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
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 this program. For more details, please contact your ethics officer or supervisor.

Vermont-Licensed HCPs – Vermont state rules prohibit Boston Scientific from providing any food, meals or refreshments to any change to healthcare professionals licensed by and regularly practicing in Vermont. Accordingly, health care professionals licensed by and regularly practicing in Vermont are not required to partake in any of the food, meals, or refreshments offered at the event.

U.S. Physicians – The U.S. Physician Payment Sunshine Act requires all pharmaceutical, biologic, and medical device companies to disclose annually to the U.S. government payments and transfers of value provided to U.S. physicians, and teaching hospitals. This includes the value of meals and refreshments provided to U.S. physicians in connection with attending Boston Scientific educational programs.

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WELCOME

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

Andre Machado  
ASSFN President  
Cleveland Clinic  
Cleveland, Ohio

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Scientific Program Chair  
Vanderbilt University  
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University of Alabama at Birmingham  
Birmingham, Alabama

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Scientific Program Committee  
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Scientific Program Committee  
University of Tennessee  
Memphis, Tennessee
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Duke University  
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Case Medical Center  
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Scientific Program Committee  
University of Florida  
Gainesville, Florida

**Julie G. Pilitsis**  
Scientific Program Committee  
University of Arizona  
Banner Health  
Tucson, Arizona

**Nathan C. Rowland**  
Scientific Program Committee  
Medical University of South Carolina  
Charleston, South Carolina

**Nitin Tandon**  
Scientific Program Committee  
University of Texas  
Houston, Texas

**Doris Wang**  
Scientific Program Committee  
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 Saddlington 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.

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

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.
FEATURED 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
REMOTE PROGRAMMING
featuring new real-time charging notifications

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with 10 recharges per year

SMALLEST IMPLANT PROFILE
of any DBS IPG on the market**

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*Redefining rechargeable LIBERTA RC™ DBS System

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Rx Only

Brief Summary: Prior to using Abbott devices, please review the Clinician’s Manual for a complete listing of indications, contraindications, warnings, precautions, potential adverse events, and directions for use. The system is intended to be used with leads and associated extensions that are compatible with the system.

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Austin, TX 78746 USA
Tel: 1 972 526 8286
Neuromodulation.Abbott

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<tr>
<th>Name</th>
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<td>Shabbar Danish</td>
<td>Rutgers Robert Wood Johnson Medical School</td>
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<td>David Darrow</td>
<td>University of Minnesota</td>
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<td>Kate Davis</td>
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<td>Pierre D’Haese</td>
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<td>Darin Dougherty</td>
<td>Massachusetts General Hospital</td>
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<td>W. Jeffrey Elias</td>
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<td>Jerome Engel, Jr.</td>
<td>University of California, Los Angeles</td>
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<td>Kelly Foote</td>
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<td>McKnight Brain Institute</td>
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<td>Michael Fox</td>
<td>Berenson-Allen Center for Non Invasive Brain</td>
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<td>Center, Harvard Medical School</td>
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<td>Jason Gerrard</td>
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<td>Shawn Giinter</td>
<td>Pendant Biosciences, Inc.</td>
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<td>Jorge González-Martínez</td>
<td>University of Pittsburgh</td>
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<td>Robert Gross</td>
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<td>Kunal Gupta</td>
<td>Indiana University</td>
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<td>Ryder Gwinn</td>
<td>Eastside Neuroscience Institute</td>
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<td>Mallory Hacker</td>
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<td>Clement Hamani</td>
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<td>Travis Hassell</td>
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<td>Leigh Hochberg</td>
<td>Massachusetts General Hospital</td>
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<td>Kathryn Holloway</td>
<td>VCU Health System</td>
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<td>University of Toronto</td>
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<td>Kara Johnson</td>
<td>University of Florida</td>
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INVITED SPEAKERS

Lora Kahn
Ochsner Medical Center
New Orleans, LA

Lorraine Kalia
University of Toronto
Toronto, ON Canada

Sunil 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  
University of Arizona  
Banner Health  
Tucson, AZ

Nader Pouratian  
UT Southwestern Medical Center  
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  
Oregon Health and Science University  
Portland, OR

Ali Rezai  
Rockefeller Neuroscience Institute  
Morgantown, WV

R. Mark Richardson  
Massachusetts General Hospital  
Boston, MA

Joshua Rosenow  
Northwestern University  
Chicago, IL

Nathan Rowland  
Medical University of South Carolina  
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
STOP BY THE ABBOTT BOOTH TO SEE FOR YOURSELF.
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
Eyihamisi 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, Monetris Medical and Zimmer Biomet

In-Kind Equipment provided by
Brainlab, FHC Inc., Monetris 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

**4:00–5:00 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!
10:20 am-12:00 pm  GRAND HALL D

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 Holleark; Justin Michael Campbell; Lensky Augustin; Dawn Eliashiv; Vikram Rao; Itzhak Fried; Nicholas Hasulak; Sonja Hiller; Nanthia Suthana
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

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

An Implantable AI Enabled Device Can Predict Seizures with High Accuracy Up to 1 Hour Before Events
Raja N. Jani; Joseph Samir Neimat; Tommaso Melodia

Parallel Session 2
Pediatric Surgical Advances
Moderators: Tyler Abel, Elizabeth Tyler-Kabara

RNS in the Pediatric Population
Meena Vessell

Cerebellar Deep Nuclei DBS for Acquired Dystonias in Children
Iahn Cajigas Gonzalez

Laser Ablation for Pediatric Epilepsies
Elsa Arrocho Quinones

Multimodal Approaches to Pediatric Spasticity
Robert Naftel

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  
**SUMMIT 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  
**SUMMIT 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
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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>2:00-2:20 pm</td>
<td>Collaborations in Sports: A Conversation with a Sportscaster and Patient</td>
<td>Dario J. Englot, Richard Pierce, Pete Weber</td>
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<td>2:20-2:30 pm</td>
<td>Honoring Ronald R. Tasker</td>
<td>Andres Lozano</td>
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<td>2:30-2:35 pm</td>
<td>Introduction of ASSFN President</td>
<td>Joseph Neimat</td>
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<td>2:35-3:00 pm</td>
<td>Presidential Address</td>
<td>André Machado</td>
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<td>3:00-3:30 pm</td>
<td>GRAND HALL E</td>
<td>Beverage Break – Visit the Exhibits!</td>
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<td>3:30-6:00 pm</td>
<td>GRAND HALL D</td>
<td>Parallel Session 3</td>
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<td>The Evolution of Epilepsy Surgery</td>
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<td><strong>Moderators:</strong> Sharona Ben-Haim, Guy McKhann</td>
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<td>3:30-3:45 pm</td>
<td>Standardization of the Epilepsy Surgical Evaluation</td>
<td>Kate Davis</td>
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<td>3:45-4:00 pm</td>
<td>Measuring Benefit Beyond Engel Outcome</td>
<td>Dario J. Englot</td>
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<td>4:00-4:15 pm</td>
<td>Evolving from Resection to Ablation</td>
<td>Robert Gross</td>
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<td>4:15-4:30 pm</td>
<td>Thalamic Neuromodulation for Primary Generalized Epilepsy</td>
<td>David Burdette</td>
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<td>4:30-4:45 pm</td>
<td>FUS as a Novel Tool for Epilepsy</td>
<td>Vibhor Krishna</td>
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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 Rashinokar; 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 Pellegrino; 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
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. Wång

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 Borgheal; Arthur Nascimento; Faical Isbaine; Robert E. Gross; Matthew Gombolay; Svjetlana Micinovic
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 McDonnold; 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

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
Abbott
Non-CME Sponsored Breakfast Session
DBS for Depression: the TRANSCEND Pivotal Study
Robert Gross, Brian Kopell, Patricio Riva Posse

7:00–7:55 am SUMMIT E
Insightec
Non-CME Sponsored Breakfast Session
The Silent, Unmet Need in Movement Disorders; Advancements in Focused Ultrasound—Exablate® Prime
Stephen Harward II, Ahmed Raslan

8:30 am–5:30 pm GRAND HALL E
Exhibit Hall Open

8:00–9:30 am GRAND HALL D
Plenary Session 3
Exploring the Conscious and Unconscious Brain
Moderators: Julie Pilitsis, Konstantin Slavin

8:00–8:02 am
Introduction
Nitin Tandon

8:02–8:30 am
Unlocking the Neural Systems of the Brain
György Buzsáki

8:30–8:50 am
Theory of Mind and Social Cognition
Ziv Williams
<table>
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<tr>
<th>Time</th>
<th>Session</th>
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| 8:50–9:10 am | Neuromodulation for Restoration of Consciousness  
Hal Blumenfeld |
| 9:10–9:30 am | Roundtable Discussion                      |
| 9:30–10:00 am| GRAND HALL E                                
Beverage Break with Exhibitors |
| 10:00 am–12:00 pm| GRAND HALL D                             
Parallel Session 5  
The Evolution of Psychiatric Neuromodulation  
**Moderators:** Sarah Bick, Nader Pouratian |
| 10:00–10:20 am| Physiological Biomarkers in Psychiatric Neurosurgery  
Kelly Bijanki, Sameer Sheth |
| 10:20–10:40 am| Clinical Trials in DBS for Depression: State of the Field  
Helen Mayberg |
| 10:40–11:00 am| Addiction as a Novel Indication for DBS  
Ali Rezai |
| 11:00–11:20 am| Interdisciplinary Engagement in Psychiatric Neurosurgery  
Darin Dougherty |
| 11:20 am–12:00 pm| Open Papers                              |
| 11:20–11:25 am| Structural, Connectivity, and Metabolic Changes  
Following Magnetic Resonance Guided Focused Ultrasound Capsulotomy  
*Benjamin Andrew Davidson; Lyndon Boone; Karim Mithani; Clement Hamani; Peter Glacobbe; Sean Nestor; Ying Meng; Jennifer Rabin; Maged Goubran; Nir Lipsman* |
11:26–11:31 am
**Acute Deep Brain Stimulation of the Fornix in Alzheimers 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 Anti-depressant 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; Shawniqua 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
1:55–2:15 pm  
**Neural Devices and Ethical Implications**  
Jennifer Blumenthal-Barby

2:15–2:45 pm  
**Ethics Roundtable Discussion**  
All Faculty

2:45–3:15 pm  
**GRAND HALL E**  
Beverage Break with Exhibitors

3:15–5:15 pm  
**GRAND HALL FOYER**  
**Poster Session with Wine & Cheese**  
**Moderators:** Tyler Ball, Ausaf Bari, Zelma HT Kiss, Ajmal Zemmar  
**Sponsored by:** NeuroPace, Inc.

5:00–6:00 pm  
**GRAND HALL D**  
**ASSFN Business Meeting**  
**Presiding Officer:** André Machado
PROGRAM SCHEDULE

TUESDAY, JUNE 4, 2024

6:30 am-12:00 pm GRAND HALL FOYER
Registration

7:00-7:55 am GRAND HALL FOYER
Continental Breakfast

8:00-10:00 am GRAND HALL D
Plenary Session 5
Unlocking the Brain
Moderators: Jason Gerrard, R. Mark Richardson

8:00–8:05 am  
Introduction  
Michael Okun

8:05–8:35 am  
Noninvasive Brain Stimulation through Temporal Interference  
Ed Boyden

8:35–9:00 am  
Development and Future Directions of Focused Ultrasound  
Kullervo Hynynen

9:00–9:25 am  
Non-Invasive Neuromodulation  
Mike Fox

9:25–9:50 am  
Group Discussion  
All Faculty

9:50–10:00 am  
Awards Ceremony

8:30–10:30 am GRAND HALL E
Exhibit Hall Open
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<td>10:00–10:30 am</td>
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<td>Beverage Break with Exhibitors</td>
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<td>Connectomic Functional Neurosurgery</td>
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<td><strong>Moderators:</strong> Bornali Kundu, Cameron McIntyre</td>
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<td>10:30–10:50 am</td>
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<td><strong>Introduction and Modeling Methods</strong></td>
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<td>Cameron McIntyre</td>
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<td>10:50–11:10 am</td>
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<td><strong>Applications in Parkinson’s Disease</strong></td>
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<td>Chengyuan Wu</td>
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<td>11:10–11:30 am</td>
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<td><strong>Applications in Psychiatric Disorders</strong></td>
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<td>Nader Pouratian</td>
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<td><strong>Applications in Epilepsy</strong></td>
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<td>Vicky Morgan</td>
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<td><strong>Round Table Discussion</strong></td>
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<td>Bench to Bedside Advances</td>
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<td><strong>Moderators:</strong> Clement Hamani, Suneil Kalia</td>
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<td><strong>Molecular Therapies-Early Pipeline</strong></td>
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<td>Lorraine Kalia</td>
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<td><strong>Delivery of Molecular Therapeutics</strong></td>
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PROGRAM SCHEDULE

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 Ill; Jayse M. Weaver; Andrew L. Alexander; Raghu Raghavan; Martin Brady; Walter F. Block

105 Modeling the Epileptogenic Network Disconnection with Simulated Temporal Lobe Surgery
Elliot 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; Suneil 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 Buteiko; 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 Alijanpourotaghsara; 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 Parkinsons 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
Judith Gault; Elyn R. Saks; Stephanie Lehto; Nidal Moukaddam; Patrick W. Hosokawa; Paul Appelbaum; Wayne Goodman; Nicola Cascella; Akira Sawa; Sameer A. Sheth; Steven Ojemann; John Thompson; Daniel R. Kramer; Rachel Davis
117 Precisely Timed, On-Demand Intracranial Brain Stimulation Using the RNS System
Edward Bader; Alex Boro; Nathaniel Killian; Emad N. Eskandar

118 A Machine Learning Framework Using Brain Coordinates to Accurately Localize Surgical Targets
Alaa Taha; Greydon Gilmore; Mohamad Abbass; Violet Liu; Chris Zajner; Brendan Santyr; Abrar Ahmed; Ali Hadi; Sandy Wong; Ali Khan; Jonathan C. Lau

119 Beta-Band Power in the Human Amygdala During a Delayed Arm-Reaching Task
Shivani Sundaram; Arthur Shao; Roberto Martin del Campo-Vera; Jonathan Cavalieri; Selena Zhang; Miguel Parra; Ryan Chung; Adith Swarup; Alexandra Kammen; Christi Heck; Xenos Mason; Charles Y. Liu; Spencer Kellis; Brian Lee

120 Multiregional Human Single Neuron Dynamics During Intertemporal Choice
Jay Gill; Mahmoud Omidbeigi; Nanthia Suthana; Jonathan Kao; Ausaf A. Bari

121 A Posterior Approach for Combined Targeting of The Centromedian Nucleus and Pulvinar for Responsive Neurostimulation
Melissa Ming Jie Chua; Rohan Jha; Justin Campbell; Aaron Warren; Shervin Rahimpour; John Rolston

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
Megan Ryan; David Isaac Satzer; Steven Ojemann; John Thompson; Daniel R. Kramer

125 Classification of Consciousness-Impairing Seizures with Intracranial Recordings Using Deep Learning
Derek Doss; Rohan Rashingkar; Graham Walter Johnson; Caen Bibro; Jared Shliess; Danika Lea Paulo; Shawniqua Williams Roberson; Kevin Haas; Sarah Bick; Catie Chang; Vicky Morgan; Darío J. Englot

126 Epilepsy and Tornados: Neuromodulating the Pre-Ictal Funnel Cloud
Graham Walter Johnson; Derek Doss; Ghassan Makhouli; Leon Cai; Caen Bibro; Addison Cavender; Danika Lea Paulo; Baxter Rogers; Shilpa Reddy; Robert Partlow Naffel; Benoit Dawant; Catie Chang; Mark Wallace; Shawniqua Williams Roberson; Vicky Morgan; Sarah Bick; Darío J. Englot
127 Cingulum Bundle Electrographic Connectivity to the Affective Network Varies with Paracingulate Sulcal Morphology
Isabel Danstrom; Joshua Adkinson; Meghan Robinson; Lu Lin; Atul Maheshwari; Ben Shofty; Garrett P. Banks; Mohammed Ahmed Hasen; Sameer A. Sheth; Sarah Heilbronner; Alica Goldman; Kelly R. Bijanki

128 Frailty and Outcomes after Unilateral MRgFUS Thalamotomy for Tremor
Nathan Pertsch; Kazuki Sakakura; Dustin Kim; Julia Mueller; Jacob Mazza; Daniel Wolfson; Ryan Matthew Kelly; John Pearce; Shama Patel; Sepehr Sani

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
Min Jae Kim; Liming Qiu; Gustavo Campos; Maya Alexis; Daniel Barbosa; Iahn Cajigas; Casey H. Halpern

133 Electrokinetic Convection Enhanced Delivery of Molecules to the Brain from Cortical Surface Hydrogel Reservoir
Jesus Cruz-Garza; Lokeshwar Sai Santosh Bhenderu; Khaled Taghlabi; Jaime Guerrero; Amir H. Faraji

135 Insula Risk-taking Signal is Positively Associated with Orbitofrontal Cortex Reward Prediction Error
Natasha Hughes; Helen Qian; Zixiang Zhao; Michael Zargari; Balbir Singh; Zhengyang Wang; Jenna Fulton; Christos Constantinidis; Shawniqua Williams Roberson; Sarah Bick; Dario J. Englot

136 Is the Ansa Lenticularis the Globus Pallidus Internas Secret Weapon Against Dyskinesias?
Shawn D’Souza; Vikram Seshadri; Jamie Toms; Pierre D’Haese; Benoit Dawant; Rui Li; Paul Koch; Paul S. Larson; Kathryn L. Holloway

138 Relationship Between Accumulated Thermal Dose and Early Tremor Improvement with MRgFUS
Tarannum Rahnuma; Samuel Richardo; G. Bruce Pike; Davide Martino; Camila Aquino; Marisol Ardila; Zelma HT Kiss; Fady Girgis
139 Thalamic Network Mapping in Patients with Multifocal Epilepsy Treated with RNS: Towards Network-Guided RNS Electrode Placement
Josue Moises Avecillas-Chasin; Varun Subramaniam; Ogechukwu Ariwodo; Andy Ho Wing Chan; Lara Marcuse; Madeline Fields; Maite La Vega-Talbott; Saadi Ghatan; Fedor Panov

140 Aperiodic Neural Activity is a Biomarker for Depression Severity
Carl Hacker; Kelly R. Bijanki; Sameer A. Sheth; Madaline Mocchi

142 Action of Glucagon-like Peptide-1 (GLP-1)/Gastric Inhibitory Polypeptide (GIP)-Receptor Dual-Agonism on Food Preoccupations Involves Low Frequency Oscillations Within the Human Nucleus Accumbens
Wonkyung Choi; Younghoon Nho; William Wilent; Nida Firdous; Andrew Chang; Gustavo Campos; David Bakalov; Liming Qiu; Robert Seilheimer; Isaac Jonathan; Jonathan Pomeraniec; Marie Kerr; Disha S. Joshi; Anastassia Amaro; Matthew Hayes; Iahn Cajigas; Bilan Pesaran; Kelly Allison; Joshua Gold; Thomas Wadden; Casey H. Halpern

143 Connectomic Predictors of Outcome in Centromedian RNS and DBS for Generalized Epilepsy
Pranav Nanda; Gabriel Gonzalez-Escamilla; Aaron Warren; Clemens Neudorfer; Zachary Kons; Nathaniel D. Sisterson; Andreas Horn; R. Mark Richardson

144 Direct Motor Point Functional Electrical Stimulation for Improved Dexterity in Hand Movement
Ayobami Ward; Matthew Mender; Madison Kelberman; Jordan Lam; Nishant Ganesh Kumar; Yamaan S. Saadeh; Theodore Kung; Parag G. Patil; Cynthia Chestek

145 Evaluating fMRI Correlates of EEG-vigilance in Temporal Lobe Epilepsy
Sarah E. Goodale; Jeffery M. Harding; Haatif Pourmotabbed; Kimberly Rogge-Obando; Shiyu Wang; Caroline Martin; Caen Bibro; Vicky Morgan; Dario J. Englot; Catie Chang

146 Automated Preoperative Volumetric Analysis as an Independent Predictor of Seizure Irritative Zone
Dorian Kusyk; Christian Sanfilippo; Nicholar Blaney; Jenna Li; Timothy Quezada; Tyson Tragon; Alexander Whiting

147 Canonical Wnt Activator Chir99021 Prevents Epileptogenesis in the Intrahippocampal Kainate Mouse Model of Temporal Lobe Epilepsy
Muriel Mardones; Kevin Rostam; Margaret Nickerson; Kunal Gupta

148 DBS for Neuropathic Facial Pain Engages Multiple Tracts Implicated in Depression
Evangelia Tsalaki; Grace Eckroate; Wenxin Wei; Meskerem Tolossa; Stephano Chang; Ausaf A. Bari
149 Deep Brain Stimulation of the Ventral Capsule and Ventral Striatum Drives Approach Behavior and High Beta Power in Ventrolateral Prefrontal Cortex

Sameer Vikram Rajesh; Nicole Provenza; Gabriel Reyes; Kalman Katlowitz; Raphael Bechtold; Nabeel Diab; Sandesh Reddy; Anthony Allam; Ajay Gandhi; Samad Hirani; Nisha Giridharan; Garrett P. Banks; Mohammed Hasen; Ben Shofty; Benjamin Hayden; Jeffrey Cohn; Eric Storch; Jeffrey Herron; Mary Phillips; Wayne Goodman; Sameer A. Sheth

150 Hippocampal Interictal Epileptiform Discharges May Disrupt Working Memory

Angelique Tay; Jonathan Daume; Chrystal Reed; Ueli Rutishauser; Adam N. Mamela

151 Mapping the Subcortical Connectome in Parkinson’s Disease Patients Undergoing Deep Brain Stimulation

Alaa Taha; Jason Kai; Brendan Santyr; Mohamad Abbass; Greydon Gilmore; Bradley Karat; Arun Thurairajah; Ali Khan; Jonathan C. Lau

152 Response Inhibition is Associated with High Beta Oscillatory Power Increase in the Ventral Intermediate Nucleus of the Thalamus in Essential Tremor Patients

Helen Qian; Leah Mann; Zixiang Zhao; Danika Lea Paulo; Daniel Claassen; Sarah Bick

153 Subcellular-Scale Carbon Fiber Electrodes for Single-Unit Recording in Cortex and Peripheral Nerve

Jordan Lam; Joseph Letner; Julianna Richie; Paras Patel; Miranda Copenhaver; Abhilasha Kamboj; Jamie Phillips; Cynthia Chestek

154 Transcutaneous Afferent Patterned Stimulation Triggers Theta-Delta-Alpha Enhancement and Low Gamma Deterioration in the Thalamus of Essential Tremor Patients

Cuong Luu; Youngwon Youn; Jennifer Perrault; Aaron J. Suminski; Wendell Bradley Lake

155 Vibrotactile Auricular Vagus Nerve Stimulation Increases Low Frequency Coherence in Intracranial EEG

Kara Donovan; Joshua Adams; Ki Yun Park; Phillip Demarest; Gansheng Tan; Jon Timothy Willie; Jenna Gorlewicz; Peter Brunner; Eric C. Leuthardt

156 Comparison of Dentato-Rubro-Thalamic Tractography Methods Based on the Anatomy of the Rubral Wing

Assaf Berger; Jongchul Chung; Zane Schnurman; Valentin Stepanov; Ling Pan; Timothy Shepherd; Alon Mogilner

157 Low-Intensity Focused Ultrasound of the Subthalamic Nucleus May Alter Cognitive and Motor Behaviour: Preliminary Results

Terra Fairbanks; Hrishikesh Raghuram; Alan Coreas; Milad Naghizadeh; Shirshak Shrestha; Siyun Li; Julia Kam; G. Bruce Pike; Samuel Pichardo; Fady Girgis
158 Imaging of Pain States and Clinical Correlates in Chronic Low-back Pain Patients Implanted with Thoracic Spinal Cord Stimulation
Arjun Balaji Ashok; Yazan Shamli Oghli; Steven R. Glener; Isaiah Ailes; Mashaal Syed; KiChang Kang; Sara Naghizadeh-Kashani; Islam Fayed; Feroze Mohamed; Laura Krisa; Chengyuan Wu; Caio M. Matias; Mahdi Alizadeh

159 Phase-Amplitude Coupling as A Predictor for Optimal DBS Contact in Movement Disorders
Ilknur Telkes; Shelby Sabourin; Tessa Harland; Julie G. Plilis is

160 The Global Regional and National Macroeconomic Consequences of Idiopathic Epilepsy
Jakob Gerstl; Emma Pair; Matilde Pittarello; Alexander Yearley; Philipp Lasserren; Joshua D. Bernstock; Christopher Sungwoon Hong; Timothy R. Smith; Melissa Ming Jie Chua

161 Real-World Outcomes Using DBS Systems with Directionality and Multiple Independent Current Control: USA Experience
Michael S. Okun; Kelly D. Foote; Theresa Zesiewicz; Yarema Basil Bezchlibnyk; Alexander Mark Papanastassiou; Juan Ramirez-Castaneda; Jonathan Dennis Carlson; Jason Aldred; Vibhor Krishna; Cornelli Luca; Jonathan R. Jagid; Jennifer Durphy; Leo Verhagen-Metman; Sepehr Sani; Steven Ojemann; Drew Kern; David Weintraub; Ritesh Rahani; Abdolreza Siadati; Bharathy Sundaram; Cong Zhao; Derek Martinez; Mustafa Siddiqui; Stephen B. Tatter; Lilly Chen; Edward Goldberg

162 Contribution of Gait and Freezing of Gait in Visual System in Patients with Parkinson’s Disease: An fMRI study
Emad Alomari; Yazan Shamli Oghli; Kylee Shivok; Abdulaziz Alhussein; Mashaal Syed; Islam Fayed; Robert Sergott; Caio M. Matias; Kevin Hines; Chengyuan Wu; Tsao-Wei Liang; Mahdi Alizadeh

163 Adoption and Accessibility of Laser Interstitial Thermal Therapy (LITT) in the United States: A Nationwide Inpatient Sample Analysis
Can Sarica; Brian Melchiorse; Andrew Yang; Brendan Santyr; Artur Vetkas; Nardin Samuel; Ghazaleh Darmani; Cletus Cheyuo; Oliver Flouty; Ajmal Zemmar; Mojgan Hodaie; Suneil Kumar Kalia; Andres M. Lozano

164 Local Field Potential Characteristics from Directional and Omnidirectional Leads in Parkinson’s Disease: Analysis of Patients Receiving Adaptive Deep Brain Stimulation
Travis Hassell; Todd Herrington; Martijn Beudel; Jill L. Ostrem; Simon Little; Leonardo Almeida; Adolfo Ramirez-Zamora; Alfonso Fasano; Kyle Mitchell; Elena Moro; Michal Gostkowski; Nagaraja Sarangmat; Scott Stanslaski; Lisa Tonder; Ye Tan; Tim Goble; Nathan Morelli; Robert Raike; Helen Bronte-Stewart
165 Non-Invasive Electrophysiological Recording and Modulation of the Human Olfactory Bulb: Preliminary Findings to Advance New Perspectives for Investigating the Limbic System
Mahmoud Omidbeigi; Andrew Sheriff; Greg Lane; Guangyu Zhou; Bruce Tan; Christina Zelano

166 A Pneumatically-actuated Robot for MRI-guided Stereotactic Neurosurgical Procedures
Gang Li; Atharva Paralikar; Ayush Nankani; Pavel Yarmolenko; Chima Oluigbo; Kevin Cleary; Reza Monfaredi

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
Dorian Kusyk; Vyas Praveer; Timothy Quezada; Alexander Whiting

170 Personalized Evocation of Cue-hyperreactivity May Optimize Deep Brain Stimulation for Opiate Use Disorder
Liming Qiu; Younghoon Nho; Robert Seilheimer; Altona Tufanoglu; Neda Kaboodvand; William Wilent; David Oslin; Katherine Scangos; Anna-Rose Childress; Casey H. Halpern

171 Phantom Testing of Induced-Current in DBS during MRI Acquisition at 3T
Stephen Slovensky; Meltem Izzetoglu; Islam Fayed; Feroze Mohamed; Mahdi Alizadeh; Chengyuan Wu

172 Digital Phenotyping of Patients Undergoing Focused Ultrasound Thalamotomy for Essential Tremor
Jakob Gerstl; Gustaf von Grothesen; David J. Segar; Philip Mattisson; Joshua D. Bernstock; Melissa Ming Jie Chua; Sarah Christie; Hassan Y. Dawood; Patrick Emedom-Nna; Jukka-Pekka Onnela; Timothy R. Smith; John David Rolston; G. Rees “Rees” Cosgrove

173 Direct Electrical Stimulation of the Basolateral Amygdala Modulates Oscillatory Dynamics in the Hippocampus
Justin Michael Campbell; Krista Wahlstrom; Martina Hollearn; Tyler Davis; Amir Arain; James Swift; Peter Brunner; Ben Shofty; Shervin Rahimpour; John Rolston; Jon Timothy Willie; Cory Inman

174 Thalamic Responsive Neurostimulation Charge Density and Seizure Type Correlate with Seizure Reduction and Time to Response
Nathaniel D. Sisteron; Pranav Nanda; Ashley Walton; Zachary Kons; Catherine Chu; Syd Cash; Lidia Moura; Joel Oster; Alexandra Urban; R. Mark Richardson

175 Asleep Deep Brain Stimulation for Essential Tremor
Tessa Harland; Jared Brougham; Matthew Hefner; Jessica Wilden
176 Comprehensive Map of Subthalamic Pathway Activation as a Function of DBS Parameter Settings and Stimulation Location
Anneke Frankemolle-Gilbert; Angela Noecker; Tjitske Heida; Cameron C. McIntyre

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
John Thompson; Lisa Hirt; Younghoon Nho; Kristen Park; Michael Summers; Clete Kushida; Leslie West; Stephen Gliske; Casey H. Halpern; Aviva Abosch

179 Investigation of Gustatory Pathways Using Probabilistic Tractography: Implications for MR-guided Focused Ultrasound Kazuki Sakakura; Alireza Borghei; Nicholas Rubert; Nathan J. Pertsch; Sepehr Sani

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
Nathan Pertsch; Kazuki Sakakura; Julia Mueller; Dustin Kim; John Pearce; Jacob Mazza; Shama Patel; Sepehr Sani

181 Neural Signatures and Neuromodulation in a Subject Experiencing Inhibition Control Deficits Following Temporal Resection
Layth Mattar; Shraddha Shah; Joshua Adkinson; Raissa Mathura; Andrew Watrous; Yue Zhang; Kelly R. Bijanki; Sarah Heilbronner; Sameer A. Sheth; Garrett P. Banks; Eleonora Bartoli

182 Pharmacokinetics of ACH in Cortex After DBS Suggest that Diffusion Rather Than Cholinesterase Activity is the Rate Limiting Step in Clearance
Fernando L. Vale; Khadijah Shanazz; Tucker Oliver; Jamal Bogan; Philip O’Herron; Kun Xie; David Blake

183 Pupil Diameter as a Non-invasive Readout of Disrupted Salience Dynamics in the Depressed Human Brain
Madaline Mocchi; Eleonora Bartoli; John F. Magnotti; Jan Willem DeGee; Brian Metzger; Bailey Pascuzzi; Raissa Mathura; Jeffrey Yau; Wayne Goodman; Sameer A. Sheth; Matthew McGinley; Kelly R. Bijanki

184 Role of Frontotemporal Networks in Anxiety and Depression During the Performance of a Cognitive Control Task
Aniruddha Shekara; Alexander Ross; Angelique Paulk; Alik Widge; Sydney Cash; Paula Shear; John Paul Sheehy; Ishita Basu
185 Subthalamic Nucleus Response in Parkinson’s Disease Between Movement Initiation and Cue After Holding During a Center-Out-Task
Jonathan Platt; Rex Tien; Madelyn Mendlen; John Thompson; Daniel R. Kramer

186 Successful Magnetic Resonance-Guided Focused Ultrasound Treatment of Tremor in Patients with a Skull Density Ratio of 0.4 or Less
Artur Vetkas; Alexandre Boutet; Can Sarica; Jurgen Germann; Brendan Santyr; Suniel Kumar Kalia; Andres M. Lozano

187 The Impact of Registration Accuracy on Estimates of Deep Brain Stimulation Electrode Position in Stereotactic Space
Mohamad Abbass; Greydon Gilmore; Brendan Santyr; Alan Chailil; Alaa Taha; Mandar Jog; Keith MacDougall; Andrew Parrent; Terry M. Peters; Jonathan C. Lau

188 What’s in a Name?: A Volumetric Analysis of Hemispherectomy Technique Choice on the Development of Hydrocephalus
Akshay Sharma; Fawaz Alotaibi; Demitre Serletis; William E. Bingaman; Richard Ramma

189 Selective Peripheral Denervation for Cervical Dystonia: A 40-Year Comparative Analysis at Mayo Clinic
Damiano Giuseppe Barone; Kirsten Hayford; Robert J. Spinner

190 Analysis of Price Transparency for Deep Brain Stimulation in the United States
Anthony Bishay; Stefan Wolfgang Koester; Campbell Liles; Austin Triana; Robert J. Dambrino; Danika Lea Paulo; Michael Feldman; Tyler Joseph Ball; Sarah Bick; Lola Blackwell Chambless; Dario J. Englot

191 Stereotactic Frame-based Targeting of the Posterior Fossa: A Systematic Workflow
Anton Fomenko; Artur Vetkas; Benjamin Davidson; Newton Cho; Suniel Kumar Kalia

192 Temporal Lobe Epilepsy Patients Demonstrate Global Neocortical Decreases in Functional Connectivity to Nucleus Basalis
Addison Cavender; Ghassan Makhoul; Caen Bibro; Derek Doss; Sarah Goodale; Hernan FJ Gonzalez; Danika Lea Paulo; Sarah Bick; Catie Chang; Graham Walter Johnson; Vicky Morgan; Dario J. Englot

193 Combining Tractography and Electrophysiological Connectivity for Hypothesis-Driven Network Probing in Stereoelectroencephalography (sEEG)-Guided Deep Brain Stimulation (DBS) for Treatment-Refractory Obsessive-Compulsive Disorder (trOCD)
Gustavo Campos; Liming Qiu; Robert Seilheimer; Harvey Haung; Min Jae Kim; Zhengjia Wang; Younghoon Nho; Katherine Scangos; Dora Hermes, Kai Joshua Miller; Daniel Barbosa; Casey H. Halpern
194 The Geometry of Spinal Cord Population Dynamics Underlying Flexible Motor Patterns
Lahiru Wimalasena; Chethan Pandarinath; Nicholas Au Yong

195 Pallidal Recordings Indicate a Correlation Between Neurophysiology and Behavior During Motor Conflict
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Jan Hachmann; Kathryn Holloway; Paul Koch
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Monday, June 3 8:30 am-5:30 pm
Tuesday, June 4 8:30-10:30 am

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