larios; Seonok Lee; Sheri Madrid; Yves Maury; Catherine Priest; Cory Nicholas

3:30–6:00 pm GRAND HALL ABC
Parallel Session 4
The Evolution of Movement Disorder Surgery
Moderators: Nicole Bentley, Michael Okun

3:30–3:45 pm
Bilateral FUS vs. DBS for Tremor
Kara Beasley

3:45–4:00 pm
Gene Therapy of Movement Disorders
Paul Larson

4:00–4:15 pm
Advanced Stimulation Paradigms
PROGRAM SCHEDULE

Travis Hassell
4:15–4:30 pm
Value of Closed Loop: Clinician’s Perspective
Kelly Foote

4:30–4:45 pm
Value of Closed Loop: Engineer’s Perspective
Ayse Gunduz

4:45–5:05 pm
Panel Discussion
All Faculty

5:05–6:00 pm
Open Papers

5:05–5:10 pm
Gait Phase Adaptive Deep Brain Stimulation Improves Gait Parameters in Parkinson’s Disease Patients
Kenneth Louie; Jannine Balakid; Jessica Bath; Hamid Fekri Azgomi; Jacob Marks; Julia Choi; Philip A. Starr; Doris D. Wang

5:11–5:16 pm
Connectomics of Chronic VIM vs Rescue VIM/VO Deep Brain Stimulation in Essential Tremor
Vyshak Chandra; Yusuf Mekri; Anna Fusco; Joshua Wong; Justin D. Hilliard; Kelly D. Foote

5:17–5:22 pm
Long-term Clinical Outcomes for Patients with Parkinson’s Disease Receiving a Unilateral Implantation to the Substantia Nigra of an Investigational Cell-based Therapy at the Time of DBS Surgery (DBS-plus)
George Quintero; John Slevin; Julie Gurwell; Greg Gerhardt; Craig van Horne

5:23–5:28 pm
Automated Deep Brain Stimulation Parameter Selection via Meta-Active Learning of Evoked Potentials
Eric Cole; Mariah Schrum; Enrico Opri; Letian Chen; Arthur Wang; Paola Testini; Bahram Borgheai; Arthur Nascimento; Faical Isbaine; Robert E. Gross; Matthew Gombolay; Svjetlana Miocinovic
5:29–5:34 pm  
Reduction of Alpha Synuclein Oligomers in Preclinical Models of Parkinson's Disease by Electrical Stimulation In Vitro and Deep Brain Stimulation In Vivo  
Suneil K. Kalia; Eun Jung Lee; David Hernán Aguirre-Padilla; Anton Fomenko; Grishma Pawar; Minesh Kapadia; Andres M. Lozano; Clement Hamani; Lorraine Kalia

5:35–5:40 pm  
Optimal Focused Ultrasound Lesion Location in Essential Tremor  
Melissa Ming Jie Chua; Alfredo Morales Pinzon; Clemens Neudorfer; Patrick Ray Ng; Sarah Blitz; Garance Meyer; Konstantin Butenko; Till Dembek; Fardad Behzadi; Nathan McDonold; John Rolston; Charles R.G. Guttmann; Michael Fox; Garth Cosgrove; Andreas Horn

5:41–5:46 pm  
fMRI-based Deep Brain Stimulation Programming: A Blinded, Crossover Clinical Trial  
Brendan Santyr; Afis Ajala; Ibrahim Alhashyan; Jurgen Germann; Jianwei Qui; Alexandre Boutet; Alfonso Fasano; Andres M. Lozano

5:47–5:52 pm  
Focused Ultrasound Pallidothalamic Tractotomy for Cervical Dystonia  
Shiro Horisawa; Takaomi Taira

5:53 – 5:58 pm  
A Network Imaging Biomarker to Predict Clinical Responses to Subthalamic Nucleus Deep Brain Stimulation Surgery for Parkinson's Disease  
Prashin Unadkat; Vijay Dhawan; Yilong Ma; Chris Tang; Shichun Peng; Martin Niethammer; An Vo; Silvia Caminiti; Daniela Perani; David Eidelberg

6:00–8:00 pm  
GRAND HALL TERRACE

Opening Reception

Kick off the ASSFN Biennial Meeting experience by connecting with colleagues over drinks and delicious hors d’oeuvres!
# PROGRAM SCHEDULE

**MONDAY, JUNE 3, 2024**

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<th>Time</th>
<th>Location</th>
<th>Event Description</th>
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<td>6:30 am-6:00 pm</td>
<td>GRAND HALL FOYER</td>
<td>Registration</td>
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<td>7:00-7:55 am</td>
<td>GRAND HALL FOYER</td>
<td>Continental Breakfast</td>
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<td>7:00-7:55 am</td>
<td>SUMMIT D</td>
<td>Abbott Non-CME Sponsored Breakfast Session</td>
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<td>DBS for Depression: the TRANSCEND Pivotal Study</td>
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<td>Robert Gross, Brian Kopell, Patricio Riva Posse</td>
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<td>7:00-7:55 am</td>
<td>SUMMIT E</td>
<td>Insightec Non-CME Sponsored Breakfast Session</td>
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<td>The Silent, Unmet Need in Movement Disorders; Advancements in Focused Ultrasound—Exablate® Prime</td>
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<td>Stephen Harward II, Ahmed Raslan</td>
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<td>8:30 am-5:30 pm</td>
<td>GRAND HALL E</td>
<td>Exhibit Hall Open</td>
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<td>8:00-9:30 am</td>
<td>GRAND HALL D</td>
<td>Plenary Session 3</td>
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<td></td>
<td>Exploring the Conscious and Unconscious Brain</td>
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<td><strong>Moderators:</strong> Julie Pilitsis, Konstantin Slavin</td>
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<tr>
<td>8:00-8:02 am</td>
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<td>Introduction</td>
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<td>Nitin Tandon</td>
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<td>8:02-8:30 am</td>
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<td>Unlocking the Neural Systems of the Brain</td>
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<td>György Buzsáki</td>
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<td>8:30-8:50 am</td>
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<td>Theory of Mind and Social Cognition</td>
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<td>8:50–9:10 am</td>
<td>Neuromodulation for Restoration of Consciousness</td>
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<td>Hal Blumenfeld</td>
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<td>9:10–9:30 am</td>
<td>Roundtable Discussion</td>
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<td>9:30–10:00 am</td>
<td>Beverage Break with Exhibitors</td>
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<td>10:00 am–12:00 pm</td>
<td>Parallel Session 5</td>
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<td>The Evolution of Psychiatric Neuromodulation</td>
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<td><strong>Moderators:</strong> Sarah Bick, Nader Pouratian</td>
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<tr>
<td>10:00–10:20 am</td>
<td>Physiological Biomarkers in Psychiatric Neurosurgery</td>
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<td>Kelly Bijanki, Sameer Sheth</td>
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<td>10:20–10:40 am</td>
<td>Clinical Trials in DBS for Depression: State of the Field</td>
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<td>Helen Mayberg</td>
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<td>10:40–11:00 am</td>
<td>Addiction as a Novel Indication for DBS</td>
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<td>Ali Rezai</td>
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<td>11:00–11:20 am</td>
<td>Interdisciplinary Engagement in Psychiatric Neurosurgery</td>
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<td>Darin Dougherty</td>
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<td>11:20 am–12:00 pm</td>
<td>Open Papers</td>
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<td>11:20–11:25 am</td>
<td>Structural, Connectivity, and Metabolic Changes</td>
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<td>Following Magnetic Resonance Guided Focused Ultrasound Capsulotomy</td>
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<td>Benjamin Andrew Davidson; Lyndon Boone; Karim Mithani;</td>
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<td>Clement Hamani; Peter Giacobbe; Sean Nestor; Ying Meng;</td>
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<td>Jennifer Rabin; Maged Goubran; Nir Lipsman</td>
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11:26–11:31 am

**Acute Deep Brain Stimulation of the Fornix in Alzheimer’s Disease Disrupts Memory Recall**

Anna Kimata; Matthew Chan; Bryan Zheng; Peter M. Lauro; Jennifer Davis; Umer Akbar; Wael Asaad

11:32–11:37 am

**Pathway Specific Stimulation of Prefrontal Cortical Pathways Recruits Unique Cortical Sources**

Andreas Seas; M. Sohail Noor; Ki Sueng Choi; Ashan Veerakumar; Mosadoluwa Obatusin; Jacob Dahill-Fuchel; Vineet Tiruvadi; Elisa Xu; Patricio Riva Posse; Christopher Rozell; Helen S. Mayberg; Cameron C. McIntyre; Bryan Howell; Allison Waters

11:38–11:43 am

**Stereo-electroencephalography Guided Multi-Lead Deep Brain Stimulation for Treatment-Resistant Obsessive-Compulsive Disorder**

Robert Seilheimer; Liming Qiu; Younghoon Nho; Gustavo Campos; Neda Kaboodvand; Taneeta Ganguly; Kristie Bauman; Mario Cristancho; William Wilent; Cammie Rolle; Michael A. Jensen; Kai Miller; Desmond Oathes; Lily Brown; A. Moses Lee; Nolan R. Williams; Katherine Scangos; Daniel Barbosa; Casey H. Halpern

11:44–11:49 am

**Brain Network Changes Characterized with Resting State Functional MRI are Associated with Antidepressant Effects After Deep Brain Stimulation of the Medial Forebrain Bundle**

Prashin Unadkat; Nha Nguyen; Jack Nhat Truong; Patrick Do; David Eidelberg; An Vo; Albert Fenoy

11:50–11:55 am

**Circuit-based Relevant Electrophysiology Modulation of Personalized Evocation is Associated with Amelioration in OCD-related Distress**

Younghoon Nho; Liming Qiu; Gustavo Campos; Robert Seilheimer; Camarin Rolle; Katherine Scangos; Daniel Barbosa; Casey H. Halpern

11:56 am–12:01 pm

**Induced Emotional State and Aperiodic Activity of the Amygdala**

Haeorum Park; Carl Hacker; Hohyun Cho; Peter Brunner; Jon Timothy Willie
Parallel Session 6
The Evolution of Pain Surgery
Moderators: Ahmed Raslan, Jennifer Sweet

10:00–10:20 am
Advances in Peripheral Nerve Stimulation
Sridevi Sarma

10:20–10:40 am
Choosing the Right Spinal Neuromodulation Technology
Erika Petersen

10:40–11:00 am
Advances in Intraoperative Monitoring for Spinal Cord Stimulation
Michael Staudt

11:00–11:20 am
New Directions in Intracranial Ablation for Pain
Jeff Elias

11:20 am–12:00 pm
Open Papers

11:20–11:25 am
Artificial Intelligence Based Imaging Analysis of Pain and Non-Pain States
Timur Latypov; Matthew So; Peter Shih Ping Hung; Matthew R. Walker; Sarasa Tohyama; Frank Rudzicz; Mojgan Hodaie

11:26–11:31 am
First In-Human Deep Brain Stimulation of Subgenual Cingulate Cortex for Chronic Low Back Pain: 9-Month Outcomes of a Randomized Trial
Michael Ward; Evangelia Tsolaki; Wenxin Wei; Meskerem Tolossa; Nader Pouratian; Ausaf A. Bari

11:32–11:37 am
Mesolimbic Beta and Gamma Power Modulate Motor Output
Leah Mann; Helen Qian; Natasha Hughes; Zixiang Zhao; Balbir Singh; Zhengyang Wang; Jenna Fulton; Dario J. Englot; Christos Constantinidis; Shawniqueta Williams Roberson; Daniel Claassen; Sarah Bick
11:38–11:43 am  
**Responsive Neurostimulation for Post-Traumatic Stress Disorder: Interval Update**  
Evan Einstein; Mauricio Vallejo; Ralph Koek; Julia Schneiders; Jay Gill; Sonja Hiller; Anthony Jang; Jonny Baham; Matthias Stangl; Uros Topalovic; Martin Seeber; Vikram Rao; Michael Fanselow; Michelle Craske; Scott Krahl; James Chen; Merit Vick; Nicholas Hasulak; Nanthia Suthana; Jean-Philippe Langevin

11:44–11:49 am  
**A Clinical Trial to Investigate Neuromodulation of the Insula for Chronic Neuropathic Pain**  
W. Jeffrey Elias; Shayan Moosa; Chang-Chia Liu; Patrick Finan; Mark Quigg

11:50–11:55 am  
**Human Cervical Epidural Spinal Electrogram Topographically Maps Distinct Volitional Movements**  
Poojan Shukla; John Frederick Burke; Nikhita Kunwar; Kara Presbrey; Jannine Balakid; Maria Yaroshinsky; Kenneth Louie; Line G. Jacques; Prasad Shirvalkar; Doris D. Wang

11:56 am–12:01 pm  
**A Week in the Life of the Human Brain: Stable States Punctuated by Chaotic Transitions**  
Maxwell Wang; Max G. Sell; James Castellano; R. Mark Richardson; Avniel Ghuman

12:00–1:15 pm  
**SUMMIT D**  
**Honored Guest Lunch**  
**Moderators:** Dario J. Englot, Joseph Neimat  
**Honorees:** Jerome Engel Jr., George Ojemann

1:15–3:00 pm  
**GRAND HALL D**  
**Plenary Session 4**  
**Advances in Neural Interfaces**  
**Moderators:** Parag Patil, Nitin Tandon

1:15–1:35 pm  
**BCI for Speech**  
Edward Chang

1:35–1:55 pm  
**Sensory BCI**  
Timothy Lucas
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<tr>
<td>1:55–2:15 pm</td>
<td>Neural Devices and Ethical Implications</td>
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<td>Jennifer Blumenthal-Barby</td>
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<td>2:15–2:45 pm</td>
<td>Ethics Roundtable Discussion</td>
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<td>All Faculty</td>
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<td>2:45–3:15 pm</td>
<td>Beverage Break with Exhibitors</td>
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<td>3:15–5:15 pm</td>
<td>Poster Session with Wine &amp; Cheese</td>
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<td>Moderators: Tyler Ball, Ausaf Bari, Zelma HT Kiss, Ajmal Zemmar</td>
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<td>Sponsored by: NeuroPace, Inc.</td>
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<tr>
<td>5:00–6:00 pm</td>
<td>ASSFN Business Meeting</td>
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<td>Presiding Officer: André Machado</td>
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# PROGRAM SCHEDULE

## TUESDAY, JUNE 4, 2024

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<td>GRAND HALL FOYER</td>
<td>Registration</td>
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<td>7:00-7:55 am</td>
<td>GRAND HALL FOYER</td>
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<td>8:00-10:00 am</td>
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<td><strong>Unlocking the Brain</strong></td>
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<td><em>Moderators:</em> Jason Gerrard, R. Mark Richardson</td>
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<tr>
<td>8:00-8:05 am</td>
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<td>Introduction</td>
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<td>Michael Okun</td>
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<td>8:05-8:35 am</td>
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<td>Noninvasive Brain Stimulation through Temporal Interference</td>
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<td>Ed Boyden</td>
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<td>8:35-9:00 am</td>
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<td>Development and Future Directions of Focused Ultrasound</td>
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<td>Kullervo Hynynen</td>
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<td>9:00-9:25 am</td>
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<td>Non-Invasive Neuromodulation</td>
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<td>Mike Fox</td>
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<td>9:25-9:50 am</td>
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<td>Group Discussion</td>
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<td>All Faculty</td>
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<tr>
<td>9:50-10:00 am</td>
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<td>Awards Ceremony</td>
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<td>8:30-10:30 am</td>
<td>GRAND HALL E</td>
<td>Exhibit Hall Open</td>
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Claim CME

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10:00–10:30 am  GRAND HALL E
Beverage Break with Exhibitors

10:30 am–12:00 pm  GRAND HALL D
Parallel Session 7
Connectomic Functional Neurosurgery
Moderators: Bornali Kundu, Cameron McIntyre

10:30–10:50 am
Introduction and Modeling Methods
Cameron McIntyre

10:50–11:10 am
Applications in Parkinson’s Disease
Chengyuan Wu

11:10–11:30 am
Applications in Psychiatric Disorders
Nader Pouratian

11:30–11:50 am
Applications in Epilepsy
Vicky Morgan

11:50–12:00 pm
Round Table Discussion

10:30 am–12:00 pm  GRAND HALL ABC
Parallel Session 8
Bench to Bedside Advances
Moderators: Clement Hamani, Suneil Kalia

10:30–10:50 am
Molecular Therapies-Early Pipeline
Lorraine Kalia

10:50–11:10 am
Delivery of Molecular Therapeutics
Nir Lipsman
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11:10–11:30 am
Stem Cells Translation Pipeline
Vivian Tabar

11:30–11:50 am
Gene Transfer: Animal Models to Human Studies
Michael Kaplitt

11:50 am–12:00 pm
Questions
100 Preoperative Network Expression is Associated with Stimulation Mediated Antidepressant Effects After Deep Brain Stimulation to the Medial Forebrain Bundle
Prashin Unadkat; Chris Conner; An Vo; David Eidelberg; Albert Fenoy

101 A Multifunctional Intracortical Brain Computer Interface in the Human Precentral Gyrus
Nicholas Au Yong; Samuel Nason-Tomaszewski; Anna Pritchard; Brandon Jacques; Yahia Ali; Mattia Rigotti; Eun Young Choi; Darrel Deo; Francis Willett; Nicholas Card; Jaimie M. Henderson; David M. Brandman; Sergey Stavisky; Leigh R. Hochberg; Chethan Pandarinath

102 Stimulation Responsiveness to Ventral Capsule Ventral Striatum and Subgenual Cingulate Stimulation
Garrett P. Banks; Eleonora Bartoli; Joshua Adkinson; Isabel Danstrom; Anusha Allawalla; Denise Oswalt; Nicole Provenza; Ben Shofty; Victoria Pirtle; Andrew Watrous; Raissa Mathura; Nader Pouratian; Sanjay Mathew; Wayne Goodman; Kelly R. Bijanki; Sameer A. Sheth

103 Preoperative Tremor Severity and Operative Parameters Predict Imbalance in Patients Undergoing Focused Ultrasound
Rohan Jha; Melissa Ming Jie Chua; Aryan Wadhwa; John David Rolston

104 Mapping Heterogeneous Hydraulic Parameters in White Matter for Convection Enhanced Delivery
Tom Lilieholm; Doug Dean III; Jayse M. Weaver; Andrew L. Alexander; Raghu Raghavan; Martin Brady; Walter F. Block

105 Modeling the Epileptogenic Network Disconnection with Simulated Temporal Lobe Surgery
Elliott G. Neal; Samantha Joell Schimmel; Zeegan George; Adam Alayli; Gavin Lockard; Keaton Piper; Fernando L. Vale; Yarema Basil Bezchlibnyk

106 Deep Brain Stimulation for Epilepsy: Sweetspot for ANT DBSConnectomic Underpinnings and Meta-Analysis of Outcomes
Artur Vetkas; Alexandre Boutet; Jurgen Germann; Can Sarica; Anton Fomenko; Mojgan Hodaei; Sunil Kumar Kalia; Taufik Valiante; Andres M. Lozano

108 Translating the Transcriptome: A Connectomic Approach for Gene Network Decoding and Clinical Integration
Clemens Neudorfer; Bassam Al-Fatly; Barbara Hollunder; Ningfei Li; Garance Meyer; Konstantin Butenko; Matteo Vissani; Frederic Schaper; Ehsan Tadayon; Alan Bush; Pranav Nanda; Thomas Picht; Katharina Faust; Christine Klein; Jeremiah Scharf; Matthew State; Andrea Kühn; Christos Ganos; Michael Fox; R. Mark Richardson; Andreas Horn
109 Low-Frequency Power in The Ventral Capsule/Ventral Striatum and Orbitofrontal Cortex: A Neural Biomarker of Obsessive-Compulsive Symptom Severity
Nisha Giridharan; Nicole Provenza; Anthony Allam; Raphael Bechtold; Nabeel Diab; Sameer Vikram Rajesh; Sandy Reddy; Gabriel Reyes; Evan Dastin-van Rijn; Ajay Gandhi; Samad Hirani; Huy Dang; Garrett P. Banks; Michelle Avendano-Ortega; Sarah McKay; David Borton; Eric Storch; Jeffrey Herron; Wayne Goodman; Sameer A. Sheth

110 Neurons in the Lateral Prefrontal Cortex Encode Task Features During Virtual Navigation
Mohamad Abbass; Benjamin Corrigan; Renee Johnston; Roberto Gulli; Adam J. Sachs; Jonathan C. Lau; Julio Martinez-Trujillo

111 Single Neuron Representations of Sequential Task Structure Emerge Rapidly in Human Anterior Cingulate and Entorhinal Cortex
Habiba Azab; Mohamady El-Gaby; Shraddha Shah; Raissa Mathura; Eleonora Bartoli; Andrew Watrous; Adrish Anand; Joshua Adkinson; Thomas Donoghue; Sandra Perreira; Uros Topalovic; John Sakon; Zeb Kurth-Nelson; Elliot Smith; Nanthia Suthana; Itzhak Fried; Joshua Jacobs; Matt Botvinick; Timothy Behrens; Sameer A. Sheth

112 Offline Simulation of Adaptive Deep Brain Stimulation Algorithm Classification for Performance Characterization During Provocation of OCD Symptoms
Raphael Bechtold; Nicole Provenza; Sameer Vikram Rajesh; Nisha Giridharan; Ajay Gandhi; Gabriel Reyes; Anthony Kaspa Allam; Sandy Reddy; Eric Storch; Sameer A. Sheth; Wayne Goodman; Jeffrey Herron

113 Cortical/Subcortical Beta Dynamics and Grey Matter Thickness in Primary and Premotor Cortex: A Brodmann Area Approach in Parkinson’s Disease
Amirreza Alijanpourataghsara; Koorosh Mirpour; Ahmed Shalaby; Krishna Kanth Chitta; Jeon Lee; Nader Pouratian

114 The Spatiotemporal Network Dynamics of Speech Production
Kathryn Snyder; Kiefer Forseth; Nitin Tandon

115 Defining a Possible Globus Pallidus Hot Spot for Image-Guided Programming of DBS in Parkinson’s Disease
Jessica Ng; Sarah Wang; Jeff Solomon; Carrie Stegner; Mahsa Malekmohammadi; Merek Gourley; Jill L. Ostrem

116 Ethical Considerations of Deep Brain Stimulation for Treatment Refractory Schizophrenia: Surveying Stakeholders
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118 A Machine Learning Framework Using Brain Coordinates to Accurately Localize Surgical Targets
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119 Beta-Band Power in the Human Amygdala During a Delayed Arm-Reaching Task
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120 Multiregional Human Single Neuron Dynamics During Intertemporal Choice
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121 A Posterior Approach for Combined Targeting of The Centromedian Nucleus and Pulvinar for Responsive Neurostimulation
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122 Differential Activity of Anterior and Posterior Entorhinal Cortex During Human Episodic Memory
Cody Wolfe; Bradley Lega

123 Extent of Ablation Negatively Correlates with Post Operative Apathy in LITT Anterior Capsulotomy for OCD
Daniel Biro; Maureen Lacy; Hannah Hagy; Peter C. Warnke

124 Neuronal Firing Characteristics of the Centromedian Nucleus to Guide Deep Brain Stimulation Targeting for Epilepsy
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125 Classification of Consciousness-Impairing Seizures with Intracranial Recordings Using Deep Learning
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**127** Cingulum Bundle Electrographic Connectivity to the Affective Network Varies with Paracingulate Sulcal Morphology
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**128** Frailty and Outcomes after Unilateral MRgFUS Thalamotomy for Tremor
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**129** Spatial Localization of High-Frequency Oscillations in the Subthalamic Nucleus in Parkinson’s Disease
Alan Bush; Matteo Vissani; Todd Herrington; R. Mark Richardson

**130** Acute Theta-Burst Deep Brain Stimulation in Parkinsons Disease Demonstrates Cognitive and Motor Improvements
Kevin Wu; Jonathan Cavaleri; Wooseong Choi; Kaevon Brasfield; Melanie Cohn; Melissa L. Wilson; Kay B. Jann; Robert G. Briggs; Charles Y. Liu; Brian Lee; Xenos Mason; Darrin J. Lee

**131** Brain State Limits Propagation of Neural Signals in Laminar Cortical Circuits
Natasha Kharas; Samantha Debes; Ariana Andrei; Valentin Dragoi

**132** Characterizing Differential Tremor Sweetspots and Side Effect Sourspots Following Thalamic High-Intensity Focused Ultrasound through Probabilistic Lesion Mapping
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**133** Electrokinetic Convection Enhanced Delivery of Molecules to the Brain from Cortical Surface Hydrogel Reservoir
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**135** Insula Risk-taking Signal is Positively Associated with Orbitofrontal Cortex Reward Prediction Error
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**136** Is the Ansa Lenticularis the Globus Pallidus Internas Secret Weapon Against Dyskinesias?
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**138** Relationship Between Accumulated Thermal Dose and Early Tremor Improvement with MRgFUS
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144 Direct Motor Point Functional Electrical Stimulation for Improved Dexterity in Hand Movement
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145 Evaluating fMRI Correlates of EEG-vigilance in Temporal Lobe Epilepsy
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146 Automated Preoperative Volumetric Analysis as an Independent Predictor of Seizure Irritative Zone
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147 Canonical Wnt Activator Chir99021 Prevents Epileptogenesis in the Intrahippocampal Kainate Mouse Model of Temporal Lobe Epilepsy
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148 DBS for Neuropathic Facial Pain Engages Multiple Tracts Implicated in Depression
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149 Deep Brain Stimulation of the Ventral Capsule and Ventral Striatum Drives Approach Behavior and High Beta Power in Ventrolateral Prefrontal Cortex
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151 Mapping the Subcortical Connectome in Parkinson’s Disease Patients Undergoing Deep Brain Stimulation
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152 Response Inhibition is Associated with High Beta Oscillatory Power Increase in the Ventral Intermediate Nucleus of the Thalamus in Essential Tremor Patients
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153 Subcellular-Scale Carbon Fiber Electrodes for Single-Unit Recording in Cortex and Peripheral Nerve
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154 Transcutaneous Afferent Patterned Stimulation Triggers Theta-Delta-Alpha Enhancement and Low Gamma Deterioration in the Thalamus of Essential Tremor Patients
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155 Vibrotactile Auricular Vagus Nerve Stimulation Increases Low Frequency Coherence in Intracranial EEG
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164 Local Field Potential Characteristics from Directional and Omnidirectional Leads in Parkinsons Disease: Analysis of Patients Receiving Adaptive Deep Brain Stimulation
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165 Non-Invasive Electrophysiological Recording and Modulation of the Human Olfactory Bulb: Preliminary Findings to Advance New Perspectives for Investigating the Limbic System
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166 A Pneumatically-actuated Robot for MRI-guided Stereotactic Neurosurgical Procedures
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167 Aperiodic Activity as a Biomarker of Seizures and Neuromodulation
David Isaac Satzer; Lesley Kaye; Steven Ojemann; Daniel R. Kramer; John Thompson

169 Guided Mindfulness Meditation Increases Interictal Discharges in Patients Undergoing Invasive EEG monitoring
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170 Personalized Evocation of Cue-hyperreactivity May Optimize Deep Brain Stimulation for Opiate Use Disorder
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171 Phantom Testing of Induced-Current in DBS during MRI Acquisition at 3T
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172 Digital Phenotyping of Patients Undergoing Focused Ultrasound Thalamotomy for Essential Tremor
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173 Direct Electrical Stimulation of the Basolateral Amygdala Modulates Oscillatory Dynamics in the Hippocampus
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174 Thalamic Responsive Neurostimulation Charge Density and Seizure Type Correlate with Seizure Reduction and Time to Response
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175 Asleep Deep Brain Stimulation for Essential Tremor
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176 Comprehensive Map of Subthalamic Pathway Activation as a Function of DBS Parameter Settings and Stimulation Location
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177 Impaired Functional Connectivity of Subcortical Arousal Centers in Wake and Sleep: Identifying Therapeutic Targets for Neuromodulation in Epilepsy
Haatef Pourmotabbed; Caroline Martin; Sarah E. Goodale; Derek Doss; Shiyu Wang; Vicky Morgan; Catie Chang; Dario J. Englot

178 Investigating Scalp EEG and Subthalamic Nucleus LFP Cross Correlation Based on Sleep Stage Classification
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179 Investigation of Gustatory Pathways Using Probabilistic Tractography: Implications for MR-guided Focused Ultrasound
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180 MR Guided Focused Ultrasound using VIM and VOP/A Dual-lesions for the Treatment of Tremor Dominant Parkinsons Disease: Outcomes in Six Treated Cases
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182 Pharmacokinetics of ACH in Cortex After DBS Suggest that Diffusion Rather Than Cholinesterase Activity is the Rate Limiting Step in Clearance
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183 Pupil Diameter as a Non-invasive Readout of Disrupted Salience Dynamics in the Depressed Human Brain
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184 Role of Frontotemporal Networks in Anxiety and Depression During the Performance of a Cognitive Control Task
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<td><a href="http://www.zimmerbiomet.com/en">www.zimmerbiomet.com/en</a></td>
<td>904-741-4400</td>
</tr>
<tr>
<td>Zimmer Biomet’s ROSA ONE® Brain is a robotic platform to assist surgeons in planning and performing complex neurosurgical procedures in a minimally invasive manner.</td>
<td></td>
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</table>
GENERAL INFORMATION

<table>
<thead>
<tr>
<th>EXHIBIT HALL</th>
<th>GRAND HALL E</th>
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<tbody>
<tr>
<td>Sunday, June 2</td>
<td>9:30 am-4:30 pm</td>
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<tr>
<td>Monday, June 3</td>
<td>8:30 am-5:30 pm</td>
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<tr>
<td>Tuesday, June 4</td>
<td>8:30-10:30 am</td>
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<thead>
<tr>
<th>REGISTRATION</th>
<th>GRAND HALL FOYER</th>
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<tbody>
<tr>
<td>Saturday, June 1</td>
<td>8:00 am-4:00 pm</td>
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<tr>
<td>Sunday, June 2</td>
<td>6:30 am-6:00 pm</td>
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<tr>
<td>Monday, June 3</td>
<td>6:30 am-6:00 pm</td>
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<tr>
<td>Tuesday, June 4</td>
<td>6:30 am-12:00 pm</td>
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Medtronic
Opening Reception
Grand Hall Terrace
Sunday, June 2 — 6:00-8:00 pm
Enjoy a delicious array of food and refreshments while reconnecting with colleagues and new contacts with exhibiting companies at the Opening Reception. Each medical attendee registered for the meeting will receive one complimentary ticket.

Poster Session with Wine and Cheese
Grand Hall Foyer
Monday, June 3 — 3:15-5:15 pm
Enjoy a pre-dinner glass of wine during this uninterrupted time dedicated to viewing the scientific posters and take advantage of this opportunity to interact with the poster authors.

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