DESIGNED FOR FINE TUNING

VISIT BOOTH #318

*Hypothetical patients.

Learn more about APTIOM and how it was right for these patients.*

EXHIBIT HALL HOURS

Saturday, December 7  
12:00 PM – 6:00 PM

Sunday, December 8  
10:00 AM – 4:00 PM

Monday, December 9  
10:00 AM – 2:00 PM

For full Prescribing Information, please visit www.AptiomHCP.com.
You’re Invited to a Clinical Symposium & Dinner:
Epilepsy Treatment Update for Patients Suffering from Seizure Clusters

DATE: FRIDAY, DECEMBER 6, 2019 | TIME: 6:00 PM - 9:00 PM | LOCATION: ROOM 314-315

Dinner will be served.*

Join us to learn about seizure clusters and a rescue treatment option. Seizure clusters impact 15% of patients with uncontrolled epilepsy and ~5% of the total epilepsy population, more than 150K patients in the US.

UCB is looking forward to seeing you at AES 2019!

Don’t wait to visit UCB Booth #308 and get your picture taken with the K9 assistant celebrities! You will also learn about our epilepsy portfolio, including a newly available rescue treatment!

*UCB is committed to complying with all legal requirements. For US healthcare professionals, we operate in accordance with the PhRMA Code on Interactions with Healthcare Professionals. Attendance at this activity is limited to healthcare professionals. Accordingly, attendance by guests or spouses is not appropriate, and associated expenses will not be reimbursed. Certain country, US federal and state requirements restrict and/or require disclosure of items UCB provides to healthcare professionals, including meals and refreshments. If you are licensed in certain jurisdictions or have institutional restrictions that do not permit receiving meals and refreshments, UCB respectfully asks you to identify yourself to the meeting host.

Disclaimer: Opinions presented during this Industry-Sponsored Non-CME Satellite Education Activity are those of the speakers and/or the sponsor and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.
to advance treatments, solve problems, and help improve the lives of people with Epilepsy.

Visit booths #547 and #344 to learn more about innovative treatment options from Aquestive® Therapeutics.

Our innovative drug delivery technology is helping to advance treatment options for patients

Strong patient communities are an essential lifeline for people seeking better care and outcomes. Aquestive is partnering with advocacy organizations on community projects, such as The Art of Living with Seizures, to help connect patients and caregivers to the information and support they need.

To learn more about our advocacy partnerships visit: Aquestive.com/about-us/commitment-to-epilepsy

Images of individuals were purchased by Aquestive® Therapeutics and are intended to model real patient scenarios.

© 2019 Aquestive Therapeutics, Inc. Aquestive, and the Logo, are registered trademarks of Aquestive Therapeutics, Inc. All rights reserved. September 2019
Because there’s still work to be done

Special Scientific Exhibit and Posters

Sunday, December 8, 2019
2:00 – 5:00 PM
Room 321-323, Level 300
Baltimore Convention Center

Featuring poster presentations on cenobamate, including information on:
- Mechanism of action
- Clinical pharmacology
- Clinical efficacy and safety

To learn more, visit https://www.sklifescienceinc.com
© 2019 SK Life Science, Inc., a subsidiary of SK Biopharmaceuticals Co., Ltd.
Welcome to the AES 2019 Annual Meeting!

The countdown is on. Will you accept your mission?

Patients with DRAVET SYNDROME deserve a giant leap forward.

Your mission is to visit ZOGENIX MISSION CONTROL (Booth #809) and explore information that might change the way you think about Dravet syndrome.
TOGETHER, LET’S BRING A NEW HOPE TO PATIENTS WITH MEDICALLY REFRACTORY EPILEPSY.

Please visit us during the 2019 AES Annual Meeting to learn more about Deep Brain Stimulation (DBS). Find us at Booth #525.

EDUCATIONAL DINNER SYMPOSIUM

Friday, December 6th
6:00 – 9:00 PM
Hilton Baltimore Inner Harbor, Key Ballroom 10, Floor 2

Deep Brain Stimulation (DBS) — Advancements in the Treatment of Medically Refractory Epilepsy

POSTER SESSIONS

Sunday, December 8th
12:00 – 2:00 PM
Hall E, Level 100
Anatomical Connectivity and Efficacy of Electro-Therapy for Seizure Control: A SANTE’ Single Center Regression Analysis (#: 2.057)

Monday, December 9th
12:00 – 2:00 PM
Hall E, Level 100
Analysis of DBS Lead Targeting in the SANTÉ Clinical Trial (#3.351)

PRE-REGISTRATION REQUIRED
https://medtronic.cvent.com/d/myqt69/

There is no fee for attending this educational activity.

Opinions presented during the Industry-Supported Satellite Non-CME Symposium/Workshop are those of the speakers and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.

medtronic.com
© 2019 Medtronic. All rights reserved. Medtronic, Medtronic logo and Further, Together are trademarks of Medtronic. All other brands are trademarks of a Medtronic company. UC202005859 EN
Dear Doctor,

I have 3x more captives still seizing than this city has people.

"C. Zure"

Nearly 60% of adults with epilepsy who continue to have seizures despite the use of AEDs belong to me.¹² That's 1.8 million people. Baltimore alone couldn't hold them all, but I can.¹²

They can't escape. Maybe you can?

Try at Booth 109.

AED=antiepileptic drug.

# TABLE OF CONTENTS

## Welcome
- From the AES President ........................................... 9
- From the Chairs .................................................. 10

## General Information
- Business Centers .................................................. 12
- Faculty Ready Room .............................................. 12
- First Aid .......................................................... 12
- Lost and Found .................................................... 12
- Mothers’ Room ...................................................... 12
- Quiet Room ......................................................... 14
- Scooter Rental ...................................................... 14
- WiFi ............................................................. 14
- Meeting Policies ................................................... 14
- Safety Information ................................................ 14

## About the Education Program
- Accreditation ....................................................... 16
- Credit Claim ........................................................ 16
- Disclosure Policy .................................................. 17

## Awards and Recognition
- Distinguished Service Award .................................. 20
- Founders Award .................................................... 20
- Basic Science Research Award ................................. 21
- Clinical Science Research Award ............................. 21
- Fritz E. Dreifuss Lecture ......................................... 22
- The Rebecca Goldbeg-Kaufman AES Clinical Award in Ethical Neuropsychology ................................. 23
- Lennox and Lombroso Lecture ................................ 23
- J. Kiffin Penny Award for Excellence in Epilepsy Care ............................................................. 25
- Early Career Research Grantees ............................... 26
- Abstract Awards .................................................... 28

## Program
- Meeting-at-a-Glance .............................................. 32
- Accredited Programs ............................................. 34
- Special Interest Group Sessions ............................... 37
- Poster Schedules ................................................... 39
- Daily Schedule-at-a-Glance .................................... 41
- Thursday Program ................................................ 47
- Friday Program .................................................... 47
- Saturday Program ................................................ 54
- Sunday Program ................................................... 62
- Monday Program .................................................. 72
- Tuesday Program .................................................. 79
- Other Programming ................................................ 85

## Maps
- Area Map .......................................................... 88
- Hilton Baltimore Hotel ........................................... 89
- Baltimore Convention Center .................................. 90

## Exhibitors
- Exhibit Hall Map .................................................. 91
- Exhibitor Locations .............................................. 92
- Exhibitor Listings .................................................. 93
- Innovation Pavilions .............................................. 93
The Epilepsy Leadership Council (ELC) is a coalition of professional, governmental, and non-profit organizations representing patients with epilepsy and their families. The ELC works collaboratively to support research and advocacy to improve the lives of individuals with epilepsy.

The Epilepsy Leadership Council is supported in part by a grant from Eisai Inc.
Greetings!

On behalf of the Board of Directors, Annual Meeting program committees, and AES staff, I am excited to welcome you to the 73rd Annual Meeting of the American Epilepsy Society.

Our meeting is certainly never dull—and this year finds us at an exciting juncture with new developments in our field in both the scientific and clinical areas. For example, NIH funding for epilepsy-related research is estimated to hit $254 million in FY2019, almost double the amount in FY2015. Especially inspiring are the contributions being made across disciplines, as evidenced by the innovation coming out of the National Institutes of Health Brain Research through Advancing Innovative Neurotechnologies® (BRAIN) Initiative. In that spirit, the new Dialogues to Transform Epilepsy session will highlight two speakers whose work focuses on transformative neurobiological research outside of the epilepsy field, each paired with a member of the AES community for a dialogue about how these advances might accelerate progress in the field.

Because this meeting brings together professionals from all realms of epilepsy—neuroscientists, clinical researchers, clinicians, industry, patient advocates, and others—it inspires and fosters connections that can lead to significant improvements in the diagnosis, treatment, and quality of life for people with epilepsy. And those connections cross not only disciplines, but geographic borders, as the AES Annual Meeting truly plays host to the world, with colleagues from more than 60 countries in attendance.

This meeting is also a time for assessing accumulated knowledge and its implications for the future. I am very excited to focus this year’s Presidential Symposium on Evidence-Based Treatment for Women with Epilepsy during Reproductive Years: 15 Years of Progress and Future Directions. Data from animal preclinical studies, pharmacokinetic modeling, detailed observational prospective studies, and large-scale pregnancy registries have provided an abundance of findings finally permitting an evidence-based approach to the treatment of women with epilepsy during pregnancy. And the future holds opportunity to deliver on the promise of a truly personalized medicine approach for these patients.

And as we look to the future, AES recognizes the investment and support we as a community must provide to those just entering or who are early in their careers in the field. I know I am personally energized by the enthusiasm and commitment I see in the residents, fellows, and other early career professionals at this meeting. We’ve expanded the formal offerings we provide for these members, but I urge all of us to take the opportunity to meet, engage, and connect with the future of the specialty while here.

I look forward to seeing everyone here in Baltimore this week, and to the relationships and progress that will result from this meeting.

Welcome and enjoy the meeting,

Page B. Pennell, MD, FAES
President
American Epilepsy Society

---

2019 BOARD OF DIRECTORS

President
Page B. Pennell, MD, FAES

First Vice President
William D. Gaillard, MD, FAES

Second Vice President
Douglas A. Coulter, PhD

President Emeritus
Shlomo Shinnar, MD, PhD, FAES

Treasurer
William H. Theodore, MD, FAES

Treasurer-Elect
Howard P. Goodkin, MD, PhD, FAES

Board Members
Elinor Ben-Menachem, MD, PhD, FAES
Howard P. Goodkin, MD, PhD, FAES
Sheryl C. Haut, MD
Lori L. Isom, PhD, FAES
Manisha N. Patel, PhD
Georgette (Gigi) Smith, PhD, RN, CPNP-PC, FAES

Ex-Officio
Eileen M. Murray, MM, CAE
Executive Director
Timothy E. Welty, MA, PharMD, FCCP, FAES
Council on Clinical Activities
Jorge G. Burneo, MD, MSPH, FAAN, FAES
Council on Communications
Jack M. Parent, MD
Epilepsy Currents Chief Editor
Nathalie Jetté, MD, MSc, FRCPC
ILAE Liaison/ILAE-North America Chair
Fred A. Lado, MD, PhD
Council on Education
Amy Brooks-Kayal, MD, FAES
Development Council
Aristea S. Galanopoulou, MD, PhD, FAES
Research and Training Council

Staff Liaison
Lyn Wolfson, MA
Governance and Administration Manager
Dear Colleagues,

Welcome to the 73rd Annual Meeting of the American Epilepsy Society in the historic city of Baltimore, known for its beautiful harbor, seafood, aquarium, and world-renowned medical centers. Baltimore today draws vitality and strength from its diversity. With its harbor and early railways, it has always been open to the world and ready to receive and promote new ideas. We encourage each of you bring this same spirit of innovation to this year’s AES meeting covering the latest science, clinical knowledge, and epilepsy education.

We are proud of our long-standing multidisciplinary tradition, offering a space where all epilepsy professionals can gather, share ideas, and work together. This year offers content for the many diverse groups who share AES as their professional home.

Clinicians can access expanded CME offerings at select Investigator’s Workshops, Special Interest Groups (SIGs), and professional development sessions, in addition to symposia and the Annual Course. The new Dialogues to Transform Epilepsy session will explore how conceptual or technological advances from outside of epilepsy research might accelerate progress in foundational understanding of the epilepsies. Advanced practice providers can benefit from new sessions tailored to their needs, including a career pathways panel, a special reception, and a SIG.

Other highlights at the meeting include:

- **Symposia and the Annual Course:** This year, our 11 symposia offer new and exciting insights into key topics in epilepsy care and research, from interictal epileptiform activity in the Epilepsy Specialist Symposium to the science of neuroinflammation and epilepsy in the Merritt-Putnam Symposium.

- **Special Sessions:** In addition to the celebrated Hoyer and Lombroso lectures, special lectures will review the World Health Organization Global Report on Epilepsy and recent changes to EEG monitoring codes.

- **Investigators Workshops and Special Interest Groups:** Explore cutting-edge research from basic through clinical fields in 16 Investigators Workshops. Connect with colleagues who share your interests in 40 SIGs on varied topics for professionals across epilepsy.

- **Poster Sessions:** Explore trailblazing research in poster sessions Saturday through Monday, and don’t miss the walking tours!

- **Professional Development:** Discover new sessions on How to Give a Chalk Talk, How to Negotiate, and Caring for a Diverse Patient Population, with CME offered for the latter two offerings. Connect to colleagues in one of several SIGs on career development and wellness.

- **Skills Workshops in Basic and Clinical Science:** Advance your clinical and practical skills in one of 14 hands-on workshops. Topics include neuromodulation, genetic testing, and single cell approaches to studying cellular diversity.

We welcome you to this amazing city and hope that AES 2019 energizes and inspires you with new clinical knowledge, relevant research, and new professional connections that will help you advance the care of individuals with epilepsy.

We owe it to the patients who suffer from these devastating diseases.

Fred A. Lado, MD, PhD
Chair, Council on Education

Barbara C. Jobst, MD, PhD, FAAN, FAES
Chair, Annual Meeting Committee

---

**ABOUT AES**

**Dedicated to eradicating epilepsy and its consequences**

AES is a medical and scientific society that provides professionals working in epilepsy with the resources needed to deliver unparalleled patient care, advance their research efforts, and make a difference for people living with epilepsy. For more than 75 years, AES has provided a dynamic global forum where professionals from across the field of epilepsy can learn, network, and collaborate.
AES RESEARCH FUNDS

The American Epilepsy Society is proud to support the next generation of epilepsy researchers.

AES has established several named funds targeting specific research and programmatic needs in epilepsy research, including these opportunities:

- Susan S. Spencer Fund for Clinical Research and Education
- Lennox and Lombroso Trust for Research and Training
- Jack M. Pellock Pediatric Travel Fund
- Suzanne and Peter Berry International Travel Award
- Fritz Dreifuss Epilepsy Fund
- Rebecca Goldberg-Kaufman Ethical Neuropsychiatry Award Fund
- J. Kiffin Penny Fund
- Junior Mexican Epileptologists Travel Award Fund

To make a gift supporting research: [aesnet.org/impact](http://aesnet.org/impact)
ABOUT THE MEETING

Meeting Resources

AES Member Center — New in 2019!
The AES Member center is the hub for all things AES. Come pick out your ribbons, meet our staff, and learn more about how to join AES and make the most of your membership. The Member Center will also feature short but valuable Talk Back to AES sessions (thank you for sharing your perspectives!) and Learning the Ropes sessions to help you make the most of the AES Annual Meeting. More information is available in the mobile app.

AES Annual Meeting App
Download the AES 2019 mobile app to your smart phone today! The meeting app will allow you to save sessions and activities to build your schedule; find your way around the meeting with interactive maps; search for activities, exhibitors, speakers, posters, abstracts, and more; and connect with other attendees using PeerFinder (prior opt-in required).

Business Centers
Two business centers are conveniently located in the hotel and convention center. Both offer a variety of services that include shipping, mailing, faxing, and photocopying. Please contact each business center directly for details. The business center located at the convention center is full service.

ABC Imaging Business Center
Baltimore Convention Center: Adjacent to Room 334, Level 300
One West Pratt Street
Baltimore, Maryland 21201
Eugene King, Store Manager
Phone: 410.649.7194
Fax: 410.649.7196
Email: baltimore.cc@abcimaging.com

The UPS Store #6175 and Business Center
Hilton Baltimore Inner Harbor Hotel: Second floor
401 West Pratt Street
Baltimore, Maryland 21201
Phone: 443.220.0280
Fax: 443.220.0281
Email: store6175@theupsstore.com

Badges
Badges must be worn and visible to access all meeting and session areas. Convention center security may restrict access to anyone that does not comply. (Exception: Friday, public Hoyer Lecture only)

Show Your Badge Discount Program
Baltimore is full of restaurants and attractions and AES 2019 attendees are eligible for exclusive discounts! Simply show your badge at participating establishments to receive a special promotion or discount. For more information, to make reservations, or to plan your itinerary, stop by the restaurant concierge at the Baltimore Convention Center, call 1-877-Baltimore, or visit the Baltimore Visitor Center at the Inner Harbor (located at 401 Light Street).

Coat and Luggage Check
Convention Center, Pratt Street Lobby, Level 300
The coat and luggage check area will be available during

AES ANNUAL MEETING 2019
With the AES Annual Meeting App, you can do it all:

- Browse sessions and events using filters and search
- Build your personal schedule for the meeting
- Search, filter, and read complete abstracts
- Explore the Exhibit Hall
- Network with other epilepsy professionals
- Map your way to sessions, posters, and booths
- Take notes and access symposia handouts

Download the AES Annual Meeting App
meeting.aesnet.org/mobile-app
ABOUT THE MEETING

Poster Concierge
Convention Center, Pratt Street Lobby, Level 300
The poster concierge is available to assist presenters with their poster assignment information including poster numbers and presentation times and dates.

Quiet Room
Convention Center, Room 335, Level 300
This room is intended to provide a quiet, calm space where attendees can spend time away from noise, lights, and other stimuli. The quiet room is not available for conversations or meetings.

Restaurant Reservations
Convention Center, Pratt Street Lobby, Level 300 near Starbucks
Confirm restaurant reservations at all Visit Baltimore member-restaurants; receive information, and directional support for all area attractions and amenities during your stay.

Scooter Rental
Scooter rental is available through Scooter Equipment. There will be no delivery fee to Baltimore hotels. Please call 410.480.8360 or 1.877.SCOOTIN to make reservations.

Seating Areas
Seating areas are available on Level 300 of the Baltimore Convention Center and in the exhibit hall. These areas are perfect for small group conversations and are available on a first-come, first-served basis.

WiFi Access
Basic, complimentary wireless access is offered in lobby areas throughout the convention center, with the exception of the exhibit hall.

Meeting Policies
Please refer to the complete listing of AES policies on our website: https://meeting.aesnet.org/policies

Insurance/Liabilities
AES cannot be held responsible for any personal injury, loss, damage, accident to private property, or additional expenses incurred as a result of delays or changes in air, rail, sea, road or other services, strikes, sickness, weather, acts of terrorism, and/or any other cause. Participants are encouraged to make their own arrangements for health and travel insurance.

No Smoking Policy
The Baltimore Convention Center complies with the City of Baltimore's health code by prohibiting smoking, vaping devices, and e-cigarettes within 50 feet of all entrances. In accordance with this code, there are no designated smoking areas inside the convention center. Ash urns are provided for the convenience of all attendees outside of all main entrances. For the comfort and health of all attendees, smoking, vaping, and e-cigarettes are not permitted at any AES function including educational sessions, meetings, and all functions where food is served. Please note: smoking is also not permitted in hotels, other public buildings, restaurants, or bars.

Session Room Capacity
Due to safety and fire regulations, doors will be closed to all session rooms that fill to capacity. Seating is available on a first-come, first-served basis.

Recording or Photos of Content and Material
AES strictly prohibits photography, videotaping, and audio recordings (flash, digital, or otherwise) in all educational and poster sessions, unless by the official AES photographer. New for 2019: Photography will be allowed in the poster hall with the permission of the poster authors. If a presenting author chooses not to allow photographs, this will be indicated on their poster with a “no photos” sticker. Violations of this policy will result in removal from the session and possible revocation of meeting registration. Refunds will not be honored.

Material presented at the AES Annual Meeting may not be reproduced in any format without the express written consent of AES or the otherwise applicable rights holder. Attendees acknowledge and agree that commercial or promotional distribution, publishing or exploitation of speaker sessions, content, or materials from the annual meeting is strictly prohibited.

Photography Release
AES uses photographs of meeting events in its promotional materials. Unless the permission is revoked in writing to AES; by attending, all meeting attendees and visitors agree to the use of their likeness in such materials.

Meeting Attire
Dress for the Annual Meeting is business casual. Consider bringing a light jacket or sweater with you, as meeting room temperatures and personal comfort levels vary.

Safety and Security Information
The following security measures have been designed to further enhance your personal and professional safety.

- House phones located throughout the convention center will connect you to public safety by dialing 7055, or by calling 410-649-7055 from a mobile phone.
- Uniformed convention center employees have radios and are ready to assist you. Advise the dispatcher of the exact location within the convention center. We respectfully request that you do NOT call 911 directly.
- An EMT will be on duty in the convention center throughout the meeting. Convention Center, Pratt Street Lobby, Level 300 (Foyer between Room 336 and 300 West Show Office)
- A clearly displayed annual meeting badge will be required to enter all educational sessions, poster sessions, the exhibit hall, and meetings.
- A government-issued photo identification is required to receive a badge and to replace a lost badge.
• Convention center security may randomly check packages and bags at the convention center entrances, meeting rooms, and in the exhibit hall.
• Meeting attendees are to use approved convention center entrances and exits only.
• Due to safety and fire regulations, doors will be closed to session rooms that fill to capacity.
• Security staff will be present throughout the meeting to monitor the safety of all participants.

See something, say something. Please report any suspicious activity to security staff or to the AES registration desk.

General Safety Tips
• Remove your badge once you leave the meeting facilities.
• Carry important telephone numbers with you.
• Do not display or carry large amounts of cash.
• Walk in groups, especially at night.
• Lock your hotel room door.
• Always verify hotel room repair or service calls.
• Do not disclose your room number to anyone.
• Never give your personal information (credit card, room number, etc.) over the phone; instead, go to the front desk if the hotel calls with questions.

AES offers year-round online education to assist epilepsy professionals in staying ahead of the curve and fulfilling continuing education requirements. These resources are available both live and on-demand to suit your needs!

• Webinars
• Self-assessment Activities
• Performance Improvement Continuing Medical Education Activities
• Fellowship Curriculum
• EPIPORT Clinical Research Training
• Annual Meeting recordings
… and so much more

Visit aesnet.org/education to learn more.
Statement of Need
The need for this activity has been determined based on identifying professional practice gaps, previous course evaluations, and AES self-assessments. The educational content of this activity was based upon current issues and topics provided by the AES Annual Meeting Committee and membership.

Target Audience
Neurologists, epileptologists, pediatric neurologists, nurses, psychologists, neuropsychologists, nurse practitioners, physician assistants, pharmacists, researchers, and scientists.

Global Learning Objectives
This comprehensive educational meeting provides learners with opportunities to:

1. Increase knowledge about the diagnosis and treatment, including novel diagnostic methods and therapeutic modalities of, various manifestations of epilepsy and common comorbidities to enhance clinical practice and improve patient outcomes.
2. Be informed about the latest research developments in epilepsy that may translate into clinical care and human therapy in the near future.
3. Consider the public health implications of epilepsy and the impact of the disease on patients, communities, and health systems.

NOTE: Each session has its own specific learning objectives, which are included within the program book.

Mission Statement
The American Epilepsy Society promotes research and education for physicians and other healthcare professionals dedicated to the prevention, treatment, and cure of epilepsy. Its continuing professional education (CPE) offers an array of activities to assist the learner in assessing their educational needs and expanding their knowledge, competence, and performance in the field of epilepsy, which leads to an improvement in the outcomes of care.

The CPE program always reinforces the fundamental components of epilepsy care in accordance with an epilepsy care curriculum, including quality improvement and patient safety. In addition, its educational interventions also provide an opportunity to advance professional practice in new and emerging areas of the specialty. In recognition of the importance of the added qualification in epilepsy by the American Board of Psychiatry and Neurology as well as the Maintenance of Certification requirements, AES is committed to the provision of educational opportunities and tools that aid in the certification and MOC requirements.

The expected results of the AES program of continuing professional development are as follows:

- The AES CPE Program fosters a culture of interprofessional collaboration amongst the cadre of professionals that care for persons with epilepsy.
- The AES CPE Program enhances the professional practice of healthcare professionals who care for persons with epilepsy.
- The AES CPE Program provides education in epilepsy therapy to increase the competence of clinicians in the use of these complex and multi-layered options to manage epilepsy in patients.
- The AES CPE Program uses educational interventions as a tool to improve the quality of care and patient safety of persons with epilepsy.

Accreditation
This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education. The American Epilepsy Society (AES) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

AMA PRA Category 1 Credit™ Designation
The American Epilepsy Society designates this live educational activity for a maximum of 36.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

International Credits
The American Medical Association has determined that non-U.S. licensed physicians who participate in this CME activity are eligible for AMA PRA Category 1 Credits™.

Physician Assistants
AAPA accepts certificates of participation for educational activities certified for AMA PRA Category 1 Credits™ from organizations accredited by ACCME or a recognized state medical society. Physician assistants may receive a maximum of 36.75 hours of Category 1 credit for completing this program.

Continuing Nursing and Pharmacy Education Credit
In support of improving patient care, this activity has been planned and implemented by American Epilepsy Society and University of Minnesota, Interprofessional Continuing Education [University of Minnesota, Interprofessional Continuing Education is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.]

This activity is awarded up to 36.75 ANCC and ACPE contact hours. Select portions of the Annual Meeting are approved for pharmacy CE credit. Specific hours of credit for approved presentations and the Universal Activity Numbers assigned to select presentations are found in the program materials. Criteria for success: credit is based on documented program attendance and online completion of a program evaluation/assessment.

NOTE: Questions regarding CE activity and reporting relative to nursing and/or pharmacy please contact University of Minnesota Continuing Pharmacy Education at onlinece@umn.edu

Maintenance of Certification
The American Board of Psychiatry and Neurology has reviewed the 73rd Annual Meeting and has approved this program as part of a comprehensive Continuing Medical Education (CME) program, which is mandated by the ABMS as a necessary component of maintenance of certification.
Credit Claim
Attendees who registered in the following categories may claim CME or CE for the Annual Meeting: physician, health care provider, trainee, one-day, and two-day. Meeting registration includes credit claiming. Post meeting attendees will receive an email notification to access the online evaluation and credit claim system. The evaluation and claim system will remain open until February 28, 2020. Evaluations and credit claims must be completed by this date to record and receive your CME/CE certificates.

Disclosure Policy and Resolution of Conflicts of Interest
It is the policy of the American Epilepsy Society to ensure balance, independence, objectivity, and scientific rigor. All individuals involved in the selection, development, and presentation of content are required to disclose any real or apparent conflicts of interest. Conflicts of interest will be resolved by AES prior to an educational activity being delivered to learners. In accordance with the ACCME Standards for Commercial Support of CME, AES has implemented the mechanisms of prospective peer review of this CME activity to identify and resolve any conflicts. Additionally, the content of this activity is based on the best available evidence.

Unapproved Use Disclosure
The American Epilepsy Society requires CME authors to disclose to learners when products or procedures being discussed are off-label, unlabeled, experimental, and/or investigational (not FDA approved) and any limitations on the information that is presented, such as data that are preliminary or that represent ongoing research, interim analyses, and/or unsupported opinion. This information is intended solely for continuing medical education and is not intended to promote off-label use of these medications. If you have questions, contact the medical affairs department of the manufacturer for the most recent prescribing information. Information about pharmaceutical agents/devices that is outside of U.S. Food and Drug Administration approved labeling may be contained in this activity.

Disclaimer
This CME activity is for educational purposes only and does not constitute the opinion or endorsement of, or promotion by, the American Epilepsy Society. Reasonable efforts have been taken to present educational subject matter in a balanced, unbiased fashion, and in compliance with regulatory requirements. However, each activity participant must always use his or her own personal and professional judgment when considering further application of this information, particularly as it may relate to patient diagnostic or treatment decisions including, without limitation, FDA-approved uses and any off-label, investigational, and/or experimental uses.

Annual Meeting Session Descriptions
The AES Annual Meeting offers high-quality educational programming across diverse work settings, professional roles, and experience levels. Whether you are just starting with the specialty, have a limited background in epilepsy, or are highly fluent with complex topics, you will find sessions and content relevant to your needs.

Symposia
Provide the major educational activities at the Annual Meeting. Topics range from clinically oriented presentations reviewing common issues in epilepsy to more complex topics combining basic sciences and clinical neurology. While target audiences differ, all symposia include discussion of clinically relevant information.

Professional Development
Offers mentorship, training, and information geared to early career professionals or anyone considering a career change.

Dialogues to Transform Epilepsy
New in 2019, this session introduces transformative neurobiological research from outside the epilepsy field, with discussions on how those advances could accelerate progress in epilepsy.

Investigators Workshops
Highlight exciting developments in basic, translational, and clinical epilepsy research in a format promoting interactive discussion. Speakers include established and junior epilepsy investigators, as well as researchers from other fields.

Special Interest Groups (SIG)
Offer information and networking for attendees with similar interests, in sessions organized by AES members. Although the sizes of SIG sessions vary, all lend themselves to active participation and dialogue.

Special Lectures
Recognize the accomplishments of distinguished leaders in clinical epilepsy and research. The Judith Hoyer Lecture in Epilepsy is co-sponsored with the National Institute of Neurological Disorders and Stroke and is delivered by the immediate past President of AES. The Lombroso Lecture is given by an invited member who has greatly advanced the collective understanding of epilepsy and is preceded by special presentations from the current year AES Research Award winners in Clinical Science and Basic Science.

Epilepsy Fellowship Program Directors Meeting
Provides a forum for current clinical epilepsy program directors, clinical neurophysiology program directors, and those interested in starting an ACGME Fellowship to address challenges in running a program and meeting accreditation requirements. This session will meet ACGME program requirement II.A.4.

Annual Course
Encourages in-depth exploration of important topics related to epilepsy, focused on clinical care, including review of the science underlying the topics, reviews of clinical research, and discussion of the associated clinical implications.
The Annual Course includes a mixture of educational lectures, clinical vignettes, and panel discussions.

**Poster Sessions**
Posters are grouped by general topic category at various times throughout the meeting. Poster authors are available for discussion during each session. In addition, the following special poster sessions offer additional times to interact with authors:

- Poster Walking Tours: tours of selected posters led by leading experts in topic areas.
- Investigators Workshop Poster Session: Highly scored abstracts submitted in the basic, translational, and clinical epilepsy research categories.
- Platform Sessions: Three concurrent sessions highlighting selected key scientific abstracts consisting of author presentations followed by Q&A.
- Pediatric Epilepsy Highlight Session: This session showcases scientific abstracts focused on topics in clinical care and research in pediatric epilepsy.
- Contributions of a Diverse Professional Community: A celebration of diversity in the epilepsy professional community, offering an additional opportunity to showcase the work of professionals who identify with groups that are traditionally underrepresented in clinical care and research.

**Skills Workshops**
Deliver hands-on and interactive learning opportunities in focused clinical areas or basic science research skills. Attendance at each workshop is limited to a small number of participants to allow optimal interaction. Advanced registration and an additional fee are required.

---

**FIRE IN YOUR BELLY? ORTHOTICS IN YOUR SHOES?**

You are one app download away from winning the 2019 AES Step Challenge!

A little friendly competition never hurt anyone. You can step up to the new AES walking challenge whether you’re taking in the education and networking in Baltimore, or back home wishing you were.

**All you need to do is take the first step.** Download the AES 2019 Step Challenge app on your phone, and presto! You are playing the game. Every step you take will count toward valuable bragging rights and mostly modest prizes, plus a couple big ones.

Check out the details in the AES Member Center near registration. The 2019 AES Step Challenge is generously supported by:

We’ve got a leaderboard. We’ve got prizes. **All you need is the app:** https://www.hekahealth.com/aes19

All prizes are provided by the American Epilepsy Society.

---

**AES EPIPORT**

New AES Resources for Training in Clinical Research

The EPIPORT Online Clinical Research Curriculum offers introductory training on key concepts in epilepsy clinical research with 28 online, on-demand modules.

The AES Mentorship Program for Clinical Research provides targeted mentorship for investigators looking to hone their skills in clinical research grantmanship.

More information is available at aesnet.org/clinical-science

The AES EPIPORT Online Clinical Research Curriculum and the AES Mentorship Program for Clinical Research are supported in part by an educational grant from Eisai Inc.

---

**FOR PRIME TIME!**

**BIG IDEAS, READY FOR PRIME TIME!**

In 2008, Nihon Kohden brought an idea to AES. What if NKUSA auctioned one of its flagship EEG-1200 machines and donated 100% of the proceeds to AES research programs? It was a winning idea, and Nihon Kohden has generously supported the AES equipment auction for more than a decade.

Thank you, Nihon Kohden! Roughly $275,000 later, Nihon Kohden continues its tradition with its 2019 donation of $27,000 from the sale of an EEG system to Cabell Huntington Hospital of Huntington, West Virginia.

Visit Booth #441 to join AES in saying a big thank you to Nihon Kohden!

---

**THE PROGRESSION OF INNOVATION**

How does a great idea turn into a quarter of a million dollars? When it’s championed by a company committed to growing the epilepsy talent pipeline, that’s how.

In 2018, Eisai Inc. was approached with an idea. What if it could take the success of the AES Epilepsy Fellowship Exam (EpiFITE) and turn it into a valuable educational resource? Eisai approached AES with a grant to create the EPIPORT Online Clinical Research Curriculum and the AES Mentorship Program for Clinical Research.

The proceeds will benefit:

- The AES Equipment Auction Fund
- The Susan S. Spencer Fund for Clinical Education and Research
- The Lennox and Lombroso Trust for Research and Training
- The AES Epilepsy In-Service Training Exam
- The AES Fellowship Curriculum and the AES Mentorship Program for Clinical Research
- The AES Mentorship Program for Clinical Research
- The AES EPIPORT Online Clinical Research Curriculum
- The AES 2019 Step Challenge

The AES EPIPORT Online Clinical Research Curriculum and the AES Mentorship Program for Clinical Research are supported in part by an educational grant from Eisai Inc.

---

**MEETING.AESNET.ORG**

**In-Service Training Examination**

The AES Epilepsy In-Service Training Exam is a quarter of a million-dollar idea championed by a company committed to growing the epilepsy talent pipeline.

This epilepsy-specific examination is designed to help participating fellowship programs.

- Benchmark fellows’ performance against other fellows and programs.
- Also a valuable tool for program directors to identify areas for program improvement.
- The AES Epilepsy In-Service Training Exam is available both live and on-demand to suit your needs!

**NEW!**

Announcing EpiFITE, the AES Epilepsy Fellowship Exam!

- Designed to prepare fellows for the October 2020 ABPN subspecialty certification in epilepsy medicine.
- Available both live and on-demand to suit your needs!

**EpiFITE**

Sign up to receive more information or register at aesnet.org/in-service

---

**NEW!**

Epilepsy Research dossier for prime time:

- Available both live and on-demand to suit your needs!

---

**EPIPORT Online Clinical Research Curriculum**

The EPIPORT Online Clinical Research Curriculum offers introductory training on key concepts in epilepsy clinical research with 28 online, on-demand modules.

**The AES Mentorship Program for Clinical Research** provides targeted mentorship for investigators looking to hone their skills in clinical research grantmanship.

More information is available at aesnet.org/clinical-science

The AES EPIPORT Online Clinical Research Curriculum and the AES Mentorship Program for Clinical Research are supported in part by an educational grant from Eisai Inc.

---

**AES ANNUAL MEETING 2019**

18

**ABOUT THE EDUCATION PROGRAM**
Say hello to the new AES Member Center!
Stop by the AES Member Center, conveniently located in the Pratt Street lobby near registration. Our friendly membership staff is eager to serve as your one-stop resource for membership information.

But wait! There’s more! To help you get the most out of your time in Baltimore, check out what else you can find at the Member Center.

LEARN THE ROPES
First time at AES and wanting to make the most of it? Wondering how the AES grant system works? Curious about the Epilepsy Currents editorial process? The Member Center has scheduled quick, twenty-minute Learn the Ropes sessions on these topics and more. See the schedule in the mobile app or at the Member Center.

TALK BACK
AES wants your feedback. Always. To make it easier to hear you, we’ve set up quick, twenty-minute Talk Back sessions on specific topics scheduled in the Member Center. See the schedule in the mobile app or at the Member Center.

DECORATE YOURSELF
That name badge you are wearing wants company! Whether you are a first-timer, a ten-year veteran, a generous donor, an AES committee member, a Fellow of the American Epilepsy Society, or some other role, announce it all meeting long with a ribbon on your name badge. Pick up your ribbons at the Member Center.
**Distinguished Service Award**

Established in 1993, this award recognizes outstanding service by an AES member in the field of epilepsy, including non-educational and non-scientific, with emphasis on exemplary contributions to advancing the mission of the American Epilepsy Society and service to its members. The award includes a $1,000 honorarium.

**Award presentation:** Friday, December 6, 4:00 PM, preceding the Judith Hoyer Lecture; Convention Center, Ballroom III, Level 400

**Michael Privitera, MD**

Dr. Michael Privitera is professor of neurology and director of the epilepsy center at the University of Cincinnati Gardner Neuroscience Institute. His training in neurology and epilepsy included Johns Hopkins, Georgetown, and University of Texas. He established the epilepsy center in Cincinnati in 1987; there are now 18 epileptologists at UC and Cincinnati Children’s. Dr. Privitera is an expert on advanced treatments for epilepsy, with a research focus on new antiepileptic drugs including cannabinoids for epilepsy, generic equivalence of antiepileptic drugs, and seizure prediction. He has over 200 scientific publications. He has been principal investigator or co-PI on over 45 clinical trials of antiepileptic drugs, led several multicenter national and international clinical trials, and worked on several NIH-sponsored multicenter trials of antiepileptic drug efficacy and adverse effects. He has mentored dozens of residents, fellows, graduate students, and post-docs. He has served as a reviewer for NIH, CURE, and FDA, earned many honors and awards, and served in many leadership positions at the University of Cincinnati. His service to the American Epilepsy Society includes multiple committee chair positions, the board of directors, two terms as treasurer, and as president in 2016.

**Founders Award**

This award, formerly titled the Lennox Award, was established in 1966 and recognizes AES members who have a record of lifetime contributions and accomplishments related to epilepsy. The award is funded by the Lennox and Lombroso Trust Fund, which was established in 1962 to advance and disseminate knowledge concerning epilepsy in all of its aspects—biological, clinical and social—and to promote better care and treatment for persons with epilepsy. The award includes a $10,000 honorarium.

**Award presentation:** Saturday, December 7, 8:45 AM, preceding the Presidential Symposium; Baltimore Convention Center, Ballroom III, Level 400

**Amy Brooks-Kayal, MD, FAES**

Amy Brooks-Kayal, MD is professor of pediatrics, neurology and pharmaceutical sciences, co-director of the Translational Epilepsy Research Program, and chief and Ponzio family chair of pediatric neurology at the University of Colorado School of Medicine, Skaggs School of Pharmacy and Pharmaceutical Sciences, and Children’s Hospital Colorado. Dr. Brooks-Kayal trained at Johns Hopkins University School of Medicine, the University of Pennsylvania, and Children’s Hospital of Philadelphia (CHOP). She joined the University of Colorado in 2008 after 13 years on the faculty at Penn and CHOP. Her area of clinical focus is pediatric epilepsy. Her research focuses on regulation of gene expression during epilepsy and epileptogenesis, with particular emphasis on GABAA receptor expression, transcriptional regulation by BDNF and the JAK/STAT pathway, as well as targeting identified molecular changes to develop disease modifying therapy. Dr. Brooks-Kayal is chair of the AES Development Council and a past president of the American Epilepsy Society, a member of the Commission on North American Affairs of the ILAE, a Director of the American Board of Psychiatry and Neurology and a past member of the NIH/NINDS Advisory Council and CURE Scientific Advisory Board. She is a co-director of the Child Neurology Career Development K12 program (CNCDP) and is an active member of the American Epilepsy Society, Child Neurology Society, American Neurological Association, Society for Neuroscience, and American Academy of Neurology.
Research Awards

The American Epilepsy Society Research Recognition Awards are given annually to active scientists and clinicians working in all aspects of epilepsy research. The awards are designed to recognize professional excellence reflected in a distinguished history of research of important promise for the improved understanding and treatment of epilepsy. These awards include a $10,000 honorarium.

Basic Science Research Award

Award presentation: Saturday, December 7, 8:45 AM, preceding the Presidential Symposium; Baltimore Convention Center, Ballroom III, Level 400

Basic Science Research Award recipient Dr. Helen E. Scharfman will present “Contributing to Basic Research About Epilepsy” on Monday December 9, 2:00 PM, preceding Lombroso Lecture.

Helen E. Scharfman, PhD

Helen E. Scharfman, PhD, is professor of child and adolescent psychiatry, neuroscience and physiology, and psychiatry at New York University Langone Health and an Investigator at the NYU Neuroscience Institute. Dr. Scharfman is also a research scientist VII in the Center for Dementia Research at The Nathan S. Kline Institute for Psychiatric Research, which is affiliated with NYU and the New York State Office of Mental Health. Dr. Scharfman has a basic research laboratory focused on mechanisms that regulate excitability and plasticity in the normal brain of rodents and in animal models of epilepsy. She has published over 150 articles and edited or co-edited five books. Dr. Scharfman has served AES, the Epilepsy Foundation, and the International League against Epilepsy in several ways. At AES, she has served on the board of directors and numerous committees such as the publications, investigators workshop, program, and basic sciences committees. She has also been a contributing editor for Epilepsy Currents. She has received National Institutes of Health (NIH) support since starting her laboratory in 1991 and has served on the boards or as a reviewer for many national and international organizations such as the NIH, and reviewed ad hoc for over 40 different peer-reviewed journals. She has served on editorial boards of Science Translational Medicine, eLife, J. Neuroscience, Sci. Reports, Epilepsia, Epilepsy Research, Epilepsy and Behavior, and Epilepsy Research and Treatment.

Dr. Scharfman obtained her doctoral degree in Pharmacology at the Uniformed Services University of the Health Sciences, where her advisor was Dr. John Sarvey. Her postdoctoral training was in the laboratory of Dr. Philip Schwartzroin at the University of Washington, Seattle. She then worked in the laboratory of Dr. Paul Adams at the State University of New York, Stony Brook, before she started her laboratory at Columbia University.

Clinical Science Research Awards

Award presentation: Saturday, December 7, 8:45 AM, preceding the Presidential Symposium; Baltimore Convention Center, Ballroom III, Level 400

Clinical Science Research award recipient Dr. Josep Dalmau will present “The Significance of Seizures in Autoimmune Encephalitis” on Monday December 9, 2:00 PM, preceding Lombroso Lecture.

Josep Dalmau, MD, PhD

Dr. Josep Dalmau received his MD and PhD from the Autonoma University of Barcelona, Spain. He trained in neuro-oncology at Memorial Sloan-Kettering Cancer Center in New York and afterwards was appointed to the faculty. After 11 years at Memorial, Dr. Dalmau was appointed co-director of neuro-oncology at the University of Arkansas for Medical Sciences, and in 2002 he joined the University of Pennsylvania as professor of neurology. He is currently research professor at the Catalán Institute for Research and Advanced Studies and the Institute for Biomedical Investigations at Hospital Clinic, University of Barcelona, Spain, as well as adjunct professor of neurology at Penn. In his initial work, Dr. Dalmau discovered several immune-mediated paraneoplastic diseases. In more recent studies his group discovered anti-NMDAR encephalitis and nine other disorders mediated by antibodies against ion channels and synaptic receptors; these disorders represent a new category of diseases. This work has been funded by several Spanish and European agencies, as well as the NIH. He is the recipient of numerous awards including the George W. Jacoby award from the American Neurological Association and the George Cotzias award from the American Academy of Neurology. Dr Dalmau is a member of the National Academy of Medicine and many other scientific societies. He has served as chair of the autoimmune neurology section at the American Academy of Neurology (AAN) and is currently editor of Neurology: Neuroimmunology and Neuroinflammation.
Clinical Science Research Awards (Cont’d)

Award presentation: Saturday, December 7, 8:45 AM, preceding the Presidential Symposium; Baltimore Convention Center, Ballroom III, Level 400

Clinical Science Research award recipient Professor Angela Vincent will present “Neuromuscular Junction to Brain” on Monday December 9, 2:00 PM, preceding Lombroso Lecture.

Professor Angela Vincent, FMedSci, FRS

Angela Vincent is emeritus professor of neuroimmunology at the University of Oxford and has affiliations with University College and Kings College, London. She is medically qualified with an MSc in biochemistry. As an honorary consultant in immunology, she established and directed the Oxford Neuroimmunology Service from 1992-2016. She was president of the International Society of Neuroimmunology (2001-2004), Head of Department of Clinical Neurology (2005-2008), and an associate editor of Brain (2004-2013). Although not a neurologist, she received the Association of British Neurologists medal (2009) and the WFN Medal for scientific contributions to neurology (2017, Kyoto). In 2018, together with Drs. J. Dalmau and J. Posner, she received the Klaus Joachim Zülch Prize. She was elected Fellow of the Academy of Medical Sciences in 2002 and Fellow of the Royal Society of London in 2011.

Past and current interests include clinical and serological studies on patients with neuromuscular junction disorders (myasthenia, MuSK-myasthenia, Lambert Eaton myasthenic syndrome, peripheral nerve hyperexcitability) and acquired disorders of the CNS associated with antibodies to receptors, ion channels and associated proteins (i.e. LGI1 and CASPR2, NMDA and glycine receptors), which are causes of a wide range of features including amnesia, seizures, psychiatric and movement disorders. She also pioneered the role of maternal antibodies in causing neuronal pathology that could influence susceptibility to developmental and other neurological diseases.

Fritz E. Dreifuss Lecture

Award presentation: Saturday, December 7, 8:45 AM, during the Presidential Symposium; Baltimore Convention Center, Ballroom III, Level 400

The Fritz E. Dreifuss lecture honors the memory of Dr. Dreifuss, a leading clinical epilepsy specialist, clinical investigator, and former president of the American Epilepsy Society and the International League Against Epilepsy. Founder of the Comprehensive Epilepsy Program at the University of Virginia and mentor to a generation of epilepsy researchers, Dr. Dreifuss was devoted to mentoring those in clinical epilepsy research.

Supported by the AES Fritz Dreifuss Fund, the lecture promotes clinical epilepsy research and outstanding patient care and includes a $1,000 honorarium.

Torbjörn Tomson, MD, PhD

Dr. Tomson is senior professor of neurology at the Department of Clinical Neuroscience Karolinska Institutet, and senior consultant at the department of neurology, Karolinska University Hospital, Stockholm, Sweden. His emphasis in epilepsy research is on pharmacotherapy, epidemiology, and pregnancy issues. Dr. Tomson’s main contributions are in research on SUDEP and pregnancy outcomes in relation to maternal use of different antiseizure medications.

He has served on several Commissions of the International League Against Epilepsy (ILAE) and is currently chair of the Task Force on Women and Pregnancy. He is FRCP Edinburgh, Honorary professor at Hanoi Medical University, and Visiting Professor, University College Dublin. He received the American Epilepsy Society Research Recognition Award for Clinical Science in 2013.
AWARDS AND RECOGNITION

The Rebecca Goldberg Kaufman AES Clinical Award in Ethical Neuropsychiatry

The Rebecca Goldberg Kaufman AES Clinical Award in Ethical Neuropsychiatry honors the memory of educator Rebecca Goldberg Kaufman, who held knowledge and compassion as keystone virtues. As a mother of a child with epilepsy, she understood the significant psychiatric and social ramifications of epilepsy and became a staunch advocate for increased education of the psychological aspects of epilepsy. She also supported clinical research on the psychiatric effects of anticonvulsants.

Supported by the AES Rebecca Goldberg Kaufman Fund, this lecture promotes clinical neuropsychiatry, the psychiatric aspects of epilepsy, and/or the use of antiepileptic drugs in the treatment of psychiatric disorders. It includes a $1,000 honorarium.

Award presentation: Saturday, December 7, 2:15 PM, during the Best Practices in Clinical Epilepsy Symposium; Baltimore Convention Center, Room 316, Level 300

Aimee W. Smith, PhD

Dr. Smith is assistant professor of psychology at East Carolina University in Greenville, North Carolina. She also has an adjunct appointment in pediatrics at Brody School of Medicine, East Carolina University and is a licensed health service psychologist. She is a researcher, educator, and clinician who is dedicated to transforming healthcare’s approach to epilepsy, medication adherence, and healthcare transition using principles of health behavior change. She mentors graduate students with the aim of training the next generation of mental health care providers to serve youth with epilepsy.

Dr. Smith has published journal articles and book chapters in pediatric chronic illness, with a special focus on psychosocial aspects (i.e., quality of life, medication adherence, transition, behavior problems) of pediatric epilepsy. This year, Dr. Smith received a Junior Investigator Award from the American Epilepsy Society to study healthcare utilization and associated costs during healthcare transition in adolescents and young adults with epilepsy.

Lombroso Lecture | Glial Cells and Epilepsy: How New Tools are Revealing New Insights

The Lombroso Lecture is given each year by a clinician or scientist who is considered to be an outstanding investigator in the field of epilepsy research. The Lombroso lecturer is selected by the AES president, annual meeting chair, and scientific program committee chair. This will mark the 52nd lecture in this series.

Monday, December 9, 2:00 PM; Baltimore Convention Center, Ballroom III, Level 400

Karen S. Wilcox, PhD

Karen S. Wilcox, PhD, is the Richard L. Stimson Presidential Professor and chair of the department of pharmacology and toxicology, as well as director of the contract site of the internationally recognized NINDS-funded Epilepsy Therapy Screening Program at the University of Utah. Dr. Wilcox received her PhD in physiology at the University of Pennsylvania in 1993 and remained there as a research associate until 1998, when she moved to Utah. Her areas of research interest include basic mechanisms of pharmacoresistant epilepsy, the role of glial cells and inflammation in seizure generation and epileptogenesis, the development of novel animal models of epilepsy, and the mechanism of action of anti-seizure drugs. She has served on the Scientific Advisory Board for Citizen’s United for Research in Epilepsy (CURE), is a past member of the Board of Directors for the American Epilepsy Society, and has served as an Epilepsy Benchmarks Steward for the NINDS Office of Science Policy and Planning. Dr. Wilcox is a member of several editorial review boards and has served as an ad-hoc reviewer for journals in a number of areas, including pharmacology, neuroscience, and epilepsy, and continues to be an active member of AES, serving on numerous committees. She has completed terms as a regular member of two study sections at NIH, continues to serve in an ad hoc capacity as a reviewer for NINDS, and reviews grants for a number of foundations. She recently received an NINDS Javits Neuroscience Investigator Award to study the role of activated microglia in the development of epilepsy following CNS infection. The goal of her research is to improve the lives of patients with epilepsy through the development of innovative therapies.
FIND IT FAST!
Quick Ways to Search for the Abstract You Want

2019 AES GUIDE TO POSTER ABSTRACTS

There are more than 1,250 posters on display here in Baltimore — target the abstracts you don’t want to miss.

Our online abstract search is indexed two ways for your convenience. Find the science you seek by author or by poster number within categories.

AES WEBSITE

The latest epilepsy science is at your fingertips when you visit the AES Annual Meeting abstracts database.

Find all the 2019 poster session abstracts online. Search by author, topic, title, and more. Archives from 2007 to 2018 are also available.

Search now:
aesnet.org/abstracts

Session 1: Saturday, December 7
12 PM–6 PM

Session 2: Sunday, December 8
10 AM–4 PM

Session 3: Monday, December 9
8 AM–2 PM

Abstract search is also available on the AES mobile app.

The 2019 AES Online Abstract Search and the 2019 AES Guide to Poster Abstracts are supported by Greenwich™ Biosciences.
MORE THAN A DECADE OF SUPPORT FOR AES RESEARCH

Thank you, Nihon Kohden!

How does a great idea turn into a quarter of a million dollars? When it’s championed by a company committed to growing the epilepsy talent pipeline, that’s how.

In 2008, Nihon Kohden brought an idea to AES. What if NKUSA auctioned one of its flagship EEG-1200 machines and donated 100% of the proceeds to AES research programs? It was a winning idea, and Nihon Kohden has generously supported the AES equipment auction for more than a decade.

Roughly $275,000 later, Nihon Kohden continues its tradition with its 2019 donation of $27,000 from the sale of an EEG system to Cabell Huntington Hospital of Huntington, West Virginia.

The proceeds will benefit:

- Lennox and Lombroso Trust for Research and Training
- Susan S. Spencer Fund for Clinical Education and Research

NIHON KOHDEN

Visit Booth #441 to join AES in saying a big thank you to Nihon Kohden!

J. Kiffin Penry Award for Excellence in Epilepsy Care

This award, originally funded by Abbott Laboratories and supported now by the AES J. Kiffin Penry Fund, was established in 1997 in honor of Dr. Penry’s lifelong focus on and genuine concern for the patient with epilepsy. It recognizes individuals whose work has had a major impact on patient care and improved the quality of life for persons with epilepsy. The award includes a $3,000 honorarium.

Award presentation: Saturday, December 7, 5:30 PM, preceding the Epilepsy Therapies Symposium; Convention Center, Ballroom III, Level 400

Barbara C. Jobst, MD, PhD

Barbara C. Jobst, MD, PhD is currently the Louis and Ruth Frank professor of neurosciences at Geisel School of Medicine at Dartmouth, vice-chair of Neurology at Dartmouth-Hitchcock Medical Center and co-directs the Dartmouth-Hitchcock Epilepsy Center. She completed her medical training at the Friedrich-Alexander Universität in Erlangen and the Krankenhaus der Barmherzigen Brüder in Regensburg, Germany. At Dartmouth-Hitchcock Epilepsy Center she trained with Drs. Peter Williamson in epilepsy care and epilepsy surgery and has remained there since. Dr. Jobst is a clinician-investigator who applies basic research to benefit patients and has trained many students, residents, fellows, and junior faculty in taking care of epilepsy patients.

After initial work in the description of epilepsy characteristics, such as frontal lobe epilepsy and work in the prognosis after epilepsy surgery, she has moved her scientific interest to intracranial neurophysiology and brain stimulation. She and her team have participated in multiple multicenter trials involving brain stimulation. Following intractable epilepsy patients for prolonged periods, she observed that the cognitive and psychiatric consequences of epilepsy are as disabling as seizures. Since then she studies the interaction of cognition and neurophysiology. Her work has included improving cognition with invasive brain stimulation as well as developing and implementing a cognitive-behavioral program for memory problems in epilepsy (HOBSCOTCH). She has coordinated the Managing Epilepsy Well network, one of the thematic research networks of the CDC, aimed to improve the quality of life of patients with epilepsy through self-management. Dr Jobst is well-published in her field and a frequently sought national and international speaker. She is on the editorial board of Neurology and Epilepsia, active in multiple professional societies and has additional leadership training as a graduate of ELAM (Executive Leadership in Academic Medicine). Her goal is to reduce disability, seizures and stigma related to epilepsy.
CONGRATULATIONS TO THE 2019 EARLY CAREER RESEARCH GRANTEES!

The American Epilepsy Society takes pride in growing the epilepsy talent pipeline. More than 85% of our research grants are committed to early career scientists. AES grants are made possible through the generosity of AES members, philanthropic donors, industry supporters, and non-profit partners.

Susan S. Spencer, MD, Clinical Research Training Fellowship in Epilepsy
Supported by AES, Epilepsy Foundation, American Brain Foundation, and the American Academy of Neurology Institute
2018-2019: Hiroki Nariai, MD, Ronald Reagan UCLA Medical Center
2019-2020: Lisseth Burbano, MD, The Florey Institute of Neuroscience

AES Postdoctoral Research Fellowships
Justin Botterill, PhD, Nathan S. Kline Institute
Jose Carlos Gonzalez, PhD, The University of Alabama at Birmingham
Andrea Hartzell, PhD, The Scripps Research Institute
Vanessa Nieto Estevez, PhD, The University of Texas at San Antonio, supported by the Lennox and Lombroso Fund
Martha Steng, PhD, The University of Minnesota – Twin Cities, supported by the Lennox and Lombroso Fund

AES/PERF Pediatric Postdoctoral Research Fellowship
Equally funded by AES and the Pediatric Epilepsy Research Foundation
Heather Born, PhD, Baylor College of Medicine

AES/LGSF Postdoctoral Research Fellowship
Funded at 10% by the Lennox Gastaut Syndrome Foundation
Zin-Juan Klaft, MD, Doctorate, Tufts University, supported by the Lennox and Lombroso Fund

AES Research Training Fellowship for Clinicians
Nicholas Gregg, MD, Mayo Clinic
Claude Steriade, MD, New York University School of Medicine
Anusha Yeshokumar, MD, Icahn School of Medicine at Mount Sinai

AES/EF Research and Training Fellowship for Clinicians
Funded by the Epilepsy Foundation
Behnaz Esmaeili, MD, Brigham and Women’s Hospital

AES/Wishes for Elliott Research and Training Fellowship for Clinicians
Funded at 15% by Wishes for Elliott
Ranmal Samarasinghe, MD, PhD, UCLA

AES Predoctoral Fellowships
Emily Acton, BS, University of Pennsylvania
Christin Godale, BS, Cincinnati Children’s Hospital Medical Center
Alexandra Petrucci, BS, University of Iowa
Lindsey Shapiro, BS, Emory University

AES Junior Investigator Awards
Melissa Barker-Halinski, PhD, University of Washington
Rani Sarkis, MD, MSc, Brigham and Women’s Hospital
Aimee Smith, PhD, East Carolina University
Olga Taraschenko, MD, PhD, University of Nebraska Medical Center

AES EF Junior Investigator Awards
Funded by the Epilepsy Foundation
Alicia Guemez-Gamboa, PhD, Northwestern University, Chicago Campus
William Nobis, MD, PhD, Vanderbilt University Medical Center

Epilepsy Study Consortium Mini-Grants
Funded by the ESC
Chris McGraw, MD, PhD, Children’s Hospital Boston
Mauricio Villamar, MD, Brigham and Women’s Hospital

To make a gift supporting research, visit the AES website at aesnet.org/donate

2019 AES Fellows Program

Welcome 2019 Fellows! More than 100 clinical and postdoctoral fellows have been given support to attend the 2019 Annual Meeting, with expanded programming and mentorship this year.

Participants will:
• Learn about advances in care and research
• Engage with expert mentors and peers
• Participate in newly expanded sessions on career skills and career pathways

The 2019 AES Fellows Program is supported in part by educational grants from:
• Upsher-Smith Laboratories, LLC
• Greenwich Biosciences, Inc.
• Sunovion Pharmaceuticals Inc.
• Supernus Pharmaceuticals, Inc.
• SK Life Science, Inc.
APPLICATIONS OPEN FOR 2020 AES GRANTS

APPLY TODAY!

Thanks to the generosity of AES members, donors, and nonprofit partners, AES is one of the largest non-governmental funders for those starting careers in epilepsy research. 85% of our research grant dollars support early career scientists working across the full spectrum of epilepsy research.

Details at aesnet.org/research

### ONE-YEAR EARLY CAREER FELLOWSHIPS

<table>
<thead>
<tr>
<th>Amount</th>
<th>Fellowship Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>$30,000</td>
<td>Predoctoral Research Fellowships (supported in part by LivaNova)</td>
</tr>
<tr>
<td>$50,000</td>
<td>Postdoctoral Research Fellowships</td>
</tr>
<tr>
<td>$50,000</td>
<td>Junior Investigator Research Awards</td>
</tr>
<tr>
<td>$50,000</td>
<td>Research and Training Fellowship for Clinicians</td>
</tr>
<tr>
<td>$15,000</td>
<td>Epilepsy Study Consortium Mini-Grants (applications due Jan 31, 2020)</td>
</tr>
<tr>
<td>$50,000</td>
<td>Junior Investigator Research Awards</td>
</tr>
<tr>
<td>$50,000</td>
<td>Research and Training Fellowship for Clinicians, funded by AES and Pediatric Epilepsy Research Foundation</td>
</tr>
</tbody>
</table>

### OTHER GRANT PROGRAMS

<table>
<thead>
<tr>
<th>Amount</th>
<th>Program Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to $50,000</td>
<td>NEW FOR 2020 – Infrastructure Grants</td>
</tr>
<tr>
<td>$150,000</td>
<td>Susan S. Spencer Clinical Research Training Fellowship (supported in part by Upsher-Smith Laboratories, LLC)</td>
</tr>
<tr>
<td>Up to $35,000</td>
<td>Epilepsy Foundation Clinical Research Apprenticeship</td>
</tr>
<tr>
<td>Up to $20,000</td>
<td>Seed Grants (supported in part by Upsher-Smith Laboratories, LLC)</td>
</tr>
<tr>
<td>Various amounts</td>
<td>Research and Training Workshop Grants</td>
</tr>
</tbody>
</table>

AES is proud to partner with these non-profit organizations to support highly reviewed proposals that align with the organization’s research priorities.
Congratulations! AES selects recipients for the following travel awards based on the scientific merit of submitted abstracts.

**Suzanne and Peter Berry International Travel Award**

This award recognizes and honors two young investigators conducting clinical neuroscience research related to epilepsy in Asia, Africa, Oceania, the Middle East, or Latin America. Awardees receive a $1,000 travel stipend and complimentary meeting registration.

<table>
<thead>
<tr>
<th>CONTACT AUTHOR</th>
<th>ABSTRACT TITLE</th>
<th>POSTER/PLATFORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew Neal, MBBS, PhD</td>
<td>Epileptogenicity in Tuberous Sclerosis Complex: A Stereo-Electroencephalography Study</td>
<td>1.143</td>
</tr>
<tr>
<td>Tomotaka Ishizaki, MD</td>
<td>Modified Distributed Source Analysis of Magnetoencephalography Improves Focus Detection in Focal Epilepsy, as Validated by Comparison with Surgical Outcomes</td>
<td>2.038</td>
</tr>
</tbody>
</table>

**Grass Foundation Young Investigator Award**

This award recognizes and honors outstanding young investigators conducting research in basic or clinical neuroscience related to epilepsy. The Grass Foundation and AES combine resources to provide awardees with a $1,000 travel stipend and complimentary meeting registration.

<table>
<thead>
<tr>
<th>CONTACT AUTHOR</th>
<th>ABSTRACT TITLE</th>
<th>POSTER/PLATFORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert McGovern, MD</td>
<td>Hemispherectomy in Adults and Adolescents: Seizure and Functional Outcomes in 47 Patients</td>
<td>1.333</td>
</tr>
<tr>
<td>Rima El Atrache, MD</td>
<td>Photoplethysmography Detects Blood Volume Pressure Changes in the Pre-ictal Period in Patients with Focal Impaired Awareness Seizures</td>
<td>1.102</td>
</tr>
<tr>
<td>Patricia Fogerson, PhD</td>
<td>The Absence Seizure Envelope Is Built on Thalamocortical Output</td>
<td>1.057</td>
</tr>
<tr>
<td>Laura Montier, MS, PhD</td>
<td>Pilot Study on Gene Discovery in Somatic Mutations in Brain Lesions from Stereotactically Placed Depth Electrodes</td>
<td>1.387</td>
</tr>
<tr>
<td>Kathryn Snyder, BE</td>
<td>Automated Identification of Focal Cortical Dysplasia on Structural MRI Using a Novel Machine Learning Approach</td>
<td>1.253</td>
</tr>
<tr>
<td>Eleonora Tamilia, PhD</td>
<td>Pre-Surgical Electric and Magnetic Source Imaging Of Scalp-Recorded Ripples in Children With Epilepsy: Concordance with Intracranial EEG and Epileptogenic Zone</td>
<td>1.103</td>
</tr>
<tr>
<td>Ravnoor Gill, MSc</td>
<td>Detection of MRI-negative Focal Cortical Dysplasia Using Uncertainty-informed Bayesian Deep Learning: A Multicentre Validation Study</td>
<td>1.254</td>
</tr>
</tbody>
</table>
**Young Investigator Award**

This award recognizes young investigators conducting basic, translational, or clinical epilepsy research. Awardees receive a $1,200 travel stipend.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title of Presentation</th>
<th>Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrar Omar Al-Faraj, MD</td>
<td>Factors Affecting Breastfeeding Patterns in Women with Epilepsy</td>
<td>1.246</td>
<td></td>
</tr>
<tr>
<td>Ganna Balagura, MD</td>
<td>Sineups: A Novel Therapeutic Strategy for STXBP1 Encephalopathy Based on Non-Coding RNA: Preliminary In Vitro Studies</td>
<td>1.045</td>
<td>D.05</td>
</tr>
<tr>
<td>Christina Casnar, PhD</td>
<td>Characterizing Children with Epilepsy and Autism without Intellectual Disability</td>
<td>1.284</td>
<td>F.01</td>
</tr>
<tr>
<td>Divyanshu Dubey, MBBS</td>
<td>Intravenous Immunoglobulins in LGI1/CASPR2-Antibody Associated Epilepsies</td>
<td>1.292</td>
<td></td>
</tr>
<tr>
<td>Ezequiel Gleichgerrcht, MD</td>
<td>Dissociating Amygdalohippocampal vs. Parahippocampal Contributions to Verbal Declarative Memory: Lesion-Symptom Mapping in Patients with Mesial Temporal Lobe Epilepsy</td>
<td>1.372</td>
<td></td>
</tr>
<tr>
<td>Hernan Gonzalez, MS</td>
<td>Nucleus Basalis MRI Functional Connectivity Abnormalities in Patients with Temporal Lobe Epilepsy</td>
<td>1.267</td>
<td>B.06</td>
</tr>
<tr>
<td>Kanupriya Gupta, BA</td>
<td>Localization of Epileptogenic Zones Using Network Analysis of Resting-State Stereo-EEG Data</td>
<td>1.190</td>
<td></td>
</tr>
<tr>
<td>Lawrence Hsieh, PhD</td>
<td>Dysplastic Neurons Mediate Epileptogenesis in Tuberous Sclerosis Complex</td>
<td>1.015</td>
<td></td>
</tr>
<tr>
<td>Harper Kaye, BA</td>
<td>Attraction of the Motor Map Toward a Seizure Focus</td>
<td>1.159</td>
<td>C.07</td>
</tr>
<tr>
<td>Marissa Kellogg, MD, MPH</td>
<td>Increased Risk of Suicide-Related Behaviors (SRB) in US Veterans with Epilepsy and Conversion Disorder Diagnoses</td>
<td>1.285</td>
<td></td>
</tr>
<tr>
<td>Wesley Kerr, MD, PhD</td>
<td>An Evidence-based Algorithm to Triage Patients with Probable Psychogenic Nonepileptic Seizures Towards Early Video-EEG</td>
<td>1.204</td>
<td>F.09</td>
</tr>
<tr>
<td>Alexander Ksendzovsky, MD, PhD</td>
<td>A Feedforward Mechanism for Epilepsy Regulated by Lactate Dehydrogenase A</td>
<td>1.002</td>
<td>A.05</td>
</tr>
<tr>
<td>Alice Lam, MD, PhD</td>
<td>Linking the Electrical and Clinical Features of Hyperexcitability in Alzheimer’s Disease</td>
<td>1.147</td>
<td>C.08</td>
</tr>
<tr>
<td>Hyo Lee, DO</td>
<td>MRI Structural Heterogeneity Within and Across Focal Cortical Dysplasia: A Data-driven Approach Based on Consensus Clustering</td>
<td>1.255</td>
<td></td>
</tr>
<tr>
<td>Lin Li, PhD</td>
<td>Electrograph Substrates of Altered Brain Networks During the Latent Period of Epileptogenesis</td>
<td>1.033</td>
<td>A01</td>
</tr>
<tr>
<td>Archana Proddutur, PhD</td>
<td>Dentate Parvalbumin-expressing Axo-axonic Cells Are Functionally Isolated Early After Experimental Epilepsy</td>
<td>1.003</td>
<td></td>
</tr>
<tr>
<td>Corey Ratcliffe, BSc</td>
<td>Cognitive Impairment in Juvenile Absence Epilepsy: A Neuropsychological Investigation of Patients and Their Unaffected Siblings</td>
<td>1.371</td>
<td>F.02</td>
</tr>
<tr>
<td>Mani Ratnesh Sandhu, MBBS</td>
<td>Abnormal Synchronization of Glutamate and Branched-chain Amino Acids in the Epileptic Hippocampus of an Animal Model of Mesial Temporal Lobe Epilepsy</td>
<td>1.058</td>
<td>A.08</td>
</tr>
<tr>
<td>Aarti Sathyanarayana, PhD</td>
<td>Measuring Drug Effects on Brain Dynamics Through Electroencephalography</td>
<td>1.145</td>
<td>C.05</td>
</tr>
<tr>
<td>Egidio Spinelli, MD</td>
<td>MAST3 as a Novel Cause of Developmental and Epileptic Encephalopathies</td>
<td>1.388</td>
<td>D.03</td>
</tr>
</tbody>
</table>
AWARD RECIPIENTS

Nurse and Advanced Practice Provider Travel Award

This award recognizes and honors outstanding young investigators with nursing degrees who are conducting epilepsy research. Awardees receive a $1,000 travel stipend.

Sandra Dewar, RN, APRN, FAES  How Do Patients with Drug-resistant Epilepsy Perceive the Severity of Their Illness?  1.396
Colleen Gagnon, RN, BSN, CNRN  Medication Education for Safe Caregiver Administration in an Ambulatory Epilepsy Clinic at Boston Children's Hospital: A Quality Improvement Initiative  1.397
Patricia McGoldrick, NP, MSN, MPA  Brain-responsive Neurostimulation (RNS System, NeuroPace, Inc.) in Pediatric Patients  3.355

Jack M. Pellock Pediatric Travel Award

The John (Jack) M. Pellock Award for Pediatric Excellence recognizes and honors outstanding young investigators conducting clinical research in pediatric epilepsy. Awardees will receive a $1,000 travel stipend and complimentary meeting registration.

Emma Macdonald-Laurs, MBChB  Does the First Hour of Continuous Electroencephalography (cEEG) Monitoring in At-risk Neonates Accurately Predict Subsequent Seizures?  1.135
Ramya Ghantasala, MD  Is Benign Rolandoic Epilepsy a Focal or Generalized Epilepsy Syndrome?  3.186 | E.01

Kimford J. Meador Research in Women with Epilepsy Award

This award recognizes an AES member who has done important and recently published research which advances the care of women with epilepsy. Awardee receives a $5,000 travel stipend. This award is sponsored by My Epilepsy Story.

Deepti Zutshi, MD  Pregnancy Outcomes in African American Women with Epilepsy  3.240

Support Epilepsy Research with a Donation to AES

Three Easy Steps

1. Take out your phone and text AES to 56651
2. Enter the amount you want to give. Hit SEND. You will receive a link to make your donation.
3. Fill in your information and click SUBMIT to complete your donation.
Questions? Contact Susan Oliver at soliver@aesnet.org

BIG IDEAS, READY FOR PRIME TIME!

Introducing the AES Thought Leader Theater

Don’t miss it when you walk into the exhibit hall!

Check out the first ever AES Thought Leader Theater. It’s a professional television studio on the floor, designed to capture big ideas around epilepsy and share them with stakeholders through professionally-produced videos.

Grab a seat in the studio audience as non-profit leaders are interviewed about their efforts on behalf of patients, caregivers, and families. Pause for a moment to watch the finished videos in the exhibit hall lobby. Stop by the Epilepsy Resource Area to thank these leaders for their important work.

Videos are provided to non-profit organizations at no cost to use in their outreach and advocacy efforts. Check the recording schedule outside the Theater.

The 2019 AES Thought Leader Theater is generously supported by:

Eisai
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Recognition Amount</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BENEFACTOR LEVEL</strong></td>
<td>$500,000+</td>
<td>Eisai Inc.</td>
</tr>
</tbody>
</table>
| **LEADER LEVEL**      | $250,000 - $499,999| UCB, Inc.  
Greenwich Biosciences, Inc.  
Sunovion Pharmaceuticals Inc. |
| **PARTNER LEVEL**     | $100,000 - $249,999| SK Life Science, Inc.  
LivaNova  
Upsher-Smith Laboratories, LLC  
Supernus Pharmaceuticals Inc. |
| **SUPPORTER LEVEL**   | $50,000 - $99,999  | Zogenix, Inc.  
NeuroPace, Inc.  
Medtronic  
BioMarin Pharmaceutical Inc.  
Nihon Kohden America, Inc.  
Neurelis, Inc. |
| **CONTRIBUTOR LEVEL** | $25,000 - $49,999  | Aquestive Therapeutics, Inc.  
Mallinckrodt Pharmaceuticals |
| **ADVOCATE LEVEL**    | $10,000 - $24,999  | Epilepsy Foundation  
Lundbeck  
Ceribell  
empatica inc.  
Cadwell Industries, Inc.  
Neuralynx, Inc. |
| **PATRON LEVEL**      | $5,000 - $9,999    | Lifelines Neurodiagnostics Systems, Inc.  
Texas Children’s Hospital  
Charleston Area Medical Center  
MEGIN Oy  
Ad-Tech Medical Instrument Corp.  
Moberg ICU Solutions  
PMT Corporation  
Renishaw Inc.  
Philips Neuro |

*List is current as of October 25, 2019. See Supporter signs at the Annual Meeting or check the Mobile App for updated recognition levels.*
<table>
<thead>
<tr>
<th>Session Name</th>
<th>FRIDAY</th>
<th>SATURDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC SCIENCE SKILLS WORKSHOPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLINICAL SKILLS WORKSHOPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INVESTIGATORS WORKSHOPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LECTURES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Judith Hoyer Lecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dialogues to Transform Epilepsy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lombroso Lecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSTER SESSIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROFESSIONAL DEVELOPMENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCIENTIFIC EXHIBITS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIG SESSIONS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYMPOSIA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Course</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Fundamentals Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Best Practices in Clinical Epilepsy Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epilepsy Specialist Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epilepsy Therapies Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot Topics Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merritt-Putnam Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pediatric State of the Art Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presidential Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translational Research Symposium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDUSTRY SATELLITE SYMPOSIA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following programs offer CME and/or CE credit. Please see daily schedule for program details. Consult meeting.aesnet.org for information about credit claim.

**Career Skills | Caring for a Diverse Patient Population**  
Friday, December 6 | 8:30 – 9:45 AM  
Convention Center, Rooms 339 – 342, Level 300  
[CME & CE]

**Epilepsy Specialist Symposium | Interictal Epileptiform Activity and Its Meaning**  
Friday, December 6 | 8:30 – 11:30 AM  
Convention Center, Ballroom III, Level 400  
[CME & CE]

**Annual Fundamentals Symposium | Psychogenic Nonepileptic Seizures: From Challenges to Practical Management**  
Friday, December 6 | 12:30 – 3:00 PM  
Convention Center, Ballroom III, Level 400  
[CME & CE]

**Epilepsy Fellowship Program Director Meeting**  
Friday, December 6 | 1:00 – 3:00 PM  
Convention Center, Room 316, Level 300  
[CME]

**Special Interest Group | Pregnancy Registries: Emerging Data from The International Pregnancy Registries and Neurodevelopmental Studies**  
Friday, December 6 | 1:00 – 3:00 PM  
Convention Center, Rooms 318 – 320, Level 300  
[CME & CE]

**Spanish Symposium | Neuromodulation for Treatment of Medically-refractory Epilepsy**  
Friday, December 6 | 3:30 – 6:00 PM  
Convention Center, Rooms 339 – 342, Level 300  
[CME & CE]

**17th Judith Hoyer Lecture in Epilepsy | Advances in the Diagnosis and Management of Neonatal Seizures**  
Friday, December 6 | 4:00 – 5:30 PM  
Convention Center, Ballroom III, Level 400  
[CME]

**Special Interest Group | Neuropsychology: Cognitive Rehabilitation in Epilepsy**  
Friday, December 6 | 6:00 – 7:30 PM  
Convention Center, Rooms 345 and 346, Level 300  
[CME & CE]

**Special Interest Group | Children’s Hour: Big Debates Over Small Matters in Pediatric Epilepsy**  
Saturday, December 7 | 7:00 – 8:30 AM  
Convention Center, Rooms 337 and 338, Level 300  
[CME & CE]

**Special Interest Group | Ictal Semiology: Case Studies in Seizure Semiology**  
Saturday, December 7 | 7:00 – 8:30 AM  
Convention Center, Rooms 339 – 342, Level 300  
[CME & CE]

**Presidential Symposium | Evidence-Based Treatment for Women with Epilepsy During Reproductive Years: 15 Years of Progress and Future Directions**  
Saturday, December 7 | 8:45 – 11:45 AM  
Constitution Center, Ballroom III, Level 400  
[CME & CE]

**Best Practices in Clinical Epilepsy | Challenges in the Care of Patients with Intractable Epilepsy**  
Saturday, December 7 | 5:30 – 8:00 PM  
Constitution Center, Ballroom III, Level 400  
[CME & CE]

**Epilepsy Therapies Symposium | Neurostimulation for Epilepsy: Which, When, Where and How?**  
Saturday, December 7 | 5:30 – 8:00 PM  
Constitution Center, Ballroom III, Level 400  
[CME & CE]

---

**8th Annual AES Wine Tasting and Silent Auction**

**Saturday, December 7, 7:00 - 10:00 PM**  
The Center Club, TransAmerica Building  
17th Floor | 100 Light Street  
$175 per ticket

Sample extraordinary wines from around the world paired with innovative hors d’oeuvres. All proceeds benefit the Lennox and Lombroso Trust and the Susan S. Spencer Fund, which support AES research programs.

Tickets available at the AES registration desk and at meeting.aesnet.org/wine-event

Limited to 200 people.
<table>
<thead>
<tr>
<th>Event</th>
<th>Date and Time</th>
<th>Location</th>
<th>CE Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translational Research Symposium</td>
<td>Saturday, December 7</td>
<td>5:30 – 8:00 PM</td>
<td>Convention Center, Room 316, Level 300</td>
</tr>
<tr>
<td>Annual Course</td>
<td>Diagnosis and Management of Epilepsy as a Network Disorder</td>
<td>Sunday, December 8</td>
<td>8:45 AM – 5:15 PM</td>
</tr>
<tr>
<td>Investigator Workshop</td>
<td>Electrographic Seizures in Acute Brain Injury: Prediction, Significance, and Association with Epileptogenesis</td>
<td>Sunday, December 8</td>
<td>3:15 – 4:45 PM</td>
</tr>
<tr>
<td>Special Interest Group</td>
<td>Psychosocial Comorbidities: Psychosis and Epilepsy</td>
<td>Sunday, December 8</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Special Interest Group</td>
<td>Psychogenic Nonepileptic Seizures (PNES): Where is the Silver Lining in Psychogenic Non-epileptic Seizures? Mortality, Disability, Symptom Substitution, Variable Treatment Responses</td>
<td>Monday, December 9</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Pediatric State of the Art Symposium</td>
<td>Emergency Seizure Management: Smarter Systems Stop Seizures Sooner</td>
<td>Monday, December 9</td>
<td>8:45 – 11:45 AM</td>
</tr>
<tr>
<td>Merritt-Putnam Symposium</td>
<td>Neuroinflammation in Epilepsy</td>
<td>Monday, December 9</td>
<td>5:45 – 8:15 PM</td>
</tr>
<tr>
<td>Special Interest Group</td>
<td>Epilepsy Surgery: Great and Desperate Cures</td>
<td>Tuesday, December 10</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Hot Topics Symposium</td>
<td></td>
<td>Tuesday, December 10</td>
<td>8:45 – 10:45 AM</td>
</tr>
<tr>
<td>Scientific Symposium</td>
<td>Pharmacogenomics in Epilepsy: Existing and Emerging Opportunities for Intervention</td>
<td>Tuesday, December 10</td>
<td>8:45 – 10:45 AM</td>
</tr>
</tbody>
</table>

**NEW!**

**AES Epilepsy Fellowship In-Service Training Examination (EPIFITE)**

Coming March 2020

This epilepsy-specific examination is designed to prepare fellows for the October 2020 ABPN subspecialty certification in epilepsy medicine. The AES Epilepsy In-Service Training Exam is also a valuable tool for program directors to benchmark fellows’ performance against other participating fellowship programs.

Sign up to receive more information or register at aesnet.org/in-service

---

**Thank you for your generosity!**

Many thanks to AES members and supporters who further the Society's mission with their philanthropic gifts. AES recognizes and deeply appreciates the generosity of all donors and contributors.

**PLANNED GIFTS**
Make a lasting impact during and beyond your lifetime

**NAMED FUNDS**
Support fellowships, research grants and travel awards

**ANNUAL FUND**
Put your dollars to work today where the need is greatest

Learn more and donate at aesnet.org/impact
Make the most of what AES has to offer

Join our diverse and dynamic community of more than 4,000 epilepsy professionals working together to treat and cure epilepsy. This is where you belong.

AES Members receive:

- Member newsletters, announcements, and offers
- Significant discounts on annual meeting registration and educational programs
- A free subscription to *Epilepsy Currents*, the highly-rated commentary and literature review journal from AES—providing members with a quick and easy to way keep up-to-date on epilepsy
- A free subscription to *Epilepsia*, the research journal of the ILAE*
- Listing in the AES Find-A-Doctor online directory*
- Access to AES Connect, our exclusive members-only community
- Information on funding opportunities
- Consideration for fellowships, travel awards, and research grants
- … and much more!

*Benefit of select membership types

Learn more at [aesnet.org/membership](http://aesnet.org/membership) or come visit our membership team at the Member Center in the registration area!
<table>
<thead>
<tr>
<th>SIG Name</th>
<th>Date/Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Mechanisms and Neuroscience: Tauopathies and Epileptogenesis: Cause or Correlation?</td>
<td>Saturday, December 7</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Children's Hour: Big Debates Over Small Matters in Pediatric Epilepsy</td>
<td>Saturday, December 7</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Clinical Epilepsy for the Advanced Practice Provider: Case Review: Challenging Management Cases in the Epilepsy Clinic</td>
<td>Friday, December 6</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Cognitive and Behavioral Interventions for Epilepsy: Knowledge Translation in CBTs for Epilepsy: Dissemination, Implementation, and Treatment Fidelity</td>
<td>Tuesday, December 10</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Critical Care Epilepsy: Quantitative and Automated CEEG Analysis</td>
<td>Monday, December 9</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Data Science in Epilepsy: Effective Data Visualization</td>
<td>Saturday, December 7</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Dietary Therapies for Epilepsy: Patient Monitoring and Biological Mechanisms: Point-Counterpoint Discussion</td>
<td>Monday, December 9</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>EEG: The Future of the Stat EEG</td>
<td>Friday, December 6</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Engineering and Neurostimulation: Focusing on Fast Oscillations: New Insights and Controversies</td>
<td>Sunday, December 8</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Epidemiology: Epidemiology in Action: Findings that Change Practice</td>
<td>Friday, December 6</td>
<td>1:30 – 3:00 PM</td>
</tr>
<tr>
<td>Epilepsy and Aging: Medical and Surgical Outcomes in Older Adults with Epilepsy</td>
<td>Saturday, December 7</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Epilepsy Education: Building a Career as an Epilepsy Educator</td>
<td>Monday, December 9</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Epilepsy Surgery: Great and Desperate Cures</td>
<td>Tuesday, December 10</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Genetics: Precision Medicine for Genetic Epilepsies</td>
<td>Friday, December 6</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Global Health: Fostering Collaboration Within Global Health</td>
<td>Friday, December 6</td>
<td>1:30 – 3:00 PM</td>
</tr>
<tr>
<td>Ictal Semiology: Case Studies in Seizure Semiology</td>
<td>Saturday, December 7</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Intractable Generalized Epilepsy: From Genetic Testing to Surgical Approach</td>
<td>Monday, December 9</td>
<td>9:00 – 10:30 AM</td>
</tr>
<tr>
<td>MEG/MSI: Indications and Contraindications for MEG in Epilepsy Patients</td>
<td>Friday, December 6</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Neonatal Seizures: Outcomes Following Neonatal Seizures</td>
<td>Sunday, December 8</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Neuroendocrinology: Going ‘Downstream’ of Endogenous Steroids for New Therapeutic Approaches</td>
<td>Sunday, December 8</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>Neuropsychology: Cognitive Rehabilitation in Epilepsy</td>
<td>Friday, December 6</td>
<td>6:00 – 7:30 PM</td>
</tr>
<tr>
<td>NIH and Non-Profit Research Resources/Jr Investigator Workshop: How are Grants Reviewed and What Makes a Successful Proposal?</td>
<td>Tuesday, December 10</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Pediatric Epilepsy Case Discussions: Diagnostic and Treatment Challenges</td>
<td>Tuesday, December 10</td>
<td>7:00 – 8:30 AM</td>
</tr>
<tr>
<td>Practice Management: Multidisciplinary Care Models in Seizures and Epilepsy</td>
<td>Monday, December 9</td>
<td>9:00 – 10:30 AM</td>
</tr>
<tr>
<td>Pregnancy Registries: Emerging Data from the International Pregnancy Registries and Neurodevelopmental Studies</td>
<td>Friday, December 6</td>
<td>1:30 – 3:00 PM</td>
</tr>
<tr>
<td>Private Practice Epilepsy: The Shifting Sands of Epilepsy: Navigating Changes in Reimbursement</td>
<td>Friday, December 6</td>
<td>1:30 – 3:00 PM</td>
</tr>
</tbody>
</table>

**Note:** Due to safety and fire regulations, doors will be closed to any room that fills to capacity.
SPECIAL INTEREST GROUPS (SIG) AT 2019 AES ANNUAL MEETING

**Professional Wellness in Epilepsy Care**
Monday, December 9 | 7:00 - 8:30 AM
Convention Center, Rooms 347 and 348, Level 300

**Psychogenic Nonepileptic Seizures (PNES): Where is the Silver Lining in Psychogenic Non-epileptic Seizures? Mortality, Disability, Symptom Substitution, Variable Treatment Responses**
Monday, December 9 | 7:00 – 8:30 AM
Convention Center, Rooms 343 and 344, Level 300
CME & CE

**Psychosocial Comorbidities: Psychosis and Epilepsy**
Sunday, December 8 | 6:00 – 7:30 PM
Convention Center, Rooms 347 and 348, Level 300
CME & CE

**Quality and Safety: Measuring Quality of EEG Interpretation**
Tuesday, December 10 | 7:00 – 8:30 AM
Convention Center, Rooms 347 and 348, Level 300

**Scientific Publishing: Class IV Studies, Meta-analyses, Meta-syntheses Scope, and limitations**
Saturday, December 7 | 7:00 – 8:30 AM
Convention Center, Room 324, Level 300

**Seizure and Cerebrovascular Disease: Review of the Latest Updates on Epidemiology and Management of Post-Stroke Seizures**
Sunday, December 8 | 6:00 – 7:30 PM
Convention Center, Rooms 337 and 338, Level 300

**Seizures in Autoimmune Encephalitis: Seizures and Epilepsy Accompanying Neuroimmunological Disorders**

---

**A Warm AES Welcome to Advanced Practice Providers!**

We’re thrilled to have you with us in Baltimore.

AES is expanding its programs tailored to the interests and needs of APPs working in epilepsy.

Check out these events. Find details and locations in the AES mobile app or in this program book.

- **Friday, December 6, 10:00 AM:** Career Pathways Panel, Interprofessional Careers Emphasis (Convention Center, Rooms 337 and 338, Level 300)
- **Friday, December 6, 1:30 PM:** Talkback: How Can AES Support Career Development of Advanced Practice Providers? (Member Center, Pratt Street Lobby)
- **Friday, December 6, 6:00 PM:** SIG: Clinical Epilepsy for the Advanced Practice Provider (Convention Center, Room 321, Level 300)
- **Friday, December 6, 7:30 PM:** Advanced Practice Providers Reception (APPs by invite only—visit Member Center to reserve your spot and learn more)
- **Saturday, December 7, 2:15 PM:** Best Practices in Clinical Epilepsy Symposium (Convention Center, Room 316, Level 300)
- **Monday, December 9, 6:00 PM:** CDC Public Health Workshop, Successful Strategies to Facilitate Transition of Youth with Epilepsy into Adult Health Care (Convention Center, Rooms 349 and 350, Level 300)

**APPs in Epilepsy: This is where you belong.**

AES Advanced Practice Provider (APP) activities at the AES Annual Meeting are supported in part by SK Life Science, Inc.
POSTER SCHEDULES

There are three ways to access abstracts presented during these poster sessions:
1. Pick up the guide to poster abstracts, available in the registration area
2. Visit aesnet.org/abstracts for our searchable abstract database
3. Download the AES annual meeting app with all abstracts at meeting.aesnet.org/mobile-app

Numbers shown indicate the poster hall board assignment. Refer to aesnet.org/abstracts for details.

Convention Center, Hall E, Level 100

Authors present Saturday and Sunday 12:00 – 2:00 PM, and Monday 12:00 – 1:45 PM

<table>
<thead>
<tr>
<th>Saturday, December 7 Poster Session 1 12:00 – 6:00 PM</th>
<th>Sunday, December 8 Poster Session 2 10:00 AM – 4:00 PM</th>
<th>Monday, December 9 Poster Session 3 8:00 AM – 2:00 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Mechanisms ........................................... 1.001 – 1.077</td>
<td>........................................... 2.001 – 2.091</td>
<td>........................................... 3.001 – 3.077</td>
</tr>
<tr>
<td>Neurophysiology ................................. 1.125 – 1.201</td>
<td>........................................... 2.148 – 2.179</td>
<td>........................................... 3.115 – 3.185</td>
</tr>
<tr>
<td>Comorbidities (Somatic and Psychiatric) ... 1.283 – 1.291</td>
<td>........................................... 2.338 – 2.340</td>
<td>........................................... 3.338 – 3.342</td>
</tr>
<tr>
<td>Surgery .................................. 1.331 – 1.369</td>
<td>........................................... 2.372 – 2.379</td>
<td>........................................... 3.413 – 3.426</td>
</tr>
<tr>
<td>Dietary .................................. 1.367 – 1.383</td>
<td>........................................... 2.380 – 2.384</td>
<td>........................................... 3.413 – 3.426</td>
</tr>
<tr>
<td>Genetics ................................ 1.381 – 1.393</td>
<td>........................................... 2.400 – 2.426</td>
<td>........................................... 3.427 – 3.457</td>
</tr>
<tr>
<td>Public Health .................................. 1.410 – 1.426</td>
<td>........................................... 2.450 – 2.458</td>
<td></td>
</tr>
</tbody>
</table>

AES CAREER FAIR
at the 2019 AES Annual Meeting
Inside the exhibit hall, near the Innovation Pavilions
Saturday, December 7, 2019
12:00 – 6:00 PM EST
Sunday, December 8, 2019
10:00 AM – 4:00 PM EST

Job Seekers: This is an opportune time to meet with top employers in the epilepsy and neurology field. Network with reputable employers and gain knowledge of new opportunities.

Employers: Meet face-to-face with experienced epilepsy and neurology professionals from around the country. This recruiting event is exclusively for AES members and meeting attendees. This is a once a year opportunity to recruit the nation’s top epilepsy and neurology talent.

Visit jobs.aesnet.org to register today!

Attend the AES Career Fair at the 2019 AES Annual Meeting!

The career fair provides a unique opportunity to meet with top employers face-to-face while in Baltimore. These employers will be seeking to fill roles in epilepsy, neurology, and sub-specialties of these fields.
SCIENTIFIC EXHIBITS

These exhibits will provide meeting attendees an opportunity to stay up-to-date on the latest epilepsy-related research. Authors will be present throughout the exhibits.

**Sunday, December 8, 8:00 AM – 5:00 PM**

BioMarin Scientific Exhibit in Collaboration with Invitae, Xenon and Stoke: Genetic Epilepsies: Updates in the Science and Diagnosis

**BioMarin Pharmaceutical Inc.**
Convention Center, Rooms 318 – 319, Level 300

---

**Sunday, December 8, 8:00 – 11:00 AM**

Research Updates from Eisai

**Eisai Inc.**
Convention Center, Rooms 324 – 326, Level 300

Low-Dose Fenfluramine: An Update on Mechanisms, Efficacy, and Safety in the Treatment of Epileptic Encephalopathies

**Zogenix, Inc.**
Convention Center, Rooms 321 – 323, Level 300

---

**Sunday, December 8, 2:00 – 5:00 PM**

SK life science Special Scientific Exhibit and Posters

**SK Life Science, Inc.**
Convention Center, Rooms 321 – 323, Level 300

---

**Monday, December 9, 8:00 – 11:00 AM**

Managing Seizure Clusters: Unmet Needs and Emerging Approaches

**Aquestive Therapeutics, Inc.**
Convention Center, Rooms 318-319, Level 300

Epidiolex®: The Only FDA-Approved Cannabidiol Treatment

**Greenwich Biosciences, Inc.**
Convention Center, Rooms 324-326, Level 300

UCB Commitment to Epilepsy Care

**UCB, Inc.**
Convention Center, Rooms 321-323, Level 300

---

**Monday, December 9, 2:00 – 5:00 PM**

Clinical Development Program for Valtoco™ (diazepam nasal spray, NRL-1): From Concept to NDA

**Neurelis, Inc.**
Convention Center, Rooms 321-323, Level 300
<table>
<thead>
<tr>
<th>Thursday, December 5</th>
<th>Friday, December 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Peer Support Best Practices</strong></td>
<td><strong>Registration</strong></td>
</tr>
<tr>
<td>Workshop</td>
<td>6:30 AM – 5:00 PM</td>
</tr>
<tr>
<td>8:00 AM – 5:00 PM</td>
<td><strong>Convention Center, Pratt Street Lobby, Level 300</strong></td>
</tr>
<tr>
<td><strong>Co-hosted by CNF and AES</strong></td>
<td><strong>CME &amp; CE</strong></td>
</tr>
<tr>
<td><strong>Advance registration required</strong></td>
<td><strong>Convention Center, Ballroom III, Level 400</strong></td>
</tr>
<tr>
<td><strong>Registration</strong></td>
<td><strong>10:00 – 11:15 AM</strong></td>
</tr>
<tr>
<td>5:00 — 7:00 PM</td>
<td><strong>Career Pathways Panel: Clinical Care Emphasis</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Pratt Street Lobby, Level 300</strong></td>
<td><strong>Convention Center, Rooms 339 – 342, Level 300</strong></td>
</tr>
<tr>
<td><strong>Friday, December 6</strong></td>
<td><strong>Career Pathways Panel: Interprofessional Careers Emphasis</strong></td>
</tr>
<tr>
<td><strong>Registration</strong></td>
<td><strong>Career Pathways Panel: Research Emphasis</strong></td>
</tr>
<tr>
<td>6:30 AM – 5:00 PM</td>
<td><strong>Convention Center, Rooms 343 and 344, Level 300</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Pratt Street Lobby, Level 300</strong></td>
<td><strong>12:30 – 3:00 PM</strong></td>
</tr>
<tr>
<td><strong>8:00 AM – 3:00 PM</strong></td>
<td><strong>Annual Fundamentals Symposium: Psychogenic Nonepileptic Seizures: From Challenges to Practical Management</strong></td>
</tr>
<tr>
<td><strong>33rd Annual Advances in the Management of Epilepsy and the Epilepsy Clinic</strong></td>
<td><strong>CME &amp; CE</strong></td>
</tr>
<tr>
<td><strong>ADDITIONAL FEE</strong></td>
<td><strong>Convention Center, Ballroom III, Level 400</strong></td>
</tr>
<tr>
<td>Hilton, Key Ballrooms 11 and 12, Second Floor</td>
<td><strong>1:00 – 3:00 PM</strong></td>
</tr>
<tr>
<td><strong>8:30 – 9:45 AM</strong></td>
<td><strong>Epilepsy Fellowship Program Director's Meeting</strong></td>
</tr>
<tr>
<td><strong>Career Skills: Caring for a Diverse Patient Population</strong></td>
<td><strong>CME</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 339 – 342, Level 300</strong></td>
<td><strong>Convention Center, Room 316, Level 300</strong></td>
</tr>
<tr>
<td><strong>Career Skills: How to Give a Chalk Talk</strong></td>
<td><strong>1:30 – 3:00 PM</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 343 and 344, Level 300</strong></td>
<td><strong>SIG: Epidemiology: Epidemiology in Action: Findings that Change Practice</strong></td>
</tr>
<tr>
<td><strong>8:30 – 11:30 AM</strong></td>
<td><strong>Convention Center, Room 322, Level 300</strong></td>
</tr>
<tr>
<td><strong>Epilepsy Specialist Symposium: Interictal Epileptiform Activity and Its Meaning</strong></td>
<td><strong>SIG: Global Health: Fostering Collaboration Within Global Health</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 325 and 326, Level 300</strong></td>
<td><strong>Convention Center, Room 325, Level 300</strong></td>
</tr>
<tr>
<td><strong>Co-hosted by CNF and AES</strong></td>
<td><strong>SIG: Pregnancy Registries: Emerging Data from The International Pregnancy Registries and Neurodevelopmental Studies</strong></td>
</tr>
<tr>
<td><strong>Advance registration required</strong></td>
<td><strong>CME &amp; CE</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 318 – 320, Level 300</strong></td>
<td><strong>Convention Center, Room 316, Level 300</strong></td>
</tr>
<tr>
<td><strong>8:30 – 11:30 AM</strong></td>
<td><strong>SIG: Private Practice Epilepsy: The Shifting Sands of Epilepsy: Navigating Changes in Reimbursement</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Room 321, Level 300</strong></td>
<td><strong>CME</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 345 and 346, Level 300</strong></td>
<td><strong>Convention Center, Ballroom III, Level 400</strong></td>
</tr>
<tr>
<td><strong>3:30 – 6:00 PM</strong></td>
<td><strong>Spanish Symposium: Neuromodulation for Treatment of Medically-refractory Epilepsy</strong></td>
</tr>
<tr>
<td><strong>17th Judith Hoyer Lecture in Epilepsy: Advances in the Diagnosis and Management of Neonatal Seizures</strong></td>
<td><strong>CME &amp; CE</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 339 – 342, Level 300</strong></td>
<td><strong>Convention Center, Ballroom III, Level 400</strong></td>
</tr>
<tr>
<td><strong>4:00 – 5:30 PM</strong></td>
<td><strong>6:00 – 7:30 PM</strong></td>
</tr>
<tr>
<td><strong>Basic Science Skills Workshop: Chronic In Vivo Recording: Single Unit to iEEG</strong></td>
<td><strong>Basic Science Skills Workshop: Single Cell Approaches to Study Cellular Diversity</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 343 and 344, Level 300</strong></td>
<td><strong>ADDITIONAL FEE</strong></td>
</tr>
<tr>
<td><strong>SIG: Clinical Epilepsy for the Advanced Practice Provider: Case Review: Challenging Management Cases in the Epilepsy Clinic</strong></td>
<td><strong>Convention Center, Rooms 337 and 338, Level 300</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Room 321, Level 300</strong></td>
<td><strong>SIG: EEG: The Future of the Stat EEG</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Room 322, Level 300</strong></td>
<td><strong>Convention Center, Room 322, Level 300</strong></td>
</tr>
<tr>
<td><strong>CONVNET.IO</strong></td>
<td><strong>SIG: Genetics: Precision Medicine for Genetic Epilepsies</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Room 316, Level 300</strong></td>
<td><strong>Convention Center, Room 316, Level 300</strong></td>
</tr>
<tr>
<td><strong>SIG: MEG/MSI: Indications and Contraindications for MEG in Epilepsy Patients</strong></td>
<td><strong>SIG: Neuropsychology: Cognitive Rehabilitation in Epilepsy</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 347 and 348, Level 300</strong></td>
<td><strong>CME &amp; CE</strong></td>
</tr>
<tr>
<td><strong>Convention Center, Rooms 345 and 346, Level 300</strong></td>
<td><strong>Convention Center, Rooms 345 and 346, Level 300</strong></td>
</tr>
</tbody>
</table>
### FRIDAY, DECEMBER 6 AND SATURDAY, DECEMBER 7 | SCHEDULE AT-A-GLANCE

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:45 – 11:45 AM</td>
<td>Presidential Symposium: Evidence-Based Treatment for Women with Epilepsy During Reproductive Years: 15 Years of Progress and Future Directions</td>
</tr>
<tr>
<td>12:00 – 6:00 PM</td>
<td>Poster Session 1</td>
</tr>
<tr>
<td>12:15 – 2:00 PM</td>
<td>Poster Walking Tours</td>
</tr>
<tr>
<td>2:15 – 4:30 PM</td>
<td>Concurrent Platform Sessions</td>
</tr>
<tr>
<td>2:15 – 4:45 PM</td>
<td>Best Practices in Clinical Epilepsy: Challenges in the Care of Patients with Intractable Epilepsy</td>
</tr>
<tr>
<td>2:30 – 4:00 PM</td>
<td>Investigators Workshop: Neurostimulation and Neuroimaging of Subcortical Arousal Circuits in Epilepsy</td>
</tr>
</tbody>
</table>

#### Saturday, December 7

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 AM – 5:00 PM</td>
<td>Registration</td>
</tr>
<tr>
<td>12:00 PM – 6:00 PM</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>7:00 – 8:30 AM</td>
<td>Career Skills: How to Negotiate</td>
</tr>
<tr>
<td>2:30 – 4:00 PM</td>
<td>Investigators Workshop: Neurostimulation and Neuroimaging of Subcortical Arousal Circuits in Epilepsy</td>
</tr>
</tbody>
</table>

### SIG: Seizures in Autoimmune Encephalitis: Seizures and Epilepsy Accompanying Neuroimmunological Disorders

Convention Center, Rooms 318 – 320, Level 300

### SIG: SUDEP: New Technologies to Capture the Physiological Changes and Novel Interventions

Convention Center, Rooms 325, Level 300

### 6:00 – 8:00 PM

**Industry CME Satellite Symposium: Real World Approaches to Cannabinoids in Pediatric Epilepsy: What Do the Data Tell Us?**

Hilton Baltimore Inner Harbor, Key Ballroom 4, Second Floor

Sponsored by Greenwich Biosciences, Inc.

See section, “Other Programming,” on page 85 for details.

### 6:00 – 9:00 PM

**Industry Non-CME Satellite Symposium: Your Patients with Dravet Syndrome: Early Life into Adulthood**

Hilton Baltimore Inner Harbor, Key Ballroom 2, Second Floor

Sponsored by Biocodex.

See section, “Other Programming,” on page 85 for details.

**Industry Non-CME Satellite Symposium: Deep Brain Stimulation (DBS) Advancements in Treatment of Medically Refractory Epilepsy**

Hilton Baltimore Inner Harbor, Key Ballroom 10, Second Floor

Sponsored by Medtronic.

See section, “Other Programming,” on page 85 for details.

**Industry Non-CME Satellite Symposium: Epilepsy Treatment Update for Patients Suffering from Seizure Clusters**

Baltimore Convention Center, Rooms 314 – 315, Level 300

Sponsored by UCB, Inc.

See section, “Other Programming,” on page 85 for details.

**SIG: Basic Mechanisms and Neuroscience: Tauopathies and EPILEPTOGENESIS: CAUSE OR CORRELATION?**

Convention Center, Room 322, Level 300

**SIG: Children’s Hour: Big Debates Over Small Matters in Pediatric Epilepsy**

Convention Center, Room 322, Level 300

**SIG: Data Science in Epilepsy: Effective Data Visualization**

Convention Center, Room 325, Level 300

**SIG: Epilepsy and Aging: Medical and Surgical Outcomes in Older Adults with Epilepsy**

Convention Center, Rooms 343 and 344, Level 300

**SIG: Ictal Semiology: Case Studies in Seizure Semiology**

Convention Center, Rooms 339 – 342, Level 300

**SIG: Scientific Publishing: Class IV Studies, Meta-analyses, Meta-analyses Scope, and limitations**

Convention Center, Room 324, Level 300

**SIG: Tuberous Sclerosis: Current Role for Vigabatrin in the Treatment of Epilepsy in TSC**

Convention Center, Rooms 345 and 346, Level 300

---

**Notes:**

- See page 58 for more information.
- Visit aesnet.org/abstracts for our searchable abstract database.
- Download the AES annual meeting app with all abstracts at meeting.aesnet.org/mobile-app.
Investigators Workshop: Recent Advances in Microelectrode Array Technology and Its Applications  
Convention Center, Rooms 347 and 348, Level 300

Investigators Workshop: Seizures in Seniors: How Do We Identify New and Innovative Therapies for this Growing Patient Demographic?  
Convention Center, Rooms 345 and 346, Level 300

Investigators Workshop: Wearable Devices: Beyond Seizure Detection  
Convention Center, Rooms 343 and 344, Level 300

5:30 – 8:00 PM

Epilepsy Therapies Symposium: Neurostimulation for Epilepsy: Which, When, Where, and How?  
Convention Center, Ballroom III, Level 400

Translational Research Symposium: Advances in Translation for Traumatic Brain Injury (TBI) and Antiepileptogenesis  
Convention Center, Room 316, Level 300

8th Annual AES Wine Tasting and Silent Auction  
$ ADDITIONAL FEE  
7:00 – 10:00 PM  
The Center Club  
Transamerica Tower, 17th Floor  
More information can be found at Registration or at meeting.aesnet.org/wine-event

Sunday, December 8

Registration  
7:00 AM – 5:00 PM  
Convention Center, Pratt Street Lobby, Level 300

Exhibit Hall  
10:00 AM – 4:00 PM  
Convention Center, Hall E, Level 100

8:00 – 8:30 AM

American Epilepsy Society Annual Business Meeting  
Hilton, Holiday Ballroom 1, Second Floor  
Open to all AES members.

8:00 AM – 5:00 PM

Scientific Exhibit  
BioMarin Pharmaceutical Inc.  
Convention Center, Rooms 318 – 319, Level 300  
See section, “Other Programming,” on page 85 for details.

8:00 AM – 11:00 AM

Scientific Exhibits  
Eisai Inc.  
Convention Center, Rooms 324 – 326, Level 300  
See section, “Other Programming,” on page 85 for details.

8:45 AM – 5:15 PM

Annual Course: Diagnosis and Management of Epilepsy as a Network Disorder  
Convention Center, Ballroom III, Level 400

8:45 – 10:15 AM

Investigators Workshop: Circuit Based Therapies in Epilepsy  
Convention Center, Rooms 337 and 338, Level 300

Investigators Workshop: Gut Microbiome and Epilepsy: Paradigm Shifting Advances for Understanding and Treating Epilepsy  
Convention Center, Rooms 343 and 344, Level 300

Industri Therapeutic Update: The Additional Burden of GTC Seizures  
Hilton Baltimore Inner Harbor, Key Ballroom 8, Second Floor  
Sponsored by UCB, Inc.  
See section, “Other Programming,” on page 86 for details.

10:00 AM – 4:00 PM

Poster Session 2  
Authors Present: 12:00 – 2:00 PM  
Convention Center, Hall E, Level 100

12:15 – 2:00 PM

Poster Walking Tours  
Convention Center, Hall E, Level 100

10:30 AM – 12:00 PM

Investigators Workshop: Gene Therapy for Developmental Epileptic Encephalopathies  
Convention Center, Rooms 343 and 344, Level 300

Investigators Workshop: Hot Topics from Young Investigators in the Epilepsy Community  
Convention Center, Rooms 337 and 338, Level 300

Investigators Workshop: New Approaches and Challenges to Modeling Brain Networks Using Large Neuroimaging Databases: Experiences from ENIGMA-Epilepsy and the Epilepsy Connectome Project  
Convention Center, Rooms 345 and 346, Level 300

12:00 to 1:00 PM

Industry Therapeutic Update: The Additional Burden of GTC Seizures  
Hilton Baltimore Inner Harbor, Key Ballroom 8, Second Floor  
Sponsored by UCB, Inc.  
See section, “Other Programming,” on page 86 for details.
### Sunday, December 8

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00 – 1:30 PM</td>
<td>Investigators Workshop Poster Session and Lunch</td>
<td>Convention Center, Rooms 339 – 342, Level 300</td>
</tr>
<tr>
<td></td>
<td>Featuring highly-scored abstracts submitted in the basic, translational, and clinical epilepsy research categories.</td>
<td></td>
</tr>
<tr>
<td>1:30 – 3:00 PM</td>
<td>Investigators Workshop: On Melancholia in Epilepsy: Mechanistic Insights into the Comorbidity of Epilepsy with Depression and Anxiety</td>
<td>Convention Center, Rooms 345 and 346, Level 300</td>
</tr>
<tr>
<td></td>
<td>Investigators Workshop: Poison Exons: From Development and Disease to Therapeutic Target</td>
<td>Convention Center, Rooms 337 and 338, Level 300</td>
</tr>
<tr>
<td></td>
<td>Investigators Workshop: Seeing the Forest or the Trees: Does Synaptic and Cellular Heterogeneity Support Pathological Network Activity Level?</td>
<td>Convention Center, Rooms 343 and 344, Level 300</td>
</tr>
<tr>
<td>2:00 – 5:00 PM</td>
<td>Scientific Exhibit</td>
<td>SK Life Science, Inc.</td>
</tr>
<tr>
<td></td>
<td>Convention Center, Rooms 321 – 323, Level 300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See section, “Other Programming,” on page 85 for details.</td>
<td></td>
</tr>
<tr>
<td>3:15 – 4:45 PM</td>
<td>Investigators Workshop: Electrographic Seizures in Acute Brain Injury: Prediction, Significance, and Association with Epileptogenesis</td>
<td>Convention Center, Rooms 345 and 346, Level 300</td>
</tr>
<tr>
<td></td>
<td>CME &amp; CE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Convention Center, Rooms 345 and 346, Level 300</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Investigators Workshop: Oligonucleotide Therapies for Epilepsy: A New Era in Precision Medicine?</td>
<td>Convention Center, Rooms 337 and 338, Level 300</td>
</tr>
<tr>
<td></td>
<td>Investigators Workshop: Ultra-slow and DC Recordings to Study Seizures, Migraine, and Spreading Depression</td>
<td>Convention Center, Rooms 343 and 344, Level 300</td>
</tr>
<tr>
<td>5:15 – 6:45 PM</td>
<td>Poster Session: Contributions of a Diverse Professional Community</td>
<td>Convention Center, Rooms 339 – 342, Level 300</td>
</tr>
<tr>
<td>6:00 – 7:30 PM</td>
<td>CDC Public Health Workshop</td>
<td>Convention Center, Rooms 349 and 350, Level 300</td>
</tr>
<tr>
<td></td>
<td>SIG: Engineering and Neurostimulation: Focusing on Fast Oscillations: New Insights and Controversies</td>
<td>Convention Center, Rooms 345 and 346, Level 300</td>
</tr>
<tr>
<td></td>
<td>SIG: Neonatal Seizures: Outcomes Following Neonatal Seizures</td>
<td>Convention Center, Room 316, Level 300</td>
</tr>
<tr>
<td></td>
<td>SIG: Neuroendocrinology: Going ‘Downstream’ of Endogenous Steroids for New Therapeutic Approaches</td>
<td>Convention Center, Rooms 343 and 344, Level 300</td>
</tr>
<tr>
<td></td>
<td>SIG: Psychosocial Comorbidities: Psychosis and Epilepsy</td>
<td>CME &amp; CE</td>
</tr>
<tr>
<td></td>
<td>Convention Center, Rooms 347 and 348, Level 300</td>
<td></td>
</tr>
<tr>
<td>6:00 – 8:00 PM</td>
<td>Industry CME Satellite Symposium: Cognitive and Developmental Outcomes in Severe Epilepsies of Infancy: How are the Roles of Genetics and Seizure Frequency Intertwined?</td>
<td>Baltimore Convention Center, Room 314-315, Level 300</td>
</tr>
<tr>
<td></td>
<td>Sponsored by Zogenix, Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>See section, “Other Programming,” on page 86 for details.</td>
<td></td>
</tr>
<tr>
<td>6:00 – 9:00 PM</td>
<td>Industry Non-CME Satellite Symposium: The Epileptic Heart</td>
<td>Convention Center, Room 316, Level 300</td>
</tr>
</tbody>
</table>

### Monday, December 9

**Registration**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 AM – 5:00 PM</td>
<td>Registration</td>
<td>Convention Center, Pratt Street Lobby, Level 300</td>
</tr>
</tbody>
</table>

**Exhibit Hall**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM – 2:00 PM</td>
<td>Exhibit Hall</td>
<td>Convention Center, Hall E, Level 100</td>
</tr>
</tbody>
</table>

**Attendee Reception**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 – 10:30 PM</td>
<td>Attendee Reception</td>
<td>Hilton, Holiday Ballroom 6, Second Floor</td>
</tr>
</tbody>
</table>

**Industry Non-CME Satellite Symposium: The Data Revolution: How Data Science is Transforming Epilepsy Treatment**

Hilton Baltimore Inner Harbor, Key Ballroom 2, Second Floor  
Sponsored by NeuroPace, Inc.  
See section, “Other Programming,” on page 86 for details.
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:15 – 1:45 PM</td>
<td>Poster Walking Tours</td>
<td>Convention Center, Hall E, Level 100</td>
</tr>
<tr>
<td>8:45 – 11:45 AM</td>
<td>Pediatric State of the Art Symposium: Emergency Seizure Management: Smarter Systems Stop Seizures Sooner</td>
<td>CME &amp; CE, Convention Center, Ballroom III, Level 400</td>
</tr>
<tr>
<td>9:00 – 10:30 AM</td>
<td>NAEC/AES EEG Monitoring Codes: Coding Changes for Long Term EEG Monitoring Services for 2020</td>
<td>Convention Center, Room 316, Level 300</td>
</tr>
<tr>
<td>2:00 – 5:00 PM</td>
<td>Scientific Exhibit</td>
<td>Neuralis, Inc., Convention Center, Rooms 321–323, Level 300</td>
</tr>
<tr>
<td>3:15 – 5:45 PM</td>
<td>Dialogues to Transform Epilepsy</td>
<td>Convention Center, Room 316, Level 300</td>
</tr>
<tr>
<td>3:15 – 5:30 PM</td>
<td>Concurrent Platform Sessions</td>
<td>There will be three concurrent sessions consisting of selected key scientific abstracts. Authors will present a 15-minute overview of their work followed by a two-minute Q&amp;A session.</td>
</tr>
<tr>
<td>5:45 – 8:15 PM</td>
<td>Merritt-Putnam Symposium: Neuroinflammation in Epilepsy</td>
<td>CME &amp; CE, Convention Center, Ballroom III, Level 400</td>
</tr>
</tbody>
</table>

**MONDAY, DECEMBER 9 | SCHEDULE AT-A-GLANCE**

- **SIG: Dietary Therapies for Epilepsy: Patient Monitoring and Biological Mechanisms: Point-Counterpoint Discussion**
  - Convention Center, Rooms 337 and 338, Level 300
- **SIG: Epilepsy Education: Building a Career as an Epilepsy Educator**
  - Convention Center, Rooms 345 and 346, Level 300
- **SIG: Professional Wellness in Epilepsy Care**
  - Convention Center, Rooms 347 and 348, Level 300
- **SIG: Psychogenic Nonepileptic Seizures (PNES): Where is the Silver Lining in Psychogenic Non-epileptic Seizures? Mortality, Disability, Symptom Substitution, Variable Treatment Responses**
  - CME & CE, Convention Center, Rooms 343 and 344, Level 300
  - Convention Center, Room 314, Level 300
- **SIG: Stereoelectroencephalography (SEEG): Anatomo-electro-clinical Correlation in Practice: The Use of Semiology and Multimodal Investigations to Guide Implantation and Interpretation of Stereoelectroencephalography**
  - Convention Center, Room 314, Level 300

**8:00 AM – 2:00 PM**

**8:00 – 11:00 AM**

- **Scientific Exhibits**
  - Aquestive Therapeutics, Inc.
    - Convention Center, Rooms 318-319, Level 300
    - See section, “Other Programming,” on page 86 for details.
  - Greenwich Biosciences, Inc.
    - Convention Center, Rooms 324-326, Level 300
    - See section, “Other Programming,” on page 86 for details.
  - UCB, Inc.
    - Convention Center, Rooms 321-323, Level 300
    - See section, “Other Programming,” on page 86 for details.
  - Neuralis, Inc.
    - Convention Center, Rooms 321–323, Level 300
    - See section, “Other Programming,” on page 86 for details.

- **8:45 AM – 11:45 AM**
  - Pediatric State of the Art Symposium: Emergency Seizure Management: Smarter Systems Stop Seizures Sooner
  - CME & CE, Convention Center, Ballroom III, Level 400

- **9:00 – 10:30 AM**
  - NAEC/AES EEG Monitoring Codes: Coding Changes for Long Term EEG Monitoring Services for 2020
  - Convention Center, Room 316, Level 300
  - SIG: Intractable Generalized Epilepsy: From Genetic Testing to Surgical Approach
  - Convention Center, Room 314, Level 300
  - SIG: Neuroimaging: Imaging Genetics Across Epilepsy Syndromes
  - Convention Center, Rooms 343 and 344, Level 300
  - SIG: Practice Management: Multidisciplinary Care Models in Seizures and Epilepsy
  - Convention Center, Rooms 347 and 348, Level 300
  - SIG: Temporal Lobe Club: The Intracranial EEG Evaluation of Temporal Lobe Epilepsy. Which is Best?
  - Convention Center, Rooms 337 and 338, Level 300
  - SIG: Tumor Related Epilepsy: Diagnostic Advances in Tumor-Related Epilepsy
  - Convention Center, Rooms 345 and 346, Level 300
  - WHO-ILAE-IBE Global Report on Epilepsy: Epilepsy: A Public Health Imperative
  - Convention Center, Rooms 349 and 350, Level 300

- **2:00 – 3:15 PM**
  - Lombroso Lecture: Glial Cells and Epilepsy: How New Tools are Revealing New Insights
  - Convention Center, Ballroom III, Level 400

- **3:15 – 5:45 PM**
  - Dialogues to Transform Epilepsy
  - Convention Center, Room 316, Level 300
  - New in 2019!

- **5:45 – 8:15 PM**
  - Merritt-Putnam Symposium: Neuroinflammation in Epilepsy
  - CME & CE, Convention Center, Ballroom III, Level 400

See page 77 for more information.
**Tuesday, December 10**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Registration</strong></td>
<td>7:00 AM – 12:30 PM <strong>Convention Center, Pratt Street Lobby, Level 300</strong></td>
</tr>
</tbody>
</table>

7:00 – 8:30 AM

SIG: Cognitive and Behavioral Interventions for Epilepsy: Knowledge Translation in CBTs for Epilepsy: Dissemination, Implementation, and Treatment Fidelity
Convention Center, Rooms 345 and 346, Level 300

SIG: Epilepsy Surgery: Great and Desperate Cures

SIG: NIH and Non-Profit Research Resources/Jr Investigator Workshop: How are Grants Reviewed and What Makes a Successful Proposal?
Convention Center, Rooms 349 and 350, Level 300

SIG: Pediatric Epilepsy Case Discussions: Diagnostic and Treatment Challenges
Convention Center, Room 316, Level 300

SIG: Quality and Safety: Measuring Quality of EEG Interpretation
Convention Center, Rooms 347 and 348, Level 300

SIG: Sleep in Epilepsy: Sleep On The Edge: New Techniques for Epilepsy
Convention Center, Rooms 337 and 338, Level 300

8:45 – 10:45 AM

Hot Topics Symposium

Scientific Symposium: Pharmacogenomics in Epilepsy: Existing and Emerging Opportunities for Intervention

11:00 AM – 12:30 PM

Clinical Skills Workshop: Alternative Therapies to Standard Anti-epileptic Therapies: My Seizure Drugs Aren’t Working, Now What?

Clinical Skills Workshop: Intracranial Electrode Studies: How Do You Choose a Technique for Optimum Localization?

Clinical Skills Workshop: Genetics Testing in Epilepsy Patients

Clinical Skills Workshop: Misadventures in EEG

**ADDITIONAL FEE**
Convention Center, Rooms 347 and 348, Level 300

Clinical Skills Workshop: Intracranial Electrode Studies: How Do You Choose a Technique for Optimum Localization?

**ADDITIONAL FEE**
Convention Center, Rooms 337 and 338, Level 300

Clinical Skills Workshop: Genetics Testing in Epilepsy Patients

**ADDITIONAL FEE**
Convention Center, Rooms 339 and 340, Level 300

Clinical Skills Workshop: Misadventures in EEG

**ADDITIONAL FEE**
Convention Center, Rooms 349 and 350, Level 300

12:45 – 2:15 PM

Clinical Skills Workshop: Intracranial Electrode Studies: How Do You Choose a Technique for Optimum Localization?

**ADDITIONAL FEE**
Convention Center, Rooms 337 and 338, Level 300

Clinical Skills Workshop: Genetics Testing in Epilepsy Patients

**ADDITIONAL FEE**
Convention Center, Rooms 339 and 340, Level 300

Clinical Skills Workshop: Treating Patients with Psychogenic Nonepileptic Seizures

**ADDITIONAL FEE**
Convention Center, Rooms 345 and 346, Level 300

Clinical Skills Workshop: Pearls of VideoEEG Monitoring

**ADDITIONAL FEE**
Convention Center, Rooms 349 and 350, Level 300

**Clinical Skills Workshop: Neuromodulation in Epilepsy**

**ADDITIONAL FEE**
Convention Center, Rooms 347 and 348, Level 300

**Clinical Skills Workshop: Optimal Use of Neuroimaging in Diagnosing and Treating Epilepsy**

**ADDITIONAL FEE**
Convention Center, Rooms 343 and 344, Level 300

**Clinical Skills Workshop: Treating Patients with Psychogenic Nonepileptic Seizures**

**ADDITIONAL FEE**
Convention Center, Rooms 345 and 346, Level 300

**Clinical Skills Workshop: Pearls of VideoEEG Monitoring**

**ADDITIONAL FEE**
Convention Center, Rooms 349 and 350, Level 300
Thursday, December 5

Peer Support Best Practices Workshop

8:00 AM – 5:00 PM
Convention Center, Rooms 325 and 326, Level 300

This workshop provided by the Child Neurology Foundation and hosted in partnership with the American Epilepsy Society, will give attendees the opportunity to learn how to build, expand, and promote peer support programs. The training content is applicable to all organizations providing peer support for caregivers of children with neurologic conditions.

Following participation in this activity, participants will be able to:

- Understand the core elements of peer support to caregivers of children with neurologic conditions
- Understand parameters of effective and ethical peer support
- Understand how to support and train peer support specialists in patient advocacy organizations
- Contribute to the assembly of a network of peer support resources

Program
Peer Support 101
People Are the Priority
Training Your Peer Support Specialists
Family Matching
Sustaining Your Peer Support Team
Developing Trusting Relationships with Physicians
Building and expanding Your Peer Support Program

Registration
5:00 PM – 7:00 PM
Convention Center, Pratt Street Lobby, Level 300

Friday, December 6

Registration
6:30 AM – 5:00 PM
Convention Center, Pratt Street Lobby, Level 300

Friday, December 6

33rd Annual Advances in the Management of Epilepsy and the Epilepsy Clinic

$ ADDITIONAL FEE

8:00 AM – 3:00 PM
Hilton, Key Ballrooms 11 and 12, Second Floor

This intensive one-day conference is designed for professionals who participate in the care of persons with epilepsy. The overall purpose is to improve services to individuals and families affected by epilepsy. The conference is presented by the Epilepsy Information Service of Wake Forest University School of Medicine, Winston-Salem, North Carolina, through an unrestricted grant committed to the education of health professionals, in an effort to promote the comprehensive care of those with epilepsy and their families.

Preregistration was required for this session. Please call Wake Forest School of Medicine at 800-642-0500 with questions.

This activity has been approved for AMA PRA Category 1 Credits™. Wake Forest University is the accrediting entity.

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Career Skills: Caring for a Diverse Patient Population

CME & CE
8:30 – 9:45 AM
Convention Center, Rooms 339 – 342, Level 300

Clinicians care for a diverse population of patients, which requires careful attention to how implicit biases may impact quality of care. This session will specifically address those biases and practice inconsistencies in caring for patients from diverse populations. It will include speakers and panelists who will discuss how implicit biases may impact clinical care, and will provide recommendations on how clinicians can provide better care for patients across all backgrounds.

Learning Objectives
Following participation in this activity, participants will be able to:

- Identify implicit bias and practice inconsistencies that may limit quality of care for patients from diverse backgrounds
- Recognize how implicit bias may impact their interaction with epilepsy patients from diverse backgrounds
- Demonstrate culturally sensitive care to epilepsy patients from diverse backgrounds

Program
Chairs: Daniel Correa, MD and Elizabeth Felton, MD, PhD
Implicit Bias, Richard T. Benson, MD, PhD
Experiences Caring for Diverse Epilepsy Populations, Tina Shih, MD
Panelists: Karen Parko, MD; Holly Hinson, MD, MCR, FAAN; Tina Shih, MD; and Richard T. Benson, MD, PhD
Target Audience
APPs, Clinicians, Fellows/Trainees, Nurses, Behavioral Health Providers, Technicians

Education Credit
1.25 CME
Nurses may claim up to 1.25 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 1.25 contact hours (0.125 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/6/19.

Career Skills: How to Give a Chalk Talk

8:30 – 9:45 AM
Convention Center, Rooms 343 and 344, Level 300

"Chalk Talks" are an integral part of the interview process for research-oriented faculty positions at many institutions, particularly in basic science departments. An hour-long chalk talk is an in-depth presentation of near-future research plans given without using slides, with extensive Q&A throughout. Thus, giving a great chalk talk requires specific preparation and is vital to getting a job offer. In this session, a panel of scientists will discuss common formats, preparation, presentation strategies, and dos/don’ts. The panel will take questions concerning chalk talks and the academic application/interview process.

Chairs: Karen Wilcox, PhD; MacKenzie Howard, PhD; and David Auerbach, PhD

Target Audience
Fellows/Trainees, Scientists

Epilepsy Specialist Symposium: Interictal Epileptiform Activity and Its Meaning

8:30 – 11:30 AM
Convention Center, Ballroom III, Level 400

This symposium appraises the meaning of interictal activity. It examines whether interictal epileptiform discharges (IED) are predictive of seizures and whether IED can be used to determine the seizure onset zone or predict outcome after epilepsy surgery. It will also inform about the interaction of IED and cognition and practical consequences of how interictal activity interferes with driving.

Learning Objectives
Following participation in this activity, participants will be able to:
- Discuss how interictal epileptiform activity is related to seizures
- Recognize the value of interictal activity for localizing the seizure onset zone
- Review the interaction between IED and cognition and attention
- Discuss the spatial variation and distribution of interictal epileptiform discharges
- Comprehend clinical decision making based on interictal discharges

Chairs: Barbara Jobst, MD, PhD and Greg Worrell, MD, PhD

Introduction and Case Presentation, Barbara Jobst, MD, PhD

Can Interictal Spikes Predict Seizures?
- Do IEDs Promote Seizures? Philippa Karoly, PhD
- Rhythms of Interictal Epileptiform Activity, David Spencer, MD

Can IED Predict Seizure Focus or Surgical Outcome?
- Does the Spatial Distribution or Frequency of IED Predict Seizure Onset Zone? Erin Conrad, MD
- Should Ictal or Interictal Activity Guide Surgical Resection? Jean Gotman, PhD
- The Latest Science About Interictal Activity: Excerpts from Poster Presentations

Chairs: Barbara Jobst, MD, PhD and Greg Worrell, MD, PhD

Epilepsy Specialist Symposium: Interictal Epileptiform Activity and Its Meaning

CME & CE

10:00 – 11:15 AM
Convention Center, Rooms 339 – 342, Level 300

This panel will highlight a breadth of career options in private practice, industry, government, and other sectors. Panelists will describe their work in a panel discussion, followed by breakout sessions with attendees to provide advice and answer questions. This session is one of three parallel Career Pathways panels offered simultaneously for clinical care, research, and interprofessional careers. Participants may go between sessions, which will take place in adjacent rooms.

Chairs: Edward Novotny, MD and Brenda Porter, MD, PhD

Panelists: Michelle Dougherty, MD; Emily Frielich, MD; Volker Knappertz, MD; Rajeshwari Mahalingam, MD; Steve White, RpH, PhD; and other representatives of diverse clinical careers

Target Audience
Clinicians, Fellows/Trainees
Career Pathways Panel:
Interprofessional Careers Emphasis

10:00 – 11:15 AM
Convention Center, Rooms 337 and 338, Level 300

This panel will highlight a breadth of career paths including clinical, research, teaching, administration, and other settings for advanced practice providers. Panelists will describe their work in a panel discussions, seek attendee participation, as well as answer any questions.

This session is one of three parallel Career Pathways panels offered simultaneously for clinical care, research, and interprofessional careers. Participants may go between sessions, which will take place in adjacent rooms.

Chair: Gigi Smith, PhD, RN, PNP, FAES
Panelists: Kelly R. Conner, PhD, MMS, PA-C; Sandra Dewar, PhD, APRN, FAES; Gigi Smith, PhD, RN, PNP, FAES; and Bethany Thomas, MSN, CRNP, CNRN

Target Audience
APPs

Career Pathways Panel: Research Emphasis

10:00 – 11:15 AM
Convention Center, Rooms 343 and 344, Level 300

This panel will highlight a breadth of career options in academia, industry, non-profit, policy, and government sectors. Panelists will describe their careers in a panel discussion, followed by breakout sessions with attendees to provide advice and answer questions.

This session is one of three parallel Career Pathways panels offered simultaneously for clinical care, research, and interprofessional careers. Participants may go between sessions, which will take place in adjacent rooms.

Chairs: David Auerbach, PhD and Yu Wang, MD, PhD
Panelists: Gemma Carvill, PhD; Tracy Dixon-Salazar, PhD; Edward Glasscock, PhD; Julie Milder, PhD; Sylvie Raver, PhD; Letitia Weigand, PhD; and others

Target Audience
Scientists, Fellows/Trainees

Annual Fundamentals Symposium:
Psychogenic Nonepileptic Seizures: From Challenges to Practical Management

12:30 – 3:00 PM
Convention Center, Ballroom III, Level 400

This session is meant to be an educational symposium that is mainly targeted to a clinical audience but will cover the fundamentals of PNES, including the diagnostic challenges, understanding the pathogenic mechanisms, communicating the diagnosis, and treatment (from evidence to practice). Following a series of brief lectures by experts, this session will close with an interactive panel discussion with experts in the field to discuss the challenges and opportunities in front of us.

Program
Chair: Barbara Dworetzky, MD, FAAN
Introduction, Barbara Dworetzky, MD, FAAN
Diagnostic Challenges, Barbara A. Dworetzky, MD, FAAN
Understanding the Pathogenic Mechanisms, Selma Aybek Rusca, MD
Communicating the Diagnosis, Markus Reuber, MD, PhD, FRCP
Treatment: From Evidence to Practice, Gaston Baslet, MD, and Lorna Myers, PhD
From Challenges to Opportunities: Interactive Session With the Experts, Selma Aybek Rusca, MD; Gaston Baslet, MD; Julia Doss, PsyD; Barbara Dworetzky, MD; W. Curt LaFrance, Jr., MD, MPH; Lorna Myers, PhD; and Markus Reuber, MD, PhD

Learning Objectives
Following participation in this activity, participants will be able to:
- Review the diagnostic challenges for psychogenic nonepileptic seizures
- Discuss the pathogenic mechanisms for psychogenic nonepileptic seizures
- Appreciate the importance in communicating the diagnosis of psychogenic nonepileptic seizures
- Recognize the evidence based treatments and practical strategies for treatment

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Education Credit
2.5 CME

Nurses may claim up to 2.5 contact hours for this session.
University of Minnesota approves this knowledge-based activity for 2.5 contact hours (0.25 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/6/19.

Epilepsy Fellowship Program Director’s Meeting

1:00 – 3:00 PM
Convention Center, Room 316, Level 300

The purpose of the Fellowship Directors Program is to provide educational resources and interchange of ideas between Epilepsy and Clinical Neurophysiology fellowship program directors. This meeting also serves to fulfill a requirement for program directors from ACGME accredited programs to attend a program director meeting at a national meeting in the field or subspecialty. We will discuss a potential match process for prospective fellows in epilepsy, review fellow recruitment and challenges, review and learn about strategies to improve wellness and reduce burnout in our trainees and incorporation of the AES fellowship curriculum into training programs.
**Learning Objectives**
Following participation in this activity, participants will be able to:

- Review and understand options to create a match program in epilepsy
- Review and appreciate challenges in fellow recruitment and learn strategies to improve the process
- Discuss strategies to improve wellness and mitigate burnout in fellowship trainees
- Explain methods to incorporate the AES Fellowship Curriculum into a training program

**Program**
1:00 – 1:05 PM: Welcome and Old Business, Jennifer Hopp, MD
1:05 – 1:30 PM: Options for Match in Epilepsy Fellowship, Jennifer Hopp, MD
1:30 – 1:55 PM: Fellowship Recruitment: Challenges and Strategies, Amar Bhatt, MD
1:55 – 2:20 PM: Wellness and Burnout, Sarah Schmitt, MD
2:20 – 2:45 PM: AES Fellowship Curriculum, Kristen Park, MD
2:45 – 3:00 PM: Discussion

**Target Audience**
Clinicians

**Education Credit**
2.0 CME

---

**SIG: Global Health: Fostering Collaboration Within Global Health**

1:30 – 3:00 PM

**Convention Center, Room 325, Level 300**

This session will feature presentation and discussion of the results of a recently published systematic review of global health and epilepsy. Further topics will include an introduction and discussion of the newly created ILAE Web based database for Global Health projects, a discussion on epilepsy care for “the other 50%,” and a conversation on epilepsy care in Zambia. The SIG will conclude with a discussion of collaboration on global health projects from both an epilepsy societal perspective and/or an individual perspective.

Coordinators: Karen L. Parko, MD and Mary Spiciarich, MD

Speakers: Edwin Trevathan, MD, MPH and Omar K. Siddiqi, MD, MPH

**Target Audience**
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

---

**SIG: Epidemiology: Epidemiology in Action: Findings that Change Practice**

1:30 – 3:00 PM

**Convention Center, Room 322, Level 300**

Several recent findings in epilepsy epidemiology have direct relevance to clinical practice. Key findings about the hit rate of genetic tests, the frequency of comorbidities, and the risk of SUDEP impact clinical decisions about what tests clinicians send, how they counsel people with epilepsy and their families, and what screening tools they use at routine visits. This session will include an exploration of this topic with relevant examples. We will also focus on junior investigators and their recent work, to allow newcomers to share their findings and receive feedback from experts. Finally, we will conduct an interactive exercise to identify key unanswered questions and to help us prioritize what areas of epilepsy epidemiology we should pursue as a field.

Coordinators: Zachary Grinspan, MD and Dale Hesdorffer, PhD

Speakers: Zachary Grinspan, MD, MS; Dale Hesdorffer, PhD; Nathalie Jette, MD, MSc; and top three epidemiology abstracts presenters

**Target Audience**
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

---

**SIG: Pregnancy Registries: Emerging Data from the International Pregnancy Registries and Neurodevelopmental Studies**

1:30 – 3:00 PM

**Convention Center, Rooms 318-320, Level 300**

The Pregnancy Registry SIG will continue to present the latest updates from the largest international registries, as well as from the most prominent neurodevelopmental studies. We will complement the registries’ focus on structural teratogenicity with the newest information on cognitive teratogenicity of the AEDs available, information that takes decades to be incorporated into guidelines leading to a dangerous gap in our clinical practice. In addition to presenting pivotal data on teratogenesis, pregnancy complications and fertility, the experts invited will give their opinions on the management of several case examples demonstrating how they apply their data and experience to clinical care.

**Learning Objectives**
Following participation in this activity, participants will be able to:

- Review the associated structural teratogenicity risks of different antiseizure medications
- Recognize the neonatal outcomes associated with different antiseizure medications
- Comprehend the associated neurodevelopmental risks of different antiseizure medications
- Discuss the risk of seizures during pregnancy
- Have a framework for optimizing the antiseizure medication regimen for best pregnancy outcomes

Coordinators: Naymee J. Velez Ruiz, MD and P. Emanuela Voinescu, MD

Speakers: Lewis B. Holmes, MD; Torbjörn Tomson, MD, PhD; Kimford J. Meador, MD; and Sanjeev V. Thomas, MD
**Target Audience**  
APPS, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**Education Credit**  
1.5 CME
Nurses may claim up to 1.5 contact hours for this session.
University of Minnesota approves this knowledge-based activity for 1.5 contact hours (0.15 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/6/19.

**SIG: Private Practice Epilepsy: The Shifting Sands of Epilepsy: Navigating Changes in Reimbursement**

1:30 – 3:00 PM  
**Convention Center, Room 321, Level 300**

Recent proposed changes by CMS and AMA to office visit and EEG reimbursement has the potential to dramatically change the practice management for private practice epileptologists. Private practice experts will share the most up-to-date modifications in these revenue streams. Speakers will address rationale and likely outcomes of these adjustments. A group discussion will follow to share ideas for next steps in clinical practice.

Coordinators: Eric Segal, MD and Ro Elgavish, MD, PhD  
Speakers: Robert Wechsler, MD, PhD, FAES, FAAN, and Mark Mintz, MD

**Target Audience**  
APPS, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

---

**Spanish Symposium: Neuromodulation for Treatment of Medically-refractory Epilepsy**

CME & CE  
3:30 – 6:00 PM  
**Convention Center, Rooms 339 – 342, Level 300**

This symposium will review the different neuromodulation therapies used to treat medically refractory epilepsy and how to determine the best candidate for each of these modalities. The speakers will describe how to define medically-refractory epilepsy; review the work-up required to determine if a patient is a good candidate for neuromodulation; assess which of the modalities is the most appropriate based on the epilepsy syndrome; and describe vagal nerve stimulation, deep brain stimulation, and responsive brain stimulation.

**Learning Objectives**
Following participation in this activity, participants will be able to:
- Describe the definition of medically-refractory epilepsy
- Identify patients who are potential candidates for treatment with neuromodulation
- Appreciate the different neuromodulation treatment options available for patients with refractory epilepsy

---

**17th Judith Hoyer Lecture in Epilepsy: Advances in the Diagnosis and Management of Neonatal Seizures**

AES Award Presentations: Distinguished Service Award and Susan S. Spencer Clinical Research Fellowship  
NINDS Director’s Update: Walter Koroshetz, MD, Director, National Institute of Neurological Disorders and Stroke (NINDS) at the National Institutes of Health

**CME**  
4:00 – 5:30 PM  
**Convention Center, Ballroom III, Level 400**

The Judith Hoyer Lecture in Epilepsy combines the discussion of the state-of-the-art in a specific area of epilepsy and the impact it may have on health care delivery. It is designed to be accessible to both professional and public audiences. The lecture will discuss the recent advances in clinical care of newborn infants suspected of seizures and will include: recent revisions of classification, updated criteria for diagnosis, application of neurophysiology (EEG-video monitoring), the expanding role of genetic testing, revisiting the wide range of causes, consideration of evidence-based therapies, and factors which determine and eventually improve outcome of newborns with seizures. In addition, barriers to providing optimal care for all newborns with these disorders will be discussed with a focus on aspects of potential health care disparities and potential solutions.

Speaker: Eli M. Mizrahi, MD
Learning Objectives
Following participation in this activity, participants will be able to:

- Identify seizure types based upon the revised ILAE classification of neonatal seizures
- Understand the clinical utility as well as limitations of cEEG-video monitoring in diagnosis and management
- Identify the full range of etiologic factors which may put neonates at risk to develop seizures
- Select first- and second-line AEDs, as well and adjunctive therapies, with best evidence
- Apply integrative strategies to improve outcomes in neonates with seizure

Co-sponsored with National Institute of Neurological Disorders and Stroke (NINDS).

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Education Credit
0.75 CME

This educational activity is supported in part by educational grants from Eisai Inc. and Upsher-Smith Laboratories, LLC.

Basic Science Skills Workshop: Chronic In Vivo Recording: Single Unit to iEEG

$ ADDITIONAL FEE

6:00 – 7:30 PM

Convention Center, Rooms 337 and 338, Level 300

Given that epilepsy is a disease that arises in living brains, understanding network properties in the intact subject is an essential step towards deciphering the complex dynamics of seizures and co-morbidities. These dynamics are system-level mechanisms that can be targeted, just like receptors can be targeted with drugs. Novel therapeutic targets can be sought with chronic in vivo recordings in the brain. Techniques that seek to detect and understand these complex neuronal properties are challenging, both in terms of experimental issues and analytical approaches. In this workshop, we will present an overview of electrophysiological recordings at different spatial scales (single neurons in single brain structures to local field potentials over multiple brain regions) and will discuss how these data are recorded, analyzed, and interpreted to better understand individual and network electrophysiology in the brain. Finally, we will describe the importance of these studies to guide therapeutic brain stimulation approaches.

Speakers: Rodney C. Scott, MD and David J. Mogul, PhD

Seating is limited for this workshop. Advance registration is strongly encouraged.

Target Audience
Scientists, Technicians, Fellows/Trainees

Basic Science Skills Workshop: Single Cell Approaches to Study Cellular Diversity

$ ADDITIONAL FEE

6:00 – 7:30 PM

Convention Center, Rooms 343 and 344, Level 300

Exciting new technologies are emerging that allow analysis of the properties of individual cells with increasing ease. With the diverse cell populations that make up the brain, embracing this complexity can provide new insight into brain function and dysfunction. In this workshop, we will describe novel single-cell approaches to understand cellular complexity including single cell RNAseq, genomics, and more. The workshop will also include a hands-on component to give participants experience in the environments used to analyze single-cell RNAseq data using a sample data set. The workshop will be led by an expert in single cell methodologies and an epilepsy researcher who is a new adopter of these tools.

Learning Objectives
Following participation in this activity, participants will be able to:

- Understand what single-cell approaches exist
- Describe how these approaches can be utilized in the brain
- Understand how such data-sets can be analyzed

Speakers: Mike McConnell, PhD and Chris Dulla, PhD

Seating is limited for this workshop. Advance registration is strongly encouraged.

Target Audience
Scientists, Technicians, Fellows/Trainees

SIG: Clinical Epilepsy for the Advanced Practice Provider: Case Review: Challenging Management Cases in the Epilepsy Clinic

6:00 – 7:30 PM

Convention Center, Room 321, Level 300

Three APP speakers will present challenging clinical cases highlighting a unique diagnosis and treatment technique; pediatric and adult cases involving medical, surgical, and genetic therapies included.

Coordinators: Bethany Thomas, MSN, CRNP and Kelly Conner, PA

Speakers: Patricia McGoldrick, NP, MSN, MPA; Suzanne Pach, MSN FNP-C, SCRN; and Sarah Tefft, MSN, CRNP

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

This educational activity is supported in part by SK Life Science, Inc.
SIG: EEG: The Future of the Stat EEG
6:00 – 7:30 PM
Convention Center, Room 322, Level 300
The common use of computer networks for the transfer of EEG data files now allows for immediate inpatient and emergency department EEG interpretations. With this, physicians in emergency departments and intensive care units now expect EEG testing to be more readily available and that a subspecialist will provide an EEG interpretation as care decisions are being made, regardless of the day or time. As such, EEG infrastructure and EEG practice are both changing, and old questions about when and how to best utilize EEG are returning for reconsideration in a new EEG era. This presents a need to the EEG community to address the changing expectations and provide clarity for optimizing the delivery of EEG results, especially in critical care situations. This SIG will focus on three aspects of stat EEG testing that are now commonly being reconsidered:

- Optimizing the indications for the stat EEG to maximize the clinical outcome
- Optimizing the access to stat EEG across various clinical resource settings
- Optimizing the duration of the stat EEG to maximize diagnostic efficiency and accuracy

Coordinators: John M Stern, MD; and Selim Benbadis, MD
Speakers: Josef Parvizi, MD, PhD, and Lawrence J. Hirsch, MD

Target Audience
Apps, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Genetics: Precision Medicine for Genetic Epilepsies
6:00 – 7:30 PM
Convention Center, Room 316, Level 300
“Precision medicine” is a term frequently used in reference to therapies for genetic epilepsies, but what is it and has it arrived? If not, why not and what will it take to get there? This SIG will feature a lively debate regarding the reality of precision medicine in the current era of accelerated genomic discoveries. Precision medicine has been declared in several instances, but there is a sense that we are far from where we need to be. With this debate, the real promise of therapeutic approaches that target underlying disease pathology highlighted by one speaker will be tempered with a realistic critique of our success to date provided by the other speaker. Questions regarding what we mean by precision medicine will be raised, including expected efficacy, the specificity of treatment responses, and the role of rational therapeutic design. The level of evidence needed to support novel therapies in very rare genetic conditions, including n-of-one reporting, will be discussed.

Coordinators: Tristan Sands, MD, PhD and Danielle M. Andrade, MD, MSc
Speakers: Dennis Dlugos, MD, and Steven Petrou, PhD

Target Audience
Apps, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: MEG/MSI: Indications and Contraindications for MEG in Epilepsy Patients
6:00 – 7:30 PM
Convention Center, Rooms 347 and 348, Level 300
Despite its acceptance as part of the standard of care and its routine clinical use in epilepsy centers where it is available, magnetoencephalography remains mysterious to most neurologists—and even to many epileptologists. In particular, they are puzzled as to when MEG can be helpful, and in which cases MEG is unlikely to add additional information. Even beyond a misunderstanding of the indications themselves, apprehension and a lack of knowledge regarding the technical aspects has led to the perception that there are many limitations of MEG, most of which are myths. For any physician who treats epilepsy patients, this SIG will serve to acquaint them with MEG in a practical and clinical way. The speakers will clearly define the uses and misuses of MEG, carefully illustrating their key points with multiple clinical cases. This includes not only indications and contraindications, but also answers to the questions of when in the workup to order the MEG, what to expect from the MEG report, and how to integrate the MEG results into the therapeutic decision-making.

Coordinators: Richard C. Burgess, MD, PhD and Michael E. Funke, MD, PhD
Speakers: Anto Bagic, MD, PhD; Ismail S. Mohamed, MD; and Andreas V. Alexopoulos, MD, MPH

Target Audience
Apps, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Neuropsychology: Cognitive Rehabilitation in Epilepsy
6:00 – 7:30 PM
Convention Center, Rooms 345 and 346, Level 300
CME & CE
Cognitive deficits are prevalent in individuals with epilepsy and negatively impact functional capacity and quality of life. Following epilepsy surgery, a substantial proportion of those with pharmacoresistant epilepsy experience clinically significant declines in cognitive functions, such as memory and language. Patients are often referred for speech therapy or cognitive rehabilitation to treat deficits and improve function. Yet, to date, there is little empirical evidence for the efficacy of such interventions in epilepsy, and almost no evidence in children.

Learning Objectives
Following participation in this activity, participants will be able to:

- Review the state of knowledge on cognitive rehabilitation in epilepsy
- Recognize evidence-based methods in other disorders (i.e., stroke, TBI) that can inform how to move the epilepsy field forward

Coordinators: Andreas V. Alexopoulos, MD, MPH; and Michael E. Funke, MD, PhD
Speakers: Anto Bagic, MD, PhD; Ismail S. Mohamed, MD; and Andreas V. Alexopoulos, MD, MPH

Target Audience
Apps, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians
FRIDAY, DECEMBER 6

- Discuss the practical application of these approaches through different program formats (i.e., inpatient, camp, specialized schools, online training)

Coordinators: Robyn M. Busch, PhD and Madison Berl, PhD
Speakers: Sallie Baxendale, PhD; Kristine Kingsley, PsyD; and Beth Slomine, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

Education Credit
1.5 CME

Nurses may claim up to 1.5 contact hours for this session. University of Minnesota approves this knowledge-based activity for 1.5 contact hours (0.15 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/6/19.

SIG: Seizures in Autoimmune Encephalitis: Seizures and Epilepsy Accompanying Neuroimmunological Disorders
6:00 – 7:30 PM
Convention Center, Rooms 318 – 320, Level 300
This SIG will discuss clinical manifestations and EEG patterns in patients with autoimmune encephalitis. It will also address treatment protocols for refractory status epilepticus in patients with autoimmune encephalitis by discussing illustrative cases. We will conclude with a Q&A session.

Coordinators: Sanjeev V. Kothare, MD and Ruben I. Kuzniecky, MD
Speakers: Heather Olson, MD and Shefali Karkare, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: SUDEP: New Technologies to Capture the Physiological Changes and Novel Interventions
6:00 – 7:30 PM
Convention Center, Room 325, Level 300
The substrates and triggers for SUDEP remain unknown as the events leading up to SUDEP are often not captured. This session will include a review of novel technologies for capturing the physiological changes (i.e., autonomic, serotonergic, and cardiac) surrounding non-fatal and fatal seizures, and recent therapeutic interventions. We will also review recent pathological markers for SUDEP identified using novel technologies. Talks will include recent translational studies that apply computational approaches, accelerometry, ECGs, videos, and multimodal technologies to characterize the physiological state and postictal changes associated with SUDEP. The SIG will conclude with a panel discussion of presented results and recent clinical (sensory and pharmacological) interventions to reduce SUDEP.

Coordinators: David S. Auerbach, PhD and Franck K. Kalume, PhD
Speakers: Domininique M. Durand, PhD; Sandor Beniczky, MD, PhD; Corey Massey, PhD; and Brian D. Moseley, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

This educational activity is supported in part by LivaNova.

Saturday, December 7

Registration
6:30 AM – 5:00 PM
Convention Center, Pratt Street Lobby, Level 300

Exhibit Hall
12:00 – 6:00 PM
Grand Opening at Convention Center, Hall E, Level 100

Career Skills: How to Negotiate
7:00 – 8:30 AM
Hilton, Holiday Ballroom 4, Second Floor
Negotiation skills can help you access the job and resources that will allow you to thrive throughout your career. This session will focus on advice and training for those seeking new employment opportunities in any sector of epilepsy, with a panel of leading professionals from common sectors of research and clinical care professions.

Moderators: Pue Farooque, DO and Adam Hartman, MD
Speaker: Eva Ritzl, MD
Panelists: Frances Jensen, MD; Marcelo Lancman, MD; Martha Morrell, MD, PhD; and Jack Parent, MD

SIG: Basic Mechanisms and Neuroscience: Tauopathies and Epileptogenesis: Cause or Correlation?
7:00 – 8:30 AM
Convention Center, Room 322, Level 300
Neurological disorders with increased burden of phosphorylated Tau—such as Alzheimer’s Disease—are characterized by neuronal hyperexcitability and elevated lifetime risk of seizures. Vice versa, recent work suggests that reducing Tau burden in animal models of epilepsy decreases neuronal excitability and inhibits seizures. These studies suggest that drugs targeting Tau could...
be therapeutic in epilepsy. Despite this progress in the field, the underlying mechanisms are unclear, and it is controversial if Tau hyperphosphorylation is cause or consequence of seizures, or both. This SIG will shed light on these questions by discussing the most current basic research on Tau in epilepsy. Speakers will provide different perspectives on the topic.

Dr. Swamy Thippeswamy will discuss how deletion of Tau or Fyn affects seizure onset and epileptogenesis in response to chemoconvulsants. Dr. Bret Smith will present data showing how epileptogenesis affects Tau hyperphosphorylation in a mouse model of acquired temporal lobe epilepsy and what the impact of hyperphosphorylated Tau is on seizure susceptibility, epileptogenesis, and hippocampal neuron excitability. Dr. Lori Isom will present research suggesting that the role of Tau may not be generalizable to genetic epilepsies. Talks will be short to allow for audience engagement and discussion.

Coordinators: Christina Gross, PhD and Joaquin N Lugo, PhD
Speakers: Bret N. Smith, PhD; Lori L. Isom, PhD; and Thimmasettappa (Swamy) Thippeswamy, DVM, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Children's Hour: Big Debates Over Small Matters in Pediatric Epilepsy

7:00 – 8:30 AM
Convention Center, Rooms 337 and 338, Level 300

This SIG will feature debates covering two topics that come up repeatedly in pediatric epilepsy clinics: the role of sports in epilepsy—should Johnny be allowed to play sports if he has epilepsy? Are there safe sports and for which epilepsy types?; and the role of sleep deprivation, which a lot of our adolescent population is facing, and seizures. Families seem to be concerned about sleep and its effects on triggering seizures. We will discuss the role of sleep in causing seizures in both abnormal and normal brains (like JME).

Learning Objectives
Following participation in this activity, participants will be able to:

- Discuss effect of irregular sleep in adolescent patients as it pertains to seizure provocation armed with factual data
- Review the beneficial effect of physical activity on patients with epilepsy and role of physical activity in reducing seizure burden
- Recognize the best practices when it comes to discussing lifestyle issues including sleep, physical activity and stress in patients with epilepsy

Coordinators: Charuta Joshi, MBBS and Renzo Guerrini, MD
Speakers: Elaine C. Wirrell, MD; Katherine Nickels, MD; Zachary Grinspan, MD; and Anup Patel, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

Education Credit
1.5 CME
Nurses may claim up to 1.5 contact hours for this session.

SIG: Data Science in Epilepsy: Effective Data Visualization

7:00 – 8:30 AM
Convention Center, Room 325, Level 300

Data visualization is nothing new. In the past two decades, the newly coined term of “data science” has emerged to encompass portions of a number of overlapping fields including psychology, mathematics, engineering, computer science, statistics, and of course, artificial intelligence and machine learning. Today, there is more data than ever, and more advanced ways to process it into useful information. That sounds like a good thing. The bad thing is that we can visualize this influx of data in an infinite set of possible representations, and so many of them are terrible at communicating important ideas. What data science offers is a reasoned approach to this problem, offering a suite of options but also a selection of best practices, rules of thumb, and even specific things not to do.

This interactive SIG will focus on exactly these three problems:

- How should scientists visualize their own data to themselves and their peers?
- How should clinicians expect data to be visualized?
- How should patients expect data to be visualized?

Coordinators: Daniel M Goldenholz, MD, PhD and Brian Litt, MD
Speakers: Sharon Chiang, MD, PhD and Ketan Mane, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Epilepsy and Aging: Medical and Surgical Outcomes in Older Adults with Epilepsy

7:00 – 8:30 AM
Convention Center, Rooms 343 and 344, Level 300

As our epilepsy patients continue to age, there is a pressing need to better understand how older adults with epilepsy respond to a variety of medical and surgical treatments. In particular, despite a substantial increase in the number of older adults with drug-resistant epilepsy who are candidates for resective surgery, there is little data documenting their outcomes. In this SIG, we will discuss the risks and benefits of epilepsy surgery in aging adults, including current data on seizure and cognitive outcomes. We will review concerns about comorbidity and complication of resective epilepsy surgery in older adults. Neuropsychological outcomes in younger versus older adults with epilepsy following surgical intervention will be compared, with a focus on differential predictors of cognitive outcomes for each group. Finally, rodent models that identify age-specific differences
in seizure mechanisms and response to medications will be discussed. This SIG will cover both basic and clinical research models of treatment outcomes in older adults with epilepsy.

**Target Audience**
APPS, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**SIG: Ictal Semiology: Case Studies in Seizure Semiology**

**CME & CE**

7:00 – 8:30 AM

**Convention Center, Rooms 339 –342, Level 300**

In this SIG, clinical cases will be presented using videos of seizures to illustrate how seizure semiology can be used in the localization of seizure onset and routes of ictal propagation. The panel and the audience are challenged in the detailed examination of seizure semiology with four to six cases of typical or unusual seizures. Clinical responses to cortical stimulation will also be presented to further elucidate eloquent areas of the brain in relationship to seizure semiology. The audience is invited to examine the seizures and stimulation responses to form hypotheses. The faculty will comment on the material with brief discussion of clinical features. The presenter will give a final explanation based upon neuroimaging, intracranial EEG, and the surgical outcome. Brief didactic material is delivered for each case. This interactive session will aim to show the audience how to use subjective and observable clinical elements to localize the seizure onset and reconstruct the propagation pattern of the ictal discharge.

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Recognize how seizure semiology can be deftly used to localize seizure onset
- Comprehend ictal propagation pathways through analysis of the sequence of development of different semiotic features
- Recognize the traps and pitfalls in applying seizure semiology for seizure localization

**Coordinators:** Chong Wong, MBBS, PhD and Guadalupe Fernandez-Baca Vaca, MD

**Speakers:** Hajo Hamer, MD, MHBA; Philippe Kahane, MD, PhD; Akos Szabo, MD; and Andrew Bleasel, MBBS, PhD

**Target Audience**
APPS, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**Education Credit**
1.5 CME

Nurses may claim up to 1.5 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 1.5 contact hours (0.15 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/7/19.

---

**SIG: Scientific Publishing: Class IV Studies, Meta-analyses, Meta-syntheses Scope, and limitations**

7:00 – 8:30 AM

**Convention Center, Room 324, Level 300**

National and international treatment guidelines and meta-analysis increasingly rely on formal quality appraisals of publications. We will discuss if and when there is still a role for class IV publications and how such publications should be read and used. Meta-analyses and meta-syntheses are highly ranked in the hierarchy of scientific publication, but the methodology of these methods of summarizing evidence and answering research questions has important limitations and is sometimes misapplied altogether. We will discuss how authors can assess whether a topic is suitable for these methodologies and how the quality of published meta-analyses and meta-syntheses can be critically appraised.

**Coordinators:** Markus Reuber, MD, PhD, FRCP and Andres M. Kanner, MD

**Target Audience**
APPS, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**SIG: Tuberous Sclerosis: Current Role for Vigabatrin in the Treatment of Epilepsy in TSC**

7:00 – 8:30 AM

**Convention Center, Rooms 345 and 346, Level 300**

Vigabatrin is approved for the treatment of infantile spasms and focal seizures. In TSC, it is the recommended first-line treatment for infantile spasms. Recent reports and ongoing studies also suggest that early vigabatrin treatment, before the onset of clinical seizures, may reduce the subsequent overall epilepsy burden and improve long-term developmental outcomes. The potential for vigabatrin-associated visual field loss, however, is a persistent concern of both clinicians and parents who struggle with evaluating treatment benefit and risk when considering treatment with vigabatrin. This SIG will update attendees on the latest evidence that supports vigabatrin treatment of infantile spasms and focal seizures in TSC, recent studies on the prevalence of vigabatrin treatment-related toxicities in TSC including analysis of the vigabatrin safety registry in the United States, and the first treatment outcome results of the European EPISTOP clinical trial of early vigabatrin treatment before seizure onset.

**Coordinators:** Darcy A. Krueger, MD, PhD and Joyce Wu, MD

**Speakers:** Shaun Hussain, MD; Serguisz Jozwiak, MD, PhD; and Robert Sergott, MD

**Target Audience**
APPS, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

This educational activity is supported in part by an educational grant from Upsher-Smith Laboratories, LLC.
Presidential Symposium: Evidence-Based Treatment for Women with Epilepsy During Reproductive Years: 15 Years of Progress and Future Directions

Special Presentations: AES Research Recognition Awards in Basic and Clinical Science, Fritz E. Dreifuss Award, Founders Award; ILAE President’s Update

CME & CE
8:45 – 11:45 AM
Convention Center, Ballroom III, Level 400
The reproductive years are a critical time in the lifespan of a female with epilepsy. Treatment choices should be made with consideration of safety during a future potential pregnancy, whether planned or unplanned. Fortunately, data from animal preclinical studies, pharmacokinetic modeling, detailed observational prospective studies, and large-scale pregnancy registries have provided an abundance of findings, permitting evidence-based treatment of women with epilepsy during pregnancy. The goal is to maintain maternal health and seizure control while minimizing fetal risk for adverse outcomes such as major congenital malformations and neurodevelopmental abnormalities. Future directions include enhanced incorporation of pharmacogenomics and genetics into pre-conceptional counseling, with the ability to deliver a personalized medicine approach to each woman with epilepsy during her reproductive years.

Learning Objectives
Following participation in this activity, participants will be able to:

• Review the latest evidence for differential risks between ASM types and doses for structural teratogenicity
• Discuss how ASMs can affect fetal brain development through studies in animals and humans
• Recognize pharmacokinetic principles during pregnancy and how to adjust ASMs to maintain seizure control
• Review how genetic counseling can be incorporated into clinic for women with epilepsy of childbearing age, now and in the future

Program
Chair: Page B. Pennell, MD, FAES
Introduction with a Case, Page B. Pennell, MD, FAES
Impact of Changes in ASM Selection on Risk of Congenital Malformations: Evidence-based Strategies Make a Difference, Torbjörn Tomson, MD, PhD (Fritz E. Dreifuss Award Winner)
Effects of ASMs and Seizures on Development: Mechanistic Insights from Basic Science, Patrick A. Forcelli, PhD
Pharmacokinetics of ASMs During Pregnancy and Postpartum: Latest and Emerging Data, Angela Birmbaum, PhD, FAES
Balancing Maternal Health and Fetal Risk: Dual or Dueling Exposure Considerations? Page B. Pennell, MD, FAES
Incorporating Genetics into the Care of Women with Epilepsy, Beth Rosen Sheidley, MS, CGC
Wrap-up and Panel Discussion

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

Education Credit
2.75 CME
Nurses may claim up to 2.75 contact hours for this session.
University of Minnesota approves this knowledge-based activity for 2.75 contact hours (0.275 CEUs). UAN JA0000810-9999-19-082-L01-P Initial Release Date: 12/7/19.
This educational activity is supported in part by educational grants from Eisai Inc., Sunovion Pharmaceuticals Inc., and UCB, Inc.

Poster Session 1
12:00 – 6:00 PM
Authors Present: 12:00 PM – 2:00 PM
Convention Center, Hall E, Level 100
Posters are grouped by general topic category at various times throughout the meeting. There are three ways to access abstracts presented during this poster session:
1. Pick up the guide to poster abstracts, available in the registration area
2. Visit aesnet.org/abstracts for our searchable abstract database
3. Download the AES annual meeting app with all abstracts at meeting.aesnet.org/mobile-app

Poster Walking Tours
12:15 – 2:00 PM
Convention Center, Hall E, Level 100
Tour Leaders: Jorge Gonzalez-Martinez, MD PhD; Kimford Meador, MD; Gordon Buchanan, MD, PhD; Alison Pack, MD; and Ilo Leppik, MD
Join leading experts as they spotlight interesting posters and facilitate discussion with authors, gaining new and different perspectives on the data presented.
To join a walking tour, gather at the Poster Information Table (near exhibit booth #108 and board #433) in the poster hall. A schedule of topics and tour leaders will be available.
## Concurrent Platform Sessions

2:15 – 4:30 PM

There will be three concurrent sessions consisting of selected key scientific abstracts. Authors will present a 15-minute overview of their work followed by a two-minute Q&A session. There are two ways to access abstracts presented during this poster session:

1. Visit [aesnet.org/abstracts](https://aesnet.org/abstracts) for our searchable abstract database
2. Download the AES annual meeting app with all abstracts at [meeting.aesnet.org/mobile-app](https://meeting.aesnet.org/mobile-app)

<table>
<thead>
<tr>
<th>Time</th>
<th>Platform A: Basic Mechanisms of Epilepsy</th>
<th>Platform B: Neuroimaging</th>
<th>Platform C: Advances in Neurophysiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:15 PM</td>
<td><strong>A.01</strong> Electrograph Substrates of Altered Brain Networks During the Latent Period of Epileptogenesis</td>
<td><strong>B.01</strong> Detection of MRI-negative Focal Cortical Dysplasia Using Uncertainty-Informed Bayesian Deep Learning: A Multicentre Validation Study</td>
<td><strong>C.01</strong> Ictal and Post-Ictal Brainstem Posturing is Associated with Generalized Convulsive Seizures (GCS) Severity Markers and Breathing Compromise</td>
</tr>
<tr>
<td></td>
<td>Lin Li, PhD</td>
<td>Ravnoor Gill, MsC</td>
<td>Laura Vilella Bertran, MD</td>
</tr>
<tr>
<td>2:30 PM</td>
<td><strong>A.02</strong> The Absence Seizure Envelope is Built on Thalamocortical Output</td>
<td><strong>B.02</strong> Value of 7T MRI in 100 Patients Undergoing Epilepsy Presurgical Evaluation</td>
<td><strong>C.02</strong> Epileptogenicity in Tuberous Sclerosis Complex: A Stereo-Electroencephalography Study</td>
</tr>
<tr>
<td></td>
<td>Patricia Fogerson, PhD</td>
<td>Irene Wang, PhD</td>
<td>Andrew Neal, MBBS, PhD</td>
</tr>
<tr>
<td>2:45 PM</td>
<td><strong>A.03</strong> Leveraging the Intrinsinc Kcnq2 K+ Channel Plasticity in the Hippocampus to Diminish Seizure Susceptibility</td>
<td><strong>B.03</strong> Fiber Ball White Matter Modelling in Patients with Focal Epilepsy</td>
<td><strong>C.03</strong> Targeting the Centromedian Nucleus for Thalamic Deep Brain Stimulation: MRI Visualisation, Intraoperative Microelectrode Recordings, and Resting-State Functional Connectivity</td>
</tr>
<tr>
<td></td>
<td>Chase Carver, PhD</td>
<td>Lorna Bryant, PhD Student</td>
<td>Aaron Warren, PhD</td>
</tr>
<tr>
<td>3:00 PM</td>
<td><strong>A.04</strong> Surprising Pathways of Focal Motor Seizure Spread</td>
<td><strong>B.04</strong> Automated Seizure Focus Lateralization in Temporal Lobe Epilepsy Using Multicontrast MRI</td>
<td><strong>C.04</strong> High Frequency Cortical Activation Patterns with Stimulation of Anterior Nucleus of Thalamus at Low and High Frequencies</td>
</tr>
<tr>
<td></td>
<td>Anastasia Brodovskaya, PhD</td>
<td>Benoit Caldairou, Post-Doctoral Fellow</td>
<td>Chaitanya Ganne, MBBS, PhD</td>
</tr>
<tr>
<td>3:15 PM</td>
<td><strong>A.05</strong> A Feedforward Mechanism for Epilepsy Regulated by Lactate Dehydrogenase A</td>
<td><strong>B.05</strong> FDG-PET Provides Further Evidence for the Epileptic Network of Lennox-Gastaut Syndrome</td>
<td><strong>C.05</strong> Measuring Drug Effects on Brain Dynamics Through Electroencephalography</td>
</tr>
<tr>
<td></td>
<td>Alexander Ksendzovsky, MD</td>
<td>Tom Baldfroid, Master of Medicine</td>
<td>Aarti Sathyanarayana, PhD</td>
</tr>
<tr>
<td>3:30 PM</td>
<td><strong>A.06</strong> C1q Mediates Chronic Secondary Gliotic Inflammation and Neurodegeneration in a Mouse Model of Post-traumatic Epilepsy</td>
<td><strong>B.06</strong> Nucleus Basalis MRI Functional Connectivity Abnormalities in Patients with Temporal Lobe Epilepsy</td>
<td><strong>C.06</strong> Spike Onset Zone on Magnetoencephalography in Various Epileptogenic Lesions</td>
</tr>
<tr>
<td></td>
<td>Stephanie Holden, BS, MS</td>
<td>Hernan Gonzalez, MS</td>
<td>Hiroshi Shirozu, MD, PhD</td>
</tr>
<tr>
<td>3:45 PM</td>
<td><strong>A.07</strong> Branched-chain Amino Acids: Possible Explanation for the Glutamine Paradox in the Human Epileptic Brain?</td>
<td><strong>B.07</strong> Multiscale Profiling of Thalamo-Cortical Connectopathy in Generalized and Focal Epilepsies</td>
<td><strong>C.07</strong> Attraction of The Motor Map Toward a Seizure Focus</td>
</tr>
<tr>
<td></td>
<td>Tore Eid, MD, PhD</td>
<td>Yifei Weng, MD</td>
<td>Harper Kaye, BS</td>
</tr>
<tr>
<td>4:00 PM</td>
<td><strong>A.08</strong> Abnormal Synchronization of Glutamate and Branched-Chain Amino Acids in the Epileptic Hippocampus of an Animal Model of Mesial Temporal Lobe Epilepsy</td>
<td><strong>B.08</strong> Postoperative Reorganization of Modular Architecture in Brain Networks Informs Surgical Outcome</td>
<td><strong>C.08</strong> Linking the Electrical and Clinical Features of Hyperexcitability in Alzheimer’s Disease</td>
</tr>
<tr>
<td></td>
<td>Mani Ratnesh Sandhu, MBBS</td>
<td>Xiaosong He, PhD</td>
<td>Alice Lam, MD, PhD</td>
</tr>
<tr>
<td>4:15 PM</td>
<td><strong>A.09</strong> Brain-Cardio-Respiratory Connectivity in A Genetic Model Of SUDEP Susceptibility</td>
<td><strong>B.09</strong> Imaging Individual Hippocampal Seizures and The Long-term Impact of Repeated Seizures</td>
<td><strong>C.09</strong> Localization Shift of Electrocorticography Contacts After Implantation in Pediatrics</td>
</tr>
<tr>
<td></td>
<td>Timothy Hutson, BS</td>
<td>Man kin Choy, PhD, MSc, BSc</td>
<td>Stephen Foldes, PhD</td>
</tr>
</tbody>
</table>
**Best Practices in Clinical Epilepsy: Challenges in the Care of Patients with Intractable Epilepsy**

*Award Presentation: Rebecca Goldberg Kaufman AES Clinical Award in Ethical Neuropsychiatry*

**2:15 – 4:45 PM**  
**Convention Center, Room 316, Level 300**

Challenges arise to providing comprehensive care for persons with intractable epilepsy, particularly in quality of life, epilepsy diets, use of CBD, surgical options, and psychosocial/mental health and neurocognitive functioning. This symposium will provide general knowledge on care for patients with intractable epilepsy in the above domains and practical solutions for addressing challenges in these domains relevant to providing comprehensive epilepsy care. Mixed didactic with case-based presentations followed by questions and answer format with the speaker panel. Concrete examples of an interprofessional approach to caring for patients with intractable epilepsy will be integrated throughout the symposium.

**Learning Objectives**  
Following participation in this activity, participants will be able to:

- Recognize treatment challenges and the importance of quality of life in the comprehensive care of persons with intractable epilepsy
- Implement strategies to address treatment challenges in the areas of epilepsy diets, surgery, neurocognitive and mental health, and CBD
- Delineate the role and responsibilities of the comprehensive epilepsy team in addressing barriers to care for persons with intractable epilepsy

**Program**  
Chairs: Janelle L Wagner, PhD and Madona Plueger, ACNS-BC, APRN, CNRN, FAES  
Introduction, Madona Plueger, ACNS-BC, APRN, CNRN, FAES  
Quality of Life, Aimee Smith, PhD (*Rebecca Goldberg Kaufman AES Clinical Award in Ethical Neuropsychiatry*)

Epilepsy Diets, Courtney Haney, RD  
Use of CBD, Lisa Garrity, PharmD  
Surgical Options, Sumeet Vadera, MD  
Psychosocial, Mental Health, and Neurocognitive Functioning, Lindsay Schommer, APRN, MSN  
Conclusions, Janelle L Wagner, PhD

**Target Audience**  
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

**Education Credit**  
2.5 CME  
Nurses may claim up to 2.5 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 2.5 contact hours (0.25 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/7/19.

This educational activity is supported in part by educational grants from Eisai Inc., Greenwich Biosciences, Inc., and UCB, Inc.

---

**Investigators Workshop: Neurostimulation and Neuroimaging of Subcortical Arousal Circuits in Epilepsy**

**2:30 – 4:00 PM**  
**Convention Center, Rooms 337 and 338, Level 300**

This workshop will address new and exciting data and techniques for imaging networks and uncovering mechanisms of therapeutic modulation by subcortical stimulation devices in epilepsy. We will provide a comprehensive update of the neuroscience of arousal and consciousness as a general field, and as applied to epileptic seizure networks, in the context of other altered states such as anesthesia, coma, or sleep. Promising findings using high field opto-fMRI and multi-site stimulation in animal models allow unprecedented visualization of cortical and limbic network changes with subcortical stimulation, with ability to modulate seizure threshold or reverse seizure-induced loss of consciousness.

**Learning Objectives**  
Following participation in this activity, participants will be able to:

- Recognize similarities and differences in cortical-subcortical arousal mechanisms in epileptic seizures, anesthesia and sleep
- Describe high field functional neuroimaging methods in animal models combined with optogenetics and multi-site neurostimulation
- Discuss and assess the translational potential of subcortical stimulation devices to prevent or reverse loss of consciousness during seizures, modulate seizure susceptibility, and improve epilepsy comorbidities in patients with refractory epilepsy

Moderator: Melanie Boly, PhD  
Speakers: Melanie Boly, PhD; Jin Hyung Lee, PhD; and Hal Blumenfeld, MD, PhD

**Target Audience**  
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

---

**Investigators Workshop: Recent Advances in Microelectrode Array Technology and Its Applications**

**2:30 – 4:00 PM**  
**Convention Center, Rooms 347 and 348, Level 300**

This workshop will address emerging microelectrode array (MEA) technologies and their applications. Transparent electrode arrays are of interest to many researchers who work on in-vivo neuronal imaging and optogenetic stimulation. In addition, in late 2018, the novel, extremely high density silicon electrode array, “Neuropixels,” became available to the general research community. Emerging innovations are not limited to the forefront of in-vivo electrophysiology. Advanced materials and increased computational capability have pushed the limit of conventional MEA concepts also into in vitro assay systems. Discussion will focus on how these innovations can be implemented in the laboratory.
Learning Objectives
Following participation in this activity, participants will be able to:
• Recognize how advanced microelectrode array (MEA) technology is being used in the in vivo electrophysiology
• Recognize how to establish high-throughput in vitro assay systems using advanced MEA array and iPSCs
• Identify several resources available to them and plan to implement some of the innovations in their own laboratories

Moderator: Hajime Takano, PhD
Speakers: Flavia Vitale, PhD; Timothy Harris, PhD; and Ikuro Suzuki, PhD

Target Audience
Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

Investigators Workshop: Wearable Devices: Beyond Seizure Detection

2:30 – 4:00 PM
Convention Center, Rooms 343 and 344, Level 300
This workshop will address the application of available wearable devices to novel uses beyond simple seizure detection and alerting. We will discuss ongoing research to leverage available technology to better understand seizure risk, aid in epilepsy diagnosis, and dynamically assess disease comorbidities.

Learning Objectives
Following participation in this activity, participants will be able to:
• Explain and identify intersections between wearable device technology and translational and clinical science in epilepsy
• Discuss the application of wearable technology to improve epilepsy diagnosis, enable seizure forecasting and remote patient monitoring
• Assess approaches and barriers to validating these novel applications

Moderator: Daniel Friedman, MD
Speakers: Daniel M. Goldenholz, MD, PhD; W. Curt LaFrance Jr., MD, MPH; and Akane Sano, MEng, PhD

Target Audience
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

Epilepsy Therapies Symposium: Neurostimulation for Epilepsy: Which, When, Where, and How?

Award Presentation: J. Kiffin Penry Award of Excellence in Epilepsy Care

CME & CE

5:30 – 8:00 PM
Convention Center, Ballroom III, Level 400
There are now several options available for treating refractory epilepsy with neurostimulation. We will briefly present a case, followed by presentations on the clinically available neurostimulation modalities: responsive neurostimulation, deep brain stimulation, and vagus nerve stimulation. We will review what practicing neurologists should know about the FDA device clearance process and discuss choosing a neurostimulation modality in 2019. This session will close with panel discussion related to the presented case and audience Q&A.

Learning Objectives
Following participation in this activity, participants will be able to:
• Discuss the multiple neurostimulation modalities and better individualize the type of neurostimulation for a given patient
• Recognize the utility of chronic intracranial EEG recordings
• Counsel patients on the benefits and risks of responsive neurostimulation, vagus nerve stimulation, and deep brain stimulation
• Identify the FDA device clearance process and what “clearance” does and does not imply
Translational Research Symposium: Advances in Translation for Traumatic Brain Injury (TBI) and Antiepileptogenesis

5:30 – 8:00 PM

Convention Center, Room 316, Level 300

This symposium focuses on the current state of research on traumatic brain injury (TBI) and antiepileptogenesis with particular emphasis on the challenges, achievements, and possible solutions for translating ideas into therapies. We will provide an overview of the challenges of translating basic findings to clinical utility in this specific domain of epilepsy research with speakers giving up-to-date reviews of the state of knowledge from both animal and clinical studies; a debate format discussion of the utility of animal work in pre-clinical research; an update on EpiBioS4Rx; a discussion of different trial methodologies and collaborative approaches that may be useful in this (and other domains) and, finally, an open panel discussion.

Learning Objectives
Following participation in this activity, participants will be able to:

- Describe the current state of basic and translational research related to post-TBI epilepsy (PTE)
- Discuss current and future pathways to develop anti-epileptogenic interventions for PTE
- Recognize the competing research priorities for PTE

Program

Chairs: Terrence O’Brien, MD and Solomon L. Moshé, MD

Introduction, Sydney Cash, MD, PhD
The Perspective of Stakeholders, Daniel Correa, MD
The EpiBioS4Rx Experience and Update, Jerome P. Engel, Jr., MD, PhD
What have Animal Studies Taught Us so Far? Asla Pitkanen, MD
What have Human Studies Taught Us so Far? Thomas Bleck, MD
Pro and Con: Are Preclinical/Animal Studies Useful for the Translation of Research to Improved Care? Thomas Sutula, MD, PhD and Jacqueline French, MD
Other Ongoing Approaches to Coordinate Pre- and Post-clinical Studies and/or Alternative Clinical Trial Approaches, Zachary Grinspan, MD

Panel Discussion and Conclusions
Sunday, December 8

Registration

7:00 AM – 5:00 PM
Convention Center, Pratt Street Lobby, Level 300

Exhibit Hall

10:00 AM – 4:00 PM
Convention Center, Hall E, Level 100

American Epilepsy Society Annual Business Meeting

8:00 – 8:30 AM
Hilton, Holiday Ballroom 1, Second Floor
Open to all AES members.
President, Page B. Pennell, MD, FAES

Annual Course: Diagnosis and Management of Epilepsy as a Network Disorder

CME & CE

8:45 AM – 5:15 PM
Convention Center, Ballroom III, Level 400
This year’s Annual Course will tackle the state-of-the-art knowledge and thought processes related to the growing appreciation of epilepsy as a disorder of brain networks. Through a series of case presentations, didactic lectures, and debates, thought leaders will discuss diagnostic methods and management strategies that address epilepsy and its co-morbidities.

Learning Objectives
Following participation in this activity, participants will be able to:

• Describe the diagnostic techniques used to measure the extent of epileptic networks
• Discuss the therapeutic implications on medical, surgical, and neuromodulatory treatments of epilepsy and its comorbidities
• Apply state of the art imaging, neuropsychological, and clinical tools in the study of epileptic networks

Program
Chair: Lara Jehi, MD
8:45 AM: Introduction, Lara Jehi, MD

Defining the Anatomy of a Network in Epilepsy
Moderator: Lara Jehi, MD

8:50 AM: Case: Child with Hypothalamic Hamartoma, Alison May, MD
8:55 AM: Lecture: Semiology and Epileptic Networks, Aileen McConigal, MBChB, PhD, MRCP
9:15 AM: Lecture: Novel Imaging of the Epileptic Brain, Lawrence Ver Hoef, MD
9:35 AM: Debate: Understanding the Epileptic Network is Critical to Plan Resective Epilepsy Surgery vs. Surgery in its Essence is Resection of a Focus, Dario J. Englot, MD, PhD vs. Howard L. Weiner, MD
10:05 AM: Break

Defining the Neuropsychology of a Network in Epilepsy
Moderator: Tracy Milligan, MD

10:20 AM: Case: Adult Patient with Non-lesional Frontal Lobe Epilepsy, Heather R. Mckee, MD
10:25 AM: Lecture: Genetics of Networks from Focal to Generalized Epilepsy, Danielle M. Andrade, MD, MSc
10:45 AM: Lecture: Cortico-cortical Evoked Potentials, Dileep Nair, MD
11:05 AM: Lecture: Modulating a Network (RNS, DBS, and VNS), Danielle Becker, MD, MS
11:25 AM: Debate: Invasive EEG is Always Pre-requisite for Planning Responsive Neurostimulation Implantation vs. Not Every RNS Needs to Follow an Invasive EEG, Christopher T. Skidmore, MD; vs. Gregory A. Worrell, MD, PhD
11:55 AM - 2:00 PM: Lunch Break

Networks and Co-morbidities in Epilepsy
Moderator: Lara Jehi, MD

2:00 PM: Debate: Traditional Neuropsychological Testing Adequately Assesses Network Disruptions Underlying Neurobehavioral Comorbidities vs New Assessment Methods are Needed for Clinical Efficiency and Better Network Understanding, Bruce P. Hermann, PhD vs. Robyn M. Busch, PhD
2:30 PM: Lecture: The Role of Intercital Activity on Memory Dysfunction, Barbara C. Jobst, MD, PhD
2:50 PM: Lecture: Sleep and Epilepsy: Interplay of a Network, Nigel P. Pedersen, MD
3:10 PM: Lecture: Harnessing Networks and Machine Learning in Neuropsychiatric Care, Brian Litt, MD
3:30 PM: Break

Beyond Seizures
Moderator: Lara Jehi, MD

3:45 PM: Lecture: The Nuances of a Network in Pediatric Epilepsy, Kelly G. Knupp, MD
4:05 PM: Lecture: The “Social” Epilepsy Network, Patricia Osborne Shafer, RN, MN
4:25 PM: Lecture: From Micro-networks to Macro-networks, Catherine Schevon, MD
4:45 PM: Lecture: Artificial Intelligence vs. MD, Philip Payne, PhD
5:10 PM: Course Wrap-up, Lara Jehi, MD
SUNDAY, DECEMBER 8

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Education Credit
6.0 CME

Nurses may claim up to 6.0 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 6.0 contact hours (0.6 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/8/19.

This educational activity is supported in part by educational grants from Eisai Inc., Greenwich Biosciences, Inc., Mallinckrodt Pharmaceuticals, and UCB, Inc.

Investigators Workshop: Circuit Based Therapies in Epilepsy

8:45 – 10:15 AM
Convention Center, Rooms 337 and 338, Level 300

This workshop will address novel circuit therapies in epilepsy. Conventional systemic antiepileptic drug therapy immerses the entire brain, affecting both normal and pathogenic circuits, causing both therapeutic and negative outcomes. In addition, the neuronal circuit disruptions underlying phenotypic expression in epilepsy are mechanistically complex. Targeting individual symptoms has proven insufficiently effective in ameliorating seizures or restoring cognitive function in chronic epilepsy. Presentations in this workshop highlight that altered excitability in specific circuits is a proximate generator of both seizures and aberrant behavior in epilepsy, and that targeting these alterations in a circuit-specific manner is a viable therapeutic opportunity.

Learning Objectives
Following participation in this activity, participants will be able to:

• Recognize the promise of circuit based therapies in controlling seizures and correcting epilepsy co-morbidities
• Describe several novel intervention strategies targeting specific neuronal circuits effective in the control of seizures and co-morbidities in epilepsy
• Recognize how circuit based therapies in epilepsy overcome some common issues in current therapeutic strategies

Moderator: Douglas Coulter, PhD
Speakers: Robert F. Hunt, PhD; Julia Kahn, BS; and Dimitri Kullmann, MD, PhD

Target Audience
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

Investigators Workshop: Gut Microbiome and Epilepsy: Paradigm Shifting Advances for Understanding and Treating Epilepsy

8:45 – 10:15 AM
Convention Center, Rooms 343 and 344, Level 300

This workshop will address the timely and emerging topic of the role of the gut microbiota in epilepsy. Several publications within last year reported intriguing findings suggesting that intestinal microbiome may play a key role in epilepsy and neurodevelopmental disorders in mice. We will discuss the role of the gut microbiome in the development of epilepsy and the potential implications of these discoveries for treatment.

Learning Objectives
Following participation in this activity, participants will be able to:

• Explain what the microbiome is
• Describe how gut microbes affect brain activity and regulate seizure susceptibility
• Recognize how the gut microbiota content can affect anti-epileptic treatments strategies and how modification of the microbiota might be used to treat epilepsy

Moderators: Jeanne T. Paz, PhD and Daniel Lowenstein, MD
Speakers: Gloria Choi, PhD; Elaine Hsiao, PhD; and Andrey Mazarati, MD

Target Audience
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

Investigators Workshop: Novel Approaches to the Treatment of Epilepsy Caused by Periventricular Nodular Heterotopia (PNH)

8:45 – 10:15 AM
Convention Center, Rooms 345 and 346, Level 300

This workshop will address the treatment of refractory focal epilepsy caused by PNH, a neuronal migration disorder in which nodules of gray matter are often found in posterior head regions, near ventricles. Patients have been investigated with intracerebral electrodes and epileptogenic regions found in the nodules and in overlying or adjacent cortex. We will review recent EEG and MRI-based functional connectivity studies demonstrating that the nodules are interconnected and are connected to cortex. The selective destruction of some nodules may nevertheless provide a cure to epilepsy and we will discuss the possible impact of connectivity studies on treatment approaches.

Learning Objectives
Following participation in this activity, participants will be able to:

• Recognize PNH as a cause of medically intractable epilepsy and propose approaches to investigate patients for possible surgical treatment
• Recommend functional connectivity studies that can shed light on the organization of the epileptic network
• Recommend a type of surgery to reduce or stop the seizures in patients with PNH

Moderator: Jean Gotman, PhD
Speakers: Francois Dubeau, MD; Hui Ming Khoo, MD, PhD; and Laura Tassi, MD

Target Audience
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists
**Poster Session 2**

10:00 AM – 4:00 PM  
Authors Present: 12:00 PM – 2:00 PM  
Convention Center, Hall E, Level 100  

Posters are grouped by general topic category at various times throughout the meeting. There are three ways to access abstracts presented during this poster session:

1. Pick up the guide to poster abstracts, available in the registration area  
2. Visit [aesnet.org/abstracts](http://aesnet.org/abstracts) for our searchable abstract database  
3. Download the AES annual meeting app with all abstracts at [meeting.aesnet.org/mobile-app](http://meeting.aesnet.org/mobile-app)

**Poster Walking Tours**

12:15 – 2:00 PM  
Convention Center, Hall E, Level 100  

Tour Leaders: Paul Van Ness, MD; Jacqueline French, MD; Beate Diehl, MD, PhD; Andres Kanner, MS; and Andrew Cole, MD  

Join leading experts as they spotlight interesting posters and facilitate discussion with authors, gaining new and different perspectives on the data presented.

To join a walking tour, gather at the Poster Information Table (near exhibit booth #108 and board #433) in the poster hall. A schedule of topics and tour leaders will be available.

**Investigators Workshop: Gene Therapy for Developmental Epileptic Encephalopathies**

10:30 AM – 12:00 PM  
Convention Center, Rooms 343 and 344, Level 300  

This workshop will address the number of unique genetic etiologies causing developmental epileptic encephalopathies continues to expand. Treatment with disease-specific small molecule therapies is slowly improving seizure control, but not treating the fundamental pathophysiology underlying these disorders. Gene therapy has moved into clinical practice in a few neurologic disorders and is poised to do so in multiple other disorders including the developmental epileptic encephalopathies. The workshop will focus on how to design animal model studies of gene therapy, clinical trial design, and perspective of a company trying to bring gene therapies to patients.

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Explain the requirements for animal model safety and efficacy testing of gene therapy  
- Discuss how researchers are designing clinical trials in children with severe and uncommon neurologic disorders to study both safety and efficacy  
- Describe the perspectives of a pharmaceutical company that is pushing forward with a variety of gene therapy approaches for the treatment of rare developmental epileptic encephalopathies  

Moderators: Brenda E. Porter, MD, PhD and Eric Marsh, MD, PhD  
Speakers: Timothy Benke, MD, PhD; Rachel Bailey, PhD; and Barry Ticho, MD, PhD  

**Target Audience**  
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

**Investigators Workshop: Hot Topics from Young Investigators in the Epilepsy Community**

10:30 AM – 12:00 PM  
Convention Center, Rooms 337 and 338, Level 300  

This session will highlight presentations from young investigators conducting basic, translational, or clinical epilepsy research.

**Program**

**Moderator:** Heather Mefford, MD, PhD  
SINEUPs: A Novel Therapeutic Strategy for STXBP1 Encephalopathy Based On Non-Coding RNA - Preliminary In Vitro Studies, Ganna Balagura, MD, PhD Candidate  
MRI Structural Heterogeneity Within and Across Focal Cortical Dysplasia: A Data-driven Approach Based On Consensus Clustering, Hyo Min Lee, MS, PhD Candidate  
Measuring Drug Effects on Brain Dynamics Through Electroencephalography, Aarti Sathyanarayana, BS, MS, PhD  
Abnormal Synchronization of Glutamate and Branched-chain Amino Acids in the Epileptic Hippocampus of an Animal Model of Mesial Temporal Lobe Epilepsy, Mani Ratnesh Sandhu, MBBS, MHS Candidate, Postdoctoral Associate  

**Target Audience**  
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

**Investigators Workshop: New Approaches and Challenges to Modeling Brain Networks Using Large Neuroimaging Databases: Experiences from ENIGMA-Epilepsy and the Epilepsy Connectome Project**

10:30 AM – 12:00 PM  
Convention Center, Rooms 345 and 346, Level 300  

This workshop will address unique challenges and opportunities related to using large imaging databases to identify common structural and functional brain network alterations in epilepsy. We will rationalize approaches to data harmonization, network modeling, and statistical approaches that have been employed in the two largest epilepsy imaging projects worldwide—the ENIGMA-Epilepsy Consortium and the Epilepsy Connectome Project—and demonstrate how these datasets can provide a new platform for mechanistic and clinical translational discoveries.
Recent work from each group will be presented, covering large-scale meta-analyses to integration of raw data to identify imaging phenotypes and predict cognitive and clinical outcomes.

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Characterize the ENIGMA-Epilepsy Consortium and Epilepsy Connectome Project datasets and identify collaborative opportunities within the epilepsy research community
- Identify approaches to mitigate the challenges of data harmonization in multi-site studies, encompassing neuroimaging data (structural MRI, diffusion MRI, resting-state functional MRI), clinical assessments and socio-demographic considerations
- Utilize appropriate analytic strategies for multi-site neuroimaging data to investigate relationships with clinical/cognitive outcomes, and test the generalizability of findings

**Moderators:** Carrie R. McDonald, PhD and Leonardo Bonilha, MD, PhD

**Speakers:** Carrie R. McDonald, PhD; Boris C. Bernhardt, PhD; and Jeffrey Binder, MD

**Target Audience**

Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

**Investigators Workshop Poster Session and Lunch**

12:00 – 1:30 PM

**Convention Center, Rooms 339 – 342, Level 300**

Highly-scored abstracts submitted in the basic, translational, and clinical epilepsy research categories.

1.001 C1q Mediates Chronic Secondary Gliotic Inflammation and Neurodegeneration in a Mouse Model of Post-traumatic Epilepsy | Stephanie Holden, BS, MS

1.002 A Feedforward Mechanism for Epilepsy Regulated by Lactate Dehydrogenase A | Alexander Ksendzovsky, MD

1.004 Leveraging the Intrinsic KCNQ2 K+ Channel Plasticity in the Hippocampus to Diminish Seizure Susceptibility | Chase Carver, PhD

1.005 Surprising Pathways of Focal Motor Seizure Spread | Anastasia Brodovskaya, BS

1.018 A CRISPRi Screen in Human Ipsc-Derived Neurons to Discover Novel Focal Cortical Dysplasia Genes | Andrew Tidball, PhD

1.019 New Insights into the Early Mechanisms Underlying Epileptogenesis in a zebrafish Model of Dravet Syndrome | Camila Esguerra, PhD

1.033 Electrograph Substrates of Altered Brain Networks During the Latent Period of Epileptogenesis | Lin Li, PhD

1.034 High Frequency Electrical Stimulation on Hippocampal Seizures Induced by 4-Ap in Rat Hippocampal Slices | Yun Seo Choi, PhD Candidate

1.035 Enhanced Intrinsic Excitability and Synaptic Integration in CA1 Pyramidal Cells in the Scn1b Mouse Model of Dravet Syndrome | Jessica Chancey, PhD

1.045 SINEUPs: A Novel Therapeutic Strategy for STXBP1 Encephalopathy Based on Non-Coding RNA – Preliminary In Vitro Studies | Ganna Balagura, MD, PhD Candidate

1.047 Inhibition of mTOR by Rapamycin Treatment Rescues Behavioral and Biochemical Deficits Resulting from Neuronal Depdc5 Loss in Mice | Christopher Yuskaitis, MD, PhD

1.048 Activation of Caspase-1-Mediated Neuroinflammation in a Freeze-Lesion Model of Focal Cortical Dysplasia Exacerbates Experimental Febrile Seizures in Immature Rats | Tarek Shaker, MSc

1.056 Seizures Inhibit Respiratory CO2 Chemoreception in a Mouse Model of Dravet Syndrome | Frida Teran, BS

1.057 The Absence Seizure Envelope is Built on Thalamocortical Output | Patricia Fogerson, PhD

1.058 Abnormal Synchronization of Glutamate and Branched-Chain Amino Acids in the Epileptic Hippocampus of an Animal Model of Mesial Temporal Lobe Epilepsy | Mani Ratnesh Sandhu, MBBS

1.060 Fusion Brain Organoids Demonstrate Complex Neural Network and Oscillatory activities | Ranmal Samarasinghe, MD, PhD

1.071 Brainstem Respiratory Network in Transient and Fatal Apnoeas Due to Prolonged Hippocampal Seizures in Anaesthetised Rats | John Jefferys, PhD

1.072 Branched-Chain Amino Acids: Possible Explanation for the Glutamine Paradox in the Human Epileptic Brain? | Tore Eid, MD, PhD

1.078 Human Interictal Epileptiform Discharges Recorded from Microelectrode Arrays are Traveling Waves with Distinct Propagation Directions | Elliot Smith, PhD

1.079 Human Hippocampal Surface Recordings In Vivo Using High-Density Conformal Micro-grid Arrays | Jon Kleen, MD, PhD

1.102 Photoplethysmography Detects Blood Volume Pressure Changes in the Pre-ictal Period in Patients with Focal Impaired Awareness Seizures | Rima El Atrache, MD

1.104 Brain-Cardio-Respiratory Connectivity in a Genetic Model of Sudep Susceptibility | Timothy Hutson, BS

1.110 A Generalized Linear Model for the Detection of Spontaneous Seizures | Aafreen Azmi, AB Candidate in Computer Science

1.126 Ictal and Post-Ictal Brainstem Posturing is Associated with Generalized Convulsive Seizures (GCS) Severity Markers and Breathing Compromise | Laura Villega Bertran, MD

1.136 Pharmacokinetic and Pharmacodynamic (Pk/Pd) Relationship of Intravenous Ganaxolone in Refractory Status Epilepticus | R Eugene Ramsay, MD

1.143 Epileptogenesis in Tuberous Sclerosis Complex: A Stereo-Electroencephalography Study | Andrew Neal, MBBS, PhD
1.160 Targeting the Centromedian Nucleus For Thalamic Deep Brain Stimulation: MRI Visualisation, Intraoperative Microelectrode Recordings, and Resting-State Functional Connectivity | Aaron Warren, PhD

1.161 High Frequency Cortical Activation Patterns with Stimulation of Anterior Nucleus of Thalamus at Low and High Frequencies | Chaitanya Ganne, MBBS, PhD

1.191 Forecasting Seizure Risk at a 24-Hour Horizon | Timothee Proix, PhD

1.205 Video Quality Using Outpatient Smartphone Videos in Epilepsy: Results from the OsmartViE Study | William Tatum, DO

1.283 Artificial Intelligence (AI) to Understand Suicidality Among Teenagers and Adults Suffering From Epilepsy: The Value of Digital Conversation to Understand Their Mindset | Tatiana Falcone, MD

1.327 The Effects of Ketone Ester Supplementation on Seizure Activity and Gut Microbiome Composition in Epileptic Kcna1null Mice | Amy Chen, BHS C

1.333 Hemispherectomy in Adults And Adolescents: Seizure and Functional Outcomes in 47 Patients | Robert McGovern, MD

1.373 Anterior Temporal Lobe Regions Critical for Picture Naming: Voxel-based Lesion-Symptom Mapping in Patients Undergoing Left Temporal Lobe Resection | Jeffrey Binder, MD

1.381 Evaluation of Human Brain Tissue Transcriptome Identifies Novel Risk Genes and Altered Molecular Pathways in Gliona-Related Seizures | Anteneh Feyissa, MD, MSc

1.387 Pilot Study on Gene Discovery in Somatic Mutations in Brain Lesions from Stereotactically Placed Depth Electrodes | Laura Montier, MS, PhD

1.388 MAST3 as a Novel Cause of Developmental and Epileptic Encephalopathies | Egidio Spinelli, MD

3.292 The Action of Fenfluramine to Prevent Seizure-Induced Death in the DBA/1 Mouse SUDEP Model is Selectively Blocked by an Antagonist or Enhanced by an Agonist for the Serotonin 5-HT4 Receptor | Carl Faingold, PhD

3.294 Characterization of an Antiseizure Drug Screening Platform Using an Intra-Amygdala Kainate Microinjection Model of Temporal Lobe Epilepsy in the NINDS-Funded Epilepsy Therapy Screening Program | Peter West, PhD

3.324 Effect of PRAX-330 on SCN2A Gain of Function Mutations | Franck Potet, PhD

This workshop will address recent translationally relevant mechanistic insights into the occurrence of mood and anxiety disorders in persons with epilepsy, which contribute substantially to disability and impairments in quality of life and which remain a key NINDS/AES research benchmark. We will emphasize preclinical developments in our understanding of the shared anatomical, cellular, and molecular substrates that may predispose individuals to epilepsy and comorbid mood/anxiety disorders. Following our presentations, we will host a discussion that will revolve around strategies for risk stratification and treatment.

Learning Objectives
Following participation in this activity, participants will be able to:

- Define key neuroanatomical projections/pathways implicated in the genesis of mood/anxiety disorders in the context of epilepsy
- Appreciate the rich and diverse mechanisms by which stress may impact seizure likelihood or seizure threshold
- Acknowledge the utility of novel behavioral assays currently implemented to assay depression- and anxiety-like behavior in rodent models of epilepsy spectrum disorders

Moderator: Vaishnav Krishnan, MD, PhD
Speakers: Vaishnav Krishnan, MD, PhD; Raman Sankar, MD, PhD; and Jamie L. Maguire, PhD

Target Audience
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

Investigators Workshop: Poison Exons: From Development and Disease to Therapeutic Target

1:30 – 3:00 PM
Convention Center, Rooms 337 and 338, Level 300

This workshop will address the role of poison exons in neuronal development, in the development of genetic epilepsies through aberrant splicing, and as potential therapeutic targets for genetic epilepsies. Poison exons, or nonsense mediated decay (NMD) exons, are small exonic regions that when spliced into an RNA transcript lead to premature truncation of a protein. Inclusion of poison exons occurs during specific times in neurodevelopment and splicing occurs in a cell-specific manner. Many of the genes implicated in epilepsy harbor these exons, including SCN1A, which remain a key NINDS/AES research benchmark. We will emphasize preclinical developments in our understanding of the shared anatomical, cellular, and molecular substrates that may predispose individuals to epilepsy and comorbid mood/anxiety disorders. Following our presentations, we will host a discussion that will revolve around strategies for risk stratification and treatment.

Learning Objectives
Following participation in this activity, participants will be able to:

- Explain the cell and developmental specificity of poison exon splicing and the mechanisms that control poison exon inclusion/exclusion
- Recognize the role of poison exon inclusion/exclusion in genetic epilepsies, identify patients that should be screened for these variants, and the sequencing approaches needed to identify these variants

Investigators Workshop: On Melancholia in Epilepsy: Mechanistic Insights into the Comorbidity of Epilepsy with Depression and Anxiety

1:30 – 3:00 PM
Convention Center, Rooms 345 and 346, Level 300
Describe how inhibiting the inclusion of poison exons is a novel therapeutic target for patients with genetic epilepsies that are caused by haploinsufficiency

Moderators: Gemma Carvill, PhD and Heather Mefford, MD, PhD
Speakers: Gemma Carvill, PhD; Lori L. Isom, PhD; and Xiaochang Zhang, PhD

Target Audience
Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

Investigators Workshop: Seeing the Forest or the Trees: Does Synaptic and Cellular Heterogeneity Support Pathological Network Activity Level?

1:30 – 3:00 PM
Convention Center, Rooms 343 and 344, Level 300

This workshop will address how epilepsy researchers and clinicians can integrate emerging knowledge of synaptic, transcriptional, and circuit heterogeneity in a disease defined by highly stereotyped and synchronous electrical activity. Is there meaningful diversity in how individual synapses participate in seizure? Are rare cells types or cells that differ from the norm in their transcriptional profile important contributors to disease pathology? We will discuss these ideas and present cutting edge genetic and electrophysiological tools which allow appreciation of the heterogeneity of electrical, molecular, and transcriptional signaling that occurs in the epileptic brain.

Learning Objectives
Following participation in this activity, participants will be able to:
- Examine new tools for studying cellular diversity in epilepsy (single cell RNA sequencing, nanopatching combined with 2p imaging)
- Discuss the value of focusing on single cells when studying a disease that is commonly considered a 'network phenomenon' and the tools and concerns to consider when utilizing techniques that have a significant computational load
- Identify types of epilepsy in which the single cell level analysis would be most beneficial (i.e. cortical dysplasia or TBI where there is ‘normal’ and ‘abnormal’ tissue, side by side)

Moderators: Chris Dulla, PhD and Laura Ewell, PhD
Speakers: Heinz Beck, MD; Xia Yang, PhD; and Krishna Jayant, PhD

Target Audience
Behavioral Health Providers, Clinicians, Scientists, Pharmacists

Investigators Workshop: Electrographic Seizures in Acute Brain Injury: Prediction, Significance, and Association with Epileptogenesis

3:15 – 4:45 PM
Convention Center, Rooms 345 and 346, Level 300

This workshop will address the emerging topic of continuous EEG monitoring after acute brain injury focusing on the detection and significance of electrographic seizures as well as the link between continuous EEG findings early in the course of brain injury and the eventual development of post-injury epilepsy.

Learning Objectives
Following participation in this activity, participants will be able to:
- Calculate the risk of seizures and the estimated duration of EEG monitoring for patients with acute brain injury
- Explain the evidence supporting the concept of electrographic seizures as a mediator of secondary neuronal injury in acute brain injury and apply this knowledge to their clinical practice
- Describe the empirical results showing a link between electrographic seizures/electrographic cortical irritability and the eventual development of epilepsy after acute brain injury and outline how further investigations in this area may lead to biomarkers of early epileptogenesis

Moderators: Aaron F. Struck, MD and Jan Claassen, MD, PhD
Speakers: Aaron F. Struck, MD; Jan Claassen, MD, PhD; and Jennifer A. Kim, MD, PhD

Target Audience
APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

Education Credit
1.5 CME

Nurses may claim up to 1.5 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 1.5 contact hours (0.15 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/9/19.

Investigators Workshop: Oligonucleotide Therapies for Epilepsy: A New Era in Precision Medicine?

3:15 – 4:45 PM
Convention Center, Rooms 337 and 338, Level 300

This workshop will address the topic of oligonucleotide-based therapies for the treatment of epilepsy. Oligonucleotides are artificial DNA sequences which work by binding to target RNAs (i.e. mRNA) to disrupt their function. We will focus on exploring this nascent field in epilepsy, which offers virtually unlimited potential to treat genetic and acquired epilepsies and is now moving to clinical trials. We will review the state of the art, specific use of OGNs in distinct forms of epilepsy and span the pipeline from proof-of-concept to clinical trials as well as explore risks and limitations.
**Learning Objectives**

Following participation in this activity, participants will be able to:

- Update the community on the science of using oligonucleotides to target disease with a special focus on the benefits of this approach (e.g., almost limitless precision therapy) and limitations (delivery) of oligonucleotide “antisense” therapies for epilepsy ranging from those in late proof-of-concept, those in preclinical development, and those now in clinical trials
- Discuss and exchange ideas on the road to translation, the current and future "pipeline"
- Provide view of the future – where do other opportunities lie? What epilepsies can (and can’t) be targeted, what is the translational path in the future?

**Moderator:** David C. Henshall, PhD

**Speakers:** Cristina Reschke, PhD; Steve Petrou, PhD; and Claes Wahlstedt, MD, PhD

**Target Audience**

Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

---

**Posters Session: Contributions of a Diverse Professional Community**

**5:15 – 6:45 PM**

**Convention Center, Rooms 339 – 342, Level 300**

Please join AES over refreshments to highlight and celebrate the work of professionals who identify with or investigate underrepresented members of the epilepsy community. This is an additional poster session to celebrate the value of diversity in both the workforce and the patient community. This session provides selected abstract authors with an extra opportunity to showcase their work and network with AES members and attendees.

**Chairs:** Elizabeth Felton, MD, PhD and Aylin Reid, PhD, with support from several members of the AES Basic Sciences Committee

**1.001** C1q Mediates Chronic Secondary Gliotic Inflammation and Neurodegeneration in a Mouse Model of Post-Traumatic Epilepsy | Stephanie Holden, PhD Candidate

**1.014** Post-Mitotic Deletion of Tsc2 in Excitatory Forebrain Neurons in Mice Results in Seizures, Epileptiform Activity, and Lowered Seizure Threshold | Luis Martinez, PhD

**1.044** Brain Endothelial Glucocorticoid Receptor: Heat Shock Protein Interaction and Drug Regulatory Machinery in Human Focal Epilepsies – Potential Implications to Pharmacoresistance | Chaitali Ghosh, PhD

**1.045** SINEUPs: A Novel Therapeutic Strategy for STXBP1 Encephalopathy Based on Non-coding RNA – Preliminary In Vitro Studies | Ganna Balagura, MD, PhD Candidate

**1.056** Seizures Inhibit Respiratory CO2 Chemoreception in a Mouse Model of Dravet Syndrome | Frida Teran, BS

**1.088** Surface-Electromyography (sEMG) Patterns of Clonic Bursts During Generalized Tonic-Clonic, Psychogenic Non-epileptic, and Simulated Seizures from a Wearable Device | Damon Cardenas, PhD

**1.098** Spike Frequency, Height, and Duration Decrease Over Disease Resolution in Benign Epilepsy with Centropetal Spikes (BECTS) | Grace Xiao, BA

**1.099** Identifying Pre-ictal ECG Changes Beyond Heart Rate: A Combined Data-analytic and Literature-Search Approach | Claire Ufongene, BA

**1.100** SCN1B-Linked Dravet Syndrome Patient-Derived Ipsc Cardiac Myocytes Have Increased Sodium Current Density | Nnamdi Edokobi, BS, PhD

**1.101** Proteomic and Metabolomic Changes in a Model of Drug-resistant Temporal Lobe Epilepsy are Mitigated by Treatment with Sodium Selenate | Pablo Casillas-Espinosa, MD, PhD

**1.125** Improving Ictal Response Testing in The Pediatric Epilepsy Monitoring Unit: A Pilot Project | Reega Purohit, MD

**1.144** Seizure Characteristics of Neonates with Severe Cardiopulmonary Diseases in the Neonatal Seizure Registry | Shavonne Massey, MD

---

**Investigators Workshop: Ultra-slow and DC Recordings to Study Seizures, Migraine, and Spreading Depression**

**3:15 – 4:45 PM**

**Convention Center, Rooms 343 and 344, Level 300**

This workshop will address how ultra-slow changes in membrane potential and extracellular voltage may reveal common mechanisms that link epileptic seizures with migraine. Migraine is a comorbidity of epilepsy, and spreading depression is thought to contribute to both migraine and epileptic seizures (i.e., postictal depression). During spreading depression, neurons and glia undergo prolonged depolarization. The workshop will show how DC recordings are required to measure directly the ultra-slow components of spreading depression and postictal depression, and will discuss new techniques that can be used chronically in animal models and clinically in human patients.

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Recognize the linkages between epilepsy and migraine
- Explain the similarities and differences between seizures and spreading depression
- Perform long-term DC recordings in animal models and human patients

**Moderators:** F. Edward Dudek, PhD and Bruce Gluckman, PhD

**Speakers:** KC Brennan, MD; Punam Sawant, PhD; and Fatemeh Bahari, PhD candidate

**Target Audience**

APPs, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists
| 1.145 | Measuring Drug Effects on Brain Dynamics Through Electroencephalography | Aarti Sathyanarayana, PhD |
| 1.158 | Effects of Transcranial Focal Electrical Stimulation (TFS) via Tripolar Concentric Ring Electrodes (Tcres) at Low Current Intensity, Alone and Combined with Antiseizure Drugs in Rats | Daniel Perez-Perez, MD |
| 1.159 | Attraction of the Motor Map Toward a Seizure Focus | Harper Kaye, BA |
| 1.188 | Dynamics of Electrical Activity in Pre-Seizure Brain State | Mona Nasseri, BS, PhD |
| 1.189 | Comparative Analysis Using Global EEG Topography of Brain Resting States in Patients with Multi-Drug Resistant Temporal Lobe Epilepsy | Catherine Squirewell, BS |
| 1.190 | Localization of Epileptogenic Zones Using Network Analysis Of Resting-State Stereo-EEG data | Kanupriya Gupta, BA |
| 1.202 | Biopsychological Predictors in Patients with Psychogenic Non-Epileptic Seizures From a Comprehensive Epilepsy Center in Hawai‘i | Carol Lu, BA |
| 1.203 | Autoimmune Encephalitis and Seizures; EEG, MRI and CSF abnormalities: a case series | Hisham Elkhider, MD |
| 1.216 | Real-World Experience with Brain-responsive Neurostimulation for Focal Onset Seizures | Christine Lin |
| 1.233 | Metabolic Connectivity Can Help Predict Seizure Outcomes in Temporal Lobe Epilepsy Surgery | Mohamed Tantawi, MBCh |
| 1.245 | Antiepileptic Drug Use and Pregnancy Outcomes in African American Women with Epilepsy | Zainab Alalawi, MD |
| 1.267 | Nucleus Basalis MRI Functional Connectivity Abnormalities in Patients with Temporal Lobe epilepsy | Hernan Gonzalez, MS |
| 1.283 | Artificial Intelligence (AI) to Understand Suicidality Among Teenagers And Adults Suffering From Epilepsy: The Value Of Digital Conversation To Understand Their Mindset | Tatiana Falcone, MD |
| 1.284 | Characterizing Children with Epilepsy and Autism without Intellectual Disability | Christina Casnar, PhD |
| 1.321 | Typical Development in Infants Exposed to Lamotrigine or Levetiracetam In Utero | Rebecca Bromley, PhD |
| 1.326 | Vagus Nerve Stimulation in the Treatment of Drug-resistant Epilepsy: Preliminary Experience in a Reference Epilepsy Center in Venezuela | Anilu Daza Restrepo, MDM |
| 1.331 | Focal Seizures Drive Functional Re-mapping in the Human Supplementary Motor Area | Jennifer Hong, MD |
| 1.332 | Interaction of Epileptic and Cognitive Networks and Their Impact on Post-surgical Cognitive Outcome in Temporal Lobe Epilepsy | Vera Dinkelacker, MD |
| 1.370 | Epilepsy Connectome Project (ECP): Cognitive Gender Differences in Temporal Lobe Epilepsy | Leroy Williams, Jr., MS |
| 1.381 | Evaluation of Human Brain Tissue Transcriptome Identifies Novel Risk Genes and Altered Molecular Pathways in Glioma-related Seizures | Anteneh Feyissa, MD, MSc |
| 1.382 | The Phenotypes of 10 Epilepsy Children with GABRA1 Mutations | Ying Yang |
| 1.383 | Visual Impairment is Universal and Visual Acuity is a Quantifiable Dynamic Biomarker in Cyclin-Dependent Kinase-Like 5 (CDKL5) Deficiency Disorder | Heather Olson, MD, MS |
| 1.384 | Investigating the Role of Aberrant Methylation in Developmental and Epileptic Encephalopathies | Malavika Hebbar, PhD |
| 1.385 | Impact of Receiving LGI1 Genetic Test Results on Health-Related Behaviors | Felix Olaya, MPH |
| 1.386 | Identifying MTOR Pathway Mutations in Pediatric Non-Lesional Temporal Lobe Epilepsy | Harold Westley Phillips, MD |
| 1.387 | Pilot Study on Gene Discovery in Somatic Mutations in Brain Lesions From Stereotactically Placed Depth Electrodes | Laura Montier, MS, PhD |
| 1.394 | Prehospital Benzodiazepine Use and Outcomes Among Patients with Out-Of-Hospital Status Epilepticus | Elan Guterman, MD |
| 1.395 | Characteristics of Epilepsy in a Population-Based Cohort From Lower And Middle Income Countries | Sachi Singhal, MBBS |
| 1.410 | Epilepsy Surveillance in Children Born During The Zika Virus Outbreak in Grenada, West Indies | Karen Blackmon, PhD |
| 1.411 | Outreach to Racial and Ethnic Minorities for Epilepsy Education Through Faith-based Organizations | Steven Owens, MD, MPH |
| 1.412 | Feasibility and Acceptability of Project UPLIFT In Hispanic People with Epilepsy and Elevated Depressive Symptoms | Tanya Spruill, PhD |
| 1.413 | Minority Outreach Program to Increase Epilepsy Education And Awareness in Racial and Ethnic Communities | Thometta Cozart, MS, MPH, CPH, CHES |
| 3.044 | 3T fMRI Thalamic Activation with Vagus Nerve Stimulation | Jane Allendorfer, PhD |
| 3.186 | Is Benign Rollenic Epilepsy a Focal or Generalized Epilepsy Syndrome? | Ramya Ghantasala, MD |
| 3.287 | Targeting Glial Processes as a Treatment for Acquired Epilepsies | Oscar Alcoreza, MD |
| 3.413 | Assessing the Personal Impact of Epilepsy in a Population-based Cohort Of Veterans | Adriana Reyes Miranda, BS |
| 3.414 | Trends in the Use Of Antiepileptic Drugs During Pregnancy Across Two Decades: A Danish Population-based Study | Julie Dreier, MSPH, PhD |
## CDC Public Health Workshop

### 6:00 – 7:30 PM  
**Convention Center, Rooms 349 and 350, Level 300**

This session will include speakers from the Health Resources and Services Administration (HRSA) Epilepsy Program. HRSA supports strategic approaches to improving access to quality health care for children and youth with epilepsy. It will highlight successful strategies to facilitate the transition of youth with epilepsy into adult health care.

### Learning Objectives
Following participation in this activity, participants will be able to:

- Learn about federally-funded programs to improve access to health care for children and youth with epilepsy, which include telehealth, health care transition, and family engagement strategies.
- Describe the importance of health care transitions, components of a successful process of transition from pediatric to adult system of health care for youth with epilepsy, and the integration of public health and clinical care.
- Describe components of a successful process of transition from pediatric to adult system of health care for youth with epilepsy.
- Learn how clinical settings have leveraged technology to facilitate the transition of health care, particularly in medically underserved areas.
- Identify the roles health care providers, public health agencies, community organizations, youth, and families can play in supporting successful transitions of health care.

### Facilitator
Rosemarie Kobau, MPH, MAPP, CDC Epilepsy Program

### Speakers
- Yasmin Mazloomdoost, MPH, MSW, HRSA Epilepsy Program
- Laurie Douglass, MD, Boston Medical Center Corporation
- Marcia Franks, Michigan Department of Health and Human Services
- Children’s Special Health Care Services
- Youth

### Target Audience
- APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers
- Nurses, Scientists, Technicians

## SIG: Neonatal Seizures: Outcomes Following Neonatal Seizures

### 6:00 – 7:30 PM  
**Convention Center, Room 316, Level 300**

This session will highlight the current level of knowledge regarding outcomes in children who experience neonatal seizures. While it is known that an increasing electrographic seizure burden is associated with poor neurodevelopmental outcomes, it is important to explore and understand this relationship. We will also discuss other influences and confounding factors on outcomes following neonatal seizures, such as etiology and co-morbid health problems, as well as the role of anti-seizure medications. We will specifically discuss outcomes of genetic neonatal onset epilepsy. Additionally, through a case-based approach, this session will address current parental perception of communication in the neonatal intensive care unit and explore strategies to improve upon communication of medically complex information, even when prognostic uncertainty exists.

### Facilitator
Rosemarie Kobau, MPH, MAPP, CDC Epilepsy Program

### Speakers
- Julia Jacobs, MD
- Catherine Chu, MD
- William Stacey, MD

### Target Audience
- APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers
- Nurses, Scientists, Technicians

## SIG: Engineering and Neurostimulation: Focusing on Fast Oscillations: New Insights and Controversies

### 6:00 – 7:30 PM  
**Convention Center, Rooms 345 and 346, Level 300**

Two decades of research on interictal fast oscillations (80-600Hz) have generated an abundance of data supporting the hypothesis that fast oscillations are an electromagnetic biomarker of epileptogenic brain tissue. Yet, translating this basic research into clinical practice has been slow due, in part, to a partial understanding of the pathophysiology of fast oscillations in the epileptic brain and various issues associated with recording, detecting, and analyzing this data. Among the issues are recent results that have introduced controversies about the spatial and temporal variability of fast oscillations in relation to the seizure onset zone, the accuracy of fast oscillations observed noninvasively in contrast to interictal EEG spikes to delineate the epileptogenic zone, and the extent that removing sites of fast oscillations predicts a seizure-free outcome. For fast oscillations to move towards clinical application these issues need to be addressed, which is the goal of this session. During this session, we will review the latest results that have raised important questions about fast oscillations and the implications for clinical studies. Speakers and the audience will discuss potential approaches, such as standardizing methodology, proper validation, and new study design, that could help to resolve these controversies.

### Facilitator
Rosemarie Kobau, MPH, MAPP, CDC Epilepsy Program

### Speakers
- Robert Clancy, MD
- Roberta Cilio, MD, PhD
- Monica Lemmon, MD

### Target Audience
- APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers
- Nurses, Scientists, Technicians

## SIG: Neuroendocrinology: Going ‘Downstream’ of Endogenous Steroids for New Therapeutic Approaches

### 6:00 PM – 7:30 PM  
**Convention Center, Rooms 343 and 344, Level 300**

Gonadal steroids often target specific genes or intracellular signaling pathways to exert their biological effects. Therapeutic strategies that focus on these ‘downstream’ targets are potentially attractive because they may circumvent the side
effects of hormone therapy. There are several target genes that are good candidates and this session will focus on one: the neurotrophin brain-derived neurotrophic factor (BDNF). This focus is timely because of increasing evidence that BDNF and its receptors, p75 and TrkB, are involved in epilepsy. We will discuss evidence that estrogen in females increases BDNF and this promotes seizures in women with epilepsy. In contrast, androgen in males appears to tonically suppress BDNF and decrease seizures in men. The second presentation will switch to the developing brain where sexual differentiation of the brain is based on a perinatal surge in estrogen and testosterone. Finally, we will discuss preclinical studies suggesting that TrkB inhibition is therapeutic in animal models of temporal lobe epilepsy.

Coordinators: Helen Scharfman, PhD and Alison M. Pack, MD

Speakers: Margaret McCarthy, PhD and James McNamara, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Psychosocial Comorbidities: Psychosis and Epilepsy

CME & CE

6:00 – 7:30 PM

Convention Center, Rooms 347 and 348, Level 300

This SIG will focus on psychosis as it occurs in patients with epilepsy. The first presentation will address interictal psychosis in both its chronic and transient/episodic forms, followed by a discussion on peri-ictal psychosis (ictal, post-ictal). We will address the chronic schizophrenia-like psychoses of epilepsy, anti-seizure drug-induced psychosis, and forced normalization. All topics will be addressed with a focus on the phenomenology and etiology as best understood. While there is little evidence-based data to guide treatment and no formal guidelines, the expert speakers may present their opinions on management approach. We will have two short talks followed by one or two brief case presentations with diagnostic ambiguity. We will solicit opinions from the speakers about the cases as a means of opening discussion. During a question/answer session, audience members may weigh in with their opinions on the case or ask questions of the speakers regarding their talks.

Learning Objectives
Following participation in this activity, participants will be able to:
• Review the relationships between epilepsy and chronic interictal psychosis, including shared vulnerabilities and etiologic factors; participants will become familiar with which psychosis treatments can worsen seizures and which epilepsy treatments can worsen psychosis
• Diagnose and treat postictal psychosis and become familiar with its implications for epilepsy surgery; participants will learn to differentiate postictal psychosis from ictal psychosis, drug-induced psychosis and forced normalization
• Develop a diagnostic approach when faced with a patient with both seizures and psychosis
• Develop a framework for approaching this comorbidity in the context of their own clinical practices

SIG: Seizure and Cerebrovascular Disease: Review of the Latest Updates on Epidemiology and Management of Post-Stroke Seizures

6:00 – 7:30 PM

Convention Center, Rooms 337 and 338, Level 300

Epidemiology and management strategies of seizures following ischemic or hemorrhagic strokes are constantly evolving as newly published data becomes available. We selected three prominent speakers of this field to present updates on their research on novel data regarding:
• Epidemiology of treatment-resistant (refractory) stroke-related epilepsy including risk factors, response to medical management and other treatment options
• Impact of seizure medication choice on quality of life and cognitive functions after strokes
• Early post-stroke seizures: their incidence and their contribution to stroke outcome and post-stroke epilepsy, and the effect of acute stroke treatment choices on their occurrence (data from the Qatar stroke database)

Each presentation will be followed by a Q&A session.

Coordinators: Peter B. Forgacs, MD and Joseph W. Doria, MD

Speakers: Jorge Burneo, MD MSPH; Andrew M Naidech, MD, MSPH; and Naim I. Haddad, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

Attendee Reception

9:30 – 10:30 PM

Hilton, Holiday Ballroom 6, Second Floor

Mingle with other meeting attendees and dance the night away to the sounds of Ear Candy, featuring DJ Floss and the Rockin’ MDMC. Indulge in desserts and your choice of beer, wine or coffee. All attendees of the AES Annual Meeting are invited!
Monday, December 9

**Registration**

7:00 AM – 5:00 PM  
Convention Center, Pratt Street Lobby, Level 300

**Exhibit Hall**

8:00 AM – 2:00 PM  
Convention Center, Hall E, Level 100

**SIG: Critical Care Epilepsy: Quantitative and Automated CEEG Analysis**

7:00 – 8:30 AM  
Convention Center, Room 316, Level 300

Continuous EEG monitoring (CEEG) has become standard of care in many institutions worldwide. However, it still poses several challenges. One challenge being the daunting amount of EEG data that need to be reviewed by clinicians in a very tight time frame. This SIG will focus on new and emerging methods of quantitative and automated methods of EEG signal analysis that might allow better and faster CEEG interpretation for diagnostic and prognostic purposes, including deep learning algorithms, advanced signal decomposition, and EEG sonification. The session will comprise talks from two established clinical scientists and highlight three trainee members presenting important new abstracts related to the field.

Coordinators: Nicolas Gaspard, MD, PhD and Courtney J. Wusthoff, MD

Speakers: M. Brandon Westover, MD, PhD, and Babak Razavi, MD, PhD

**Target Audience**  
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**SIG: Dietary Therapies for Epilepsy: Patient Monitoring and Biological Mechanisms: Point-Counterpoint Discussion**

7:00 – 8:30 AM  
Convention Center, Rooms 337 and 338, Level 300

This session will cover a range of topics that are relevant to patient monitoring on the ketogenic diet and will consider dietary management issues, especially in regards to transitioning the pediatric patient to adult care.

Coordinators: Dominic D’Agostino, PhD and Maromi Nei, MD

Speakers: Eric H.W. Kossoff, MD; Elizabeth Felton, MD, PhD; and Karin Borges, PhD

**Target Audience**  
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**SIG: Epilepsy Education: Building a Career as an Epilepsy Educator**

7:00 – 8:30 AM  
Convention Center, Rooms 345 and 346, Level 300

This SIG will focus on building a career as an epilepsy educator. We will approach this according to the phases of career development, beginning with how to build the skills necessary to become an outstanding educator. We will discuss how to identify and cultivate an area of expertise. Finally, we will explore how to develop a national and international reputation and a portfolio to support advancement. Participants in this SIG will come away with practical tips for their own career development as educators regardless of the phase they are in, as well as an expanding network of educator colleagues connected through the SIG opportunity.

Coordinators: Susannah Cornes, MD and Daniel Weber, DO

Speakers: Ionnis Karakis, MD, PhD, MSc; Andres Fernandez, MD; and Nilika Singhal, MD

**Target Audience**  
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**SIG: Professional Wellness in Epilepsy Care**

7:00 – 8:30 AM  
Convention Center, Rooms 347 and 348, Level 300

This SIG will incorporate the favorable feedback and integrate suggested new ideas from the first Professional Wellness in Epilepsy Care SIG in 2018. The featured speaker will discuss narrative medicine in epilepsy caregivers with an update on the preliminary data presented at the 2018 AES Annual Meeting. This will be followed by a discussion on the dynamics and
importance of teamwork and emotional culture in the workplace and its relevance to reducing burnout and increasing professional fulfillment in epilepsy centers. Epileptologists who are graduates of the AAN Live Well Lead Well program will discuss interventions they have initiated in their workplaces and lessons learned. We will then divide into small groups to discuss themes around the emotional challenges of caring for patients with epilepsy. We will finish by discussing future steps, including resources that might be developed and made available to epilepsy professionals.

Coordinators: Cormac A. O’Donovan, MD and Steven Schachter, MD
Speakers: Lauren Frey, MD; Michael T. Vitez; Jamie L. Palaganas, MD; and Ann M. Collier, MD

**Target Audience**
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

---

**SIG: Psychogenic Nonepileptic Seizures (PNES): Where is the Silver Lining in Psychogenic Non-epileptic Seizures? Mortality, Disability, Symptom Substitution, Variable Treatment Responses**

**CME & CE**
7:00 – 8:30 AM

**Convention Center, Rooms 343 and 344, Level 300**

Psychogenic non-epileptic seizures (PNES) are paroxysmal behavioral changes that resemble epileptic seizures but are not associated with electrophysiological epileptic changes. However, simply because psychological factors are at the root of this condition, does not mean it is trivial or less onerous than other physiological disorders. This SIG will address prognosis in PNES, including the issue of mortality. One study has shown a modest increase in mortality, while a more recent study has suggested a more substantial effect. We will describe the available data, advance possible explanations for increased mortality in PNES, and will discuss potential avenues for further study. Other aspects of prognosis in PNES, in which data is limited and/or plagued with methodological questions, will cover the following:

- Review the currently available information on prognostic factors
- Discuss how to think broadly about prognosis (including seizure frequency, level of disability, other functional neurological symptoms, other therapeutic gains)
- If/how to use known prognostic factors to inform therapeutic decisions

Lastly, prognosis in youth with PNES, which differs from that in adults, will be examined with a focus on the risk factors present at diagnosis, and how those factors impact treatment. Dr. Sigita Plioplys will review the current, limited, research on long-term outcomes and how that might compare to outcomes in individuals diagnosed with other functional symptoms.

Coordinators: Lorna Myers, PhD and Julia Doss, PsyD
Speakers: Gaston Baslet, MD; Sigita Plioplys, MD; and Roderick Duncan, MD, PhD, FRCP

**Target Audience**
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

---

**SIG: Stereoelectroencephalography (SEEG): Anatomo-electro-clinical Correlation in Practice: The Use of Semiology and Multi-modal Investigations to Guide Implantation and Interpretation of Stereoelectroencephalography**

7:00 – 8:30 AM

**Convention Center, Room 314, Level 300**

This session will discuss implantation planning guided by integration of the pre-surgical data including video EEG and multi-modal imaging. Through a methodological approach, we will discuss SEEG electrode implantation strategies. The vital importance of anatomo-electro-clinical correlation in generating hypotheses will be emphasized. Finally, we will discuss the interpretation of SEEG in the light of anatomo-electro-clinical correlation and the epileptogenic zone biomarkers. We will highlight the relation between interictal and ictal activities as well as the role of electrical stimulation.

Coordinators: Ammar Kheder, MD, MRCP and Patrick Chauvel, MD
Speakers: Aileen McGonigal MD; Giridhar Kalamangalam, MD; and Guy M. McKhann, MD

**Target Audience**
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

---

**Poster Session 3**

8:00 AM – 2:00 PM

**Authors Present: 12:00 PM – 1:45 PM**

**Convention Center, Hall E, Level 100**

Posters are grouped by general topic category at various times throughout the meeting. There are three ways to access abstracts presented during this poster session:

1. Pick up the guide to poster abstracts, available in the registration area
2. Visit [aesnet.org/abstracts](aesnet.org/abstracts) for our searchable abstract database
3. Download the AES annual meeting app with all abstracts at [meeting.aesnet.org/mobile-app](meeting.aesnet.org/mobile-app)

This poster session closes promptly at 2:00 PM.
**Poster Walking Tours**

12:15 – 1:45 PM  
**Convention Center, Hall E, Level 100**

Tour Leaders: Anne Anderson, MD; Dave Clarke, MBBS; Dennis Spencer, MD; James Wheless, MD; and Eric Kossoff, MD

Join leading experts as they spotlight interesting posters and facilitate discussion with authors, gaining new and different perspectives on the data presented.

To join a walking tour, gather at the Poster Information Table (near exhibit booth #108 and board #433) in the poster hall. A schedule of topics and tour leaders will be available.

---

**Pediatric State of the Art Symposium: Emergency Seizure Management: Smarter Systems Stop Seizures Sooner**

**CME & CE**

8:45 – 11:45 AM  
**Convention Center, Ballroom III, Level 400**

Recent data have advanced our understanding and management of pediatric epilepsy emergencies. This session will present immediately actionable, data-driven changes to optimize care.

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Perform evidence-based emergency seizure management including neonatal seizures, acute inpatient seizures, prolonged seizures at home, and status epilepticus
- Recognize the role of inter-disciplinary teams in optimizing in-hospital acute seizure management
- Comprehend the role for EEG in acute seizure management

**Program**

**Chairs:** Nicholas Abend, MD and Adam Ostendorf, MD  
**Neonatal Seizures, Renée Shellhaas, MD, MS**  
**Convulsive Status Epilepticus, Tobias Loddenkemper, MD**  
**Critical Care EEG Indications and Outcomes, Cecil Hahn, MD, MPH**  
**Inpatient Acute Seizure Management, Adam Ostendorf, MD**

- Can Pediatric Neurohospitalists Improve Management of Inpatient Seizure Emergencies? Lindsey Morgan, MD  
- Home Seizure Rescue Medications, Sudha Kessler, MD, MSCE  
- Next Steps: Pathways, QI, and Implementation Science, Nicholas Abend, MD

**Target Audience**

APPs, Clinicians, Fellows/Trainees, Nurses, Scientists, Technicians, Pharmacists

**Education Credit**

3.0 CME

Nurses may claim up to 3.0 contact hours for this session. University of Minnesota approves this knowledge-based activity for 3.0 contact hours (0.30 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/9/19.

This educational activity is supported in part by Eisai Inc., Mallinckrodt Pharmaceuticals, and Sunovion Pharmaceuticals Inc.

---

**NAEC/AES EEG Monitoring Codes: Coding Changes for Long Term EEG Monitoring Services for 2020**

9:00 – 10:30 AM  
**Convention Center, Room 316, Level 300**

This session will provide a historical overview of CPT Code 95951 (VEEG) and the other long-term EEG monitoring services as well as their review by the AMA CPT Panel and Relative Value Update Committee in 2017 and 2018. Detailed information will be presented on the new code structure, definitions and appropriate usage in diagnosing and treating patients with epilepsy, and other disorders. The Medicare-assigned relative values and payment rates for the new codes also will be explained.

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Review the history of the long term EEG monitoring coding structure and its impact on epilepsy care and the reason behind and process for the coding changes becoming effective January 1, 2020
- Recognize the definitions and usage of the new codes and their potential impact on patient care

**Speakers:** Nathan B. Fountain, MD, President, NAEC; Susan T. Herman, MD, President-elect, NAEC; Gregory L. Barkley, MD, AAN Representative on AMA's Relative Value Update Committee; Marc Nuwer, MD, ACNS CPT/RUC Representative

**Target Audience**

APPs, Clinicians, Fellows/Trainees, Nurses

---

**SIG: Intractable Generalized Epilepsy: From Genetic Testing to Surgical Approach**

9:00 – 10:30 AM  
**Convention Center, Room 314, Level 300**

Diagnosing and treating intractable epilepsy can be challenging. Significant progress has been made in the management of intractable ocal epilepsy but unfortunately, this is not true when it comes to treating intractable generalized epilepsy. This session will provide a platform for discussion of complex approach in the diagnosis of intractable generalized epilepsy from clinical and electroencephalographic (EEG) features to a comprehensive approach in the medical or surgical treatment. Clinical cases will be presented in order to cover a wide range of diagnostic and therapeutic dilemmas including genetic, autoimmune, and metabolic conditions that can be encountered in intractable generalized epilepsy cases in children and adults. Novel surgical approaches will be described for appropriate cases.

**Coordinators:** Simona V. Proteasa, MD and Sean Hwang, MD

**Speakers:** Mary Connolly, MD and Robert Gross, MD

**Target Audience**

APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

This educational activity is supported in part by Stoke Therapeutics.
SIG: Neuroimaging: Imaging Genetics Across Epilepsy Syndromes

9:00 – 10:30 AM
Convention Center, Rooms 343 and 344, Level 300

Imaging genetics is an integrated research method that uses neuroimaging and genetics to assess the impact of genetic variation on brain function and structure. This session will cover the most recent research on combined MRI and genetics studies in main epilepsy syndromes: temporal lobe epilepsy, focal cortical dysplasia, and generalized genetic epilepsies.

Coordinators: Andrea Bernasconi, MD and Leonardo Bonilha, MD, PhD

Speakers: Fernando Cendes, MD, PhD; Andrea Bernasconi, MD; and Matthias J. Koepp, MD, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Temporal Lobe Club: The Intracranial EEG Evaluation of Temporal Lobe Epilepsy. Which is Best?

9:00 – 10:30 AM
Convention Center, Rooms 337 and 338, Level 300

Several strategies are used for intracranial EEG monitoring to localize the ictal onset zone. Although consensus from the last Palm Desert Conference in 1992 recommended depth electrodes for deep limbic onset seizures and subdural grids and strips for convexity neocortical onset seizures, many surgical centers in the U.S. are now transitioning from using only grids and strips to using only depth electrodes. Moreover, the approach to the use of depth electrodes now is following two strategies: bilateral standard depth electrode placements and tailored stereo EEG. The advantages and disadvantages of each of these three approaches will be discussed and debated with a view to guiding treatment decisions based on the best approach for specific clinical situations or questions.

Coordinator: Jerome Engel, Jr., MD, PhD

Speakers: John Stern, MD; Philippe Ryvlin, MD, PhD; and Daniel Friedman, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Practice Management: Multidisciplinary Care Models in Seizures and Epilepsy

9:00 – 10:30 AM
Convention Center, Rooms 347 and 348, Level 300

This session showcases multidisciplinary care models implemented by a variety of institutions in the care of patients with seizures and epilepsy. Although epileptologists have a primary role in the management of seizures, a team approach allows for a variety of healthcare professionals to address the comorbidity and complexities that can accompany seizures. Discussion will focus on the realistic and practical aspects of their multidisciplinary clinics including barriers to implementation, billing and reimbursement, and outcomes. The session will conclude with an interactive panel discussion encouraging discussion of other similar or dissimilar models that may be in place at other institutions, and their experiences.

Coordinators: Kinshuk Sahaya, MD, FAAN, FAES and Victoria Wong, MD, FAES

Speakers: Nicholas J Beimer, MD; Sharon L. Mason, MA; Elizabeth Adams, PhD; and Jaime D. E. Twanow, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Tumor Related Epilepsy: Diagnostic Advances in Tumor-Related Epilepsy

9:00 – 10:30 AM
Convention Center, Rooms 345 and 346, Level 300

This SIG will feature an update on diagnostic advances in Brain Tumor-Related Epilepsy (BTRE), with special attention paid to advances in genetic biomarkers and diagnostic neuro-imaging, and their impact on current and future management and research for both adult and pediatric patients with BTRE.

Coordinators: Jorge G. Burneo, MD, MSPH and Jessica Templer, MD

Speakers: Jeffrey A. Loeb, MD, PhD; Jeffrey M. Politsky, MD, MSc; Craig Horbinski, MD, PhD; and Csaba Juhasz, MD, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

WHO-ILAE-IBE Global Report on Epilepsy: Epilepsy: A Public Health Imperative

9:00 – 10:30 AM
Convention Center, Rooms 349 and 350, Level 300

This strategic document of the WHO, the ILAE, and the IBE addresses global strategic issues in epilepsy treatment and care. It will be presented by the leadership of these organizations.

Chairs: Sam Wiebe, MD and Martin Brodie, MD

Introduction, Sam Wiebe, MD (Canada)

What Does the Report Mean for the WHO?, Devora Kestel, MSc (WHO/Switzerland)

Overview of the Epilepsy Report, Alla Guekht, MD (Russia)

Epilepsy Research with Imminent Clinical Impact, Aristea Galanopoulou, MD, PhD (USA)

International Collaborations for Research and Care, J. Helen Cross, MD, ChB, PhD (UK)
Implementing the Report in North America and the Need for a Global Action Plan, Nathalie Jette, MD, MSc, FRCPC (USA)
Panel Discussion: Sam Wiebe, MD; Martin Brodie, MD; Page B. Pennel, MD, FAES; Philip Gattone, MEd

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Lombroso Lecture: Glial Cells and Epilepsy: How New Tools are Revealing New Insights

2:00 – 3:15 PM
Convention Center, Ballroom III, Level 400
Basic and Clinical Science Research Award Lectures
Contributing to Basic Research About Epilepsy: Helen Scharfman, PhD
The Significance of Seizures in Autoimmune Encephalitis: Josep Dalmau, MD, PhD
Neuromuscular Junction to Brain: Professor Angela Vincent, FMedSci, FRS

Glial Cells and Epilepsy: How New Tools are Revealing New Insights: Karen S. Wilcox, PhD
Technical developments in neuroscience have greatly improved our ability to study the role of astrocytes and microglia in epilepsy. For example, the development of genetically-encoded calcium indicating proteins and glutamate sensors have demonstrated that populations of glial cells, in brain regions associated with seizure generation, are not the passive, quiescent cells they were once thought to be. Following brain insults that can lead to the development of epilepsy, glial cells undergo considerable changes in gene expression, structure, and function, and produce inflammatory cytokines which contribute to neural excitability. This lecture will provide an overview of recent developments that have increased our understanding of glial cells in epilepsy and how this knowledge may be exploited for future therapies.

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Dialogues to Transform Epilepsy

3:15 – 5:45 PM
Convention Center, Room 316, Level 300
New in 2019! This session will include two speakers whose work focuses on transformative neurobiological research outside or at the fringe of the epilepsy field. Each speaker will be paired with a member of the AES community to facilitate a dialogue about how the transformative conceptual and technical advances can be implemented to accelerate progress in the epilepsy field. The session will include ample time for discussion and interaction with the audience.

Learning Objectives
Following participation in this activity, participants will be able to:
• Apply new concepts or techniques at the cutting-edge of the broader neuroscience field
• Discuss how these new concepts or techniques could be implemented into the epilepsy field
• Describe how these new concepts or techniques could potentially transform research related to epilepsy

Chair: Jamie Maguire, PhD
Moderator: Douglas Coulter, PhD

Optical Interrogation of Local and Large-scale Neural Circuits in Seizure: Jessica Cardin, PhD
Facilitator: Ivan Soltesz, PhD
Group Discussion

New Ways to Think About the Homeostatic Control of Neuronal Activity in Epilepsy: Jason Shepherd, PhD
Facilitator: Helen Scharfman, PhD
Group Discussion

Target Audience
Clinicians, Scientists, Fellows/Trainees, Behavioral Health Providers, Technicians, Pharmacists
## Concurrent Platform Sessions

### 3:15 PM – 5:30 PM

There will be three concurrent sessions consisting of selected key scientific abstracts. Authors will present a 15-minute overview of their work followed by a two-minute Q&A session. There are two ways to access abstracts presented during this poster session:

1. Visit [aesnet.org/abstracts](http://aesnet.org/abstracts) for our searchable abstract database
2. Download the AES annual meeting app with all abstracts at [meeting.aesnet.org/mobile-app](http://meeting.aesnet.org/mobile-app)

<table>
<thead>
<tr>
<th>Time</th>
<th>Platform D: Gene Targeted Therapy</th>
<th>Platform E: Clinical Epilepsy</th>
<th>Platform F: Epilepsy Related Comorbidities</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:15 PM</td>
<td>D.01 A CRISPRi Screen in Human iPSC-derived iNeurons to Discover Novel Focal Cortical Dysplasia Genes</td>
<td>E.01 Short and Long-term Outcomes of Deferred Treatment in Newly Diagnosed Epilepsy</td>
<td>F.01 Characterizing Children with Epilepsy and Autism Without Intellectual Disability</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>D.02 Inhibition of mTOR by Rapamycin Treatment Rescues Behavioral and Biochemical Deficits Resulting from Neuronal Depdc5 Loss in Mice</td>
<td>E.02 BECTS vs. CAE: Differences in Resting State Language Network Functional Connectivity are not Explained by Spike Burden</td>
<td>F.02 Cognitive Impairment in Juvenile Absence Epilepsy: A Neuropsychological Investigation of Patients and Their Unaffected Siblings</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>D.03 MAST3 as a Novel Cause of Developmental and Epileptic Encephalopathies</td>
<td>E.03 Neural Autoantibody Frequency in Epilepsy: A Systematic Review and Meta-Analysis</td>
<td>F.03 Cognitive Decline in Older Adults with Epilepsy: The Cardiovascular Health Study</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>D.04 Seizures Inhibit Respiratory CO2 Chemoreception in a Mouse Model of Dravet Syndrome</td>
<td>E.04 Video Quality Using Outpatient Smartphone Videos in Epilepsy: Results from the OsmartViE Study</td>
<td>F.04 Epilepsy Connectome Project (ECP): Cognitive Gender Differences in Temporal Lobe Epilepsy</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>D.05 SINEUPs: A Novel Therapeutic Strategy for STXBP1 Encephalopathy Based on Non-coding RNA — Preliminary In Vitro Studies</td>
<td>E.05 Effect of Antiepileptic Drug Monotherapy on The Risk of Death in Patients with Poststroke Epilepsy</td>
<td>F.05 Prevalence and Outcomes of Mood Disorders Following Temporal Lobectomy</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>D.06 Precision Models of ARX-Associated Genetic Epilepsies</td>
<td>E.06 Single Center Outcomes for Deep Brain Stimulation of the Anterior Nucleus of The Thalamus in Medically Refractory Epilepsy</td>
<td>F.06 Artificial Intelligence (AI) to Understand Suicidality Among Teenagers and Adults Suffering from Epilepsy: The Value of Digital Conversation to Understand Their Mindset</td>
</tr>
<tr>
<td>4:45 PM</td>
<td>D.07 Dampered Cellular Stress Response in GABRG2 Mutations Associated with Variable Epilepsy Syndromes and Therapeutic Implications</td>
<td>E.07 Early Life Epilepsy Natural History Project: Advancing Knowledge of Ultra-rare Diseases with the CLIRINX Informatics Platform</td>
<td>F.07 Medical and Psychiatric Diagnoses 10-Years After Diagnosis of Childhood Onset Epilepsy</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>D.08 Interneuron Dysfunction and Synaptic Reorganization Underlie Cortical Hyperexcitability in a Precision Genetic K+ Channel (KCNT1) Gain of Function Model of Neurodevelopmental Disease</td>
<td>E.08 Hospitalizations for Post-traumatic Epilepsy: Prevalence, Outcome, and Cost of Care</td>
<td>F.08 Predictive Value of Overnight Continuous EEG monitoring in Determining Epilepsy Risk in Children with Autism Spectrum Disorder</td>
</tr>
<tr>
<td>5:15 PM</td>
<td>D.09 Anti-sense Oligonucleotide Therapy Delays Seizure Onset and Extends Survival in a Mouse Model of Scn8a Encephalopathy</td>
<td>E.09 Is Benign Rolandic Epilepsy a Focal or Generalized Epilepsy Syndrome?</td>
<td>F.09 An Evidence-based Algorithm to Triage Patients with Probable Psychogenic Nonepileptic Seizures Towards Early Video-EEG</td>
</tr>
</tbody>
</table>
**Pediatric Epilepsy Highlights Session**

3:15 – 5:30 PM

**Convention Center, Rooms 339 – 342, Level 300**

This session showcases scientific abstracts focused on topics in clinical care and research in pediatric epilepsy.

1.398 Center-to-Center Variations in Recommended Care Delivery for Infantile Spasms: Quality Measurement Through the Pediatric Epilepsy Learning Healthcare System | Zachary Grinspan, MD

3.186 Is Benign Rolandic Epilepsy a Focal or Generalized Epilepsy Syndrome? | Ramya Ghantasala, MD

1.234 Long-term Outcome and Mortality InsCN1a Positive Dravet Syndrome: Findings from A 10-year Follow-up of 141 Cases | Andreas Brunklaus, MD

1.217 FINTEPLA (ZX008, Fenfluramine Hydrochloride Oral Solution) in Dravet Syndrome: Comparison of Study 1 Results Using 4-week Versus 6-week Baseline Seizure Collection | Joseph Sullivan, MD

1.327 The Effects of Ketone Ester Supplementation on Seizure Activity and Gut Microbiome Composition in Epileptic Kcnal-Null Mice | Amy Chen, BHSc


1.146 Localization Shift of Electroencephalography Contacts After Implantation in Pediatrics | Stephen Foldes, PhD

1.346 Time to Referral for Epilepsy Surgery Evaluation is Longer in Older Children with Intractable Epilepsy: A Potential Opportunity for Improvement | M. Scott Perry, MD

1.135 Does the First Hour of Continuous Electroencephalography (CEEG) Monitoring in at Risk Neonates Accurately Predict Subsequent Seizures? | Emma Macdonald-Laurs, MBChB

1.345 Electrical Source Imaging of Seizure Onset Zone with Conventional 20-channel EEG is Predictive of Surgical Outcome in Children with Epilepsy | Lorenzo Ricci, MD

**Target Audience**

APPS, Behavioral Health Providers, Clinicians, Fellows/Trainees, Scientists, Pharmacists

---

**Merritt-Putnam Symposium: Neuroinflammation in Epilepsy**

5:45 – 8:15 PM

**Convention Center, Ballroom III, Level 400**

Neuroinflammation is known to play important roles in epileptogenesis, epilepsy progression, and the long-term consequences of seizures, in various epilepsy etiologies including genetic and acquired syndromes. These results are now being translated to develop prognostic biomarkers capable of predicting the development of epilepsy, and to identify new therapeutic targets for the prevention and treatment of seizures. This symposium will present an overview of current basic science research, neuroimaging biomarkers of inflammation and their application, and potential new treatment strategies.

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Recognize the evidence for inflammatory markers in the epileptic brain
- Be aware of potential future anti-epileptic therapies based on controlling neuroinflammation
- Discuss the role of cytokines in epileptogenesis after febrile status epilepticus
- Recognize the role of blood-brain-barrier disruption in epileptogenesis

**Program**

Chair: Catherine Schevon, MD, PhD

Introduction, Catherine Schevon, MD, PhD

Neuroinflammation in Epilepsy: What Have We Learned from Human Brain Tissue? Eleanor Aronica, MD, PhD

Neuroinflammation in Ictogenesis and Epileptogenesis: Mechanisms and Targeted Pharmacological Treatments, Annamaria Vezzani, PhD

Role of Cytokines in Febrile Status Epilepticus and Epileptogenesis, William Gallentine, DO

Neuronal COX-2 Signaling and Blood-brain Barrier Leak in Epilepsy, Raymond Dingledine, PhD

Microvascular Pathology and Translation to Clinical Studies, Alon Friedman, MD, PhD

Questions and Panel Discussion

**Target Audience**

APPS, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

**Education Credit**

2.5 CME

Nurses may claim up to 2.5 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 2.5 contact hours (0.25 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/9/19.

This educational activity is supported in part by educational grants from Eisai Inc., Greenwich Biosciences, Inc., and Mallinckrodt Pharmaceuticals.
Tuesday, December 10

**Registration**

7:00 AM – 12:30 PM  
Convention Center, Pratt Street Lobby, Level 300

**SIG: Cognitive and Behavioral Interventions for Epilepsy: Knowledge Translation in CBTs for Epilepsy: Dissemination, Implementation, and Treatment Fidelity**

7:00 – 8:30 AM  
Convention Center, Rooms 345 and 346, Level 300

While the evidence base for cognitive and behavioral treatments for epilepsy continues to build, comorbidities and disparities in epilepsy persist. Issues at the forefront of psychosocial treatment knowledge translation in epilepsy include dissemination strategy development, implementation support, and fidelity monitoring. This SIG will explore each of these three issues as via presentations from scientist-practitioner dyads in the fields of mental health and epilepsy self-management, with remaining time dedicated to discussion.

Coordinators: Erica K. Johnson, PhD and Hamada H. Altalib, DO, MPH

Speakers: Robin McGee, PhD, MPH, and Aimee W. Smith, PhD

**Target Audience**

- APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**Learning Objectives**

Following participation in this activity, participants will be able to:

- Describe evaluation of a patient who failed epilepsy surgery
- Define characteristics that would make a patient who has failed epilepsy surgery a candidate for additional intervention
- Outline the methodological approaches that would be helpful for re-operation in patients with failed epilepsy surgery
- Describe the anticipated outcomes from re-operation in cases that have failed surgery

Coordinators: Nitin Tandon, MD and Guy McKhann, MD

Speakers: Kristen Riley, MD; Howard Weiner, MD; Andrew McEvoy, MD; and Steven Roper, MD

**Target Audience**

- APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**Education Credit**

1.5 CME

Nurses may claim up to 1.5 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 1.5 contact hours (0.15 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/10/19.

**SIG: Epidemiology Surgery: Great and Desperate Cures**

7:00 – 8:30 AM  
Convention Center, Rooms 343 and 344, Level 300

Intractable epilepsies sometimes necessitate radical approaches outside the realm of the standard approaches. This is particularly true for cases that fail initial surgical intervention, either due to the multifocal nature of the disease, or our failure to completely understand it. In service of alleviating the seizure burden on these patients, creative thinking and innovative approaches may be applied. These approaches must also be balanced against the risk of functional impairments. This SIG will debate possible approaches to these complex cases. The audience will be invited to participate and the application of new technologies to accomplish seizure cessation with lower morbidity will also be considered.

Coordinators: Nitin Tandon, MD and Guy McKhann, MD

Speakers: Kristen Riley, MD; Howard Weiner, MD; Andrew McEvoy, MD; and Steven Roper, MD

**Target Audience**

- APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

**Education Credit**

1.5 CME

Nurses may claim up to 1.5 contact hours for this session.

University of Minnesota approves this knowledge-based activity for 1.5 contact hours (0.15 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/10/19.

**SIG: NIH and Non-Profit Research Resources/Jr Investigator Workshop: How Are Grants Reviewed and What Makes a Successful Proposal?**

7:00 – 8:30 AM  
Convention Center, Rooms 349 and 350, Level 300

Early investigators rely on funding from a variety of sources, including federal and non-profit funding. Understanding how career development grants are reviewed and what elements make for a successful application are critically important for obtaining funding. This session will start with a brief overview of current funding mechanisms intended to support neurology researchers during the early stages of their career (i.e., Epilepsy Foundation, CURE, AAN, and NIH/NINDS K and F awards).

Following the funding overview, experienced reviewers from NIH-NINDS study sections will carry out a mock study section, in which an example K grant application is reviewed. Strengths and weaknesses for each of the scored criteria will be discussed. Audience members will then participate in determining the application’s final overall impact score. The session will end with a brief Q&A session.

Coordinators: Miriam Leenders, PhD and Alice D. Lam, MD, PhD

Speakers: Shantadurga Rajaram, PhD; Gregory Bergey, MD; Jeffrey Loeb, MD, PhD; Annapurna Poduri, MD, MPH; and Helen E. Scharfman, PhD

**Target Audience**

- APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians
SIG: Pediatric Epilepsy Case Discussions: Diagnostic and Treatment Challenges

7:00 – 8:30 AM
Convention Center, Room 316, Level 300
For more than 20 years, this SIG has provided a rare platform for sharing complex challenges in management of pediatric epilepsy. Young and seasoned epileptologists from both academic and private centers worldwide have an opportunity to present an interesting case from their practice. Recent topics discussed in this SIG in the past two years include: SUDEP, ictal semiology of ‘chapeau de gendarme’, pseudo-frontal epilepsy, precision medicine, neonatal status epilepticus, myoclonic-astatic epilepsy phenotype secondary to temporal dysplasia, CBD in epilepsy, autoimmune epilepsy, and refractory ESES. Cases representing a wide range of topics in pediatric epilepsy relevant for clinicians in particular will be covered. By offering this annual opportunity to share illustrative clinical experiences, the American Epilepsy Society fosters impactful interaction and communication among pediatric epilepsy specialists worldwide.

Coordinators: Ahsan Moosa; Naduvil Valappil, MD and Ajay Gupta, MD
Speakers: Raquel Farias-Moeller, MD; Martina Bebin, MD, MBA; and Louis Dang, MD, PhD
Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

SIG: Sleep in Epilepsy: Sleep On The Edge: New Techniques for Epilepsy

7:00 – 8:30 AM
Convention Center, Rooms 337 and 338, Level 300
This SIG will focus on emerging methodologies being used to make new discoveries in the exciting field of sleep and epilepsy. We will provide an important update from the 2019 AES Sleep and Epilepsy Workgroup. Topics discussed will include the use of quantitative EEG towards the new frontier of sleep in patients with nonconvulsive status epilepticus or along the interictal-ictal-injury continuum in the intensive care unit, high density EEG to assess different states of consciousness, such as sleep and dreaming, in the epilepsy monitoring unit, and novel computational sleep staging techniques, such as the EEG odds ratio product as a continuous measure of sleep depth in persons with epilepsy.

Coordinator: Marcus Ng, MD, FRCP, CSCN
Speakers: M. Brandon Westover, MD, PhD; Melanie Boly, MD, PhD; and Eleni Giannouli, MD, FRCP
Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians

Hot Topics Symposium

8:45 – 10:45 AM
Hilton, Key Ballroom 8, Second Floor
This symposium will present topics of great current interest to the audience of learners. The format is comprised of four lectures with time after each presentation for questions from the audience. The topics are selected to reflect issues of current interest to clinicians caring for patients with epilepsy with the goal of improving the care of patients with epilepsy.

Learning Objectives
Following participation in this activity, participants will be able to:
• Recommend devices for seizure detection based on patient characteristics and needs
• Recognize instances where early use of ketamine may be beneficial to patients in status epilepticus
• Summarize the current state of knowledge on SUDEP to better counsel patients

Program
Co-chairs: Elinor Ben-Menachem, MD, PhD and Michael R. Sperling, MD
Introduction, Elinor Ben-Menachem, MD, PhD
Update on SUDEP, Beate Diehl, MD
New Consumer Devices for Monitoring Seizures, Michael Sperling, MD
What is the Optimal Extent of Resection for Temporal Lobe Epilepsy?, Jorge Gonzalez Martinez, MD
Early Use of Ketamine for Neuroprotection in Status Epilepticus, Denson Fujikawa, MD
Conclusions, Michael Sperling, MD
Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Education Credit
2.0 CME
Nurses may claim up to 2.0 contact hours for this session.
University of Minnesota approves this knowledge-based activity for 2.0 contact hours (0.20 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/10/19.

Scientific Symposium: Pharmacogenomics in Epilepsy: Existing and Emerging Opportunities for Intervention

CME & CE
8:45 – 10:45 AM
Hilton, Key Ballroom 6, Second Floor
Recent advances in the understanding of neurobiology of epilepsies have opened avenues for targeted therapies using established as well as novel gene and allele specific interventions. Additionally, greater access to genetic testing and progress in genomic research offer opportunities for a broader application of pharmacogenomics in clinical practice. The symposium will examine progress and challenges facing individualized drug therapies, such as patient selection, clinical trial design, timing, and others. We will review topics relevant to clinical practice, such as present state of pharmacogenomics in epilepsy, genetic factors influencing drug responsiveness and resistance, and guidelines for pre-emptive screening for adverse drug reactions. Pharmacogenomics has been a burgeoning field in medicine and the symposium will ponder current progress and challenges in the clinical implementation of pharmacogenomics in epilepsy and elsewhere.

Learning Objectives
Following participation in this activity, participants will be able to:
• Review the processes through which genetic variation can influence response to antiseizure therapy
• Recognize objectives and challenges facing precision gene targeted therapies in epilepsies
• Recognize the risks associated with certain human leukocyte antigen (HLA) alleles with respect to idiosyncratic adverse drug reactions
• Review the pilot efforts in systematic implementation of pharmacogenomic in clinical practice of epilepsy
• Review U.S. programs and projects and research directions and clinical implementation of pharmacogenomics

Program
Chair: Alica M. Goldman, MD, PhD
Introduction, Alica M. Goldman, MD, PhD
Pharmacogenomics in Epilepsy, Simona Balestrini, MD
Targeted Drug Treatment for Monogenetic Epilepsies, Edward C. Cooper, MD, PhD
Timing of Targeted Therapies: Lessons from Preclinical Research, Christopher A. Reid, PhD

Challenges to Implementing Pharmacogenomics in an Epilepsy Clinic, Tracy A. Glauser, MD
Implementation of Pharmacogenomics in Clinical Care: Tools, Resources, and Outcomes, Larissa H. Cavallari, PharmD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Education Credit
2.0 CME
Nurses may claim up to 2.0 contact hours for this session.
University of Minnesota approves this knowledge-based activity for 2.0 contact hours (0.20 CEUs). UAN JA0000810-9999-19-082-L01-P. Initial Release Date: 12/10/19.
This educational activity is supported in part by an educational grant from Supernus Pharmaceuticals, Inc.

Clinical Skills Workshop: Alternative Therapies to Standard Anti-epileptic Therapies: My Seizure Drugs Aren’t Working, Now What?

ADDITIONAL FEE
11:00 AM – 12:30 PM
Convention Center, Rooms 347 and 348, Level 300
Over the last two decades, there has been a rapid expansion in the number and types of available antiepileptic drugs (AEDs), making it easy to overlook and be skeptical about non-pharmacological treatments. In addition, there is increasing concern amongst parents and caregivers about the unwanted side effects of conventional AEDs. With an emphasis on self-management, this skills workshop will focus on the non-conventional (or non-standard) medical treatments, surgical procedures, dietary approaches, and other non-pharmacological treatment approaches that may have a role in the current management of the epilepsies. Therapeutic approaches to be covered include immune treatments, diets, herbas, psychological management and wearable devices.

Moderators: Joseph Sirven, MD and Amy Crepeau, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists
Clinical Skills Workshop: Intracranial Electrode Studies: How Do You Choose a Technique for Optimum Localization?

$ ADDITIONAL FEE

11:00 AM – 12:30 PM

Convention Center, Rooms 337 and 338, Level 300

Over the past 30 years, resection for medically-intractable epilepsy has become a standard treatment option. However, in many instances, successful surgery is not possible without defining the potential respective volume by intracranial electrophysiology. Imaging and stereotactic navigation have made great strides and epilepsy centers have many choices regarding types of electrodes, number of contacts needed and how they are delivered. This is an interactive workshop where two to three cases are presented illustrating different problems to be solved in defining a region of epileptogenesis. Participants will work in groups to provide a consensus intracranial study. An experienced epileptologist will provide his or her institution’s approach to the case and we will then describe what was done and the outcome. There will be an attempt to discuss as many alternative approaches as possible, balancing the invasiveness of the various procedures and risk versus benefit.

Moderators: Dennis Spencer, MD and Jorge Gonzalez-Martinez, MD, PhD

Target Audience
Fellows/Trainees, Clinicians, Scientists, APPs

Clinical Skills Workshop: Genetics Testing in Epilepsy Patients

$ ADDITIONAL FEE

11:00 AM – 12:30 PM

Convention Center, Rooms 339 and 340, Level 300

Novel detection platforms have accelerated scientific discoveries of genes relevant to patients with epilepsy of all ages. The selection of patients that would most benefit from the genetic investigations, identification of the appropriate tests, and reporting of results are increasingly complex. This skills workshop will review available testing platforms and outline case scenario-driven testing algorithms. The aim is to provide practical clinical guide in selecting patients, testing methods, and the workflow involved in ordering, submitting, and reporting genetic tests. The workshop is designed to be an interactive, case driven discussion and a practical guide for clinical care. The goal is to address pressing questions and discuss real-life cases within the context of genetic testing driven diagnostics and care.

Moderators: Danielle Andrade, MD, MSc and Ingo Helbig, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Clinical Skills Workshop: Misadventures in EEG

$ ADDITIONAL FEE

11:00 AM – 12:30 PM

Convention Center, Rooms 349 and 350, Level 300

The EEG remains essential in the care, diagnosis and management of individuals with seizures and spells. The EEG is still the gold-standard tool in the diagnosis, classification of spells/seizure type, and identification of a specific epileptic syndromes. Therefore, making the correct EEG interpretation is essential in the proper diagnosis and prescribing appropriate therapy, and prognostication in the clinical arena. “Over-interpretation” and misinterpretation of EEG remains a well-documented problem in this population. We will present common and uncommon sources of EEG misreading and the potential implications and how to avoid these systemic errors.

Moderators: William Tatum, DO and Aatif Husain, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Clinical Skills Workshop: Optimal Use of Neuroimaging in Diagnosing and Treating Epilepsy

$ ADDITIONAL FEE

11:00 AM – 12:30 PM

Convention Center, Rooms 343 and 344, Level 300

Neuroimaging is an essential tool in the diagnosis and treatment of epilepsy. It has opened a window on the pathological substrate underlying epilepsy, ranging from subtle gliotic lesions and cortical malformations to larger, more extensive structural disturbances. This workshop will review the techniques used to diagnose epilepsy, emphasizing both basic MRI customized for epilepsy and advanced neuroimaging techniques. We will review a rational approach to the use of neuroimaging and highlight techniques that enhance diagnostic ability. This workshop will also include a practical, hands-on session with review of presurgical cases.

Moderators: Andrea Bernasconi, MD and Neda Bernasconi, MD, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists
Clinical Skills Workshop: Pearls of Video EEG Monitoring

$ ADDITIONAL FEE
11:00 AM – 12:30 PM
Convention Center, Rooms 345 and 346, Level 300

Video EEG monitoring is utilized to establish a diagnosis of epileptic seizures in contrast to other events such as psychogenic nonepileptic seizures. Reading video EEG recordings in contrast to routine EEG is a special skill and requires also interpretation of the video data. Not in all cases of epileptic seizures is the EEG helpful to identify an EEG as epileptic or not. This workshop will educate about identification and classification of events on video EEG monitoring and enhance skills about video EEG interpretation.

Moderators: Joseph Drazkowski, MD and Katherine Noe, MD, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Clinical Skills Workshop: Intracranial Electrode Studies: How Do You Choose a Technique for Optimum Localization?

$ ADDITIONAL FEE
12:45 – 2:15 PM
Convention Center, Rooms 337 and 338, Level 300

Over the past 30 years, resection for medically intractable epilepsy has become a standard treatment option. However, in many instances successful surgery is not possible without defining the potential respective volume by intracranial electrophysiology. Imaging and stereotactic navigation have made great strides and epilepsy centers have many choices regarding types of electrodes, number of contacts needed and how they are delivered. This is an interactive workshop where two to three cases are presented illustrating different problems to be solved in defining a region of epileptogenesis. The participants work in groups to provide a consensus intracranial study. A guest experienced epileptologist will provide his or her institution’s approach to the case and we will then describe what was done and the outcome. There will be an attempt to discuss as many alternative approaches as possible, balancing the invasiveness of the various procedures and risk versus benefit.

Moderators: Dennis Spencer, MD and Jorge Gonzalez-Martinez, MD, PhD

Target Audience
Fellows/Trainees, APPs, Scientists, Clinicians

Clinical Skills Workshop: Genetics Testing in Epilepsy Patients

$ ADDITIONAL FEE
12:45 – 2:15 PM
Convention Center, Rooms 339 and 340, Level 300

Novel detection platforms have accelerated scientific discoveries of genes relevant to patients with epilepsy of all ages. The selection of patients that would most benefit from the genetic investigations, identification of the appropriate tests, and reporting of results are increasingly complex. This skills workshop will review available testing platforms and outline case scenarios driven testing algorithms. The aim is to provide practical clinical guide in selecting patients, testing methods, and the workflow involved in ordering, submitting, and reporting genetic tests. The workshop is designed to be an interactive, case driven discussion and a practical guide for clinical care. Participants are encouraged to submit questions and cases to Drs. Andrade and Helbig in advance. The goal is to address pressing questions and discuss real-life cases within the context of genetic testing driven diagnostics and care.

Moderators: Danielle Andrade, MD, MSc and Ingo Helbig, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Clinical Skills Workshop: Neuromodulation in Epilepsy

$ ADDITIONAL FEE
12:45 – 2:15 PM
Convention Center, Rooms 347 and 348, Level 300

Neurostimulation is now an accepted treatment option for patients with refractory epilepsy. Several stimulation devices are approved for patients with epilepsy: the vagus nerve stimulator (VNS), the responsive neurostimulator (RNS) and the deep brain stimulator (DBS). This workshop will discuss the trials and post-marketing experience that established the tolerability and efficacy of these devices, and instruct on how to use them effectively. Hand-on experience for interrogating and programming the devices will be arranged. After the workshop, participants should be able to identify appropriate patients, understand how implantation is carried out and how to program the devices. Side effects and how to practically manage them will be discussed as well.

Moderator: Steven C. Karceski, MD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists
Clinical Skills Workshop: Optimal Use of Neuroimaging in Diagnosing and Treating Epilepsy

ADDITIONAL FEE
12:45 – 2:15 PM
Convention Center, Rooms 343 and 344, Level 300

Neuroimaging is an essential tool in the diagnosis and treatment of epilepsy. It has opened a window on the pathological substrate underlying epilepsy, ranging from subtle gliotic lesions and cortical malformations to larger, more extensive structural disturbances. This workshop will review the techniques used to diagnose epilepsy, emphasizing both basic MRI customized for epilepsy and advanced neuroimaging techniques. We will review a rational approach to the use of neuroimaging and highlight techniques that enhance diagnostic ability. This workshop will also include a practical, hands-on session with review of presurgical cases.

Moderators: Andrea Bernasconi, MD and Neda Bernasconi, MD, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Clinical Skills Workshop: Pearls of Video EEG Monitoring

ADDITIONAL FEE
12:45 – 2:15 PM
Convention Center, Rooms 345 and 346, Level 300

Video EEG monitoring is utilized to establish a diagnosis of epileptic seizures in contrast to other events such as psychogenic nonepileptic seizures. Reading video EEG recordings in contrast to routine EEG is a special skill and requires also interpretation of the video data. Not in all cases of epileptic seizures is the EEG helpful to identify an EEG as epileptic or not. This workshop will educate about identification and classification of events on video EEG monitoring and enhance skills about video EEG interpretation.

Moderators: Joseph Drazkowski, MD and Katherine Noe, MD, PhD

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists

Clinical Skills Workshop: Treating Patients with Psychogenic Nonepileptic Seizures

ADDITIONAL FEE
12:45 – 2:15 PM
Convention Center, Rooms 349 and 350, Level 300

Psychogenic nonepileptic seizures (PNES) are prevalent and disabling and are often identified in seizure monitoring units. Neurologists readily diagnose PNES, but the majority of providers do not feel equipped to treat patients with PNES. Psychogenic NES present in adults and children with neurologic signs, psychological stressors and comorbid psychiatric disorders. For years, neurologists, psychiatrists and psychologists have accumulated data about NES phenomenology, epidemiology, risks, comorbidities, and prognosis. The role of the neurologist and mental health providers in the diagnosis and management of these patients will be discussed, and common obstacles that preclude proper treatment will be reviewed. ILAE Task Force recommendations and randomized clinical trial data will be presented, including pharmacologic and non-pharmacologic interventions. Participants will observe treatment of patients with PNES using a validated intervention shown to reduce seizures, improve comorbidities and quality of life. Session participants will view video vignettes from in-session interactions between clinicians (including epileptologists and mental health workers) providing PNES treatment. During this workshop, participants will learn the elements of the 12-session intervention, using the seizure treatment workbook.

Moderator: W. Curt LaFrance, Jr., MD, MPH

Target Audience
APPs, Clinicians, Fellows/Trainees, Behavioral Health Providers, Nurses, Scientists, Technicians, Pharmacists
Friday, December 6

**Industry CME Satellite Symposium: Real World Approaches to Cannabinoids in Pediatric Epilepsy: What Do the Data Tell Us?**

- **CME**
- 6:00 – 8:00 PM
- Hilton Baltimore Inner Harbor, Key Ballroom 4, Second Floor
- For more information, please visit: [www.medscape.org/symposium/cannabinoids-in-epilepsy](http://www.medscape.org/symposium/cannabinoids-in-epilepsy)
- Pre-registration was not requested for this symposium. On-site registration is available, space permitting. Dinner is provided.
- This live activity is supported by an independent educational grant from Greenwich Biosciences, Inc.
- This CME activity is provided by Medscape. 
- To claim credit for this symposium, please go to [www.medscape.org/symposium/cannabinoids-in-epilepsy-credit](http://www.medscape.org/symposium/cannabinoids-in-epilepsy-credit) after the activity.

**Industry Non-CME Satellite Symposium: Your Patients with Dravet Syndrome: Early Life into Adulthood**

- 6:00 – 9:00 PM
- Hilton Baltimore Inner Harbor, Key Ballroom 2, Second Floor
- For further details, please visit: [www.Dravet-syndrome.com](http://www.Dravet-syndrome.com)
- Pre-registration was not requested for this symposium. On-site registration is available, space permitting. Dinner is provided.
- This activity is supported by BIOCODEX.

**Industry Non-CME Satellite Symposium: Deep Brain Stimulation (DBS) Advancements in Treatment of Medically Refractory Epilepsy**

- 6:00 – 9:00 PM
- Hilton Baltimore Inner Harbor, Key Ballroom 10, Second Floor
- For further details, please visit: [https://medtronic.cvent.com/d/Myqt69/](https://medtronic.cvent.com/d/Myqt69/)
- Pre-registration was requested for this symposium. On-site registration may be available, space permitting. Dinner is provided.
- This activity is supported by Medtronic.

Saturday, December 7

**National Association of Epilepsy Centers Pediatric Meeting**

- 12:00 PM – 2:00 PM
- Location to be posted in the mobile app
- This is a meeting for pediatric providers at pediatric and adult/pediatric epilepsy centers that are members of the National Association of Epilepsy Centers.
- This meeting is open to NAEC members only.

Sunday, December 8

**Scientific Exhibits**

- 8:00 AM – 5:00 PM
- BioMarin Scientific Exhibit in Collaboration with Invitae, Xenon and Stoke: Genetic Epilepsies: Updates in the Science and Diagnosis
  BioMarin Pharmaceutical Inc.
  Convention Center, Rooms 318 – 319, Level 300
- Low-Dose Fenfluramine: An Update on Mechanisms, Efficacy, and Safety in the Treatment of Epileptic Encephalopathies
  Zogenix, Inc.
  Convention Center, Rooms 321 – 323, Level 300
- Research Updates from Eisai
  Eisai Inc.
  Convention Center, Rooms 324 – 326, Level 300
- SK life science Special Scientific Exhibit and Posters
  SK Life Science, Inc.
  Convention Center, Rooms 321 – 323, Level 300
Industry Non-CME Therapeutic Update: The Additional Burden of GTC Seizures

12:00 – 1:00 PM
Hilton Baltimore Inner Harbor, Key Ballroom 8, Second Floor
Pre-registration was not requested for this symposium. On-site registration is available, space permitting. Dinner is provided. This activity is supported by UCB, Inc.

Industry Non-CME Satellite Symposium: Cognitive and Developmental Outcomes in Severe Epilepsies of Infancy: How are the Roles of Genetics and Seizure Frequency Intertwined?

CME
6:00 – 8:00 PM
Baltimore Convention Center, Room 314-315, Level 300
For further details, please visit: www.millermeded.com/BALTIMORE2019
Pre-registration was requested for this symposium. On-site registration may be available, space permitting. Dinner is provided. This live activity is supported by an independent educational grant from Zogenix, Inc.
This CME activity is jointly provided by Postgraduate Institute for Medicine and Miller Medical Communications, LLC.
A statement of credit will be issued only upon receipt of a completed activity evaluation form and will be emailed to you within three weeks. You will receive your certificate from CEcertificate@pimed.com. If you have questions regarding the receipt of your emailed certificate, please contact Postgraduate Institute for Medicine (PIM) via email at inquiries@pimed.com.

Industry Non-CME Satellite Symposium: The Epileptic Heart

6:00 – 9:00 PM
Hilton Baltimore Inner Harbor, Key Ballroom 10, Second Floor
For further details, please visit: www.vnstherapy.com/epilepticheart
Pre-registration was requested for this symposium. On-site registration may be available, space permitting. Dinner is provided. This activity is supported by LivaNova.

Industry Non-CME Satellite Symposium: The Data Revolution: How Data Science Is Transforming Epilepsy Treatment

6:00 – 9:00 PM
Hilton Baltimore Inner Harbor, Key Ballroom 2, Second Floor
For further details, please visit: www.neuropace.com/zimmer-symposium2019
Pre-registration was requested for this symposium. On-site registration may be available, space permitting. Dinner is provided. This activity is supported by NeuroPace, Inc.

Industry CME Satellite Symposium: Cognitive and Developmental Outcomes in Severe Epilepsies of Infancy: How are the Roles of Genetics and Seizure Frequency Intertwined?

6:00 – 8:00 PM
Baltimore Convention Center, Room 314-315, Level 300
For further details, please visit: www.millermeded.com/BALTIMORE2019
Pre-registration was requested for this symposium. On-site registration may be available, space permitting. Dinner is provided. This live activity is supported by an independent educational grant from Zogenix, Inc.
This CME activity is jointly provided by Postgraduate Institute for Medicine and Miller Medical Communications, LLC.
A statement of credit will be issued only upon receipt of a completed activity evaluation form and will be emailed to you within three weeks. You will receive your certificate from CEcertificate@pimed.com. If you have questions regarding the receipt of your emailed certificate, please contact Postgraduate Institute for Medicine (PIM) via email at inquiries@pimed.com.

Monday, December 9

National Association of Epilepsy Centers Annual Meeting

7:00 AM – 8:30 AM
Location to be posted in the mobile app
This is the Annual Meeting of the National Association of Epilepsy Centers. All providers at NAEC member epilepsy centers are invited to attend.
This meeting is open to NAEC members only.

Scientific Exhibits

8:00 – 11:00 AM
Managing Seizure Clusters: Unmet Needs and Emerging Approaches
Aquestive Therapeutics, Inc.
Convention Center, Rooms 318-319, Level 300
UCB Commitment to Epilepsy Care
UCB, Inc.
Convention Center, Rooms 321-323, Level 300
Epidiolex*: The Only FDA-Approved Cannabidiol Treatment
Greenwich Biosciences, Inc.
Convention Center, Rooms 324-326, Level 300

2:00 – 5:00 PM
Clinical Development Program for Valtoco™ (diazepam nasal spray, NRL-1): From Concept to NDA
Neurelis, Inc.
Convention Center, Rooms 321-323, Level 300
EPILEPSY FACES A SHORTAGE OF RESEARCHERS

It takes well-trained researchers to advance the understanding and treatment of epilepsy.

Top-notch epilepsy researchers don’t just happen. The American Epilepsy Society provides grants, fellowships, training, and mentoring to encourage the best and brightest to study epilepsy.

You can help us fill the epilepsy talent pipeline with scientists who are determined to find epilepsy answers. Today’s AES early career research and training program is an investment in tomorrow’s leading epilepsy researchers—and the game-changing discoveries they will make for people with epilepsy.

www.aesnet.org/research
American Epilepsy Society (AES)
135 S. LaSalle St., Suite 2850
Chicago, IL 60603
1. Baltimore Convention Center
   1 West Pratt Street

2. Hilton Baltimore Inner Harbor
   401 West Pratt Street

3. Days Inn Baltimore Inner Harbor
   100 Hopkins Place (Pratt Street and Lombard Street)

4. Sheraton Inner Harbor
   300 South Charles Street

5. Holiday Inn Inner Harbor
   301 West Lombard Street

6. Hyatt Regency Baltimore
   300 Light Street

7. Baltimore Marriott Inner Harbor
   at Camden Yards
   110 South Eutaw Street

8. Renaissance Baltimore Harborplace Hotel
   202 East Pratt Street

9. Kimpton Hotel Monaco Baltimore
   2 North Charles Street

10. Crowne Plaza Baltimore Downtown Inner Harbor
    105 West Fayette Street

11. 8th Annual AES Wine Tasting and Silent Auction
    The Center Club, TransAmerica Building
    17th Floor
    100 Light Street
### EXHIBITOR LOCATIONS

Companies with a table number are located in the Epilepsy Resource Area.

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABRET Neurodiagnostic</td>
<td>Table 23</td>
</tr>
<tr>
<td>Credentialing &amp; Accreditation</td>
<td></td>
</tr>
<tr>
<td>Ad-Tech Medical Instrument Corp.</td>
<td>434</td>
</tr>
<tr>
<td>AIT Austrian Institute of Technology</td>
<td>252</td>
</tr>
<tr>
<td>Ajinomoto Cambroise</td>
<td>913</td>
</tr>
<tr>
<td>American Board of Clinical Neurophysiology</td>
<td>Table 22</td>
</tr>
<tr>
<td>American Board of Psychiatry and Neurology</td>
<td>930</td>
</tr>
<tr>
<td>American Clinical MEG Society</td>
<td>Table 25</td>
</tr>
<tr>
<td>American Clinical Neurophysiology Society</td>
<td>Table 24</td>
</tr>
<tr>
<td>ANT North America</td>
<td>128</td>
</tr>
<tr>
<td>Appecia Pharmaceuticals</td>
<td></td>
</tr>
<tr>
<td>Aquative Therapeutics, Inc.</td>
<td>344, 547</td>
</tr>
<tr>
<td>ASET - The Neurodiagnostic Society</td>
<td>Table 21</td>
</tr>
<tr>
<td>Assertio Therapeutics</td>
<td>112</td>
</tr>
<tr>
<td>Batten Disease Support and Research Association</td>
<td>Table 20</td>
</tr>
<tr>
<td>BIOCODEX</td>
<td>847</td>
</tr>
<tr>
<td>BioMarin Pharmaceutical Inc.</td>
<td>349</td>
</tr>
<tr>
<td>Blackrock Microsystems</td>
<td>246</td>
</tr>
<tr>
<td>Blueprint Genetics</td>
<td>936</td>
</tr>
<tr>
<td>BPNA</td>
<td>Table 4</td>
</tr>
<tr>
<td>Brain Sentinel</td>
<td>520</td>
</tr>
<tr>
<td>Brain Vision LLC</td>
<td>134</td>
</tr>
<tr>
<td>Bridge the Gap - SYNGAP Education and Research Foundation</td>
<td>Table 3</td>
</tr>
<tr>
<td>Cadwell Laboratories, Inc.</td>
<td>717</td>
</tr>
<tr>
<td>Cambridge University Press</td>
<td>243</td>
</tr>
<tr>
<td>Cascade Survey Research</td>
<td>124</td>
</tr>
<tr>
<td>Cerbelli</td>
<td>741</td>
</tr>
<tr>
<td>Charleston Area Medical Center</td>
<td>335</td>
</tr>
<tr>
<td>Child Neurology Foundation</td>
<td>917</td>
</tr>
<tr>
<td>Citizens United for Research in Epilepsy (CURE)</td>
<td>Table 9</td>
</tr>
<tr>
<td>Cognizance Biomarkers, LLC</td>
<td>830</td>
</tr>
<tr>
<td>Compumedics/Neuroscan</td>
<td>709</td>
</tr>
<tr>
<td>Cook Children’s Health Care System</td>
<td>245</td>
</tr>
<tr>
<td>Core Physicians</td>
<td>927</td>
</tr>
<tr>
<td>CortiCare, Inc.</td>
<td>934</td>
</tr>
<tr>
<td>CRREmedical Corp.</td>
<td>136</td>
</tr>
<tr>
<td>Demos Medical Publishing</td>
<td>429</td>
</tr>
<tr>
<td>DigiTrace Care Services</td>
<td>409</td>
</tr>
<tr>
<td>DXI Medical USA</td>
<td>834</td>
</tr>
<tr>
<td>Dravet Syndrome Foundation</td>
<td>Table 8</td>
</tr>
<tr>
<td>EB NEURO SPA</td>
<td>241</td>
</tr>
<tr>
<td>Eisai Inc.</td>
<td>509, 941</td>
</tr>
<tr>
<td>Elixigen Scientific Inc.</td>
<td>937</td>
</tr>
<tr>
<td>emka TECHNOLOGIES Inc.</td>
<td>120</td>
</tr>
<tr>
<td>empatica inc.</td>
<td>553</td>
</tr>
<tr>
<td>EMS Biomedical</td>
<td>835</td>
</tr>
<tr>
<td>Epilepsy Alliance America</td>
<td>Table 19</td>
</tr>
<tr>
<td>Epilepsy Foundation</td>
<td>435, Table 1</td>
</tr>
<tr>
<td>Epilog Inc.</td>
<td>832</td>
</tr>
<tr>
<td>EpiNet Study Group</td>
<td>T35</td>
</tr>
<tr>
<td>Epitel, Inc.</td>
<td>737</td>
</tr>
<tr>
<td>FHC, Inc.</td>
<td>340</td>
</tr>
<tr>
<td>g.tec neurotechnology GmbH</td>
<td>413</td>
</tr>
<tr>
<td>GeneDx</td>
<td></td>
</tr>
<tr>
<td>Glut1 Deficiency Foundation</td>
<td>Table 36</td>
</tr>
<tr>
<td>Greenwich Biosciences, Inc.</td>
<td>517</td>
</tr>
<tr>
<td>GW International</td>
<td>923</td>
</tr>
<tr>
<td>Hanahtopia Foundation</td>
<td>Table 26</td>
</tr>
<tr>
<td>Henry Ford Health System</td>
<td>457</td>
</tr>
<tr>
<td>Hope for Hypothalamic Hamartomas</td>
<td>Table 6</td>
</tr>
<tr>
<td>Hope4Harper</td>
<td>Table 12</td>
</tr>
<tr>
<td>I AM A VOICE for Epilepsy Awareness™</td>
<td>Table 34</td>
</tr>
<tr>
<td>Integra LifeSciences</td>
<td>240</td>
</tr>
<tr>
<td>International Foundation for CDKL5 Research</td>
<td>Table 17</td>
</tr>
<tr>
<td>International League Against Epilepsy</td>
<td>122</td>
</tr>
<tr>
<td>Intraneurie NeuroScience</td>
<td>915</td>
</tr>
<tr>
<td>Invitae</td>
<td>332</td>
</tr>
<tr>
<td>Jack Libbey EURTEXT</td>
<td>421</td>
</tr>
<tr>
<td>LGS FOUNDATION</td>
<td>Table 2</td>
</tr>
<tr>
<td>Lifelines Neo</td>
<td>508</td>
</tr>
<tr>
<td>LivaNova</td>
<td>123</td>
</tr>
<tr>
<td>Mallinckrodt Pharmaceuticals</td>
<td>514</td>
</tr>
<tr>
<td>Managing Epilepsy Well Network</td>
<td>Table 29</td>
</tr>
<tr>
<td>Mayo Clinic Laboratories</td>
<td>524</td>
</tr>
<tr>
<td>Medtronic</td>
<td>525</td>
</tr>
<tr>
<td>Megin Oy</td>
<td>909</td>
</tr>
<tr>
<td>Memorial Healthcare System</td>
<td>427</td>
</tr>
<tr>
<td>Micromed</td>
<td>747</td>
</tr>
<tr>
<td>Moberg ICU Solutions</td>
<td>454</td>
</tr>
<tr>
<td>Monteris Medical</td>
<td>630</td>
</tr>
<tr>
<td>MRI Interventions Inc</td>
<td>632</td>
</tr>
<tr>
<td>Multi Channel Systems - A Division of Harvard Bioscience</td>
<td>108</td>
</tr>
<tr>
<td>National Association of Epilepsy Centers</td>
<td>537</td>
</tr>
<tr>
<td>National Coordinating Center for Epilepsy - American Academy of Pediatrics</td>
<td>Table 28</td>
</tr>
<tr>
<td>National Institute of Neurological Disorders &amp; Stroke (NINDS)</td>
<td>736</td>
</tr>
<tr>
<td>National Organization for Disorders of the Corpus Callosum</td>
<td>Table 30</td>
</tr>
<tr>
<td>Natus Neuro</td>
<td>625</td>
</tr>
<tr>
<td>NCGS, Inc.</td>
<td>535</td>
</tr>
<tr>
<td>Neuralynx, Inc.</td>
<td>541</td>
</tr>
<tr>
<td>Neurolis</td>
<td>329</td>
</tr>
<tr>
<td>Neurogene Inc.</td>
<td>355</td>
</tr>
<tr>
<td>Neuromonitoring Technologies</td>
<td>945</td>
</tr>
<tr>
<td>Neurology Reviews</td>
<td>231</td>
</tr>
<tr>
<td>NeuroNexus</td>
<td>634</td>
</tr>
<tr>
<td>NeuroPage, Inc.</td>
<td>641</td>
</tr>
<tr>
<td>Neurotech, LLC</td>
<td>114</td>
</tr>
<tr>
<td>Neurovital USA, Inc.</td>
<td>836</td>
</tr>
<tr>
<td>Nextstim</td>
<td>254</td>
</tr>
<tr>
<td>NIHON KOHDEN America, Inc.</td>
<td>441</td>
</tr>
<tr>
<td>Norton Neuroscience Institute, a part of Norton Healthcare</td>
<td>932</td>
</tr>
<tr>
<td>Novartis</td>
<td>929</td>
</tr>
<tr>
<td>Nutricia North America</td>
<td>235</td>
</tr>
<tr>
<td>Orphan Pharmacy Services</td>
<td>110</td>
</tr>
<tr>
<td>OWP Pharmaceuticals</td>
<td>423</td>
</tr>
<tr>
<td>Oxford University Press</td>
<td>330</td>
</tr>
<tr>
<td>Parkview Health</td>
<td>918</td>
</tr>
<tr>
<td>PCDH19 Alliance</td>
<td>Table 16</td>
</tr>
<tr>
<td>Persyst Development Corp.</td>
<td>633</td>
</tr>
<tr>
<td>Philips Neuro</td>
<td>348</td>
</tr>
<tr>
<td>Pinnacle Technology, Inc.</td>
<td>237</td>
</tr>
<tr>
<td>PMT Corporation</td>
<td>531</td>
</tr>
<tr>
<td>Practical Neurology</td>
<td>126</td>
</tr>
<tr>
<td>PsychoGenics Inc.</td>
<td>947</td>
</tr>
<tr>
<td>Purple Day Asia</td>
<td>Table 13</td>
</tr>
<tr>
<td>Renishaw Inc.</td>
<td>334</td>
</tr>
<tr>
<td>Rhythmlink International, LLC</td>
<td>732</td>
</tr>
<tr>
<td>Ricoh USA, Inc.</td>
<td>117</td>
</tr>
<tr>
<td>Ring14 USA Outreach, Inc.</td>
<td>Table 18</td>
</tr>
<tr>
<td>Ripple LLC</td>
<td>819</td>
</tr>
<tr>
<td>RosmanSearch, Inc.</td>
<td>116</td>
</tr>
<tr>
<td>ROW Foundation</td>
<td>425</td>
</tr>
<tr>
<td>SeizureTracker.com</td>
<td>556</td>
</tr>
<tr>
<td>SK Life Science</td>
<td>109</td>
</tr>
<tr>
<td>SL6CA1 Connect</td>
<td>Table 15</td>
</tr>
<tr>
<td>Smart Monitor Corp.</td>
<td>636</td>
</tr>
<tr>
<td>Stratus</td>
<td>731</td>
</tr>
<tr>
<td>Stratus Simulation Booth</td>
<td>831</td>
</tr>
<tr>
<td>STXB1 Disorders/Foundation</td>
<td>Table 33</td>
</tr>
<tr>
<td>Sunovion Pharmaceuticals Inc.</td>
<td>318</td>
</tr>
<tr>
<td>Supernus Pharmaceuticals Inc.</td>
<td>723</td>
</tr>
<tr>
<td>TESS Research Foundation</td>
<td>Table 14</td>
</tr>
<tr>
<td>Texas Children’s Hospital</td>
<td>637</td>
</tr>
<tr>
<td>The Brain Recovery Project</td>
<td>Table 5</td>
</tr>
<tr>
<td>The Charlle Foundation</td>
<td>Table 11</td>
</tr>
<tr>
<td>The Emmes Company - National Institute of Neurological Disorders and Stroke</td>
<td>734</td>
</tr>
<tr>
<td>The FamilieSCN2A Foundation</td>
<td>Table 32</td>
</tr>
<tr>
<td>The North American AED Pregnancy Registry</td>
<td>233</td>
</tr>
<tr>
<td>trumacro</td>
<td>935</td>
</tr>
<tr>
<td>Tuberous Sclerosis Alliance</td>
<td>949</td>
</tr>
<tr>
<td>UCB, Inc.</td>
<td>308</td>
</tr>
<tr>
<td>UNEEG medical.</td>
<td>242</td>
</tr>
<tr>
<td>University of Florida Health</td>
<td>Table 7</td>
</tr>
<tr>
<td>University of Maryland Medical Center</td>
<td>255</td>
</tr>
<tr>
<td>Upsher-Smith Laboratories, LLC.</td>
<td>526</td>
</tr>
<tr>
<td>UT Health Austin Pediatric Neurosciences at Dell Children’s</td>
<td>244</td>
</tr>
<tr>
<td>VA Epilepsy Centers of Excellence</td>
<td>Table 31</td>
</tr>
<tr>
<td>Variantyx Inc.</td>
<td>837</td>
</tr>
<tr>
<td>Wiley</td>
<td>411</td>
</tr>
<tr>
<td>Wishes for Elliott: Advancing SCNBA Research</td>
<td>Table 10</td>
</tr>
<tr>
<td>Wolters Kluwer Health</td>
<td>417</td>
</tr>
<tr>
<td>Wuhan Greentek Pty.Ltd.</td>
<td>921</td>
</tr>
<tr>
<td>Zeto, Inc.</td>
<td>841</td>
</tr>
<tr>
<td>Zimmer Biomet</td>
<td>647</td>
</tr>
<tr>
<td>Zogenix, Inc.</td>
<td>809</td>
</tr>
</tbody>
</table>
### Clinical Tools
- AIT Austrian Institute of Technology  . 252
- ANT North America  . 128
- Blackrock Microsystems  . 246
- Blueprint Genetics  . 936
- Epitel, Inc  . 737
- FHC, Inc  . 340
- g.tec neurotechnology GmbH  . 415
- Managing Epilepsy Well Network  . T29
- Mayo Clinic Laboratories  . 524
- Neurogene Inc  . 355
- Persyst Development Corp  . 633
- Ricoh USA, Inc  . 117
- SeizureTracker.com  . 556
- Smart Monitor Corp  . 636
- Variantyx Inc  . 837
- Zeto, Inc  . 841

### Diagnostics
- AIT Austrian Institute of Technology  . 252
- ANT North America  . 128
- Brain Sentinel  . 520
- Cadwell Laboratories, Inc  . 717
- Cognizance Biomarkers, LLC  . 830
- CortiCare, Inc  . 934
- CREmedical Corp  . 136
- EB NURO SPA  . 241
- empatica inc  . 553
- EMS Biomedical  . 835
- Epitel, Inc  . 737
- GeneX  . 413
- IntraNerve Neuroscience  . 915
- Mayo Clinic Laboratories  . 524
- Medtronic  . 525
- MEGIN Oy  . 909
- Neurogene Inc  . 355
- Neurotech, LLC  . 114
- Neurovirtual USA, Inc  . 836
- Nihon Kohden America, Inc  . 441
- Persyst Development Corp  . 633

### SeizureTracker.com  . 556
- UNEEG medical  . 242
- UT Health Austin Pediatric Neurosciences at Dell Children's  . 244
- Variantyx Inc  . 837
- Zeto, Inc  . 841

### Education
- American Clinical Neurophysiology Society  . T24
- Bridge the Gap - SYNGAP Education and Research Foundation  . T3
- The Charlie Foundation  . T11
- Child Neurology Foundation  . 917
- Citizens United for Research in Epilepsy (CURE)  . T9
- Epilepsy Alliance America  . T19
- Epilepsy Foundation  . T1, 435
- Glut1 Deficiency Foundation  . T36
- Hope for Hypothalamic Hamartomas  . T6
- IntraNerve Neuroscience  . 915
- Jack Pribaz Foundation  . T27
- LGS FOUNDATION  . T2
- Mayo Clinic Laboratories  . 524
- National Coordinating Center for Epilepsy-American Academy of Pediatrics  . T28
- National Institute of Neurological Disorders & Stroke (NINDS)  . 736
- National Organization for Disorders of the Corpus Callosum  . T30
- Nihon Kohden America, Inc  . 441
- The North American AED Pregnancy Registry  . 233
- UT Health Austin Pediatric Neurosciences at Dell Children's  . 244
- VA Epilepsy Centers of Excellence  . T31
- Wiley  . 411

### EEG Systems
- AIT Austrian Institute of Technology  . 252
- ANT North America  . 128
- Blackrock Microsystems  . 246
- Brain Vision LLC  . 134
- Cadwell Laboratories, Inc  . 717
- Compumedics/Neuroscan  . 709
- CREmedical Corp  . 136
- DigiTrace Care Services  . 409
- EB NURO SPA  . 241
- emka TECHNOLOGIES Inc  . 120

### BOOTH/TABLE

#### Accreditation/Credentialing
- ABRET Neurodiagnostic Credentialing & Accreditation  . T23
- American Board of Clinical Neurophysiology  . T22
- American Board of Psychiatry and Neurology  . 930
- National Association of Epilepsy Centers  . 537

#### Brain Mapping
- Ad-Tech Medical Instrument Corp  . 434
- ANT North America  . 128
- Blackrock Microsystems  . 246
- Compumedics/Neuroscan  . 709
- CREmedical Corp  . 136
- EB NURO SPA  . 241
- EMS Biomedical  . 835
- Epilog Inc  . 832
- g.tec neurotechnology GmbH  . 415
- Integra LifeSciences  . 240
- IntraNerve Neuroscience  . 915
- Medtronic  . 525
- MEGIN Oy  . 909
- Neurovirtual USA, Inc  . 836
- Nexion  . 254
- Nihon Kohden America, Inc  . 441
- Persyst Development Corp  . 633
- PMT Corporation  . 531
- Ricoh USA, Inc  . 117
- UT Health Austin Pediatric Neurosciences at Dell Children's  . 244

#### Clinical Research Organizations
- BIOCODEX  . 847
- Bridge the Gap - SYNGAP Education and Research Foundation  . T3
- Compumedics/Neuroscan  . 709
- EpiNet Study Group  . T35
- National Institute of Neurological Disorders & Stroke (NINDS)  . 736
- NCGS, Inc  . 535
- PsychoGenics Inc  . 947
- The North American AED Pregnancy Registry  . 233
- trumacro  . 935
- UNEEG medical  . 242
- UT Health Austin Pediatric Neurosciences at Dell Children's  . 244

#### Clinical Tools
- AIT Austrian Institute of Technology  . 252
- ANT North America  . 128
- Blackrock Microsystems  . 246
- Blueprint Genetics  . 936
- The Charlie Foundation  . T11
- EB NURO SPA  . 241
- empatica inc  . 553
- Epitel, Inc  . 737
- FHC, Inc  . 340
- g.tec neurotechnology GmbH  . 415
- Managing Epilepsy Well Network  . T29
- Mayo Clinic Laboratories  . 524
- Neurogene Inc  . 355
- Persyst Development Corp  . 633
- Ricoh USA, Inc  . 117
- SeizureTracker.com  . 556
- Smart Monitor Corp  . 636
- Variantyx Inc  . 837
- Zeto, Inc  . 841

#### Diagnostics
- AIT Austrian Institute of Technology  . 252
- ANT North America  . 128
- Brain Sentinel  . 520
- Cadwell Laboratories, Inc  . 717
- Cognizance Biomarkers, LLC  . 830
- Compumedics/Neuroscan  . 709
- CortiCare, Inc  . 934
- CREmedical Corp  . 136
- EB NURO SPA  . 241
- empatica inc  . 553
- EMS Biomedical  . 835
- Epitel, Inc  . 737
- GeneX  . 413
- IntraNerve Neuroscience  . 915
- Mayo Clinic Laboratories  . 524
- Medtronic  . 525
- MEGIN Oy  . 909
- Micromed  . 747
- National Institute of Neurological Disorders & Stroke (NINDS)  . 736
- Natus Neuro  . 625
- Neurogene Inc  . 355
- Neurotech, LLC  . 114
- Neurovirtual USA, Inc  . 836
- Nihon Kohden America, Inc  . 441
- Persyst Development Corp  . 633

#### SeizureTracker.com  . 556
- UNEEG medical  . 242
- UT Health Austin Pediatric Neurosciences at Dell Children's  . 244
- Variantyx Inc  . 837
- Zeto, Inc  . 841

#### Education
- American Clinical Neurophysiology Society  . T24
- Bridge the Gap - SYNGAP Education and Research Foundation  . T3
- The Charlie Foundation  . T11
- Child Neurology Foundation  . 917
- Citizens United for Research in Epilepsy (CURE)  . T9
- Epilepsy Alliance America  . T19
- Epilepsy Foundation  . T1, 435
- Glut1 Deficiency Foundation  . T36
- Hope for Hypothalamic Hamartomas  . T6
- IntraNerve Neuroscience  . 915
- Jack Pribaz Foundation  . T27
- LGS FOUNDATION  . T2
- Mayo Clinic Laboratories  . 524
- National Coordinating Center for Epilepsy-American Academy of Pediatrics  . T28
- National Institute of Neurological Disorders & Stroke (NINDS)  . 736
- National Organization for Disorders of the Corpus Callosum  . T30
- Nihon Kohden America, Inc  . 441
- The North American AED Pregnancy Registry  . 233
- UT Health Austin Pediatric Neurosciences at Dell Children's  . 244
- VA Epilepsy Centers of Excellence  . T31
- Wiley  . 411

#### EEG Systems
- AIT Austrian Institute of Technology  . 252
- ANT North America  . 128
- Blackrock Microsystems  . 246
- Brain Vision LLC  . 134
- Cadwell Laboratories, Inc  . 717
- Compumedics/Neuroscan  . 709
- CREmedical Corp  . 136
- DigiTrace Care Services  . 409
- EB NURO SPA  . 241
- emka TECHNOLOGIES Inc  . 120

### EXHIBITORS BY CATEGORY
EXHIBITORS BY CATEGORY

EMS Biomedical ........................................ 835
Epitel, Inc............................................. 737
g.tec neurotechnology GmbH .................. 415
Lifelines Neuro ..................................... 508
Micromed ............................................. 747
Moberg ICU Solutions ............................ 454
Natus Neuro ......................................... 625
Neuralynx, Inc ...................................... 541
NeuroNexus ........................................... 634
Neurotech, LLC ..................................... 114
Neurovirtual USA, Inc ........................... 836
Nihon Kohden America, Inc .................... 441
Philips Neuro ......................................... 348
Pinnacle Technology, Inc ....................... 237
PsychoGenics Inc .................................. 947
Ripple LLC ........................................... 819
UNEEG medical .................................... 242
UT Health Austin Pediatric Neurosciences at Dell Children's ........... 244
Zeto, Inc .............................................. 841

Electrodes
Ad-Tech Medical Instrument Corp. .......... 434
ANT North America ............................... 128
Blackrock Microsystems .................................. 246
Brain Sentinel ....................................... 520
Cadwell Laboratories, Inc ....................... 717
Compumedics/Neuroscan ....................... 709
CREmedical Corp .................................. 136
EB NEURO SPA ...................................... 241
Epitel, Inc............................................. 737
FHC, Inc .............................................. 340
Integra LifeSciences ................................ 240
Medtronic ............................................. 525
Natus Neuro ......................................... 625
NeuroNexus ........................................... 634
Neurovirtual USA, Inc ........................... 836
Nihon Kohden America, Inc .................... 441
PMT Corporation .................................... 531
Rhythmlink International, LLC ............... 732
Ripple LLC ........................................... 819
UNEEG medical .................................... 242
Wuhan Greentek Pty.Ltd .......................... 921
Zeto, Inc .............................................. 841

Genetic Services
Blueprint Genetics .................................. 936
Cognizance Biomarkers, LLC .................. 830
Invitae ................................................. 332
The North American AED

Pregnancy Registry .................................. 233
Variantyx Inc ........................................ 837

Hospital / Medical Center
Charleston Area Medical Center ............ 335
Cook Children's Health Care System ....... 325
Henry Ford Health System ..................... 457
Mayo Clinic Laboratories ....................... 524
National Institute of Neurological Disorders & Stroke (NINDS) ............. 736
Persyst Development Corp ..................... 633
Texas Children's Hospital ....................... 637
The Charlie Foundation ......................... T11
University of Maryland Medical Center ........ 255
VA Epilepsy Centers of Excellence ............ T31
Zeto, Inc .............................................. 841

Imaging
Epilog Inc ............................................ 832
Medtronic ............................................ 525
MRI Interventions Inc ............................ 632
Philips Neuro ......................................... 348
Ricoh USA, Inc ..................................... 117
UT Health Austin Pediatric Neurosciences at Dell Children's ........... 244

Medical Devices
Ad-Tech Medical Instrument Corp .......... 434
ANT North America ............................... 128
Blackrock Microsystems .................................. 246
Cadwell Laboratories, Inc ....................... 717
Ceribell .............................................. 741
Compumedics/Neuroscan ....................... 709
CREmedical Corp .................................. 136
DIXI Medical USA .................................. 834
EB NEURO SPA ...................................... 241
empatica inc ........................................ 553
EMS Biomedical ..................................... 835
Epilog Inc ............................................ 832
Epitel, Inc............................................. 737
g.tec neurotechnology GmbH ................. 415
Integra LifeSciences ................................ 240
Lifelines Neuro ..................................... 508
LivaNova ............................................. 123
Medtronic ............................................ 525
Micromed ............................................ 747
Moberg ICU Solutions ............................ 454
Monteris Medical .................................. 630
MRI Interventions Inc ............................ 632
Natus Neuro ......................................... 625
Neuralynx, Inc ...................................... 541
Neurovirtual USA, Inc ........................... 836
Persyst Development Corp ..................... 633
PMT Corporation .................................... 531
Rhythmlink International, LLC ............... 732
Ricoh USA, Inc ..................................... 117
UNEEG medical .................................... 242
Zeto, Inc .............................................. 841
Zimmer Biomet ..................................... 647

Medical Equipment
Cadwell Laboratories, Inc ....................... 717
Compumedics/Neuroscan ....................... 709
CortiCare, Inc ....................................... 934
CREmedical Corp .................................. 136
EB NEURO SPA ...................................... 241
EMS Biomedical ..................................... 835
Epitel, Inc............................................. 737
FHC, Inc .............................................. 340
g.tec neurotechnology GmbH ................. 415
Micromed ............................................ 747
Moberg ICU Solutions ............................ 454
Natus Neuro ......................................... 625
Neuralynx, Inc ...................................... 541
Neurovirtual USA, Inc ........................... 836
PMT Corporation .................................... 531
Persyst Development Corp ..................... 633
Ricoh USA, Inc ..................................... 117
Smart Monitor Corp. ............................... 636
Stratus ............................................... 731

Mobile Apps
Compumedics/Neuroscan ....................... 709
empatica inc ........................................ 553
Persyst Development Corp ..................... 633
SeizureTracker.com .............................. 556
Smart Monitor Corp. ............................... 636
The Charlie Foundation ......................... T11
Zeto, Inc .............................................. 841

Monitoring Systems
ANT North America ............................... 128
Blackrock Microsystems .................................. 246
Brain Sentinel ....................................... 520
Cadwell Laboratories, Inc ....................... 717
CortiCare, Inc ....................................... 934
DigiTrace Care Services ......................... 409
<table>
<thead>
<tr>
<th>AEM ANNUAL MEETING 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXHIBITORS BY CATEGORY</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>EB NEURO SPA ..............</td>
</tr>
<tr>
<td>empatica inc. ...............</td>
</tr>
<tr>
<td>EMS Biomedical ..............</td>
</tr>
<tr>
<td>Epitel, Inc. .................</td>
</tr>
<tr>
<td>Lifelines Neuro ..............</td>
</tr>
<tr>
<td>Medtronic ..................</td>
</tr>
<tr>
<td>Micromed ....................</td>
</tr>
<tr>
<td>Moberg ICU Solutions .........</td>
</tr>
<tr>
<td>Neuralynx, Inc. ..........</td>
</tr>
<tr>
<td>Neurotech, LLC ..............</td>
</tr>
<tr>
<td>Nihon Kohden America, Inc.</td>
</tr>
<tr>
<td>The North American AED ......</td>
</tr>
<tr>
<td>Pregnancy Registry .......</td>
</tr>
<tr>
<td>Persyst Development Corp.</td>
</tr>
<tr>
<td>Ripple LLC ..................</td>
</tr>
<tr>
<td>SeizureTracker.com ..........</td>
</tr>
<tr>
<td>Smart Monitor Corp. .......</td>
</tr>
<tr>
<td>Stratus ..................</td>
</tr>
<tr>
<td>UNEEG medical .............</td>
</tr>
<tr>
<td>Zeto, Inc ...................</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Ajinomoto Cambrooke ........</td>
</tr>
<tr>
<td>Brain Sentinel ..............</td>
</tr>
<tr>
<td>Cascade Survey Research ....</td>
</tr>
<tr>
<td>Child Neurology Foundation</td>
</tr>
<tr>
<td>emka TECHNOLOGIES Inc. .....</td>
</tr>
<tr>
<td>Epilepsy Foundation .......</td>
</tr>
<tr>
<td>Hannahtopia Foundation .....</td>
</tr>
<tr>
<td>International League Against Epilepsy</td>
</tr>
<tr>
<td>Managing Epilepsy Well Network</td>
</tr>
<tr>
<td>National Association of Epilepsy Centers</td>
</tr>
<tr>
<td>National Institute of Neurological Disorders &amp; Stroke (NINDS)</td>
</tr>
<tr>
<td>Neurogene Inc. .............</td>
</tr>
<tr>
<td>NeuroNexus .................</td>
</tr>
<tr>
<td>Nutricia North America .....</td>
</tr>
<tr>
<td>PMT Corporation ............</td>
</tr>
<tr>
<td>Purple Day Asia ............</td>
</tr>
<tr>
<td>ROW Foundation ............</td>
</tr>
<tr>
<td>SeizureTracker.com .........</td>
</tr>
<tr>
<td>trumacro ..................</td>
</tr>
<tr>
<td>VA Epilepsy Centers of Excellence</td>
</tr>
<tr>
<td>Patient Advocacy Groups</td>
</tr>
<tr>
<td>Batten Disease Support and Research Association</td>
</tr>
<tr>
<td>Bridge the Gap - SYNGAP Education and Research Foundation</td>
</tr>
<tr>
<td>The Charlie Foundation ..........</td>
</tr>
<tr>
<td>Citizens United for Research in Epilepsy (CURE) ..........</td>
</tr>
<tr>
<td>Dravet Syndrome Foundation</td>
</tr>
<tr>
<td>Epilepsy Alliance America</td>
</tr>
<tr>
<td>The FamiliesSCN2A Foundation</td>
</tr>
<tr>
<td>Glut1 Deficiency Foundation</td>
</tr>
<tr>
<td>Hope for Hypothalamic Hamartomas</td>
</tr>
<tr>
<td>Hope4Harper .................</td>
</tr>
<tr>
<td>I AM A VOICE for Epilepsy Awareness™</td>
</tr>
<tr>
<td>International Foundation for CDKL5 Research</td>
</tr>
<tr>
<td>Jack Pribaz Foundation ....</td>
</tr>
<tr>
<td>LGS FOUNDATION .............</td>
</tr>
<tr>
<td>National Coordinating Center for Epilepsy-American Academy of Pediatrics</td>
</tr>
<tr>
<td>National Organization for Disorders of the Corpus Callosum</td>
</tr>
<tr>
<td>PCDH19 Alliance ............</td>
</tr>
<tr>
<td>Purple Day Asia ............</td>
</tr>
<tr>
<td>Ring14 USA Outreach, Inc.</td>
</tr>
<tr>
<td>SLC6A1 Connect .............</td>
</tr>
<tr>
<td>STXB1 Disorders/Foundation</td>
</tr>
<tr>
<td>TESS Research Foundation</td>
</tr>
<tr>
<td>Tuberous Sclerosis Alliance</td>
</tr>
<tr>
<td>Wishes for Elliott: Advancing SCN8A Research</td>
</tr>
</tbody>
</table>

**Pharmaceutical**

- Aprecia Pharmaceuticals ........ | 341 |
- Aquestive Therapeutics, Inc. ... | 344, 547 |
- Assertio Therapeutics .......... | 112 |
- BIOCODEX .................... | 847 |
- BioMarin Pharmaceutical Inc. ... | 349 |
- Eisai Inc. .................... | 509 |
- Greenwich Biosciences, Inc. ... | 517 |
- GW International ............. | 923 |
- Mallinckrodt Pharmaceuticals | 514 |
- Neurelis ..................... | 329 |
- Novartis ..................... | 929 |
- Nutricia North America ....... | 235 |
- OWP Pharmaceuticals .......... | 423 |
- PsychoGenics Inc. ............ | 947 |
- SK Life Science .............. | 109 |
- Sunovion Pharmaceuticals Inc.  | 318 |
- Supernus Pharmaceuticals, Inc. | 723 |
- UCB, Inc. .................... | 308 |
- Upsher-Smith Laboratories, LLC | 526 |
- Zogenix, Inc. ............... | 809 |

**Practice Services**

- The Charlie Foundation .......... | T11 |
- CortiCare, Inc. ................ | 934 |
- Purple Day Asia ................ | T13 |
- SeizureTracker.com ............ | 556 |
- UT Health Austin Pediatric Neurosciences at Dell Children’s | 244 |

**Professional Societies**

- American Clinical MEG Society | T25 |
- American Clinical Neurophysiology Society | T24 |
- ASET - The Neurodiagnostic Society | T21 |
- The Charlie Foundation .......... | T11 |
- National Association of Epilepsy Centers | 537 |
- National Coordinating Center for Epilepsy-American Academy of Pediatrics | T28 |

**Publications**

- Cambridge University Press .... | 243 |
- John Libbey EUROTExT .......... | 421 |
- National Institute of Neurological Disorders & Stroke (NINDS) | 736 |
- Neurology Reviews .............. | 231 |
- Oxford University Press ....... | 330 |
- Practical Neurology ........... | 126 |
- Wiley ........................ | 411 |
- Wolters Kluwer Health .......... | 417 |

**Recruiters**

- Charleston Area Medical Center | 335 |
- Core Physicians ............... | 927 |
- Memorial Healthcare System .... | 427 |
- Parkview Health ............... | 918 |
- RosmanSearch, Inc. ............ | 116 |

**Research Aid**

- Blackrock Microsystems .......... | 246 |
- Citizens United for Research in Epilepsy (CURE) | T9 |
- Elixirgen Scientific Inc. ........ | 937 |
- emka TECHNOLOGIES Inc. ....... | 120 |
- The Emmes Company - National Institute of Neurological Disorders & Stroke | 734 |
- Epitel, Inc. .................... | 737 |
- Lifelines Neuro ................. | 508 |
- Moberg ICU Solutions .......... | 454 |
- Multi Channel Systems - A Division of...
<table>
<thead>
<tr>
<th>EXHIBITORS BY CATEGORY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvard Bioscience ..............</td>
</tr>
<tr>
<td>National Institute of Neurological Disorders &amp; Stroke (NINDS) ..........</td>
</tr>
<tr>
<td>The North American AED Pregnancy Registry ...................................</td>
</tr>
<tr>
<td>Persyst Development Corp. ..........</td>
</tr>
<tr>
<td>Pinnacle Technology, Inc. ..........</td>
</tr>
<tr>
<td>Ripple LLC ..................................</td>
</tr>
<tr>
<td>SeizureTracker.com ..............</td>
</tr>
<tr>
<td>Smart Monitor Corp. .............</td>
</tr>
<tr>
<td><strong>Seizure Detection</strong></td>
</tr>
<tr>
<td>AIT Austrian Institute of Technology .</td>
</tr>
<tr>
<td>Brain Sentinel .....................</td>
</tr>
<tr>
<td>Cadwell Laboratories, Inc. ........</td>
</tr>
<tr>
<td>Cognizance Biomarkers, LLC ..................</td>
</tr>
<tr>
<td>Compumedics/Neuroscan ............</td>
</tr>
<tr>
<td>CortiCare, Inc. ......................</td>
</tr>
<tr>
<td>EB NEURO SPA .....................</td>
</tr>
<tr>
<td>empatica inc. ......................</td>
</tr>
<tr>
<td>EMS Biomedical ....................</td>
</tr>
<tr>
<td>Epitel, Inc. .......................</td>
</tr>
<tr>
<td>IntraNerve Neuroscience .........</td>
</tr>
<tr>
<td>Lifelines Neuro ...............</td>
</tr>
<tr>
<td>Neuralynx, Inc. ..............</td>
</tr>
<tr>
<td>Neurogene Inc. ....................</td>
</tr>
<tr>
<td>Neurotech, LLC ..........</td>
</tr>
<tr>
<td>Persyst Development Corp. ........</td>
</tr>
<tr>
<td>Pinnacle Technology, Inc. ..........</td>
</tr>
<tr>
<td>PMT Corporation .............</td>
</tr>
<tr>
<td>PsychoGenics Inc. ...............</td>
</tr>
<tr>
<td>Ricoh USA, Inc. ..............</td>
</tr>
<tr>
<td>Smart Monitor Corp. ..........</td>
</tr>
<tr>
<td>UNEEG medical ..................</td>
</tr>
<tr>
<td>UT Health Austin Pediatric Neurosciences at Dell Children’s ..........</td>
</tr>
<tr>
<td><strong>Software</strong></td>
</tr>
<tr>
<td>AIT Austrian Institute of Technology .</td>
</tr>
<tr>
<td>ANT North America ..................</td>
</tr>
<tr>
<td>Blackrock Microsystems ..........</td>
</tr>
<tr>
<td>Compumedics/Neuroscan ..........</td>
</tr>
<tr>
<td>EB NEURO SPA .....................</td>
</tr>
<tr>
<td>emka TECHNOLOGIES Inc. ........</td>
</tr>
<tr>
<td>EMS Biomedical ....................</td>
</tr>
<tr>
<td>Epilog Inc. .......................</td>
</tr>
<tr>
<td>g.tec neurotechnology GmbH ....</td>
</tr>
<tr>
<td>Lifelines Neuro ...............</td>
</tr>
<tr>
<td>Medtronic ....................</td>
</tr>
<tr>
<td>Micromed ....................</td>
</tr>
<tr>
<td>MRI Interventions Inc. ..........</td>
</tr>
<tr>
<td><strong>Surgical Tools</strong></td>
</tr>
<tr>
<td>Blackrock Microsystems ..........</td>
</tr>
<tr>
<td>Monteris Medical .............</td>
</tr>
<tr>
<td>PMT Corporation .............</td>
</tr>
<tr>
<td>Renishaw Inc. ..................</td>
</tr>
<tr>
<td><strong>Testing</strong></td>
</tr>
<tr>
<td>BioMarin Pharmaceutical Inc. ......</td>
</tr>
<tr>
<td>Invitae ........................</td>
</tr>
<tr>
<td>Mayo Clinic Laboratories ..........</td>
</tr>
<tr>
<td>Neurotech, LLC ............</td>
</tr>
<tr>
<td>PsychoGenics Inc. ...............</td>
</tr>
<tr>
<td><strong>Video Tools</strong></td>
</tr>
<tr>
<td>Pinnacle Technology, Inc. ........</td>
</tr>
<tr>
<td>SeizureTracker.com ..........</td>
</tr>
<tr>
<td>Zeto, Inc. .....................</td>
</tr>
</tbody>
</table>

AES ANNUAL MEETING 2019

108

MEETING.AESNET.ORG
Real-World Approaches to Cannabinoids in Pediatric-Onset Epilepsy: What Do the Data Tell Us?

FRIDAY, DECEMBER 6, 2019
6:00 PM – 8:00 PM

HILTON BALTIMORE INNER HARBOR
BALTIMORE, MD
ROOM: KEY BALLROOM 4 (2ND FL)

Seizures associated with pediatric-onset epileptic encephalopathies can be difficult to control, almost always requiring combination therapy. Incorporating new therapies into a complicated treatment regimen can be challenging, for not only patients and caregivers, but also clinicians. Join our panel of experts, who will guide you through the data supporting the use of cannabinoid-based therapy. Continue the journey as the experts share their real-world experience in prescribing this therapy for patients with Lennox-Gastaut syndrome and Dravet syndrome, providing terminology and techniques they use when speaking with patients and caregivers about cannabinoid-based treatment for pediatric-onset epileptic encephalopathies.

Opinions presented during the Industry Satellite CME Symposia are those of the speaker and the ACCME-accredited provider and are not a reflection of AES opinions, nor are they supported, sponsored or endorsed by AES.
sEMG: A NEW DIAGNOSTIC BIOMARKER
FOR SEIZURE MONITORING

Fundamentals of Quantitative Surface Electromyography for Long-Term Monitoring

Sunday December 8, 2019
7:30 – 10:30 PM
Hilton Baltimore Inner Harbor,
Key Ballroom 4, Second Floor
Non-CME Dinner Satellite Symposium

Featured Presenters

Jonathan J. Halford, MD, FAES, FACNS
Professor of Neurology
Director, Translational Research Unit
Medical University of South Carolina, Charleston, SC

Selim R. Benbadis, MD, FAAN, FACNS
Professor of Neurology and Director,
Comprehensive Epilepsy Program
University of South Florida and Tampa General Hospital

Sándor Beniczky MD, PhD
Professor, Department of Neurology,
Aarhus University Hospital
Head of Clinical Neurophysiology Department,
Danish Epilepsy Centre
Editor-in-chief, Epileptic Disorders

Program Overview

• Understand methods of quantitative sEMG analysis during ictal events
• Review specific sEMG patterns of motor seizures and the quantitative EMG biomarkers of convulsive seizures
• Discuss how physicians can differentiate between sEMG data recorded during epileptic and psychogenic non-epileptic events
• Identify patients that may benefit from long-term physiological monitoring
• Discuss the value of sEMG in clarifying patient-reported seizures

Opinions presented during the Industry Supported Non-CME Satellite Symposia are those of the speakers and not a reflection of AES opinions, nor are they supported, sponsored, or endorsed by the American Epilepsy Society.

- Dinner will be provided.
- Pre-registration was requested.
- On-site registration may be available, space permitting.
- There is no fee for attending this educational activity.

To register, visit: BrainSentinel.com/sEMGSymposium
or call (210) 960-3594

This activity is sponsored by Brain Sentinel, Inc.
www.BrainSentinel.com

© 2019 Brain Sentinel, Inc. All rights reserved.
YOUR PATIENTS WITH DRAVET SYNDROME (DS): EARLY LIFE INTO ADULTHOOD

Join us & get the opportunity to discuss with international experts in Dravet syndrome

Learning objectives for this symposium are:

○ Know when genetic testing should be considered.

○ Recognize clinical features of DS from early life to adulthood.

○ Differentiate an adult with DS from other refractory epilepsies, especially if early history is not available.

○ Categorize therapies for DS as first line, second line, or later.

○ Describe how new agents factor in, including Vagal Nerve Stimulation (VNS).

INTERNATIONAL FACULTY PANEL

Elaine C. Wirrell, M.D., Director of Pediatric Epilepsy at Mayo Clinic, Rochester, MN, USA

Ingrid Scheffer, M.D., AO FAA FAHMS, Laureate Professor at the University of Melbourne, Austin Health and The Royal Children’s Hospital, Melbourne, Australia

Joseph Sullivan, M.D., Director of the UCSF Pediatric Epilepsy Center, San Francisco, CA, USA

Danielle Andrade, M.D., Epilepsy Program Medical Director, University Health Network, University of Toronto, Toronto, Ontario, Canada

Rima Nabbout, M.D., Ph.D., Department of Pediatric Neurology, Reference Center for Rare Epilepsies, Necker Enfants Malades Hospital, Paris, France

Mary Anne Meskis, Executive Director, Dravet Syndrome Foundation, Inc, Cherry Hill, NJ, USA

Disclaimer:
Opinions presented during this Industry Non-CME Sponsored Satellite Educational Activity are those of the speakers and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.

MBD-00001-092019
The Epileptic Heart

Sunday, December 8th, 2019 | 6:00 - 9:00 PM
Hilton Baltimore Inner Harbor, Key Ballroom 10, Second Floor

At this program, faculty members will review and discuss:

- Cardiovascular dysfunction and risk in epilepsy patients
- Effects of AEDs on the cardiovascular system
- Clinical data evaluating the potential effects of vagus nerve stimulation on the heart

Featured Presenters:

Scott Mintzer, MD
Medical Director, Epilepsy Monitoring Unit
Thomas Jefferson University Hospitals
Philadelphia, Pennsylvania

Rainer Surges, MD
Director, Department of Epileptology
University Hospital Bonn
Bonn, Germany

Richard Verrier, PhD
Associate Professor of Medicine, Cardiovascular Division,
Harvard Medical School, Beth Israel Deaconess Medical Center
Boston, Massachusetts

REGISTER
vnstherapy.com/epilepticheart

This is a FREE event.
Opinions presented during the Industry Non-CME Satellite Symposium are those of the speakers and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.
COGNITIVE AND DEVELOPMENTAL OUTCOMES IN SEVERE EPILEPSIES OF INFANCY

How Are the Roles of Genetics and Seizure Frequency INTERTWINED?

Sunday, December 8, 2019
6:00 PM – 8:00 PM
Baltimore Convention Center • Room 314-315, Level 300

PROGRAM CHAIR
Orrin Devinsky, MD
Professor of Neurology, Neuroscience, Neurosurgery, and Psychiatry
NYU School of Medicine
Director
NYU Comprehensive Epilepsy Center
New York, New York

This activity has been approved for AMA PRA Category 1 Credit™.

Pre-registration does not guarantee seating. On-site registration may be available, space permitting.

Disclaimer: Opinions presented during this Industry Sponsored Satellite Educational Activity are those of the speakers and/or the sponsor and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.
PROGRAM DESCRIPTION:

• Individuals living with GTCS are faced with unique risks and challenges compared to the general epilepsy population. In this interactive discussion, we will discuss the following issues:
  ◦ GTCS associated with:
    ▪ An increased risk of SUDEP, serious injury, and structural brain abnormalities
    ▪ Cognitive, behavioral, and social difficulties that can significantly impact patients’ quality of life and ability to work
  ◦ Many patients with GTCS remain uncontrolled. The serious risks and comorbidities associated with GTCS highlight this as an unmet need for GTCS patients

PROGRAM OBJECTIVES:

• Understand the increased risk of Sudden Unexpected Death in Epilepsy (SUDEP) and serious related injuries suffered by generalized tonic-clonic seizures (GTCS) patients, as well as the possibility to mitigate this risk through earlier and more effective treatment intervention
• Characterize the unique impact of GTCS on patients’ day-to-day lives
• Provide an overview of the current treatment paradigm for GTCS

©2019 UCB, Inc., Smyrna, GA 30080. All rights reserved.
Printed in the USA. US-P-DA-EPI-1900066

Sponsored by UCB, Inc.
You’re Invited to a Clinical Symposium & Dinner:
Epilepsy Treatment Update for Patients Suffering from Seizure Clusters

DATE: FRIDAY, DECEMBER 6, 2019
TIME: 6:00 PM - 9:00 PM
LOCATION: ROOM 314-315

Dinner will be served.*

UCB is looking forward to seeing you at AES 2019!

Join us to learn about seizure clusters and a rescue treatment option. Seizure clusters impact 15% of patients with uncontrolled epilepsy and ~5% of the total epilepsy population, more than 150K patients in the US.

*UCB is committed to complying with all legal requirements. For US healthcare professionals, we operate in accordance with the PhRMA Code on Interactions with Healthcare Professionals. Attendance at this activity is limited to healthcare professionals. Accordingly, attendance by guests or spouses is not appropriate, and associated expenses will not be reimbursed. Certain country, US federal and state requirements restrict and/or require disclosure of items UCB provides to healthcare professionals, including meals and refreshments. If you are licensed in certain jurisdictions or have institutional restrictions that do not permit receiving meals and refreshments, UCB respectfully asks you to identify yourself to the meeting host.

Disclaimer: Opinions presented during this Industry-Sponsored Non-CME Satellite Education Activity are those of the speakers and/or the sponsor and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.
A NEW HOPE FOR EPILEPSY
DBS FOR MEDICALLY REFRACTORY EPILEPSY

Join us for an Industry Non-CME Satellite Symposium being held during the American Epilepsy Society (AES) 73rd Annual Meeting 2019

Deep Brain Stimulation (DBS)
Advancements in the Treatment of Medically Refractory Epilepsy

Friday, December 6
6 – 9pm
Hilton Baltimore Inner Harbor
Key Ballroom 10, Second Floor

PROGRAM OVERVIEW
In 2018, the Medtronic Deep Brain Stimulation (DBS) System for Epilepsy was approved by the U.S. Food and Drug Administration (FDA). Since then, there have been many important learnings that we are excited to share.

This satellite symposium will focus on several key aspects of the therapy: brain anatomy involving the anterior nucleus of the thalamus (ANT) for targeting stimulation, safety and effectiveness data, best medical practices related to device implant, programming and long-term patient care.

PRE-REGISTRATION REQUIRED
https://medtronic.cvent.com/d/myqt69/

Dinner will be provided.
There is no fee for attending this educational activity.

Opinions presented during the Industry-Supported Satellite Non-CME Symposium/Workshop are those of the speakers and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.
THE DATA REVOLUTION:
How Data Science is Transforming Epilepsy Treatment

SUNDAY, DECEMBER 8, 2019 @ 6:00-9:00 PM
Hilton Baltimore Inner Harbor
Key Ballroom 2, Second Floor
401 West Pratt Street, Baltimore, MD

SPEAKERS
Martha Morrell, MD, Stanford Hospital, CMO, NeuroPace
Sameer Sheth, MD, Ph.D., Baylor College of Medicine
Dileep Nair, MD, Cleveland Clinic Foundation

REGISTER AT
www.neuropace.com/zimmer-symposium2019

HCP’s only. Space is limited. For complete product information and labeling, including indications, refer to the package insert for all products discussed. Expenses will be reported in accordance with the Sunshine Act.

Opinions presented during this Industry Sponsored Non-CME Satellite Educational Activity are those of the speakers and/or the sponsor and are not a reflection of American Epilepsy Society opinions, nor are they supported, sponsored or endorsed by the American Epilepsy Society.
The relative risk for suicidal thoughts or behavior was higher in clinical trials of a drug that cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice. Partial Onset Seizure. Adult and Adolescent Patients (≥12 years) A total of 1,088 patients receiving FYCOMPA (4, 8, 12 mg or 12 mg once daily) constituted the safety population in the pooled analysis of the placebo-controlled trials (Studies 1, 2, and 3) and in patients with partial-onset seizures. Approximately 51% of patients were female, and the mean age was 35 years. Adverse Reactions Leading to Discontinuation In controlled clinical trials (Studies 1, 2, and 3), the rate of discontinuation as a result of an adverse reaction was 3%, 8%, and 19%, respectively. in placebo-treated adults with a median exposure of 19 weeks. The percentages of adults who gained at least 1 year. Adverse reactions in pediatric patients 4 to <12 years were similar to those seen in patients treated with FYCOMPA. The in controlled partial-onset seizure clinical trials, these adverse reactions were observed in patients with and without psychiatric history, prior aggressive behavior, or concomitant use of medications associated with hostility and aggression. Some patients experienced worsening of their pre-existing psychiatric symptoms. Patients with active psychiatric disorders and unstable recurrent affective disorders were excluded from the clinical trials. The combination of alcohol and FYCOMPA significantly worsened mood and increased anger. Patients taking FYCOMPA should avoid the use of alcohol. Similar serious psychiatric and behavioral events were observed in the primary generalized tonic-clonic seizure clinical trial. In healthy volunteers taking FYCOMPA, observed psychiatric events included paranoia, hostility, mood, agitation, anger, mental status changes, and disorientation/confusional state. In the non-epilepsy trials, psychiatric events were more than twice as frequent in perampanel-treated patients than in placebo-treated patients. Patients experienced more hostility- and aggression-related adverse reactions that were serious, severe, and led to discontinuation of treatment compared to placebo. In general, in placebo-controlled partial-onset seizure clinical trials, psychiatric events were reported more frequently in patients being treated with FYCOMPA than in patients taking placebo. These events included increased aggression, anger, anxiety, which occurred in 2% or greater of FYCOMPA-treated patients and twice as frequently as in placebo-treated patients. Other symptoms that occurred with FYCOMPA and were more common than with placebo included affect, anxiety, agitation, depression, and irritability. In placebo-controlled clinical events identified as psychiatric and psychiatric disorder-related events were reported as serious and all FYCOMPA-treated patients and twice as frequently as in placebo-treated patients. To brush along with the effects of alcohol. Multiple dosing of FYCOMPA 12 mg per day also enhanced the effects of alcohol to CNS depression. A pharmacodynamic interaction study in healthy subjects found that the effects of alcohol were statistically lower than ketamine 100 mg. In addition, for “Bad Drug Effects,” FYCOMPA 24 mg and 36 mg produced responses similar to alprazolam 3 mg and higher than ketamine 100 mg. Additionally, on the analog scale (VAS). “Drug Liking,” “Overall Drug Liking,” and “Take Drug Again” for FYCOMPA were each statistically higher than placebo. YMCA results indicated that YMCA scores were observed at all doses. Effects on pup body weight, pup growth, hindlimb splay, impairment of motor coordination, and development of coordination abnormality were observed in a study in F344 rats. The results of these studies indicate that FYCOMPA is compatible with mammalian reproduction. Perampanel has been detected in the milk of nursing rats. It is not known whether FYCOMPA is present in human milk. FYCOMPA is distributed into milk at a concentration of approximately 0.07% of the maternal plasma concentration. Data from lactating rats fed FYCOMPA at doses of 12 and 36 mg/kg/day, which are approximately 3 and 9 times, respectively, the maximum recommended human dose of 12 mg/day, show that FYCOMPA is present in the milk of lactating rats. Milk production was not affected in these studies. It is not known whether FYCOMPA and its metabolites are excreted in human milk. There are no data on the presence of perampanel in human milk, the effects on the breastfed child, or the effects of the drug on milk production. Perampanel and/or its metabolites are excreted in the milk of lactating rats. FYCOMPA is distributed into milk at a concentration of approximately 0.07% of the maternal plasma concentration. It is not known whether FYCOMPA is present in human milk. Adverse drug reactions occurring in ≥2% of patients in highest FYCOMPA dosage (12 mg) and more frequent than placebo (in order of decreasing frequency for the 12 mg dose group). The most common dose-related adverse reactions in patients receiving FYCOMPA at doses of 8 mg or 12 mg (≥4% and occurring at least 1% higher than the placebo group) included dizziness (36%), somnolence (16%), agitation (10%), irritability (3%), falls (7%), nausea (7%), ataxia (5%), balance disorder (4%), gait disturbance (4%), weight gain (4%), and weight loss (4%). For almost all adverse reaction rates, values were higher on 12 mg and more often led to dose reduction or discontinuation. Table 2. Adverse Reactions in Placebo-Controlled Trials in Adult and Adolescent Patients with Partial-Onset Seizures ≥2% of Patients in Highest FYCOMPA Doses (12 mg) Group and More Frequent Than Placebo
Dose adjustment is not required in patients with mild or moderate hepatic impairment. Renal Impairment Dose adjustment is not required in patients with mild renal impairment. FYCOMPA should be used with caution in patients with moderate renal impairment and slower titration may be considered. Use in patients with severe renal impairment or undergoing hemodialysis is not recommended.

DRUG ABUSE AND DEPENDENCE

FDC® is a registered trademark of Eisai Inc. & Eisai Europe GmbH. FYCOMPA® is a registered trademark of Eisai R&D Management CO., Ltd., licensed to Eisai Inc.
IMPORTANT SAFETY INFORMATION

WARNING: SERIOUS PSYCHIATRIC AND BEHAVIORAL REACTIONS

• Serious or life-threatening psychiatric and behavioral adverse reactions including aggression, hostility, irritability, anger, and homicidal ideation and threats have been reported in patients taking FYCOMPA®

• These reactions occurred in patients with and without prior psychiatric history, prior aggressive behavior, or concomitant use of medications associated with hostility and aggression

• Advise patients and caregivers to contact a healthcare provider immediately if any of these reactions or changes in mood, behavior, or personality that are not typical for the patient are observed while taking FYCOMPA or after discontinuing FYCOMPA

• Closely monitor patients particularly during the titration period and at higher doses

• FYCOMPA should be reduced if these symptoms occur and should be discontinued immediately if symptoms are severe or are worsening

SERIOUS PSYCHIATRIC AND BEHAVIORAL REACTIONS

In the partial-onset seizures clinical trials, hostility- and aggression-related adverse reactions occurred in 12% and 20% of patients randomized to receive FYCOMPA at doses of 8 mg and 12 mg per day, respectively, compared to 6% of patients in the placebo group. These effects were dose-related and generally appeared within the first 6 weeks of treatment, although new events continued to be observed through more than 37 weeks. These effects in FYCOMPA-treated patients led to dose reduction, interruption, and discontinuation more frequently than placebo-treated patients. Homicidal ideation and/or threat have also been reported postmarketing in patients treated with FYCOMPA. The combination of alcohol and FYCOMPA significantly worsened mood and increased anger. Patients taking FYCOMPA should avoid the use of alcohol. Patients, their caregivers, and families should be informed that FYCOMPA may increase the risk of psychiatric events. Patients should be monitored during treatment and for at least one month after the last dose of FYCOMPA, and especially when taking higher doses and during the initial few weeks of drug therapy (titration period) or at other times of dose increases. Similar serious psychiatric and behavioral events were observed in the primary generalized tonic-clonic (PGCT) seizure clinical trial.

SUICIDAL BEHAVIOR AND IDEATION

Antiepileptic drugs (AEDs), including FYCOMPA, increase the risk of suicidal thoughts or behavior in patients. Anyone considering prescribing FYCOMPA or any other AED must balance the risk of suicidal thoughts or behavior with the risk of untreated illness. Epilepsy and many other illnesses for which AEDs are prescribed are themselves associated with morbidity and mortality and an increased risk of suicidal thoughts and behavior. Patients, their caregivers, and families should be informed of the risk and advised to monitor and immediately report the emergence or worsening of depression, suicidal thoughts or behavior, thoughts about self-harm, and any unusual change in mood or behavior. Should suicidal thoughts and behavior emerge during treatment, consider whether the emergence of these symptoms in any given patient may be related to the illness being treated.

DIZZINESS AND GAIT DISTURBANCE

FYCOMPA caused dose-related increases in events related to dizziness and disturbance in gait or coordination. Dizziness and vertigo were reported in 35% and 47% of patients in the partial-onset seizure trials randomized to receive FYCOMPA at doses of 8 mg and 12 mg per day, respectively, compared to 10% of placebo-treated patients. Gait disturbance related events were reported in 12% and 16% of patients in the partial-onset seizure clinical trials randomized to receive FYCOMPA at doses of 8 mg and 12 mg per day, respectively, compared to 2% of placebo-treated patients. These adverse reactions occurred mostly during the titration phase. These adverse reactions were also observed in the PGCT seizure clinical trial.

SOMNOLENCE AND FATIGUE

FYCOMPA caused dose-dependent increases in somnolence and fatigue-related events. Somnolence was reported in 16% and 18% of patients in the partial-onset seizure trials randomized to receive FYCOMPA at doses of 8 mg and 12 mg per day, respectively, compared to 7% of placebo-treated patients. Fatigue-related events were reported in 12% and 15% of patients in the partial-onset seizure trials randomized to receive FYCOMPA at doses of 8 mg and 12 mg per day, respectively, compared to 5% of placebo-treated patients. These adverse reactions occurred mostly during the titration phase. These adverse reactions were also observed in the PGCT seizure clinical trial. Patients should be advised against engaging in hazardous activities requiring mental alertness, such as operating motor vehicles or dangerous machinery, until the effect of FYCOMPA is known. Patients should be carefully observed for signs of central nervous system (CNS) depression when FYCOMPA is used with other drugs with sedative properties because of potential additive effects.

FALLS

Falls were reported in 5% and 10% of patients in the partial-onset seizure clinical trials randomized to receive FYCOMPA at doses of 8 mg and 12 mg per day, respectively, compared to 3% of placebo-treated patients.

DRUG REACTION WITH EOSINOPHILIA AND SYSTEMIC SYMPTOMS (DRESS)

DRESS, also known as multiorgan hypersensitivity, has been reported in patients taking AEDs, including FYCOMPA. DRESS may be fatal or life-threatening. DRESS typically, although not exclusively, presents with fever, rash, lymphadenopathy, and/or facial swelling, in association with other organ system involvement. If signs or symptoms are present, immediately evaluate the patient and discontinue FYCOMPA if an alternative etiology for signs or symptoms cannot be established.

WITHDRAWAL OF AEDs

A gradual withdrawal is generally recommended with AEDs to minimize the potential of increased seizure frequency, but if withdrawal is a response to adverse events, prompt withdrawal can be considered.

MOST COMMON ADVERSE REACTIONS

The most common adverse reactions in patients aged 12 years and older receiving FYCOMPA (≥5% and ≥2% higher than placebo) include dizziness, somnolence, fatigue, irritability, falls, nausea, weight gain, vertigo, ataxia, headache, vomiting, confusion, abdominal pain, and anxiety. Adverse reactions in patients aged 4 to <12 years were generally similar to patients aged 12 years and older.

DRUG INTERACTIONS

FYCOMPA may decrease the efficacy of contraceptives containing levonorgestrel. Plasma levels of perampanel were decreased when administered with known moderate and strong CYP3A4 inducers, including, carbamazepine, phenytoin, or oxcarbazepine. Multiple dosing of FYCOMPA 12 mg per day enhanced the effects of alcohol on vigilance and alertness, and increased levels of anger, confusion, and depression. These effects may also be seen when FYCOMPA is used in combination with other CNS depressants.

PREGNANCY AND LACTATION

Physicians are advised to recommend that pregnant patients taking FYCOMPA enroll in the North American Antiepileptic Drug (NAAED) Pregnancy Registry. Caution should be exercised when FYCOMPA is used during pregnancy or lactation.

HEPATIC AND RENAL IMPAIRMENT

Use in patients with severe hepatic or severe renal impairment is not recommended. Dosage adjustments are recommended in patients with mild or moderate hepatic impairment. Use with caution in patients with moderate renal impairment.

DRUG ABUSE AND DEPENDENCE

FYCOMPA is a Schedule III controlled substance and has the potential to be abused and lead to drug dependence and withdrawal symptoms including anxiety, nervousness, irritability, fatigue, asthenia, mood swings, and insomnia.

LEARN MORE AT FYCOMPA.COM/HCP

Please see Brief Summary of Prescribing Information on preceding pages.
These adverse reactions occurred mostly during the titration phase. These 12 mg per day, respectively, compared to 2% of placebo-treated patients. Seizure clinical trials randomized to receive FYCOMPA at doses of 8 mg and related events were reported in 12% and 16% of patients in the partial-onset seizure trials randomized to receive FYCOMPA at doses of 8 mg and 12 mg per day, respectively, compared to 10% of placebo-treated patients. Gait disturbance reported in 35% and 47% of patients in the partial-onset seizure trials and disturbance in gait or coordination. Dizziness and vertigo were FYCOMPA caused dose-related increases in events related to dizziness DIZZINESS AND GAIT DISTURBANCE.
Lundbeck is a global pharmaceutical company committed to improving the quality of life for people affected by psychiatric and neurological disorders. We have a deep heritage of discovery in neuroscience, and we continue to push the boundaries of brain research.

Addressing the unmet medical needs of people living with brain disorders fuels our passion and drives us to make a difference... one patient at a time.

To learn more, visit www.lundbeckus.com.