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Welcome

Dear Colleagues,

I am excited to welcome you to the 2022 Annual Meeting and Courses of the American Clinical Neurophysiology Society.

We started 2021 with a fully virtual meeting, complete with the traditional Presidential inauguration, signified by a virtual passing of the presidential gavel from a number of Past Presidents who led the Society through the most recent era of its history. It was a bit surreal, to say the least, to be sitting in my home office watching myself virtually receive a gavel and humbly accept the ACNS Presidency while wearing a dress shirt, blazer, jeans and house shoes.

As we embarked on 2021, I think we collectively had one thought in mind: next year, we will all be together again!!

Alas, the year didn’t end as we expected and forces beyond our control have delayed our anticipated in-person reunion, at least for the time being.

That said, the spirit of ACNS has never been stronger.

As we experience this meeting together virtually, whether in house shoes or from your home office, the efforts of our members and leadership will be on full display. In recent weeks, speakers and session chairs have pulled together to create a seamless, online program.

So while we may all long to be together and for that Florida sunshine, I assure you that the scientific and educational content of this years’ meeting and courses will be unparalleled; a fitting end to our 75th Anniversary celebration.

Thank you for your commitment to ACNS and for joining us for this extraordinary meeting,

Sincerely,

Suzette
About the American Clinical Neurophysiology Society (ACNS)

ACNS’ mission is to serve patients and society by empowering members to advance the science, practice and profession of clinical neurophysiology. This mission serves to fulfill the vision to optimize neurologic health through understanding of nervous system function.

Founded in 1946 and originally named the American Electroencephalographic Society (AEEGS), ACNS is the major professional organization in the United States devoted to the establishment and maintenance of standards of professional excellence in clinical neurophysiology in the practice of neurology, neurosurgery and psychiatry. ACNS members utilize neurophysiology techniques in the diagnosis and management of patients with disorders of the nervous system and in research examining the function of the nervous system in health and disease.

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ABOUT THE ANNUAL MEETING & COURSES
This year’s scientific program will feature the latest scientific advances in clinical neurophysiology presented by leading national and international experts in the field. This dynamic program has more choices than ever including the return of the Joint ACNS and International Society symposia, presentations from speakers who are experts in their field. The parallel sessions will provide simultaneous sessions for interests in EEG, electrodiagnosis and neurophysiologic intraoperative monitoring.

The meeting also features a number of opportunities for networking, including a Professional Development Mentorship Program in which residents and fellow applicants are paired with senior ACNS members and provided an opportunity to connect.

VIRTUAL PLATFORM ACCESS
Virtual platform access is limited only to those who have officially registered for each Annual Course or the Annual Meeting, with access linked to your e-mail. Attendees may only be logged on via one device at a time per individual registration. You will be prompted to authenticate with your e-mail when you join the community, or when you go to launch a session on conference day. Registered delegates will receive an email with a link to the ACNS Annual Meeting & Courses Virtual Platform beginning the week of January 20, 2022. The message will come from mvp@markeys.com. Please add mvp@markeys.com to your “safe senders” list to ensure you don’t miss it. Please also be sure to check your junk/spam folder if you have not received the message by January 25, 2022. Please save the ticket number listed in this email. It will be used to log into the event platform.

VIRTUAL PLATFORM TECHNICAL SPECIFICATIONS AND REQUIREMENTS
The ACNS 2022 Annual Meeting & Courses virtual platform is compatible with Chrome and Firefox web browsers. Be sure to open any links to the site in Chrome or Internet Explorer, may not allow you to log in or join sessions.

Annual Meeting & Courses sessions will be presented using Zoom Webinars or Meeting. Zoom is a cloud platform for video, voice, content sharing, and chat runs across mobile devices, desktops, telephones, and room systems. Attendees may choose to run Zoom via an Internet browser or to download an app to their desktop, tablet, or mobile phone.

Zoom system requirements are as follows on Windows, macOS, and Linux.
• An internet connection – broadband wired or wireless (3G or 4G/LTE)
• Speakers and a microphone – built-in or USB plug-in or wireless Bluetooth
• A webcam or HD webcam – built-in or USB plug-in

A list of supported devices can also be found at https://support.zoom.us/hc/enus/articles/360026690212

If you are having any problems, visit the Help Desk page of the virtual platform to submit a ticket to technical support.

ON-DEMAND ACCESS FOR ANNUAL COURSES ONLY
The Annual Courses will be livestreamed to the virtual platform Wednesday, January 26 - Friday, January 28, 2022. Courses will be recorded and available on-demand February 1-14, 2022.

The Annual Meeting scientific program will be presented Thursday, January 27 - Sunday, January 30, 2022. Annual Meeting sessions will be livestreamed to the Virtual Platform. Annual Meeting sessions will not be available on-demand.

BUSINESS MEETING
The ACNS Annual Business Meeting will be held in on Saturday, January 29 at 11:45am ET.

PUBLICATION OF ABSTRACTS
E-poster abstracts will be published as an online-only publication of the Journal of Clinical Neurophysiology.
POLICIES

Photography and Recording Policy
Photography, video or audio recording (including screen capture) of these courses, materials, speaker likenesses or ACNS graphics without written permission from ACNS is strictly prohibited. Please note that photographs and video taken by or on behalf of ACNS shall be property of ACNS.

Privacy Policy
The American Clinical Neurophysiology Society (ACNS) has a strong commitment to privacy. This statement outlines the policies and procedures concerning information gathering and dissemination practices related to www.acns.org, as well as member, meeting attendee, and sponsor/supporter (collectively, “users”) data. This policy is in accordance with the European General Data Protection Regulations (GDPR). To review the complete ACNS Privacy Policy, click here.

Meeting Conduct, Safety, and Responsibility Policy
The American Clinical Neurophysiology Society (ACNS) is committed to providing a safe, productive, and welcoming environment for all meeting participants and ACNS/EDI staff. All participants, including, but not limited to, attendees, speakers, volunteers, exhibitors, ACNS/EDI staff, service providers, and others are expected to abide by this Meeting Safety & Responsibility Policy. This Policy applies to all ACNS meeting-related events, online and in-person, including those sponsored by organizations other than ACNS but held in conjunction with ACNS events, in public or private facilities.

Unacceptable Behavior
- Harassment, intimidation, or discrimination in any form.
- Physical or verbal abuse of any attendee, speaker, volunteer, exhibitor, ACNS/EDI staff member, service provider, or other meeting guest.
- Examples of unacceptable behavior include, but are not limited to, verbal comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, national origin, inappropriate use of nudity and/or sexual images in public spaces or in presentations, or threatening or stalking any attendee, speaker, volunteer, exhibitor, ACNS/EDI staff member, service provider, or other meeting guest.
- Disruption of presentations at sessions, in the exhibit hall, or at other events organized by ACNS at the meeting venue, hotels, or other ACNS-contracted facilities.

ACNS has zero-tolerance for any form of discrimination or harassment, including but not limited to sexual harassment by participants or our staff at our meetings. If you experience harassment or hear of any incidents of unacceptable behavior, ACNS asks that you inform the ACNS President or ACNS Executive Director Megan M. Hille, CMP, CAE (mhille@acns.org) so that we can take the appropriate action.

ACNS reserves the right to take any action deemed necessary and appropriate, including immediate removal from the meeting without warning or refund, in response to any incident of unacceptable behavior.
EDUCATIONAL MISSION STATEMENT

Purpose
The American Clinical Neurophysiology Society (ACNS) is a professional association dedicated to fostering excellence in clinical neurophysiology and furthering the understanding of central and peripheral nervous system function in health and disease through education, research, and the provision of a forum for discussion and interaction.

Content
ACNS is committed to providing continuing medical education to its members and others interested in clinical neurophysiology. Educational objectives include 1) Reviewing current knowledge of clinical neurophysiology including: electroencephalography, evoked potentials, electromyography, nerve conduction studies, intraoperative monitoring, polysomnography and other sleep technology, quantitative neurophysiological methods, magnetoencephalography, sleep disorders, epilepsy, neuromuscular disorders, brain stimulation, brain-computer interfacing, and related areas; and 2) Informing course and meeting attendees of recent technological developments and their implications for clinical practice.

Target Audience
The Society’s educational activities are directed to clinical neurophysiologists, neurologists, psychiatrists, physiatrists, neurosurgeons, trainees in these disciplines and other physicians, technologists and researchers who utilize clinical neurophysiological techniques and knowledge in the diagnosis and management of patients with disorders of the nervous system.

Expected Result
Attendees will improve competence in clinical neurophysiology procedures and incorporate new technological advancements into their practice.

Gaps and Needs
In compliance with the Updated Accreditation Criteria of the Accreditation Council for Continuing Medical Education (ACCME), the Continuing Medical Education Committee of the ACNS has identified “professional practice gaps.” Definition: A “professional practice gap” is the difference between what a health professional is doing or accomplishing compared to what is achievable on the basis of current professional knowledge. The following professional practice gaps and educational needs were identified by a combined effort of the Program, Course and CME Committees.

Gap 1. Emerging Areas of Practice
Several emerging areas of clinical neurophysiology have significant practice gaps in which the opportunities for training and mentoring fall short of the need for experienced and trained neurologists. Intraoperative monitoring, intensive care unit EEG monitoring, video and Quantitative EEG and invasive evaluation for epilepsy surgery with Stereo EEG are growing areas of clinical neurophysiology with few practicing neurologists having adequate training in these techniques. Adult and pediatric physicians as well as neurodiagnostic technologists with competence in these areas are in great demand. Without additional specialized training, neurologists will not be competent to conduct these types of monitoring.

Gap 2. General Practice of Clinical Neurophysiology
Clinical neurophysiology procedures are performed by a large proportion of practicing US neurologists, many of whom have little or no formal training in clinical neurophysiology. Many clinical neurophysiology procedures (e.g. evoked potentials, invasive EEG, advanced EMG procedures) are performed at low volume at many centers and a forum for review and hands-on interpretation are essential to improve and maintain competence in these areas. Several specific topics with significant gaps between current practice and ideal practice have been identified via review of the literature, review of clinical neurophysiology fellowship curricula, and surveys of ACNS members and Annual Meeting attendees. These include:

- Peripheral neurophysiology, Pediatric EMG, critical illness related neurophysiology, and muscle ultrasound
- Basic EEG: Identification of normal variants, identification of artifacts, clinical correlation
- Pediatric EEG, especially neonatal EEG
- Digital EEG processing, e.g. quantitative EEG and trends for use in the intensive care unit, source localization, coregistration with neuroimaging, etc.
- Full band EEG, Ultrafast and ultraslow EEG
- NIOM: Motor evoked potentials, guidelines and standards of care for NIOM (e.g. indications, cost effectiveness)
- Evoked potentials: Current role of short- and long-latency EPs
- Video-EEG monitoring, especially invasive EEG
- Sleep, Use of new scoring system, implications for patient care

Changes in Behavior/Practice
It is intended that, as a result of attending the meeting and/or courses, physician attendees will be able to identify changes in competence or performance that are desirable. Definitions: “Competence” is knowing how to do something. “Performance” is what the physician would do in practice, if given the opportunity.

Evaluation
The updated ACCME accreditation criteria are designed to integrate with the new requirements for maintenance of certification (for more information see www.ABPN.org). Physicians are expected to perform self-assessments of their practice, but the ACNS, as an organization accredited by the ACCME, is expected to measure how its educational activities assist physicians in this activity. Thus, there are new questions in the evaluation form. These questions address your intended changes in competence or performance. In a few months, we will contact all physician meeting attendees to ask you if you actually HAVE experienced changes in competence or performance. Your responses, now and in the future, will assist us and ultimately you in determining educational activities that are most useful to you.
Continuing Medical Education (CME) Information

MEETING DESCRIPTION
The ACNS Annual Meeting & Courses are designed to provide a solid review of the fundamentals and the latest scientific advances in both “central” and “peripheral” clinical neurophysiology. Presentations at the Annual Meeting & Courses are given by leading experts in the field and have value for health care professionals who utilize clinical neurophysiology. Sessions include symposia, workshops, courses and Special Interest Groups, featuring didactic lectures, expert panels, debates and interactive formats. Poster presentations at the Annual Meeting highlight the latest work conducted at clinical neurophysiology centers nationally and internationally.

TARGET AUDIENCE
The Society’s educational activities are directed to clinical neurophysiologists, neurologists, psychiatrists, physiatrists, neurosurgeons, trainees in these disciplines and other physicians and researchers who utilize clinical neurophysiological techniques and knowledge in the diagnosis and management of patients with disorders of the nervous system.

ANNUAL COURSES LEARNING OBJECTIVES
At the end of the Annual Courses, the participant will be able to:
1. Describe the indications for use of clinical neurophysiology techniques in diagnosis of disorders of the nervous system;
2. Incorporate new neurophysiology procedures and technological advancements into his/her own clinical practice; and
3. Perform and interpret a broad range of clinical neurophysiology procedures, and integrate the results of these tests into comprehensive patient management plans.

ANNUAL MEETING LEARNING OBJECTIVES
At the end of the Annual Meeting, the participant will be able to:
1. Discuss recent advances in electroencephalography, intracranial EEG, evoked potentials, intraoperative neuromonitoring, magnetoencephalography, electromyography, nerve conduction studies, neurophysiology of neuromodulatory devices and other technologies related to practice of neurophysiology; and
2. Apply advances in clinical neurophysiology techniques to improve the diagnosis of neurologic disorders.

ACCREDITATION STATEMENT
This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the sponsorship of ACNS. ACNS is accredited by ACCME to provide continuing medical education for physicians.

CREDIT DESIGNATION
ACNS designates the Annual Meeting for 18.5 AMA PRA Category I Credit(s)™. ACNS designates the Annual Courses for the number of AMA PRA Category I Credit(s)™ listed below:

Basic EEG
4 AMA PRA Category I Credit(s)™

Neurophysiology Technology: EMG/NCV, Sleep, EEG
3 AMA PRA Category I Credit(s)™

Evoked Potentials
2 AMA PRA Category I Credit(s)™

EMG/Peripheral Nervous System - Part I
4 AMA PRA Category I Credit(s)™

EMG/Peripheral Nervous System - Part II
2 AMA PRA Category I Credit(s)™

Intensive Care Unit EEG Monitoring (ICU EEG) - Part I
6.75 AMA PRA Category I Credit(s)™

Intensive Care Unit EEG Monitoring (ICU EEG) - Part II
4 AMA PRA Category I Credit(s)™

Neonatal EEG
2 AMA PRA Category I Credit(s)™

Neuromodulation
2 AMA PRA Category I Credit(s)™

Neurophysiologic Intraoperative Monitoring (NIOM) - Part I
7 AMA PRA Category I Credit(s)™

Neurophysiologic Intraoperative Monitoring (NIOM) - Part II
4 AMA PRA Category I Credit(s)™

Stereo EEG - Part I
3.75 AMA PRA Category I Credit(s)™

Stereo EEG - Part II
3.5 AMA PRA Category I Credit(s)™

Essentials of Sleep for the Busy Clinical Neurophysiologist
1 AMA PRA Category I Credit(s)™

Video
3.75 AMA PRA Category I Credit(s)™

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

CERTIFICATES OF ATTENDANCE & CME CERTIFICATES
CME certificates will be available to registered delegates immediately upon the close of the meeting at https://www.acns.org/meetings/annual-meeting-and-courses/2022-annual-meeting--courses/cme-information

Delegates are REQUIRED to complete session evaluations to obtain a CME Certificate or Certificate of Attendance. Delegates should log on to the website listed above and enter their last name and the ID# listed at the top of their Annual Meeting & Courses confirmation receipt. The system will then ask delegates to indicate which sessions they attended, to complete evaluation forms for each of those sessions, and then will generate a PDF certificate which may be printed or saved to the delegate’s computer. Session attendance and evaluation information are saved in the database, and certificates may be accessed again, in the event the certificate is lost or another copy is required. Please note that certificates will not be mailed or emailed after the meeting. The online certificate program is the only source for this documentation. Please contact ACNS at info@acns.org for any questions. ACNS asks that all CME certificates be claimed no later than April 1, 2022.
Conflict of Interest Disclosures

POLICY ON FINANCIAL DISCLOSURES

It is the policy of ACNS to ensure balance, independence, objectivity and scientific rigor in all its individually sponsored or jointly sponsored educational programs. In order to comply with the ACCME’s Updated Standards for Commercial Support, ACNS requires that anyone who is in a position to control the content of an educational activity discloses all relevant financial relationships with any commercial interest pertaining to the content of the presentation. Should it be determined that a conflict of interest exists as a result of a financial relationship of a planner of the CME activity, the planner must recuse himself or herself from the planning for that activity or relevant portion of that activity. All presentations for which the presenter disclosed a potential conflict of interest are peer reviewed by two members of the ACNS CME Committee with no relationships. If bias is found, the presenter is asked to make changes to the presentation and it is re-reviewed for bias before final approval. Refusal to disclose a conflict or the inability to resolve an identified conflict precludes participation in the CME activity. Complete conflict of interest disclosure information is printed in the final program for the activity. A learner may request additional information regarding the nature of a planner or speaker’s disclosure if “No Relevant Relationships” has been indicated below. To request additional information, contact the ACNS Executive office at info@acns.org.

<table>
<thead>
<tr>
<th>NAME</th>
<th>Institution</th>
<th>Roles</th>
<th>Financial Relationships</th>
</tr>
</thead>
<tbody>
<tr>
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<td>CHOP / UPenn</td>
<td>Planner, Speaker</td>
<td>UCB Pharma (a, g)</td>
</tr>
<tr>
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<td>Penn State University Hershey Medical Center</td>
<td>Planner, Speaker</td>
<td>SK Life Science (e)</td>
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<tr>
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<td>Weill Cornell Medicine</td>
<td>Planner, Speaker</td>
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<td>University of Texas Southwestern</td>
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<td>Charenya Anandan, MD</td>
<td>Baylor College of Medicine</td>
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<td>Davide Giampiccolo, MD</td>
<td>Department of Neurosciences, Biomedicine and Movement Sciences, Section of Neurosurgery, University Hospital, Piazzale Stefani 1, 37124, Verona, Italy.</td>
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<td>Ahmad Marashly, MD</td>
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<td>Speaker</td>
<td>No Relationships</td>
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<td>Guillermo Martín-Palomeque, MD, FACNS</td>
<td>Clinical Neurophysiology Department. Hospital Universitario Ramón y Cajal</td>
<td>Speaker</td>
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<td>Shavonne Massey, MD, MSCE</td>
<td>CHOP / UPenn</td>
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<td>Luis-Carlos Mayor, MD, FACNS</td>
<td>Fundacion Santa Fe De Bogota</td>
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<td>Michael McGarvey, MD, FACNS</td>
<td>Perelman School of Medicine at The University of Pennsylvania</td>
<td>Planner, Speaker</td>
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<td>Daniel Menkes, MD, FACNS</td>
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<td>Yafa Minazad, DO, F ACNS, MMM</td>
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<tr>
<td>Ana Mirallave-Pescador, MD</td>
<td>King's College Hospital NHS foundation trust, Department of Neurosurgery</td>
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<tr>
<td>Julia Miró-Lladó, MD</td>
<td>IDIBELL-Universitat de Barcelona</td>
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<tr>
<td>Eli Mizrahi, MD, FACNS</td>
<td>Baylor College of Medicine</td>
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<td>UCB Biopharma (b)</td>
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<tr>
<td>Oleg Modik, PhD, CNIM</td>
<td>New York Presbyterian Hospital</td>
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<tr>
<td>Ismail Mohamed, MD, FACNS</td>
<td>UAB, Birmingham</td>
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<tr>
<td>Vizmary Montes-Pena, MD, MS</td>
<td>Division of Neurology, Department of Medicine, King Abdulaziz Medical City, King Saud bin Abdulaziz University for Health Sciences , National Guard Health Affairs, Riyadh.</td>
<td>Speaker</td>
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<tr>
<td>Lidia Moura, MD</td>
<td>Massachusetts General Hospital</td>
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<td>UCB/eNova (d)</td>
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<td>Heidi Munger Clary, MD, MPH</td>
<td>Wake Forest University School of Medicine</td>
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<tr>
<td>Srikanth Muppidi, MD</td>
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<td>Dinesh Nair, MD, PhD</td>
<td>Cleveland Clinic</td>
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<td>Jessie Nance</td>
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<td>Cody Nathan, MD</td>
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<td>Marcus Ng, MD, FRCP, CSCN (EEG), FACNS</td>
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<td>Katherine Noe, MD</td>
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<td>Jonathan Norton, PhD</td>
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<td>Marc Nuwer, MD PhD</td>
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<td>Cormac O’Donovan, MD, FRCPI, FACNS</td>
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<td>Prachi Parikh, MD</td>
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<td>Jun Park, MD, FAES, FACNS</td>
<td>UH Cleveland Medical Center / Rainbow Babies &amp; Children’s Hospital, Case Western Reserve University School of Medicine</td>
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<td>Sandipan Pati, MD</td>
<td>Barrow Neurological Institute</td>
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<td>Pritikanta Paul, MD</td>
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<td>Walter Paulus, MD</td>
<td>Georg-August-Universität Göttingen</td>
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<td>Eric Payne, M.D</td>
<td>University of Calgary</td>
<td>Speaker</td>
<td>Eisai Pharmaceuticals (Gave a talk on Status Epilepticus - The hunt for treatable causes, sponsored by Eisai)</td>
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<td>Phillip Pearl, MD, FACNS</td>
<td>Boston Children’s Hospital</td>
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<td>Page Pennell, MD, FAES</td>
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<td>Mick Perez-Cruet</td>
<td>Beaumont University</td>
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<td>SK Life Science (d); UCB (d)</td>
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<td>Chalongchai Phitsanuwong, MD</td>
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<td>Elana Pinchefsky, MD</td>
<td>CHU Sainte-Justine</td>
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<td>Samantha Pineda, MD</td>
<td>ISSSTE</td>
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<tr>
<td>Irina Podkorytova, MD</td>
<td>University of Texas Southwestern Medical Center</td>
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<tr>
<td>Ramya Raghupathi, MD</td>
<td>Hospital of University of Pennsylvania</td>
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<tr>
<td>Gustavo Ramos Burbano, MD, MSc</td>
<td>Universidad Libre y Universidad del Valle</td>
<td>Speaker</td>
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<tr>
<td>Ignacio Regidor, MD, PhD</td>
<td>Clinical Neurophysiology Department. Hospital Universitario Ramón y Cajal</td>
<td>Planner</td>
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<tr>
<td>Eva Ritzl, MD, MBA, FRCP (Glasgow), FACS</td>
<td>Johns Hopkins</td>
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<td>Andres Rodriguez, MD</td>
<td>Emory University</td>
<td>Speaker</td>
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<tr>
<td>Alexander Rotenberg, MD, PhD</td>
<td>Director, Neuro modulation Program, Boston Children’s Hospital</td>
<td>Planner</td>
<td>CRE Medical (a); Epihunter (a, e); Gamify (e); Neurometrics (a); Neuromotion (c, e); Praxis Pharmaceuticals (b); Prevep (a, c); Roche (a, e)</td>
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<tr>
<td>Elayna Rubens, MD, FACNS</td>
<td>Montefiore Medical Center/Albert Einstein College of Medicine</td>
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<td>Devon Rubin, MD, FACNS</td>
<td>Mayo Clinic</td>
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<td>Clio Rubinos, MD, MSCR</td>
<td>University of North Carolina</td>
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<tr>
<td>Francesco Sala, MD</td>
<td>Department of Neurosciences, Biomedicine and Movement Sciences, Section of Neurosurgery, University Hospital, Piazzale Stefani 1, 37124, Verona, Italy.</td>
<td>Speaker</td>
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<tr>
<td>Maria Sam, MD, FACNS</td>
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<tr>
<td>Daniel San Juan Orta, MD, MSc, FACNS</td>
<td>National Institute of Neurology and Neurosurgery, Mexico</td>
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<tr>
<td>Sarah Schmitt, MD, FACNS</td>
<td>Department of Neurology, MUSC</td>
<td>Planner, Speaker</td>
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<td>Stephan Schuele, MD, MPH, FACNS, FAAN</td>
<td>Northwestern University Feinberg School of Medicine</td>
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<td>Petra Schwingenschuh, MD</td>
<td>Klinik für Neurologie Medizinische Universität Graz</td>
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<td>Kathleen Seidel, MD, PhD</td>
<td>Department of Neurosurgery, Inselspital, Bern University Hospital, University of Bern, Switzerland</td>
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<td>Vishal Shah</td>
<td>UCLA David Geffen School of Medicine</td>
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<td>Asim Shahid, MD</td>
<td>University Hospitals Cleveland Medical Center, Rainbow Babies &amp; Children's Hospital</td>
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<td>UNMC Medical Center</td>
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<td>Zubeda Sheikh, MBBS, MD</td>
<td>Wake Forest School of Medicine</td>
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<td>Raj Sheth, MD, FAAN, FACNS</td>
<td>Mayo Clinic / Nemours Clinic-Florida</td>
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<td>Jay Shils, PhD, FACNS</td>
<td>Rush University Medical Center</td>
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<td>Peter Siao Tick Chong</td>
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<td>Mirela Simon, MD, MSc, FACNS</td>
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<td>Rajdeep Singh, MD, MS, FACNS</td>
<td>Atrium Health</td>
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<td>Saurabh Sinha, MD, PhD</td>
<td>Department of Neurology, Duke University Medical Center</td>
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<td>Aaron Struck, MD</td>
<td>University of Wisconsin School of Medicine and Public Health</td>
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<td>Iffat Ara Suchita, MD</td>
<td>The University of New Mexico</td>
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<td>Fahd Sultan, MD</td>
<td>University of Oklahoma Health Sciences Center</td>
<td>Planner, Reviewer</td>
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<td>Adriana Tanner, MD, FAES</td>
<td>Associate Professor of Neurology, Michigan State University</td>
<td>Planner, Speaker</td>
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<td>James Tao, MD, PhD</td>
<td>University of Chicago Medical Center</td>
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<td>William Tatum, IV, DO, FACNS</td>
<td>Mayo Clinic Jacksonville</td>
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<td>Armando Tello, MD, PhD</td>
<td>Hospital Español de Mexico</td>
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<td>Parthasarathy Thinumala, MD, FACNS</td>
<td>University of Pittsburgh Medical Center</td>
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<td>Ashley Thomas, MD</td>
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<td>Melissa Tsuboyama, MD</td>
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<td>Tammy Tsuchida, MD, PhD, FACNS</td>
<td>Children's National Hospital</td>
<td>Planner</td>
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<td>Arturo Ugalde-Canitrot, MD, PhD</td>
<td>Hospital Universitario La Paz, Universidad Francisco de Vitoria, Madrid, Spain</td>
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<td>Jorge Vidaurre, MD, FACNS, FAES</td>
<td>Nationwide Children's Hospital, The Ohio State University</td>
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<td>Ashley Weng, MD</td>
<td>NYP/Weill-Cornell Medical Center</td>
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<td>Robyn Whitney, MD, FRCP</td>
<td>The Hospital for Sick Children</td>
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<td>Hae Won Shin</td>
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<td>Lily Wong-Kisiel, MD</td>
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<td>Gregory Worrell, MD PhD</td>
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<td>JoJo Yang, MD</td>
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<td>Alejandro Zavala, MD, FACNS</td>
<td>Hospital Fundación Clinica Medica Sur</td>
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## Support Acknowledgement

The Annual Meeting & Courses is supported, in part, by an educational grant from the American Board of Neurology and Psychology.

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Award Recipients & Lectures

PIERRE GLOOR AWARD PRESENTATION & LECTURE

Walter Paulus, MD
The Pierre Gloor Award is presented annually for outstanding current contributions to clinical neurophysiology research. Dr. Paulus will be recognized and will deliver the 2022 Gloor Lecture on Saturday, January 29, 2022.

ROBERT S. SCHWAB AWARD PRESENTATION & LECTURE

Eva Feldman, MD, PhD
The Robert S. Schwab Award is presented annually for an individual’s outstanding contributions to peripheral clinical neurophysiology research. Dr. Feldman will be recognized and will deliver the 2022 Schwab Lecture on Saturday, January 29, 2022.

HERBERT H. JASPER AWARD PRESENTATION & LECTURE

Eli M. Mizrahi, MD, FACNS
The Herbert H. Jasper Award is presented annually to an individual for a lifetime of outstanding contributions to the field of clinical neurophysiology including research, teaching and mentoring. It is analogous to a lifetime achievement award. Dr. Mizrahi will be recognized and will deliver the 2022 Jasper Lecture on Saturday, January 29, 2022.

MARC R. NUWER SERVICE AWARD PRESENTATION

Frank W. Drislane, MD, FACNS
The Marc R. Nuwer Service Award is presented to an individual in recognition of outstanding service to ACNS and its members, including non-scientific contributions. Dr. Drislane will be recognized during the Annual Business Meeting on Saturday, January 29, 2022.

ACNS DISTINCTION IN TEACHING AWARD

Sarah E. Schmitt, MD, FACNS
This award was created to recognize a mid-career ACNS member for outstanding accomplishments in teaching clinical neurophysiology to fellows, residents, medical students or EEG technologists. Dr. Schmitt will be recognized during the Annual Business Meeting on Saturday, January 29, 2022.

ACNS DISTINCTION IN SERVICE AWARD

Courtney J. Wusthoff, MD, MS, FACNS
This award was created to recognize a mid-career ACNS member who has demonstrated outstanding service to the field of clinical neurophysiology at the institutional or national level. Dr. Wusthoff will be recognized during the Annual Business Meeting on Saturday, January 29, 2022.
Social & Networking Events

NEW MEMBER NETWORKING EVENT
Friday, January 28, 2022 · 6:00 - 7:00pm ET
ACNS members who have joined the Society in the past year are invited and encouraged to attend the New Member Event. ACNS leaders will be in attendance to welcome you to the Society and to discuss all the benefits ACNS membership has to offer.

POSTER TOURS
Join members of ACNS leadership for a virtual tour, highlighting some of the best scientific posters covering key topics.

Thursday, January 28, 2022
1:00 - 1:45pm ET

ICU EEG
Session Director: Sarah E. Schmitt, MD, FACNS

Seizures: Autonomic Changes and Detection
Session Director: Saurabh R. Sinha, MD, PhD, FACNS

Sleep and Evoked Potentials
Session Director: Madeleine M. Grigg-Damberger, MD, FACNS

Friday, January 29, 2022
1:00 - 1:45pm ET

EEG and EEG Education
Session Director: Meriem Bensalem-Owen, MD, FACNS

Epilepsy and Epilepsy Surgery
Session Director: Lawrence J. Hirsch, MD, FACNS

NIOM
Session Director: Ioannis Karakis, MD, PhD, MSc, FACNS

Pediatric EEG
Session Director: Tammy Tsuchida, MD, PhD, FACNS

ROUNDTABLE DISCUSSIONS
Saturday, January 29, 2022 · 12:30 - 1:30pm ET
Continue the discussion with senior ACNS leaders via video chat!
Join ACNS faculty for a roundtable discussion on the following topics:

ICU EEG
Hosted by: Courtney J. Wusthoff, MD, FACNS; Nicholas S. Abend, MD, MSCE, FACNS; Lawrence J. Hirsch, MD, FACNS; Emily Gilmore, MD, FACNS; and Aaron Struck, MD

Stereo EEG
Hosted by: Stephan U. Schuele, MD, MPH, FACNS; Giridhar Kalamangalam, MD, DPhil, FACNS; and Birgit Frauscher, MD, PhD

NIOM
Hosted by: Eva K. Ritzl, MD, MBA, FRCP (Glasgow), FACNS; Marc R. Nuwer, MD, PhD, FACNS; and Jaime R. Lopez, MD, FACNS

Clinical Neurophysiology in the Community
Hosted by: Suzette M. LaRoche, MD, FACNS and Rajdeep Singh, MD, MS, FACNS

International
Hosted by: Adriana Bermeo-Ovalle, MD, FACNS
Annual Courses

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WEDNESDAY, JANUARY 26, 2022

9:00am - 5:00pm ET

ICU EEG - Part I
Course Co-Directors: Courtney J. Wusthoff, MD, MS, FACNS and Nicholas S. Abend, MD, MSCE, FACNS

Learning Objectives:

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

1. Recognize common indications for CEEG in the ICU setting in neonates, children, and adults;
2. Interpret EEG patterns encountered in the ICU, including seizures, periodic patterns, and other background patterns important for prognosis and management;
3. Utilize quantitative EEG methods to assess long-term trends, screen for seizures rapidly, and detect signs of ischemia;
4. Describe the value and limitations of EEG monitoring to predict neurologic outcomes in critically ill patients, and
5. Develop and operate a high-value ICU EEG system including appropriate equipment, networking and data storage options, staffing, and practices regarding data review and reporting.

9:00am Welcome
Nicholas S. Abend, MD, MSCE, FACNS

9:10am Overview of ICU EEG Monitoring
Adriana Bermeo-Ovalle, MD, FACNS

9:40am ACNS Guidelines – Ped and Adult
Nicholas S. Abend, MD, MSCE, FACNS

10:10am Setting Up an ICU EEG Service
William Gallentine, DO, FACNS

10:40am Break

10:50am Tailored Monitoring Approaches
France Fung, MD

11:20am Billing and Coding
Marc R. Nuwer, MD, PhD, FACNS

11:50am Panel Discussion
Adriana Bermeo-Ovalle, MD, FACNS
William Gallentine, DO, FACNS
France Fung, MD

12:10pm Lunch Break

1:10pm ICU EEG Terminology
Lawrence J. Hirsch, MD, FACNS

1:50pm Periodic and Rhythmic Patterns & Ictal-Interictal Continuum
Monica Dhakar, MD, MS, FACNS

2:30pm Artifacts in the ICU
Sarah E. Schmitt, MD, FACNS

3:00pm Panel Discussion
Lawrence J. Hirsch, MD, FACNS
Sarah E. Schmitt, MD, FACNS

3:15pm Break

3:25pm EEG in Toxic Metabolic Encephalopathy
Peter Kaplan, MD, FACNS

4:05pm EEG in Anoxic Brain Injury
Emily Gilmore, MD, MS, FACNS, FNCS

4:45pm Panel Discussion and Concluding Thoughts
Peter Kaplan, MD, FACNS
Emily Gilmore, MD, MS, FACNS, FNCS

Neurophysiological Intraoperative Monitoring (NIOM) - Part I
Course Co-Directors: Eva K. Ritzl, MD, MBA, FRCP (Glasgow), FACNS and Mirela Simon, MD, MSc

Learning Objectives:
At the conclusion of this activity, the learner will be able to:

1. Design a comprehensive monitoring plan for individual patients, including multimodality intraoperative monitoring techniques (e.g. recordings of sensory and motor evoked potentials, EEG, EMG, and spinal reflex activity) to monitor segments of the nervous system at risk during surgery;
2. Recognize changes in intraoperative neurophysiologic tests which indicate damage to neural structures, and distinguish these from common technical artifacts;
3. Communicate effectively normal and abnormal results to the surgical team, and incorporate results into clinical recommendations that may alter the surgical technique to avoid, limit or reverse injury to neural structures;
4. Apply knowledge about effects of anesthesia on NIOM and designing optimal anesthetic strategies for effective monitoring;
5. Recognize the medico-legal, billing and regulatory aspects in NIOM; and
6. Demonstrate familiarity with advanced IOM techniques.

9:00am Introduction
Eva K. Ritzl, MD, MBA, FRCP (Glasgow), FACNS
Mirela Simon, MD, MSc

9:10am SEP
Aatif M. Husain, MD, FACNS
Annual Courses LS OD

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<table>
<thead>
<tr>
<th>WEDNESDAY, JANUARY 26, 2022</th>
<th>9:00am - 12:00pm ET</th>
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</thead>
<tbody>
<tr>
<td>9:45am MEP</td>
<td></td>
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<tr>
<td>Ronald Emerson, MD, FACNS</td>
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<tr>
<td>10:20am BAER</td>
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<tr>
<td>Alan D. Legatt, MD, PhD, FACNS</td>
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<tr>
<td>10:55 Break</td>
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<tr>
<td>11:05am VEP</td>
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<tr>
<td>Parthasarathy D. Thirumala, MD, FACNS</td>
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<tr>
<td>11:40am EEG</td>
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<tr>
<td>Eva K, Ritzl, MD, MBA, FRCP (Glasgow), FACNS</td>
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<tr>
<td>12:15pm Discussion</td>
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<tr>
<td>Parthasarathy D. Thirumala, MD, FACNS</td>
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<tr>
<td>Alan D. Legatt, MD, PhD, FACNS</td>
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<td>Ronald Emerson, MD, FACNS</td>
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<tr>
<td>12:35pm Lunch Break</td>
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<tr>
<td>1:25pm Welcome Back</td>
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<tr>
<td>Eva K. Ritzl, MD, MBA, FRCP (Glasgow), FACNS</td>
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<tr>
<td>Mirela Simon, MD, MSc</td>
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<tr>
<td>1:30pm EMG</td>
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<tr>
<td>Gloria M. Galloway, MD, MBA, FACNS</td>
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<tr>
<td>2:05pm Troubleshooting in the Room and Remote</td>
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<tr>
<td>Jay Shils, PhD, FACNS</td>
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<tr>
<td>2:40pm Anesthesia</td>
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<tr>
<td>Ronald Emerson, MD, FACNS</td>
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<tr>
<td>3:15pm Break</td>
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<tr>
<td>3:25pm Billing</td>
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<tr>
<td>Marc R. Nuwer, MD, PhD, FACNS</td>
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<tr>
<td>4:00pm Medicolegal</td>
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<tr>
<td>Jaime R. Lopez, MD, FACNS</td>
<td></td>
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<tr>
<td>4:35pm Discussion</td>
<td></td>
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<tr>
<td>Jaime R. Lopez, MD, FACNS</td>
<td></td>
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<tr>
<td>Marc R. Nuwer, MD, PhD, FACNS</td>
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<tr>
<td>Jay Shils, PhD, FACNS</td>
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</tbody>
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**WEDNESDAY, JANUARY 26, 2022**

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<thead>
<tr>
<th>1:00pm - 5:00pm ET</th>
<th>1:00pm - 5:00pm ET</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basic EEG</strong></td>
<td><strong>Stereo EEG (SEEG) - Part I</strong></td>
</tr>
<tr>
<td>Course Co-Directors: Ioannis Karakis, MD, PhD, MSc, FACNS and Jay S. Pathmanathan, MD, PhD</td>
<td>Course Co-Directors: Stephan Schuele, MD, MPH, FACNS, FAAN and Giridhar Kalamangalam, MD, DPhil, FACNS</td>
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<tr>
<td>Learning Objectives:</td>
<td>Learning Objectives:</td>
</tr>
<tr>
<td>At the conclusion of this activity, the learner will be able to:</td>
<td>At the conclusion of this activity, the learner will be able to:</td>
</tr>
<tr>
<td>1. Explain the basics in electroencephalography (EEG);</td>
<td>1. Identify the principles of SEEG;</td>
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<tr>
<td>2. Identify the fundamental tenets of signal generation, technical considerations of signal acquisition, types of EEG recordings and reporting standards;</td>
<td>2. Discuss the approach to various epilepsy syndromes with SEEG; and</td>
</tr>
<tr>
<td>3. Recognize normal EEG examples and their variant across various age groups that are presented and contrasted with artifacts; and</td>
<td>3. Describe the limitations of SEEG and surgical risk.</td>
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<tr>
<td>4. Discuss both non-epileptiform and epileptiform abnormalities that are demonstrated and their relationship with underlying neurologic disorders.</td>
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</tr>
<tr>
<td>1:00pm Normal Adult EEG</td>
<td>1:00pm Invasive EEG</td>
</tr>
<tr>
<td>Ammar Kheder, MD</td>
<td>Stephan Schuele, MD, MPH, FACNS, FAAN</td>
</tr>
<tr>
<td>1:30pm Normal Neonatal and Pediatric EEG</td>
<td>1:30pm Morphology of Intracranial EEG</td>
</tr>
<tr>
<td>Lily C. Wong-Kisiel, MD</td>
<td>Giridhar Kalamangalam, MD, DPhil, FACNS</td>
</tr>
<tr>
<td>2:00pm Normal EEG Variants</td>
<td>2:00pm Semiology for SEEG</td>
</tr>
<tr>
<td>Fabio Nascimento, MD</td>
<td>Patrick Chauvel, MD</td>
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<tr>
<td>2:30pm Artifacts</td>
<td>3:00pm Break</td>
</tr>
<tr>
<td>Pegah Afra, MD, FACNS</td>
<td>3:15pm Quantitative Analysis of iEEG</td>
</tr>
<tr>
<td>3:00pm Abnormal Adult EEG: Non Epileptiform Abnormalities</td>
<td>Jean Gotman, PhD, FACNS</td>
</tr>
<tr>
<td>Zubeda B. Sheikh, MBBS, MD</td>
<td>3:45pm Pediatric SEEG</td>
</tr>
<tr>
<td>3:30pm Abnormal Adult EEG: Epileptiform Abnormalities</td>
<td>Julia Jacobs, MD, PhD</td>
</tr>
<tr>
<td>Ioannis Karakis, MD, PhD, MSc, FACNS</td>
<td>4:15pm Seizure Stimulation in Defining EZ</td>
</tr>
<tr>
<td>4:00pm Abnormal Pediatric and Neonatal EEG</td>
<td>Birgit Frauscher, MD, PhD</td>
</tr>
<tr>
<td>Jun T. Park, MD, FAES, FACNS</td>
<td>4:30pm Wrap Up</td>
</tr>
<tr>
<td>4:30pm EEG Quiz</td>
<td>Stephan Schuele, MD, MPH, FACNS, FAAN</td>
</tr>
<tr>
<td>Jay S. Pathmanathan, MD, PhD</td>
<td>Giridhar Kalamangalam, MD, DPhil, FACNS</td>
</tr>
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### THURSDAY, JANUARY 27, 2022

#### 9:00am - 12:00pm ET

**Video EEG**

Course Co-Directors: Katie Bullinger, MD, PhD and Sarah E. Schmitt, MD, FACNS

Learning Objectives:

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

1. Describe the technical requirements for video-EEG monitoring in the inpatient setting;
2. Recognize safety concerns relating to video-EEG monitoring;
3. Distinguish between epileptic seizures and nonepileptic events in adults and children using video-EEG monitoring; and
4. Identify localization of epileptic seizures and determine candidacy for epilepsy surgery based on video-EEG findings.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00am</td>
<td>Introduction</td>
<td>Katie Bullinger, MD, PhD</td>
</tr>
<tr>
<td>9:05am</td>
<td>The EMU: Set Up, Technical Aspects and Indications for Monitoring</td>
<td>Susan T. Herman, MD, FACNS</td>
</tr>
<tr>
<td>9:30am</td>
<td>Safety in the EMU</td>
<td>Katherine Noe, MD</td>
</tr>
<tr>
<td>9:55am</td>
<td>Diagnosing and Localizing Epileptic Seizures Using Video-EEG</td>
<td>Zubeda B. Sheikh, MBBS, MD</td>
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<tr>
<td>10:20am</td>
<td>Break</td>
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<tr>
<td>10:35am</td>
<td>Diagnosing Nonepileptic Events Using Video-EEG</td>
<td>Selim Benbadis, MD, FACNS</td>
</tr>
<tr>
<td>11:00am</td>
<td>Pediatric and Neonatal Video-EEG</td>
<td>Janette Mailo, MD, PhD</td>
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<tr>
<td>11:25am</td>
<td>Seizure Localization Using Intracranial Video-EEG</td>
<td>Ammar Kheder, MD</td>
</tr>
<tr>
<td>11:50am</td>
<td>Discussion</td>
<td>Katherine Noe, MD, Zubeda B. Sheikh, MBBS, MD, Selim Benbadis, MD, FACNS</td>
</tr>
</tbody>
</table>

### 9:00am - 1:00pm ET

**EMG/Peripheral - Part I**

Course Co-Directors: Ruple Laughlin, MD, FACNS and Devon Rubin, MD, FACNS

Learning Objectives:

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

1. Describe the basic concepts of nerve conduction studies, the abnormalities that occur in different types of disorders, and the pitfalls that may occur during the performance of the studies;
2. Understand the approach, findings, and limitations of EDX testing in patients with radiculopathies.
3. Determine an appropriate EDX approach to patients with peripheral neuropathies, median and ulnar mononeuropathies, plexopathies, neuromuscular junction disorders, and myopathies; and
4. Identify the features and benefit of neuromuscular ultrasound in the evaluation of carpal tunnel syndrome and ulnar neuropathies.

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<tr>
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<th>Speaker(s)</th>
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</thead>
<tbody>
<tr>
<td>9:00am</td>
<td>Nerve Conduction Studies and Pitfalls</td>
<td>Devon Rubin, MD, FACNS</td>
</tr>
<tr>
<td>9:45am</td>
<td>EDX in Radiculopathies</td>
<td>Christopher J. Lamb, MD</td>
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<tr>
<td>10:30am</td>
<td>Break</td>
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<tr>
<td>11:00am</td>
<td>EDX Approach to Peripheral Neuropathy</td>
<td>Charenya Anandan, MD</td>
</tr>
<tr>
<td>11:45am</td>
<td>EDX and US in the Evaluation of CTS and Ulnar Neuropathy</td>
<td>Michael Cartwright, MD</td>
</tr>
<tr>
<td>12:45pm</td>
<td>Discussion</td>
<td>Devon Rubin, MD, FACNS, Christopher J. Lamb, MD, Michael Cartwright, MD</td>
</tr>
</tbody>
</table>

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THURSDAY, JANUARY 27, 2022

9:00am - 1:00pm ET

ICU EEG - Part II
Course Co-Directors: Courtney J. Wusthoff, MD, MS, FACNS and Nicholas S. Abend, MD, MSCE, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Recognize common indications for CEEG in the ICU setting in neonates, children, and adults;
2. Interpret EEG patterns encountered in the ICU, including seizures, periodic patterns, and other background patterns important for prognosis and management;
3. Utilize quantitative EEG methods to assess long-term trends, screen for seizures rapidly, and detect signs of ischemia;
4. Describe the value and limitations of EEG monitoring to predict neurologic outcomes in critically ill patients, and
5. Develop and operate a high-value ICU EEG system including appropriate equipment, networking and data storage options, staffing, and practices regarding data review and reporting.

9:00am Welcome
Nicholas S. Abend, MD, MSCE, FACNS

9:05am QEEG Principles
Hiba A. Haider, MD FACNS, FAES

9:45am QEEG for Seizures and IIC Patterns
Aaron Struck, MD

10:15am Multimodal and Ischemia Brain Monitoring
Brandon Foreman, MD, FACNS

10:45am Panel Discussion
Hiba A. Haider, MD FACNS, FAES
Aaron Struck, MD
Brandon Foreman, MD, FACNS

10:55am Break

11:05am Utility of QEEG
Cecil D. Hahn, MD, MPH, FACNS

11:35am aEEG in the NICU
Courtney J. Wusthoff, MD, MS, FACNS

12:05pm QEEG Cases
Susan T. Herman, MD, FACNS

12:40pm Panel Discussion & Conclusions
Cecil D. Hahn, MD, MPH, FACNS
Courtney J. Wusthoff, MD, MS, FACNS
Susan T. Herman, MD, FACNS

Stereo EEG (SEEG) - Part II
Course Co-Directors: Stephan Schuele, MD, MPH, FACNS, FAAN
Giridhar Kalamangalam, MD, DPhil, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Identify the principles of SEEG;
2. Discuss the approach to various epilepsy syndromes with SEEG; and
3. Describe the limitations of SEEG and surgical risk.

9:00am Case Presentation
Irina Podkorytova, MD

9:30am Case Presentation
Carol Ulloa, MD, FAES, FAAN

10:00am Case Presentation
Ahmad Marashly, MD

10:30am Break

11:00am Case Presentation
Sandipan Pati, MD

11:30am Case Presentation
Ramya Raghupathi

12:00pm Case Presentation
Guadalupe Fernandez-Baca, MD

12:30pm Panel Discussion & Wrap-Up
Irina Podkorytova, MD
Carol Ulloa, MD, FAES, FAAN
Ahmad Marashly, MD

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### THURSDAY, JANUARY 27, 2022

**9:00am - 1:00pm ET**

**Neurophysiological Intraoperative Monitoring (NIOM) - Part II**

Course Co-Directors: Eva Katharina Ritzl, MD, MBA, FRCP (Glasgow), FACS\(\text{NS}\) and Mirela Simion, MD, MSc, FACS\(\text{NS}\)

**Learning Objectives:**

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

1. Design a comprehensive monitoring plan for individual patients, including multimodality intraoperative monitoring techniques (e.g., recordings of sensory and motor evoked potentials, EEG, EMG, and spinal reflex activity) to monitor segments of the nervous system at risk during surgery;
2. Recognize changes in intraoperative neurophysiologic tests which indicate damage to neural structures, and distinguish these from common technical artifacts;
3. Communicate effectively normal and abnormal results to the surgical team, and incorporate results into clinical recommendations that may alter the surgical technique to avoid, limit or reverse injury to neural structures;
4. Apply knowledge about effects of anesthesia on NIOM and designing optimal anesthetic strategies for effective monitoring;
5. Recognize the medico-legal, billing and regulatory aspects in NIOM; and
6. Demonstrate familiarity with advanced IOM techniques.

**9:00am** Introduction  
*Eva Katharina Ritzl, MD, MBA, FRCP (Glasgow), FACS\(\text{NS}\)*
*Mirela Simon, MD, MSc, FACS\(\text{NS}\)*

**9:10am** Motor Mapping  
*Mirela Simon, MD, MSc, FACS\(\text{NS}\)*

**9:30am** Language Mapping  
*Dinesh G. Nair, MD, PhD*

**9:50am** Brainstem and Skull Base Surgery  
*Jaime R. Lopez, MD*

**10:10am** Spine Column  
*Bernard A. Cohen, PhD, FASNM, FACS\(\text{NS}\)*

**10:30am** Spine Cord Tumor  
*Eva Katharina Ritzl, MD, MBA, FRCP (Glasgow), FACS\(\text{NS}\)*

**10:50am** Break

**11:05am** Peripheral Nervous System Monitoring and Mapping  
*Jessie Nance*

**11:25am** Vascular Embolization Spine and Brain  
*Sedat Ulkatan, MD*

**11:45am** Monitoring for TAA and Cardiac Surgeries  
*Michael McGarvey, MD, FACS\(\text{NS}\)*

**12:05pm** Pediatric Neuromonitoring  
*Mirela Simon, MD, MSc, FACS\(\text{NS}\)*

**12:25pm** Communication in the OR and Between Monitoring Personnel  
*Stan Skinner, MD, FACS\(\text{NS}\)*
*Mirela Simon, MD, MSc, FACS\(\text{NS}\)*
*Michael McGarvey, MD, FACS\(\text{NS}\)*

**12:45pm** Discussion  
*Stan Skinner, MD, FACS\(\text{NS}\)*
*Mirela Simon, MD, MSc, FACS\(\text{NS}\)*
*Michael McGarvey, MD, FACS\(\text{NS}\)*
Annual Meeting registration includes entry to all session from Thursday, January 27 at 1:00pm ET through Sunday, January 30, 2022. Annual Meeting sessions will be livestreamed to the Virtual Platform. Annual Meeting sessions will not be available on-demand.

THURSDAY, JANUARY 27, 2022

1:00 – 2:00pm ET  
Lunch

1:00 - 1:45pm ET  
Poster Tours

ICU EEG  
Session Director: Sarah E. Schmitt, MD, FACNS

Seizures: Autonomic Changes and Detection  
Session Director: Saurabh R. Sinha, MD, PhD, FACNS

Sleep and Evoked Potentials  
Session Director: Madeleine M. Grigg-Damberger, MD, FACNS

2:00 - 3:30pm ET  
CONCURRENT SESSIONS

Combining EEG and fMRI for Intractable Epilepsy Evaluation:  
Something Old, Something New  
Session Co-Directors: Jean Gotman, PhD, FACNS and Meriem Bensalem-Owen, MD, FACNS

Learning Objectives:  
At the conclusion of this activity, the learner will be able to:  
1. Describe the techniques in combining EEG recording and fMRI.  
2. Review the experience and clinical results obtained by this technique from three North American centers.  
3. Discuss the development of this technique and the challenges encountered by a newly formed alliance.

2:00pm  
Introduction  
Meriem Bensalem-Owen, MD, FACNS

2:05pm  
The Montreal Neurological Institute Experience  
Jean Gotman, PhD, FACNS

2:30pm  
The Cleveland Clinic Foundation Experience  
Balu Krishnan, MD

3:00pm  
The University of Kentucky Alliance Team Experience  
Ruta Yardi, MD

Cortical Spreading Depolarizations: Translating Research Insights into Clinical Practice  
Co-Directors: Ediberto Amorim, MD, PhD and Britta Lindquist, MD, PhD

Learning Objectives:  
At the conclusion of this activity, the learner will be able to:  
1. Describe the mechanisms of CSD in health and disease and how CSD contribute to seizure termination and propagation in epilepsy and SUDEP models.  
2. Describe the mechanisms targeted by pharmacological agents and neuromodulation interventions for CSD in clinical trials.  
3. Identify opportunities and pitfalls of CSD monitoring implementation for patients with acute brain injury with invasive EEG monitoring.

2:00pm  
Interventional Studies Targeting Cortical Spreading Depolarizations in Humans  
Brandon Foreman, MD, FACNS

2:30pm  
Cortical Spreading Depolarizations: A Novel Seizure Termination Mechanism  
David Chung, MD, PhD

3:00pm  
Pitfalls and Opportunities of Cortical Spreading Depolarizations Monitoring in Critical Care  
Ediberto Amorim, MD, PhD

Early Career Training in NIOM: Challenges, Controversies, and Insights  
Session Co-Directors: Atif Sheikh, MD and George W. Culler, MD

Learning Objectives:  
At the conclusion of this activity, the learner will be able to:  
1. Describe the different NIOM practice models available and the advantages/disadvantages of each type of practice.  
2. Demonstrate awareness and knowledge of existing controversial topics in NIOM.  
3. Design a more appropriate NIOM curriculum for trainees that are looking to incorporate NIOM in their careers.

2:00pm  
Knowledge Gap Between Current and Ideal Practice in NIOM  
Atif Sheikh, MD  
George W. Culler, MD

2:15pm  
Panel Discussion & Debate  
Yafa Minazad, DO, FACNS  
Inna Keselman, MD, PhD

2:30pm  
Panel Discussion
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THURSDAY, JANUARY 27, 2022

The Long and Short of EEG Studies: What is the Ideal Duration?
Session Co-Directors: Elson So, MD, FACNS and Adriana Bermeo-Ovalle, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Assess the length of routine EEG that increases its yield in seizure disorders.
2. Know the limitations of prolong EMU recordings and the measures to enhance detection of EEG abnormalities and clinical events.
3. Apply factors that determine the duration needed for continuous EEG monitoring in the critically ill.

2:00pm The Routine EEG: How long is “Routine”?
David Burkholder, MD

2:25pm EEG in Epilepsy Monitoring: How Long to Wait for Events, and How Many?
Adriana Bermeo-Ovalle, MD, FACNS

2:50pm Critical Care EEG Monitoring: What is the risk of missing seizures?
Aaron Struck, MD

3:15pm Summary with Open Forum
Elson So, MD, FACNS

3:30 – 3:45pm ET Break

3:45 - 5:15pm ET
CONCURRENT SESSIONS

CNP Program Directors’ Symposium
Session Co-Directors: Lynn Liu, MD, FACNS and Ioannis Karakis, MD, PhD, MSc, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Explain the various aspects of quality improvement, from study design to production, teaching and publication.
2. Advise a colleague on how to become an educational leader.

3:45pm Introduction
Lynn Liu, MD, FACNS
Ioannis Karakis, MD, PhD, MSc, FACNS

3:50pm Quality Improvement in CNP: Basic Principles and Methodology
Susan T. Herman, MD, FACNS

4:10pm Quality Improvement in EEG and Epilepsy
Lidia M.V.R. Moura, MD

4:30pm Quality Improvement in EMG and Neuromuscular Medicine
Christina Fournier, MD

4:50pm Quality Improvement in Neurophysiologic Intraoperative Monitoring
Stan Skinner, MD, FACNS

5:10pm Discussion

Complex EMG Waveforms
Session Director: Devon Rubin, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Identify the category of waveform of complex EMG waveforms.
2. Understand the pathophysiology and significance of complex appearing or firing spontaneous EMG waveforms.
3. Determine how complex voluntary motor unit potentials helps to determine the type and temporal course of a neuromuscular disease.

3:45pm Introduction and Basic Skills to Identify Complex EMG Waveforms
Devon Rubin, MD, FACNS

4:30pm Interactive Identification of Examples of Complex Waveforms - Understanding What It is And What It Means
Devon Rubin, MD, FACNS
## Current Research in Neurophysiologic Intraoperative Monitoring

**Session Co-Directors:** Michael McGarvey, MD, FACNS and Aditya Joshi, MD

**Learning Objectives:**
At the conclusion of this activity, the learner will be able to:
1. Discuss the findings of the research papers presented and critically evaluate the findings of the papers presented.
2. Describe areas of further research to aid the field of NIOM.

   *Michael McGarvey, MD, FACNS*

   *Aditya Joshi, MD*

   *Stan Skinner, MD, FACNS*

## SEEG in Posterior Cortex Epilepsy (Joint ACNS/Sociedad Española de Neurofisiología Clínica (SENFC) Symposium)

**Session Director:** Stephan Schuele, MD, MPH, FACNS, FAAN

**Learning Objectives:**
At the conclusion of this activity, the learner will be able to:
1. Define the various types of Posterior Cortex Epilepsy (PCE) Syndromes and their presentation.
2. Discuss common etiologies and strategies to explore PCE in adults using SEEG.
3. Discuss common etiologies and strategies to explore PCE in children using SEEG.

### 3:45pm Overview of Posterior Cortex Epilepsy Surgery
   *Stephan Schuele, MD, MPH, FACNS, FAAN*

### 4:15pm Peculiarities of Posterior Cortex Epilepsy in pediatric patients
   *Marta García-Fernández, MD*

### 4:45pm Stereo EEG evaluation in adult patients with Posterior Cortex Epilepsy
   *Arturo Ugalde-Canitrot, MD, PhD*

## Sleep and Circadian Neurophysiology: Principles & Practice

**Session Co-Directors:** Milena Pavlova, MD and Marcus C. Ng, MD, FRCPC, CSCN (EEG), FACNS

**Learning Objectives:**
At the conclusion of this activity, the learner will be able to:
1. Demonstrate how circadian rhythms can assess and interact with sleep.
2. Delineate existing and emerging methods for assessing sleep and circadian rhythms from EEG.
3. Apply principles of circadian neurophysiology in a real-life practice environment.

### 3:45pm Neurophysiological principles of circadian rhythms: Assessment and interaction with sleep
   *Milena Pavlova, MD*

### 4:15pm Circadian neurophysiology in clinical practice: EEG in the Canadian Arctic
   *Marcus C. Ng, MD, FRCPC, CSCN (EEG), FACNS*

### 4:45pm Novel methods for sleep and circadian assessment from EEG signals
   *Kun Hu, PhD*
## Annual Meeting Scientific Program

Annual Meeting registration includes entry to all sessions from Thursday, January 27 at 1:00pm ET through Sunday, January 30, 2022. Annual Meeting sessions will be livestreamed to the Virtual Platform. Annual Meeting sessions will not be available on-demand.

### THURSDAY, JANUARY 27, 2022

<table>
<thead>
<tr>
<th>5:15 – 5:30pm ET</th>
<th>BREAK</th>
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<tbody>
<tr>
<td>5:30 - 7:00pm ET</td>
<td>GENERAL SESSION</td>
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<tr>
<td></td>
<td>Co-Chairs: Pegah Afra, MD, FACNS and Elizabeth E. Gerard, MD, FACNS</td>
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<tr>
<td>5:30pm</td>
<td>Welcome</td>
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<tr>
<td>Pegah Afra, MD, FACNS and Elizabeth Gerard, MD, FACNS Program Committee Co-Chairs</td>
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<tr>
<td>5:35pm</td>
<td>Presentation of the 2021 Cosimo-Ajmone Marsan Award</td>
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<tr>
<td>Aatif M. Husain, MD, FACNS</td>
<td>JCN Editor-in-Chief</td>
</tr>
<tr>
<td>5:45pm</td>
<td>Presentation of the Young Investigator Travel Awards</td>
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<tr>
<td>Pegah Afra, MD, FACNS and Elizabeth Gerard, MD, FACNS</td>
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<tr>
<td>6:00pm</td>
<td>Introduction of the ACNS President</td>
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<tr>
<td>Elizabeth E. Gerard, MD, FACNS</td>
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<tr>
<td>6:10pm</td>
<td>Presidential Address: Closing the EEG Gap</td>
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<tr>
<td>Suzette M. LaRoche, MD, FACNS</td>
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**Notes:**

- **LS** = livestreamed
- **OD** = On-demand
- **ES** = Spanish language

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FRIDAY, JANUARY 28, 2022

9:30 - 11:00am ET
CONCURRENT SESSIONS

EEG Activation Methods Revisited
Session Director: Jayant N. Acharya, MD, DM, FACNS, FAES, FAAN
Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the role and controversies of hyperventilation as an EEG activating method.
2. Discuss the mechanisms of photic stimulation induced epileptic activity.
3. Understand and apply the mechanisms for sleep and sleep deprivation to enhance epileptiform activity on EEG.

9:30am Hyperventilation: Methods, Effects, Controversies and Updates
Jayant N. Acharya, MD, DM, FACNS, FAES, FAAN

10:00am Photic Stimulation: Methods, Effects on EEG and Mechanisms of Activation
Robert Fisher, MD, PhD

10:30am Sleep and EEG: Mechanisms and Means of Activation
William O. Tatum, IV, DO, FACNS

Mentorship in Clinical Neurophysiology
Session Co-Directors: Ioannis Karakis, MD, PhD, MSc, FACNS and Lynn Liu, MD, FACNS
Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. List the key elements of being a good mentor at an individual level.
2. Describe the key elements of being a good mentor at a group level.
3. Identify traits of an appropriate mentor and be a successful mentee.

9:30am Traditional 1:1 Mentoring
Roy Hamilton, MD, FAAN, FANA

10:00am Group Mentoring and Teams Science
Lawrence J. Hirsch, MD, FACNS

10:30am How to Identify the Right Mentor and be a Successful Mentee
Monica Dhakar, MD, MS, FACNS

Needle Sticks, Seizures and Bites: Is IONM Safe?
Session Director: Jaime R. López, MD, FACNS
Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe who is at risk of IOM needle stick injuries.
2. Determine if the clinical data support that TES-MEPs have a high risk of causing seizures.
3. Develop better strategies for reducing bite injuries related to TES-MEPs.

9:30am IONM and Sharps Injuries
Aditya Joshi, MD

9:55am Seizure Risk and TcMEPs
Jaime R. López, MD, FACNS

10:20am TcMEPs and Bite Injuries
Felix Chang, MD

10:45am Discussion

Polysomnography (PSG) Through the Ages: Specific Considerations and Caveats in Different Age Groups (Joint ACNS/Brazilian Clinical Neurophysiology Society Symposium)
Session Director: Stella Marcia Azevedo Tavares, MD, PhD
Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the normal evolution of sleep (ontogenesis) and recognize normal PSG patterns in children.
2. Describe the normal evolution of sleep (ontogenesis) and recognize normal PSG patterns in adults and elderly.
3. Identify the main technical difficulties for PSG across different age periods in humans.

9:30am Polysomnography in the Elderly
Stella Marcia Azevedo Tavares, MD, PhD

10:00am Polysomnography in Adults
Milena Pavlova, MD

10:30am Polysomnography in Children
Rosana Cardoso Alves, MD, PhD

11:00 - 11:30am ET
Break
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FRIDAY, JANUARY 28, 2022

11:30am - 1:00pm ET
CONCURRENT SESSIONS

**Burnout from the Perspective of the Clinical Neurophysiologist: The Pathophysiology, Experience, and Prevention of a Modern Medical Epidemic**
Session Co-Directors: Cormac O’Donovan, MD, FRCSI, FACNS and Matthew Luedke, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the pathophysiology of burnout and its relevant clinical neurophysiologic, imaging, and laboratory biomarkers.
2. Describe causes of burnout and the deleterious impact of burnout on clinicians, their patients, and the broader social impact of clinician burnout.
3. Identify and implement common strategies for reducing burnout and improving clinician resiliency.

11:30am Biomarkers of Burnout – Neurophysiology, Radiology, and Chemistry
*Cormac O’Donovan, MD, FRCSI, FACNS*

12:05pm Burnout in the Patient, the Clinician, and Society
*Zabeen Mahulwala, MD*

12:35pm Leadership and Burnout—Improving Practice, Strengthening Providers
*Matthew Luedke, MD, FACNS*

**Clinical Neurophysiology Resident and Fellow Special Interest Group**
Session Co-Directors: Pegah Afra, MD, FACNS and Jeffrey W. Britton, MD, FACNS, FAAN, FANA, FAES

This session will feature case presentations by clinical neurophysiology trainees, selected by the ACNS Resident & Fellow Education Committee from submitted case abstracts.

11:30am Introduction
*Pegah Afra, MD, FACNS and Jeffrey W. Britton, MD FACNS*

11:35am Deep Brain Stimulation of the Centromedian Nucleus of the Thalamus for Genetic Generalized Epilepsy: A Case Report and Review of Literature
*Shruti Agashe, MD*

11:50am Seizure Freedom in a Child with Early Infantile Developmental and Epileptic Encephalopathy (Ohtahara Syndrome) with DEPDC5 Mutation and Focal Epilepsy
*Matthew MacDonald, MD*

12:05pm Not Your Regular Old Valsalva
*Aris Hadjinicolaoou, MD*

12:20pm Frontal Midline Theta: Active and Passive Knitting Rhythm
*Cody L. Nathan, MD*

12:35pm Serial Electrodiagnostic Studies in Three Patients with Brentuximab Vedotin-Induced Peripheral Neuropathy with Features of Demyelination
*Ashley Weng, MD*

12:50pm Discussion

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FRIDAY, JANUARY 28, 2022

Electric Source Imaging: Current Status of EEG Source Modeling in Localization of Epilepsy
Session Co-Directors: John Ebersole, MD and Prachi Parikh, MD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Explain the concepts of electric source imaging (ESI).
2. Assess the utility of using source modeling in localization of epilepsy.
3. Analyze the application of ESI in scalp and intracranial EEG as well as about ictal ESI.

11:30am Fundamentals of EEG Source Modeling
   John Ebersole, MD

12:00pm Intracranial EEG Validation of EEG Source Models
   James Tao, MD, PhD

12:30pm Ictal EEG Source Modeling
   Robert Knowlton, MD

Integrating EMG/NCSs into Clinical Practice
Session Director: Daniel L. Menkes, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
• Distinguish between common mononeuropathies, plexopathies and radiculopathies clinically.
• Describe the relative frequencies of these entities in order to design a tailored electrodiagnostic examination.
• Apply proper phraseology to summarize the study’s findings.

11:30am Introduction
   Daniel L. Menkes, MD, FACNS

11:35am EMG in the Diagnosis of Neuropathy
   Peter Siao, MD

12:00pm Ultrasound as a Complement to EMG
   Michael Cartwright, MD

12:30pm The Role of EMG in Radiculopathy/Spinal Stenosis
   Mick J. Perez-Cruet, MD

NIOM State of Art: Learning about Neural Networks and Connectivity
Session Co-Directors: Jay Shils, PhD and Kathleen Seidel, MD, PhD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Define up-to-date methodological approaches to assess connectivity during neurosurgical procedures.
2. Describe advantages, future potentials but also limitations of those methods and to put them in a critical context.
3. Explain the value of intraoperative guidance and strategy modification.

11:30am DBS- Beta Oscillations and Closed Loop Stimulation
   Jay Shils, PhD

11:50am Cortico-Cortical Evoked Potentials in IONM
   Davide Giampiccolo, MD

12:10pm Cerebello-Cortical Stimulation
   Francesco Sala, MD

12:30pm Continuous Mapping from Supratentorial to Spine and Collision Studies: Concept Review for the Future
   Vedran Deletis, MD, PhD
   Kathleen Seidel, MD, PhD

1:00 - 2:00pm ET
Lunch

1:00 - 1:45pm ET
Poster Tours

EEG and EEG Education
Session Director: Meriem Bensalem-Owen, MD, FACNS

Epilepsy and Epilepsy Surgery
Session Director: Lawrence J. Hirsch, MD FACNS

NIOM
Session Director: Ioannis Karakis, MD, PhD, MSc, FACNS

Pediatric EEG
Session Director: Tammy Tsuchida, MD, PhD, FACNS
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FRIDAY, JANUARY 28, 2022

2:00 - 3:30pm ET
CONCURRENT SESSIONS

EEG Education during Residency: An Uneven Playfield
Session Director: Adriana Tanner, MD, FAES

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Discuss the disparities in EEG teaching during neurology residency.
2. Discuss past and current practices in EEG teaching during residency.
3. Discuss future ways to improve EEG teaching for neurology residents.

2:00pm Introduction
Adriana Tanner, MD, FAES

2:05pm Current State of EEG Education in the US and Abroad
Fabio Nascimento, MD

2:30pm EEG Teaching: What Can we Learn from Successful Programs?
Richard Burgess, MD, PhD, FACNS

2:55pm The Future of EEG Education in Residency
Rebecca Fasano, MD

3:20pm Discussion

Evidence II: Challenges in the Establishment of IONM Effectiveness
Session Co-Directors: Stan Skinner, MD, FACNS and David MacDonald, MD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Define Big Data pros and cons as IONM evidence.
2. Describe how IONM methods differ from typical diagnostic tests.
3. Explain the need for proactive collaboration between all intraoperative team members to generate the best patient outcomes.

2:00pm Teamwork: The Linchpin between Diagnostic Prediction and Injury
Stan Skinner, MD, FACNS

2:30pm Risk assessment in machine learning and Big Data: challenges and solutions.
Ana Mirallave-Pescador, MD

3:00pm Why 2x2 Diagnostic Test Accuracy is Inappropriate for IONM
David MacDonald, MD

Neurophysiology through COVID-19 Pandemic (Joint ACNS/Mexican Clinical Neurophysiology Society Symposium)
Session Director: Alejandro Zavala, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the most frequent findings in the EEG of COVID-19 Patients.
2. Identify the most frequent findings in nerve conduction studies of COVID-19 Patients.
3. Analyze how the COVID-19 pandemic has changed the IOM.

2:00pm EEG in COVID-19 Patients
Alejandro Zavala, MD, FACNS

2:30pm Nerve Conduction Studies in COVID-19 Patients
Samantha Pineda, MD

3:00pm Changes in IOM during COVID-19 Pandemic
Jaime R. López, MD, FACNS

Step Wise Approach to Epilepsy Surgical Planning - For Residents and Fellows
Session Director: Iffat Ara Suchita, MD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Demonstrate the organized and stepwise approach to epilepsy surgery planning.
2. Conduct education on temporal, extra-temporal sEEG planning.
3. Learn about various neuromodulation devices, as palliative options.

2:00pm Case Block A
Hae Won Shin, MD

2:25pm Case Block B
Elson So, MD, FACNS

2:50pm Case Block C
Iffat Ara Suchita, MD

3:05pm Case Block D
Lily Wong-Kisiel, MD

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FRIDAY, JANUARY 28, 2022

What Have We Learned About the Physiology of Neuromuscular Junction with a Human Model of Presynaptic Dysfunction: Botulinum Toxin Chemodenervation
Session Director: Jorge Gutiérrez, MD, MSc

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Recognize and describe the effects of botulinum toxin at the level of the central and peripheral nervous system.
2. Describe the main neurophysiological techniques available to evaluate the effects of botulinum toxin at the central and peripheral levels.
3. Describe chronologically the denervation-reinervation process that occurs after chemodenervation with botulinum toxin.

2:00pm Findings in EMG, SFEMG, Sensory and Motor Nerve Conduction Studies, Repetitive Stimulation Test, H Reflexes, F Waves and Blink Reflex
Devon I. Rubin, MD, FACNS

2:30pm The Presynaptic, Synaptic, Postsynaptic, Muscular and Central Effects of Chemodenervation with Botulinum Toxin
Gustavo E. Ramos Burbano, MD, MSci

3:00pm Chronology of the Denervation-Reinervation Process after Chemodenervation with Botulinum Toxin
Marcondes Franca Jr, MD, PhD

3:30 - 4:00pm ET BREAK

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Annual Courses

Registration for the Annual Courses is ala carte, with a separate fee for each course. An All-Access Pass is also available, including access to any of the courses in any format. Courses will be livestreamed to the Virtual Platform, and will be available on-demand Tuesday, February 1 - Monday, February 14, 2022.

FRIDAY, JANUARY 28, 2022

4:00 - 6:00pm ET
ANNUAL COURSES…CONTINUED

EMG/Peripheral - Part II
Course Co-Directors: Devon Rubin, MD, FACNS and Ruple Laughlin, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the basic concepts of nerve conduction studies, the abnormalities that occur in different types of disorders, and the pitfalls that may occur during the performance of the studies;
2. Understand the approach, findings, and limitations of EDX testing in patients with radiculopathies.
3. Determine an appropriate EDX approach to patients with peripheral neuropathies, median and ulnar mononeuropathies, plexopathies, neuromuscular junction disorders, and myopathies; and
4. Identify the features and benefit of neuromuscular ultrasound in the evaluation of carpal tunnel syndrome and ulnar neuropathies.

4:00pm EDX in NMJ d/o
Ruple Laughlin, MD, FACNS

4:40pm EDX Approach to Plexopathies
Sarah Berini, MD

5:20pm EDX Approach to Myopathies
Pritikanta Paul, MD

5:50pm Discussion
Ruple Laughlin, MD, FACNS
Sarah Berini, MD
Pritikanta Paul, MD

Essentials of Sleep for the Busy Clinical Neurophysiologist
Course Co-Directors: Marcus C. Ng, MD, FRCPC, CSCN (EEG), FACNS and Lynn Liu, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Apply the more recent AASM guidelines for sleep stages and arousals on polysomnography (PSG)
2. Identify common parasomnias encountered in clinical neurophysiology practice;
3. Recognize sleep-related breathing disorders commonly encountered in clinical neurophysiology practice;
4. Apply the most recent AASM guidelines to score sleep-related breathing disorders on PSG and other types of recording;
5. Classify the phenomenology of common sleep-related movements in clinical neurophysiology practice; and
6. Identify REM sleep behavior disorder (RBD) events (and their mimics) on video-PSG.

4:00pm Sleep-Wake States, Arousals, and Parasomnias
Milena Pavlova, MD

4:30pm Sleep and Respiratory Scoring
Nancy Foldvary-Schaefer, DO

5:00pm Sleep-Related Movements: RBD, Atonia, PLMS
Madeleine M. Grigg-Damberger, MD, FACNS

5:30pm Interactive Sleep Cases
Milena Pavlova, MD
Nancy Foldvary-Schaefer, DO
Madeleine M. Grigg-Damberger, MD, FACNS
Annual Courses

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FRIDAY, JANUARY 28, 2022

Evoked Potentials
Course Co-Directors: Elayna Rubens, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Identify appropriate clinical applications of evoked potential testing;
2. Interpret accurately visual, brainstem auditory, and somatosensory evoked potentials; and
3. Correlate evoked potential results and clinical information to inform neurologic diagnosis and prognostication.

4:00pm Brainstem Auditory Evoked Potentials
   Alan D. Legatt, MD, PhD, FACNS

4:40pm Visual Evoked Potentials
   Armando Tello, MD, PhD

5:20pm Somatosensory Evoked Potentials
   Elayna Rubens, MD, FACNS

Neonatal EEG
Course Co-Directors: Shavonne L. Massey, MD and William Gallentine, DO, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the normal age-dependent neonatal EEG patterns and their evolution over time;
2. Explain the strengths and limitations of different EEG modalities in neonatal EEG background examination, seizure identification and quantification, and prognosis;
3. Identify common artifacts found in neonatal EEG; and
4. and treatment implications, particularly in the premature neonate.

4:00pm EEG Maturational Changes of the Preterm Infant
   Courtney J. Wusthoff, MD, MS, FACNS

4:30pm EEG Recording Techniques (AEfEG vs. Conventional EEG) and Artifacts in Premature Infants
   Janette Mailo, MD, PhD

5:00pm Neonatal Seizures: ictal EEG Patterns, Do They Matter, and How Do We Treat
   Dana B. Harrar, MD, PhD

5:30pm Prognostic Value of EEG in Very Premature Infants
   Robert Ryan Clancy, MD

Neuromodulation
Course Co-Directors: Gregory Worrell, MD, PhD and Alexander Rotenberg, MD, PhD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the physics of electrical and magnetic brain stimulation;
2. Discuss currently available brain stimulation devices; and
3. Explain the clinical evidence for brain stimulation.

4:00pm RNS
   Barbara Jobst, MD, FACNS

4:25pm DBS & Targets
   Nicholas M. Gregg, MD

4:45pm Discussion: Invasive Neurostimulation
   Barbara Jobst, MD, FACNS
   Nicholas M. Gregg, MD

5:00pm TMS
   Melissa Tsuboyama, MD

5:25pm Trigeminal Nerve Stimulation
   Christopher DeGiorgio, MD

5:45pm Discussion: Non-invasive Neurostimulation
   Melissa Tsuboyama, MD
   Christopher DeGiorgio, MD

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### SATURDAY, JANUARY 29, 2022

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<tr>
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<tr>
<td>9:00 - 10:30am ET</td>
<td><strong>CONCURRENT SESSIONS</strong></td>
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<tr>
<td></td>
<td>**Critical Care EEG: Current Concepts and Case Discussion/</td>
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<td></td>
<td><em>Electroencefalograma continuo en cuidados críticos:</em></td>
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<td><strong>Actualización y discusión de casos</strong></td>
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<td>Sesson Co-Directors: Camilo Gutierrez, MD and Maria J. Bruzzone Giraldez, MD, MSCR</td>
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<td>Learning Objectives:</td>
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<td>At the conclusion of this activity, the learner will be able to:</td>
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<tr>
<td>1.</td>
<td>Discuss the 2021 ICU EEG terminology, and describe the new components.</td>
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<td>2.</td>
<td>Identify common management approaches to CCEEG findings.</td>
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<td>3.</td>
<td>Describe the indications and optimal length of cEEG monitoring in</td>
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<td>critically ill adults.</td>
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<td>9:00am</td>
<td><strong>The Use of Continuous EEG (cEEG) in the Critical Care Setting</strong></td>
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<td><em>Clio Rubinos, MD, MSCR</em></td>
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<tr>
<td>9:30am</td>
<td><strong>Critical Care EEG Terminology Review and Update</strong></td>
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<td><em>Andres Fernandez, MD, FACNS</em></td>
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<tr>
<td>10:00am</td>
<td>**Definition, Concepts of “Ictal-Interictal Continuum: (IIIC), Clinical</td>
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<td>Practice and Current Management Practices**</td>
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<td><em>Andres Rodriguez, MD</em></td>
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<td><strong>Growing and Adding Services to the Epilepsy Services: Adding Value Within and Beyond the Four Walls of Epilepsy Centers</strong></td>
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<td>Sesson Co-Directors: Rajdeep Singh, MD, MS, FACNS and Matthew Luedke, MD, FACNS</td>
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<td>At the conclusion of this activity, the learner will be able to:</td>
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<tr>
<td>1.</td>
<td>Implement and improve telemedicine clinic visits in epilepsy and</td>
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<td>neurology.</td>
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<td>2.</td>
<td>Illustrate the utilization of epilepsy navigators within epilepsy centers to improve patient care.</td>
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<td>3.</td>
<td>Assess and increase utilization of EEG technician services within their centers to meet coding guidelines, help with physician burnout and improve patient care.</td>
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<tr>
<td>9:00am</td>
<td><strong>Introduction</strong></td>
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<td><em>Matthew Luedke, MD, FACNS</em></td>
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<tr>
<td>9:05am</td>
<td><strong>Optimizing Telemedicine in Epilepsy/Clinical Neurophysiology</strong></td>
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<td><em>Rajdeep Singh, MD, MS, FACNS</em></td>
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<td>9:30am</td>
<td><strong>Epilepsy Navigators for Epilepsy Centers: Improving Patient Care and Creating Business Case</strong></td>
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<td><em>Casey C. Cruse, BSN, CNRN</em></td>
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<td>9:55am</td>
<td><strong>Utilization of EEG Super Techs or Tech Readers for Video EEGs and Ambulatory Studies</strong></td>
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<td><em>Shankar Perumal, MD</em></td>
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<tr>
<td>10:20am</td>
<td><strong>Panel Discussion</strong></td>
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</table>
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SUNDAY, JANUARY 30, 2022

The Power of Social Media in Shaping the Future of Clinical Neurophysiology Education
Sesson Co-Directors: Meriem Bensalem-Owen, MD, FACS and Aatif M. Husain, MD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the current use of social media in clinical neurophysiology (CNP) education.
2. Review the various format of social media used and educational content delivered.
3. Discuss the challenges and the opportunities offered by social media for CNP education.

9:00am Introduction
Meriem Bensalem-Owen, MD, FACS
Aatif M. Husain, MD

8:05am Perspective from the Social Media Editor of the Journal of Clinical Neurophysiology
Rishi Ganesan, MD

9:30am #TwEEGtorial
Rebecca Fasano, MD

9:55am #EEGTalk
Fabio Nascimento, MD

10:20am Panel Discussion

11:00am - 12:30pm ET
GENERAL SESSION

Session Chair: Gloria M. Galloway, MD, MBA, FACS

11:00am Robert S. Schwab Award Presentation
Gloria M. Galloway, MD, MBA, FACS

11:10am Robert S. Schwab Award Lecture: “Eat, Drink, and Be Numb”
Eva L. Feldman, MD, PhD

11:45am ACNS Members’ Business Meeting & Presidential Inauguration

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**SATURDAY, JANUARY 29, 2022**

12:30 - 1:30pm ET
Lunch Roundtable Discussions

**Roundtable Discussions**

**ICU EEG**
Hosted by: Courtney J. Wusthoff, MD, FACNS; Nicholas S. Abend, MD, MSCE, FACNS; Lawrence J. Hirsch, MD, FACNS; Emily Gilmore, MD, FACNS; and Aaron Struck, MD

**Stereo EEG**
Hosted by: Stephan U. Schuele, MD, MPH, FACNS; Giridhar Kalamangalam, MD, DPhil, FACNS; and Birgit Frauscher, MD, PhD

**NIOM**
Hosted by: Eva K. Ritzl, MD, MBA, FRCP (Glasgow), FACNS; Marc R. Nuwer, MD, PhD, FACNS; and Jaime R. Lopez, MD, FACNS

**Clinical Neurophysiology in the Community**
Hosted by: Suzette M. LaRoche, MD, FACNS and Rajdeep Singh, MD, MS, FACNS

**International**
Hosted by: Adriana Bermeo-Ovalle, MD, FACNS

1:30 - 3:00pm ET
CONCURRENT SESSIONS

**Epileptic Encephalopathies Across the Pediatric Spectrum – EEG Utilization in Diagnosis and Management**
Session Co-Directors: Shavonne L. Massey, MD and Janette Mailo, MD, PhD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Explain how conventional EEG can be utilized in diagnosis of epileptic encephalopathy in neonates and children.
2. Discuss how QEEG can supplement conventional EEG seizure detection and prediction value in critically ill neonates and children.
3. Identify the role of ambulatory EEG in pediatric patients with seizures and encephalopathy.

1:30pm Introduction
*France Fung, MD*

1:35pm Neonatal Epileptic Encephalopathies
*Chalongchai Phitsanuwong, MD*

2:00pm Epileptic Encephalopathies of Infancy and Childhood
*Fiona Baumer, MD*

2:10pm Role of the Continuous EEG, Quantitative EEG Trends and Ambulatory EEG in Diagnosis and Assessment of Epileptic Encephalopathy in Pediatric Patients
*Eric Payne, MD*

2:50pm Panel Discussion

My Patient’s Dizzy. Now what? A Clinical Approach to the Diagnosis and Management of Autonomic Disorders
Session Director: Mitchell G. Miglis, MD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Interpret the results of autonomic cardiovascular reflex testing including heart rate variability with deep breathing, Valsalva maneuver and head up tilt testing in the setting of clinical cases.
2. Define typical presentations of disorders of autonomic hyperactivity and autonomic failure.
3. Recognize patterns on thermoregulatory sweat testing associated with disorders of central and peripheral autonomic pathways.

1:30pm Disorders of Autonomic Hyperactivity: Syncope and POTS
*Mitchell G. Miglis, MD*

1:55pm Disorders of Autonomic Failure and the Utility of Sweat Testing in Clinical Practice.
*Dong-Inn Sinn, MD*

2:20pm Autoimmune Autonomic Syndromes and Future Autonomic Measures
*Srikant Muppidi, MD*

2:45pm Discussion

New Insights in Intraoperative Neurophysiology for Urological Surgeries
Session Director: Jaime R. López, MD, FACNS and Ignacio Regidor, MD, PhD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Explain basic neuropsychological techniques applied for pelvic floor examination and their interpretation.
2. Describe the particularities of the intraoperative neurophysiological monitoring in radical prostatectomies.
3. List different intraoperative neurophysiological monitoring techniques used in multimodal IOM in pudendal nerve release surgeries.

1:30pm Neurophysiological Studies of the Pelvic Floor
*Armando Tello, MD, PhD*

2:00pm Intraoperative Neurophysiological Monitoring for Prostate Surgeries
*Guillermo Martin-Palomeque, MD, FACNS*

2:30pm Intraoperative Neurophysiological Monitoring in Pudendal Nerve Entrapment Surgery
*Lidia Cabañes-Martínez, MD, FACNS*
Annual Meeting Scientific Program

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SATURDAY, JANUARY 29, 2022

**Normal Features of the Intracranial EEG**
Session Director: Vasileios Kokkinos, PhD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the regional differences in intracranial EEG with respect to brain location and their associated changes with the sleep-wake state.
2. Discuss the regional variability of electrophysiological activity across the human brain and its modification through the different states of vigilance.
3. Identify normal iEEG waveforms generated by the human hippocampus.

1:30pm Modeling and Visualization of the Intracranial EEG  
*Giridhar Kalamangalam, MD, DPhil, FACNS*

2:00pm An Electrical Atlas of the Human Brain: A Multicenter Effort to Shed Light into Brain Physiology  
*Birgit Frauscher, MD, PhD*

2:30pm Normal Intracranial EEG Variants of the Human Hippocampus  
*Vasileios Kokkinos, PhD*

**The Role of Neurophysiology in the Evaluation of Patients with Epilepsy and Low Grade Gliomas/El papel de la Neurofisiología en la evaluación de los pacientes con epilepsia y gliomas de bajo grado**
Session Co-Directors: Adriana Tanner, MD, FAES and Luis-Carlos Mayor, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Discuss the presurgical evaluation of patients with epilepsy and low grade gliomas.
2. Discuss the indications for invasive evaluation in patients with epilepsy and low grade gliomas.
3. Discuss intraoperative techniques and their pros and cons in patients with epilepsy and low grade gliomas.

1:30pm The Non-Invasive Evaluation of Patients with Epilepsy and Low Grade Gliomas  
*Juan Ochoa, MD, FACS*

1:55pm The Invasive Evaluation in Patients with Epilepsy in the Setting of Low Grade Gliomas  
*Julia Miró-Lladó, MD*

2:20pm Low Grade Gliomas and Epilepsy: The Role of the Neuropathologist in the Operating Room  
*Adriana Tanner, MD, FAES*

2:45pm Discussion

3:00 - 3:30pm ET

**BREAK**

**3:30 - 5:00pm ET**

**CONCURRENT SESSIONS**

**Challenging EMG Cases: Solving the Puzzle**
Session Director: Ruple Laughlin, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Define nerve conduction features distinguishing a demyelinating from axonal neuropathy.
2. Identify electrodiagnostic techniques to assess and localize ulnar neuropathy.
3. Formulate a step-wise approach in the EDX evaluation of weakness.

3:30pm Introduction  
*Ruple Laughlin, MD, FACNS*

3:35pm Cases Round 1  
*Ruple Laughlin, MD, FACNS*

4:00pm Cases Round 2  
*Devon Rubin, MD, FACNS*

4:25pm Cases Round 3  
*Elliot Dimberg, MD, FACNS*

**Does EEG-Video Monitoring Still Need to be done in the Inpatient Setting? Hospital vs. Ambulatory EEG-Video**
Session Director: Selim Benbadis, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe the advantages and disadvantages of inpatient EEG-video monitoring.
2. Describe the advantages and disadvantages of ambulatory EEG-video monitoring.
3. Apply the CPT codes appropriately for inpatient and ambulatory EEG-video monitoring.

3:30pm EEG-Video Monitoring Should Be Performed In The Hospital  
*Meriem Bensalem-Owen, MD, FACS*

3:50pm Ambulatory EEG-Video Can Be Just as Good as Inpatient EEG-Video  
*Selim Benbadis, MD, FACS*

4:10pm Coding Implications of Inpatient vs. Ambulatory EEG-Video  
*Marc R. Nuwer, MD, PhD, FACNS*

4:30pm Discussion

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**SATURDAY, JANUARY 29, 2022**

**Use of Long-Term Video EEG Monitoring in Low-Income Countries: Challenges and Limitations (Joint ACNS/IFCN-Latin American Chapter Symposium)**
Session Co-Directors: Daniel San Juan Orta, MD, MSc, FACNS and Jorge Vidaurre, MD, FACS, FAES

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Review the state of art of the EEG features of interictal-ictal continuum phenomena in children.
2. Review Key EEG features of the interictal-ictal spectrum in the intensive care unit setting with unique challenges of this specific environment.
3. Discuss characteristics of interictal –ictal continuum in patients with super refractory status and multimodal diagnosis tests.

3:30pm Can we Implement Long-Term Video EEG Monitoring Programs in Low-Income Countries: Limitations and Possible Solutions
Jorge Vidaurre, MD, FACS, FAES

4:00pm Practical Applications of EEG Monitoring in an in a Large Center in Mexico: Are we Modifying Outcomes?
Daniel San Juan Orta, MD, MSc, FACNS

4:30pm Implementation of ICU Telemetry in Latin America: The Colombian Experience
Luis-Carlos Mayor, MD

**Intraoperative Monitoring of Lower Cranial Nerves**
Session Co-Directors: Pegah Afra, MD, FACS and Steve Karceski, MD

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Discuss the surgical anatomy and neurophysiology of lower cranial nerves.
2. Explain the peripheral lower cranial nerve monitoring during head and neck surgeries.
3. Describe the hypoglossal nerve monitoring during placement of hypoglossal stimulator.

3:30pm The Surgical Anatomy and Neurophysiology of Lower Cranial Nerves
Pegah Afra, MD, FACS

4:00pm Intraoperative neurophysiologic monitoring of lower cranial nerves during head and neck surgeries
Joseph Doria, MD

4:30pm Intraoperative monitoring of lower cranial nerves during placement of hypoglossal stimulator
Oleg Modik, PhD, CNIM

**New Insights Sleep Neurophysiology Providing About Complex Bidirectional Effects in Focal-Onset Epilepsies**
Session Director: Madeleine M. Grigg-Damberger, MD, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Explain why NREM sleep may be the best sleep/wake state to identify the epileptogenic zone for epilepsy surgery evaluations using interictal stereo-EEG.
2. Discuss how recording stereo-EEG and comprehensive respiratory polysomnography shows respiratory events accompany the majority of seizures in the majority of patients with focal-onset epilepsy undergoing epilepsy surgery evaluation.
3. Explain why half of adults with focal-onset epilepsy show pathologic objective sleepiness on the Multiple Sleep Latency Test and pathologic impaired wakefulness and attention on the Maintenance of Wakefulness tests.

3:30pm Objective Pathological Sleepiness and Difficulty Staying Awake and Alert Highly Prevalent in Unselected Adults with Focal-Onset Epilepsies
Madeleine M. Grigg-Damberger, MD, FACNS

3:55pm Roles of Sleep and Apnea In Sudden Unexpected Death In Epilepsy (SUDEP) Risk.
Nancy Foldvary-Schaefer, DO

4:15pm Contribution of Sleep to Better Define the Epileptic Focus and Post-Surgical Outcome
Birgit Frauscher, MD, PhD

4:35pm Discussion

6:00 - 6:30pm ET BREAK

6:30 - 8:00pm ET GENERAL SESSION

Co-Chairs: Cecil D. Hahn, MD, MPH, FACNS and Aatif M. Husain, MD, FACNS

5:30pm Herbert H. Jasper Award Presentation
Cecil D. Hahn, MD, MPH, FACS

5:40pm Herbert H. Jasper Award Lecture: “The Electroencephalogram of the Developing Brain”
Eli M. Mizrahi, MD, FACNS

6:15pm Pierre Gloor Award Presentation
Aatif M. Husain, MD, FACNS

Walter Paulus, MD
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**SUNDAY, JANUARY 30, 2022**

**9:00am - 12:30pm ET**

**Fostering Diversity in Clinical Neurophysiology**

Session Co-Directors: Sarah E. Schmitt, MD, FACNS and Sasha Alick-Lindstrom, MD

**Learning Objectives:**
At the conclusion of this activity, the learner will be able to:

1. Identify the current issues regarding lack of diversity in leadership in Neurology and Clinical Neurophysiology, and describe the importance of cultural competency in interactions with colleagues and patients.
2. Describe measures that can be utilized to overcome challenges encountered by minorities and women in career advancement, including strategies for balancing family and career obligation and improving work-life balance.
3. Increase personal involvement and engagement in ACNS and provide opportunities to shape the future of ACNS as a society that promotes diversity and inclusivity for ALL healthcare professionals in neurophysiology.

*The presentations from 8:30 - 9:45am will be live-streamed. The roundtable discussions at 10:00am will be open to in-person attendees only.*

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<tr>
<th>Time</th>
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<tr>
<td>9:00am</td>
<td>Introduction</td>
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<tr>
<td></td>
<td>Sarah E. Schmitt, MD, FACNS</td>
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<tr>
<td>9:05am</td>
<td>Equity, Diversity and Inclusion Lessons in Neurology</td>
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<td>Sasha Alick-Lindstrom, MD</td>
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<td>9:25am</td>
<td>Fostering Diversity in Clinical Neurophysiology</td>
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<td>Sasha Alick-Lindstrom, MD</td>
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<td>9:50am</td>
<td>Ethnic Diversity and Disparities in Healthcare</td>
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<td>Daniel J. Correa, MD, MS</td>
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<td>10:15am</td>
<td>Closing the Gender Gap: Strategies for Successfully Navigating an Academic Career</td>
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<td>Page Pennell, MD</td>
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<td>10:40am</td>
<td>Break</td>
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<td>10:00am</td>
<td>Roundtable Discussions:</td>
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<td>Finding an Appropriate Work-Life Balance</td>
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<td>Sasha Alick-Lindstrom, MD; Hiba A. Haider, MD, FACNS, FAES</td>
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<td>Finding Mentorship and Support Locally and Nationally</td>
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<td>Sarah E. Schmitt, MD, FACNS; Susan T. Herman, MD, FACNS</td>
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<td>Promoting Diversity within Your Institution</td>
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<td>Daniel J. Correa, MD, MS</td>
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<td>Obtaining Recognition within Your Professional Society</td>
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<td>Suzette LaRoche, MD, FACNS; Page Pennell, MD</td>
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**9:00 - 10:30am ET**

**CONCURRENT SESSIONS**

**Computational Approaches to Epilepsy**

Session Co-Directors: Rod C. Scott, MD, PhD and Giridhar Kalamangalam, MD, DPhil, FACNS

**Learning Objectives:**
At the conclusion of this activity, the learner will be able to:

1. Describe the characteristics of a complex adaptive system and to contrast reductionist approaches with complexity approaches to understanding such systems.
2. Define network structures at multiple hierarchical levels and discuss how these structures per se are mechanisms of disease.
3. Explain how networks at multiple hierarchical levels can be manipulated in order to reduce seizure propensity and to improve cognitive outcomes.

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<tr>
<td>9:00am</td>
<td>The Promise of Complexity Theory</td>
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<td>Matt Mahoney, PhD</td>
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<tr>
<td>9:30am</td>
<td>Single Unit Electrophysiology to Study Abnormal Microcircuits in Epilepsy</td>
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<td>Rod C. Scott, MD, PhD</td>
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<tr>
<td>10:00am</td>
<td>Spatiotemporal Patterns of EEG as Mechanisms in Epilepsy</td>
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<td>Giridhar Kalamangalam, MD, DPhil, FACNS</td>
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**The Post Sub-Specialization Era: Board Certification, Credentialing and Getting Reimbursed**

Session Co-Directors: Pegah Afra, MD, FACNS and Matthew Luedke, MD, FACNS

**Learning Objectives:**
At the conclusion of this activity, the learner will be able to:

1. Explain the difference between ABMS and non-ABMS board examinations in CNP and understand variety pf board certifications available for subspecialty of CNP,
2. Explain the credentialing process for clinical neurophysiologists,
3. Discuss the difference between privileges and credentials,
4. Explain the difference between ABMS and non-ABMS board examinations in CNP and understand variety pf board certifications available for subspecialty of CNP,
5. Discuss the difference between privileges and credentials,

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<tr>
<td>9:00am</td>
<td>Board Certification in Clinical Neurophysiology: ABMS, ABPN, ABCN, AANEM, CSCN. Who are They and What are Their Roles?</td>
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<td>Pegah Afra, MD, FACNS</td>
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<tr>
<td>9:30am</td>
<td>Credentialing Process for Clinical Neurophysiologists</td>
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<td>Matthew Luedke, MD, FACNS</td>
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<tr>
<td>10:00am</td>
<td>Credentialing Process for Neurodiagnostic Technologists</td>
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<td>Jaime R. Lopez, MD, FACNS</td>
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**SUNDAY, JANUARY 30, 2022**

**The Role of cEEG, qEEG and Evoked Potentials in Acutely Encephalopathic Children and Neonates: From Seizures to Persistent Vegetative State, and Everything in Between**

Session Co-Directors: France Fung, MD and Janette Mailo, MD, PhD

**Learning Objectives:**

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

1. Describe QEEG trends (trend changes, seizure detection, artifacts) that can be seen in encephalopathic pediatric and neonatal patients in the ICU.
2. Recognize the utility of neurophysiologic and evoked potential techniques in assessment of neonates and children with encephalopathy in pediatric and neonatal ICU.
3. Assess the strengths, weaknesses and optimal timing of various neurophysiological modalities used in the evaluation of critically ill neonates and children.

**9:00am - Introduction**

Shavonne L. Massey, MD

**9:15am - The Role of Evoked Potential Modalities in Assessment of Cerebral Function in Critically Ill Neonates and Children with Altered Awareness**

Janette Mailo, MD, PhD

**9:45am - EEG/QEEG in the NICU and PICU**

Rejean Guerriero, DO

**10:15am - Discussion**

**10:30 - 11:00am ET BREAK**

**11:00am - 12:30pm ET CONCURRENT SESSIONS**

**Clinical Neurophysiology of Encephalopathy: Grading, Patterns, and Outcome.**

Session Director: Aline Herlopian, MD

**Learning Objectives:**

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

1. Discuss the grading system of encephalopathy.
2. Recognize the different patterns associated with encephalopathy.
3. Identify various entities with their characteristic encephalopathy patterns and strategize therapeutic interventions that impact clinical outcomes.

**11:00am - Introduction**

Aline Herlopian, MD

**11:05am - Grading of Encephalopathy**

Brandon Westover, MD, PhD

**11:25am - Ictal-Interictal Continuum and Encephalopathy**

Aaron Struck, MD

**11:45am - EEG Findings in Specific Etiologies of Encephalopathy**

Aline Herlopian, MD

**12:05pm - Interactive Cases**

Aline Herlopian, MD

**Deep Brain Stimulation (DBS) in Epilepsy**

Session Director: Gregory Worrell, MD, PhD

**Learning Objectives:**

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

1. Define the historical DBS targets in epilepsy and define the evidence that support these targets.
2. Describe DBS targets for focal epilepsy and FDA approval of the targets.
3. List DBS targets in generalized epilepsy and outcome data to support these targets.

**11:00am - DBS in Generalized Epilepsy**

Abdulrahman Alwaki, MD

**11:30am - Choosing The Targets: Historical Overview**

Robert Gross, MD, PhD

**12:00pm - DBS in Focal Epilepsy**

Gregory Worrell, MD, PhD

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= livestreamed  = On-demand  = Spanish language  All times are Eastern Standard Time (ET).
Annual Meeting Scientific Program

Annual Meeting registration includes entry to all session from Thursday, January 27 at 1:00pm ET through Sunday, January 30, 2022. Annual Meeting sessions will be livestreamed to the Virtual Platform. Annual Meeting sessions will not be available on-demand.

SUNDAY, JANUARY 30, 2022

Unique Methods of TcMEPs Acquisition in Complex Cases in Adult and Pediatric Surgical Patients
Session Director: Bernard A. Cohen, PhD, FASNM, FACNS

Learning Objectives:
At the conclusion of this activity, the learner will be able to:
1. Describe LQP-TcMEP stimulating electrode arrangements and corresponding optimal placement site to get a higher density of intensity of stimulation delivered to the scalp.
2. Identify the value LQP-TcMEP-technique play during the surgical procedure using low threshold stimulation compare to conventional stimulation.
3. Conduct LQP-TcMEP-technique during a surgical procedure where patient’s age, lesion location, and preoperative neurologic deficit could have degraded MEPs monitoring feasibility.

11:00am LQP-TcMEP Technique: Historical Background and Current Scientific Research Directions
Bernard A. Cohen, PhD, FASNM, FACNS

11:30am Optimizing and Improving Continuous TcMEP Monitoring by Using Low Threshold Linked Quadri-Polar (LQP)-TcMEP in Adult Surgical Patients
Ernesto Lima, MD, CNIM, D.ABNM

12:00pm Facilitating Pediatric TcMEP Recordings to Approximate Real Time Surgical Feedback
Vizmary J. Montes-Pena, MD, MS

12:30pm ET
ADJOURN
Exhibitors

American Board of Clinical Neurophysiology (ABCN)

2908 Greenbriar Dr.
Springfield, IL, 62704
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Email: Janice@abcn.org
Website: www.abcn.org

The American Board of Clinical Neurophysiology (ABCN) has a long history of promoting excellence in Clinical Neurophysiology and offers examinations with added competency in Epilepsy Monitoring, Neurophysiologic Intraoperative Monitoring, Critical Care EEG, or General Clinical Neurophysiology. International testing is available. Coming soon — Pediatric EEG Track. International testing and online proctoring available.

ABRET Neurodiagnostic Credentialing & Accreditation

2908 Greenbriar Dr.
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ABRET Neurodiagnostic Credentialing & Accreditation offers five credentials for technologists and practitioners (R. EEG T.*, R. EP T.*, CNIM®, CLTM®, NA-CLTM, CAP®) and a Certificate Program, CMEG®. For labs wanting to demonstrate a commitment to standards and quality, laboratory accreditation programs are available, LAB-EEG, LAB-NIOM, and LAB-LTM.

ASET – The Neurodiagnostic Society

ASET offers a wide range of educational products covering a wide array of modalities to help Neurodiagnostic technologists prepare for credentialing exams. We help them obtain continuing education credits for recertification and build their skills. As the premier international professional association, we help healthcare institutions develop their workforce so they can deliver comprehensive Neurodiagnostic care.

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We provide Smart Healthcare Solutions based in real-world evidence and research. We connect patients to their healthcare network for screening, diagnostics, and health management providing Healthcare-As-a-Service in sleep medicine and neurodiagnostics. Anytime, Anywhere. Our Software-as-a-Service enables health systems to streamline data collection and access AI tools for decision making.

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Ceribell empowers neurologists with Rapid Response EEG. Validated in a multicenter clinical trial, Ceribell can be set up by bedside clinicians in minutes, and offers continuous automatic monitoring and alert. The remote EEG Portal access provides efficient real-time review.

Compumedics

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Compumedics offers innovative solutions for neuro-diagnostics ranging from Routine EEG studies to Long-Term-Monitoring. The “Curry” neuroimaging software suite, paired with Compumedics’ high density recording systems, helps optimize patient outcomes in Level 3/4 Epilepsy centers. The neXus 360 data management system provides web-based and remote physician access from any device with internet access. By defining life’s signals, our technology turns vast amounts of data into valuable information that leads to a more accurate diagnosis and consequently more effective therapy for some of the most serious health conditions.
Exhibitors

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Website: www.corticare.com

CortiCare is a provider of tele-health technology and EEG monitoring solutions to neurology and neuro-critical care areas within the hospital. CortiCare's employees have years of experience providing EEG monitoring services. CortiCare works diligently with its clients to establish protocols, practices, and processes which have become an industry standard for continuous EEG monitoring. CortiCare offers immediate monitoring services with registered EEG technologists who are on-call and available for real-time EEG monitoring. We are ready to provide support part-time, full-time or anytime that real-time EEG information is needed to help manage your critical care patients. For more information, please visit www.corticare.com.

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We promise our clients the highest quality of service in all they need with the most advanced technology. Neurosoft have been taking up the challenge of developing and producing high-quality medical equipment since 1992. 30-year long experience on the way to creating best-in-class medical equipment. Your task is our solution. We continuously analyze the needs of healthcare professionals and researchers and proud to provide the ready-made solution for your routine practice. IOM, EEG, PSG, TMS, EMG, Cardiology, Rehabilitation, Functional Diagnostics, Audiology Please visit https://www.diagnus.us for more.

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Epitel had developed REMI for remote EEG monitoring in hospitals of all sizes that connects patients at the point-of-care with an epileptologist. REMI uses Epitel's Epilog sensors that can be placed by nurses and technicians. The sensors wirelessly transmit EEG to a tablet that relays to Persyst mobile software for remote EEG review.

IntraNerve Neuroscience
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IntraNerve Neuroscience (INN) is Joint Commission accredited in Ambulatory Care — Telehealth. We offer intraoperative neuronmonitoring, neurotelemetry/cEEG, and remote physician oversight, and IONM/EEG/cEEG interpretation. Our Neurologists/Epileptologists, Technologists, and IT support are dedicated to providing care and assistance around the clock, 24/7/365. We partner with facilities like yours across the country to provide high-quality, reliable neuroscience services.

Lifelines Neuro
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Headquartered in Louisville, KY, with offices in St. Louis, MO, London, UK, and Dublin, Ireland, Lifelines Neuro is a growing EEG company specializing in neurodiagnostic systems and EEG software to reach more patients and improve patient care. With offices and partners in cities around the globe Lifelines Neuro is committed to serving our customers with cutting-edge enduring technologies and world-class customer service, training, and support.
### Exhibitors

#### MEGIN

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Website: https://megin.fi

Our mission is to satisfy the thirst to understand the human brain. MEGIN is the global leader for Magnetoencephalography (MEG) Technology. We are experts in detecting and visualizing brain function, working together with clinicians, scientists, and healthcare organizations, as well as other partners to develop, deliver and support our MEG technology. Our technology and its applications transform neuroscience research and clinical decision making to improve people’s health.

#### MVAP Medical Supplies

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Website: www.mvapmed.com

MVAP Medical Supplies is a provider of sleep, EEG, EMG, IOM, respiratory, and patient care supplies. We offer the latest products at very competitive prices all supported by our in-house Customer Service and Technical Support teams.

#### Neuromonitoring Technologies

6425 Living Place, Suite 2  
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Phone: +1-410-489-5655  
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Website: www.neuromonitoringtech.com

Neuromonitoring Technologies Continuous EEG for ICU & EMU Immediate Care of patients for improved outcomes. Neuromonitoring Technologies provides continuous “eyes-on” remote EEG in the EMU & ICU using telemedicine technology. Critical conditions (seizures, ischemia) require rapid recognition for immediate treatment that directly affects the course of an illness and the length of a hospital stay. NMT’s highly experienced, technologists, are mandatory board certified as R. EEG T. and CLTM’s. Working alongside the in-house practitioners, we are successful in correlating EEG patterns, cardiovascular and hemodynamic parameters with clinical findings for immediate intervention by the in-house neurologist.

#### NeuroPace, Inc.

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NeuroPace is a commercial-stage medical device company focused on transforming the lives of people suffering from epilepsy by reducing or eliminating the occurrence of debilitating seizures. Its novel and differentiated RNS® System is the first and only commercially available, brain-responsive platform that delivers personalized, real-time treatment at the seizure source.

#### Neurotech, LLC

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Accredited by the Joint Commission, Neurotech, LLC specializes in EEG services including in-home, long-term, and continuous EEG monitoring. Our EEG monitoring services improve patients’ comfort and provides a cost-effective alternative to a hospital stay. Neurotech cEEG Partners, LLC provides hospitals with continuous EEG monitoring in the ICU and EMU.

#### Next Gen Neuro

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Phone: +1-219-741-7374  
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Exhibitors

**Ochsner Health**

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Ochsner is recruiting BC/BE neurologists to join our practices in South Louisiana • This is a great opportunity to practice Neurology in a collegial and patient-focused environment. • Academic appointments are available at our affiliated institutions, including Tulane, LSU, and the University of Queensland. • Both newly trained and experienced physicians are encouraged to apply. • We offer a highly competitive salary with comprehensive benefits. • Relocation Assistance • CME time and financial reimbursement • Comprehensive insurance • Retirement options • 501c3 tuition reimbursement qualifications The Department of Neurology has a complement of over 40 Neurologists system-wide with subspecialty representation in stroke, neurocritical care, interventional neurology, neuromuscular disease, movement disorders, epilepsy, MS, headache, cognitive disorders, traumatic brain injury and sports neurology. The Department of Neurology is a member of the Ochsner Neuroscience Institute, ranked as one of the top 50 Neuroscience Centers by the U.S. News and World Report rankings.

**Persyst Development Corporation**

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For more than 30 years, Persyst has been committed to providing advanced EEG detection and trending solutions to clinical practice in order to assist in the review and analysis of EEG data. Persyst is used for EEG monitoring and review in hundreds of hospitals including 97 out of 100 top hospitals for Neurology in the U.S. 1 The Persyst software package features Spike and Seizure detection and a comprehensive set of customizable EEG trends. Persyst Artifact Reduction is the only FDA cleared solution for reducing most non-cerebral signals and artifact, resulting in clearer EEG and higher value qEEG. Persyst is the only EEG trending and detection software that is integrated, sold and supported by every major EEG manufacturer.

**Rhythmlink International, LLC**

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Rhythmlink International, LLC designs, manufactures and distributes EEG, IONM and EMG medical devices and provides custom packaging, private labeling, custom products and contract manufacturing to its customers. Rhythmlink is recognized as a leader within its field at providing the important physical connection between patients and the diagnostic equipment to record or elicit neurophysiologic biopotentials.

**RosmanSearch**

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RosmanSearch is a highly specialized recruitment firm. Our mission is to place quality physicians with quality practices, academic departments and hospitals nationwide.

**RSC Diagnostic Services**

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SK life science is a subsidiary of SK biopharmaceuticals, focused on developing innovative, next-generation drugs. We have 27 years of experience in R&D and are dedicated to changing the status quo in CNS. We currently have 8 compounds in the clinical development pipeline. XCOPRI (cenobamate) is a new option to treat adults with partial-onset seizures, which is an often difficult-to-control condition. The safety and efficacy of XCOPRI was established in two randomized, double-blind, placebo-controlled studies that enrolled 655 adults. In these studies, patients had partial-onset seizures with or without secondary generalization for an average of approximately 24 years and median seizure frequency of 8.5 seizures per 28 days during an 8-week baseline period. During the trials, XCOPRI reduced the percent of seizures per 28 days compared with the placebo group.

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We are the largest provider of neuromonitoring services in the US. We’ve built our success on the foundation of clinical excellence and innovation. Specialty-Care’s telemedicine capabilities allow our neuromonitoring physicians to enjoy the challenges and rewards of monitoring a variety of cases. Utilizing cutting edge technology from their home offices, our physician team partners with highly trained surgical neurophysiologists — our SNs are always certified in neurophysiological monitoring (CNIM or D.ABNM) and are always passionate about excellent patient care.

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Stratus is the nation’s leading provider of EEG testing and services and has served more than 75,000 patients across the U.S. The company offers technology, services, and proprietary software solutions to help neurologists accurately and quickly diagnose their patients with epilepsy and other seizure-like disorders. Stratus also provides mobile cardiac telemetry to support the diagnostic testing needs of the neurology community. Additionally, the company’s R&D division holds the world’s largest database of de-identified EEG recordings and is applying machine learning to improve the overall quality and efficiency of EEG testing.

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