## AMERICAN CLINICAL NEUROPHYSIOLOGY SOCIETY





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# **MESSAGE FROM THE COURSE AND PROGRAM COMMITTEE CO-CHAIRS**

Dear Colleagues,

On behalf of the American Clinical Neurophysiology Society (ACNS) Council, we are thrilled to invite you to attend the 2019 Annual Meeting & Courses, taking place February 6-10, 2019 at the Caesar's Palace in Las Vegas, Nevada.

The ACNS Annual Meeting & Courses are designed to provide a review of the fundamentals as well as the latest scientific advances in central and peripheral neurophysiology. Experts in the field will give presentations of significant value for all healthcare professionals who utilize clinical neurophysiology.

This year, the Annual Courses include expanded offerings in peripheral neurophysiology. Also, the courses are organized along tracks that should minimize conflicts for most attendees. As was done in 2017, and due to the continued success and interest in Neurophysiologic Intraoperative Monitoring (NIOM), the course will remain in the two full-day format to accommodate the degree of interest and growth within this rapidly expanding field of clinical neurophysiology. The course directors are working hard to provide attendees with an informative and educational series of presentations.

The Program Committee is pleased to present an impressive selection of sessions for delegates to attend throughout the weekend. There was an outstanding set of session proposals submitted for consideration this year and we are confident that the program content will provide an exciting educational opportunity for all in attendance.

Following the success of previous year's Joint International Symposia, we are pleased to announce the inclusion of many sessions co-organized by our colleagues outside the US. We are honored to welcome representatives from the Brazilian Society of Clinical Neurophysiology, the Mexican Society of Clinical Neurophysiology, the Canadian Society of Clinical Neurophysiology, the Columbian Society of Clinical Neurophysiology and the German Society of Clinical Neurophysiology. We hope you will take advantage of this opportunity to learn from and collaborate with our international colleagues.

In addition to the scientific sessions, there will be opportunities for educational entertainment and networking. The annual Neurophys Bowl provides a great night of "edu-tainment" for participants and attendees to test their knowledge in various fields of Clinical Neurophysiology. Additionally, attendees can socialize and network with exhibitors, colleagues and friends during the Welcome Reception on Friday, February 8 in the Exhibit Hall.

The 2019 Annual Meeting & Courses will provide an opportunity for education, networking and interaction with the latest technology for attendees in various fields of clinical neurophysiology. We hope to see you in Las Vegas!

Sincerely,



Frank. Dislan

Frank W. Drislane, MD, FACNS Course Committee Co-Chairs



Courtney J. Wusthoff, MD, FACNS Course Committee Co-Chairs



Saurabh R. Sinha, MD, PhD, FACNS Program Committee Co-Chairs



Tay Jul

Tammy Tsuchida, MD, PhD, FACNS Program Committee Co-Chairs

# **ACNS INFORMATION**

## 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.

# Officers and Council

**President** Tobias Loddenkemper, MD, FACNS Children's Hospital Boston

**1st Vice President** Cecil D. Hahn, MD, FACNS Hospital for Sick Children

2nd Vice President Gloria M. Galloway, MD, FACNS Ohio State University Medical Center

Secretary Suzette M. LaRoche, MD, FACNS Mission Health

Treasurer Jaime R. Lopez, MD, FACNS Stanford University **Immediate Past President** Stephan Schuele, MD, MPH, FACNS Northwestern University

Past President Jonathan C. Edwards, MD, FACNS Medical University of South Carolina

**Councilors-at-Large** Imran I. Ali, MD, FACNS University of Toledo

Meriem Bensalem-Owen, MD, FACNS University of Kentucky

Giridhar Kalamangalam, MD, DPhil, FACNS University of Texas

Jong Woo Lee, MD, PhD, FACNS Brigham & Women's Hospital Daniel L. Menkes, MD, FACNS William Beaumont Hospital Devon I. Rubin, MD, FACNS

May Clinic Sarah E. Schmitt, MD, FACNS Medical University of South Carolina

Saurabh R. Sinha, MD, PhD, FACNS Duke University Medical Center

AMA Delegate Marc R. Nuwer, MD, PhD, FACNS UCLA

Journal Editor Aatif M. Husain, MD, FACNS Duke University Medical Center

## **ACNS Executive Office**

555 E Wells St, Suite 1100 Milwaukee, WI 53202 Phone: (414) 918-9803 Fax: (414) 276-3349 info@acns.org www.acns.org



Megan M. Hille, CAE, CMP, Executive Director, mhille@acns.org Erin Trimmer, Senior Meetings Manager, etrimmer@acns.org Deedee Mader, Membership Manager, dmader@acns.org Elizabeth Mueller, Meetings Coordinator, emueller@acns.org

## **ACNS INFORMATION**

## **Course Committee**

#### **Co-Chairs**

Frank W. Drislane, MD, FACNS Beth Israel Deaconess Medical Center

Courtney J. Wusthoff, MD, FACNS Stanford University

Members:

Cecil D. Hahn, MD, MPH, FACNS The Hospital for Sick Children

Giridhar Kalamangalam, MD, DPhil, FACNS University of Florida Leslie H. Lee, MD, FACNS Stanford University Medical Center

Tobias Loddenkemper, MD, FACNS Children's Hospital Boston

Jaime R. Lopez, MD, FACNS Stanford University

Stephan U. Schuele, MD, MPH, FACNS Northwestern University

M. Brandon Westover, MD, PhD, FACNS Massachusetts General Hospital

#### Ex-Officio

Jeffrey Britton, MD, FACNS Mayo Clinic

Gloria M. Galloway, MD, MBA, FACNS Ohio State University Medical Center

Saurabh R. Sinha, MD, PhD, FACNS Duke University Medical Center

Tammy Tsuchida, MD, PhD, FACNS Children's National Medical Center

## **Continuing Medical Education (CME) Committee**

#### **Co-Chairs**

Meriem Bensalem-Owen, MD, FACNS University of Kentucky

Gloria M. Galloway, MD, MBA, FACNS Ohio State University Medical Center

#### Members

Amy Crepeau, MD Mayo Clinic

Charles M. Epstein, MD, FACNS Emory University School of Medicine

Evan J. Fertig, MD Providence Brain and Spine Institute

Elizabeth Gerard, MD, FACNS Northwestern University

Hiba A. Haider, MD Emory University

Abeer J. Hani, MD Lebanese American University

Susan T. Herman, MD, FACNS Beth Israel Deaconess Medical Center Monica Islam, MD Nationwide Children's Hospital

Pongkiat Kankirawatana, MD, FACNS Children's of Alabama- UAB

Fawad A. Khan, MD Ochsner Health System

Ammar Kheder, MD Penn Epilepsy Center

Jong Woo Lee, MD, PhD, FACNS Brigham & Women's Hospital

Joel Oster, MD Tufts University

Dipakkumar P. Pandya, MD Hunterdon Neurology

Jun T. Park, MD, FAES Case Western Reserve University

Karl Erwin Sanzenbacher, MD, MS, FACNS Eastern Maine Medical Center

Mirela V. Simon, MD, MSc, FACNS Massachusetts General Hospital Saurabh R. Sinha, MD, PhD, FACNS Duke University Medical Center

Fahd Sultan, MD University of Oklahoma Health Sciences Center

Christa Swisher, MD Duke University Medical Center

Shanti Thirumalai, MD, FACNS University of Michigan

#### **Ex-Officio**

Nicholas S. Abend, MD, MSCE, FACNS Children's Hospital of Philadelphia

Frank W. Drislane, MD, FACNS Beth Israel Deaconess Medical Center

Saurabh R. Sinha, MD, PhD, FACNS Duke University Medical Center

Tammy Tsuchida, MD, PhD, FACNS Children's National Medical Center

Courtney J. Wusthoff, MD, FACNS Stanford University

# **ACNS INFORMATION**

## **Program Committee**

**Co-Chairs** Saurabh R. Sinha, MD, PhD, FACNS Duke University Medical Center

Tammy Tsuchida, MD, PhD, FACNS Children's National Medical Center

**Council Liaison** Saurabh R. Sinha, MD, PhD, FACNS Duke University Medical Center

Members Nicholas S. Abend, MD, MSCE, FACNS Children's Hospital of Philadelphia

William J. Bosl, MD, PhD University of San Francisco

Richard C. Burgess, MD, PhD, FACNS Cleveland Clinic Epilepsy Center

Bernard Allan Cohen, PhD, FACNS, FASNM Neurological Monitoring Associates, LLC

Elliot Dimberg, MD, FACNS Mayo Clinic

Jonathan C. Edwards, MD, MBA, FACNS Medical University of South Carolina

Ronald Emerson, MD, FACNS Hospital for Special Surgery / Weill Cornel Med Ctr

William B. Gallentine, DO, FACNS Stanford University

Cecil D. Hahn, MD, MPH, FACNS The Hospital for Sick Children

Mark Hallett, MD, FACNS National Institutes of Health

Abeer J. Hani, MD Lebanese American University Aatif M. Husain, MD, FACNS Duke University Medical Center

Akio Ikeda, MD, PhD, FACNS Kyoto University Graduate School of Medicine

Adam Juersivich, MD SpecialtyCare

Giridhar P. Kalamangalam, MD, DPhil, FACNS University of Florida

Peter W. Kaplan, MD, FRCP, FACNS Johns Hopkins Bayview Medical Center

Ioannis Karakis, MD, PhD, MSc Emory University

Gowri Lakshminarayan, MD Specialty Care Inc

Suzette M. LaRoche, MD, FACNS Mission Health

Ruple S. Laughlin, MD Mayo Clinic

Jong Woo Lee, MD, PhD, FACNS Brigham & Women's Hospital

Leslie Lee, MD, FACNS Stanford University Medical Center

Jaime R. Lopez, MD, FACNS Stanford University

Faye McNall, MEd, REEGT ASET - The Neurodiagnostic Society

Daniela N. Minecan, MD, FACNS, FAES University of Michigan Health System

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Noor Pirzada, MD

Eva K. Ritzl, MD, FACNS Johns Hopkins University

Alexander Rotenberg, MD, PhD Children's Hospital Boston

Devon I. Rubin, MD, FACNS Mayo Clinic

Arnold J. Sansevere Jr., MD Boston Children's Hospital

Stephan U. Schuele, MD, MPH, FACNS Northwestern University

Raj D. Sheth, MD, FAAN, FACNS Mayo Clinic / Nemours Clinic-Florida

William O. Tatum, DO, FACNS Mayo Clinic Florida

Martin Veilleux, MD, FACNS Montreal Neurological Hospital

M. Brandon Westover, MD, PhD, FACNS Massachusetts General Hospital

#### **Ex-Officios**

Meriem Bensalem-Owen, MD, FACNS University of Kentucky

Frank W. Drislane, MD, FACNS Beth Israel Deaconess Medical Center

Gloria M. Galloway, MD, MBA, FACNS Ohio State University Medical Center

Courtney J. Wusthoff, MD, FACNS Stanford University

# **GENERAL MEETING INFORMATION**

## 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 IFCN Executive Committee members, and 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. The annual Neurophys Bowl is a mainstay of the Annual Meeting program, allowing members and delegates a chance to challenge their knowledge of clinical neurophysiology in a competitive format.

Important Dates	
Advance Registration Open	October 1, 2018
Poster Abstract Submission Open	October 1, 2018
Poster Abstract Submission Deadline	November 15, 2018
Poster Abstract Decision Notification	December 15, 2018
Housing Deadline	January 15, 2019
Advance Registration Deadline	January 15, 2019
Registration Cancellation Deadline	January 20, 2019
Courses Handout Website Open	January 31, 2019
CME Certificate Program Opens (pre-registered delegates)	February 8, 2019
CME Certificate Program Opens (delegates registering onsite)	March 8, 2019
CME Certificate Claim Deadline	April 3, 2019
Courses Handout Website Closes	April 28, 2019

## Las Vegas Visitor Information

Nearest Airport: McCarran International Airport (LAS)

Average February Temperatures: High 64° F, Low 42° F

## **Headquarters Hotel**

Caesar's Palace 3570 S Las Vegas Blvd Las Vegas, Nevada 89109 (866) 227-5938

## **Housing Reservations**

A block of rooms has been reserved for ACNS Annual Meeting & Courses delegates at Caesar's Palace. Reservations will be accepted on a space-available basis, at the standard hotel rate after the housing deadline of January 15, 2019. Please reserve your rooms before the deadline to take advantage of the group rate.

ACNS Group Rate: \$221/night single/double occupancy Group rate will be offered three days prior and three days following the dates of the Room Block, based on availability.

Housing Open: Now Open! Housing Deadline: January 15, 2019

To make reservations online, visit the ACNS website: http://www.acns.org/ meetings/annual-meeting-and-courses/2019-annual-meeting-and-courses/ housing--travel.

To make reservations by phone, call (866) 227-5938. If making reservations by phone, don't forget to mention the ACNS Annual Meeting to receive the group rate!

## **Registration Procedure**

Save on registration fees and avoid long lines onsite when you register before the advance deadline of January 15! Online registration is a fast an easy way to register in advance, however, delegates may also register by completing and mailing or faxing the PDF registration form available online or on page ##.

To register online, go to the ACNS website: http://www.acns.org/meetings/ annual-meeting-and-courses/2019-annual-meeting-and-courses/ registration. or fill out the paper registration form (found on Pages 19-21) at the back of the program.

All registrations will be confirmed by email. If you do not receive a confirmation within two weeks of submission, please contact the ACNS Executive Office at (414) 918-9803 or info@acns.org.

# **CONTINUING MEDICAL EDUCATION (CME) INFORMATION**

## **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 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**

#### **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.

## **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 around the country.

## **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 advances 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:

- Discuss recent advances in electroencephalography, evoked potentials, ALS, magnetoencephalography, practice technologies, nerve conduction studies and other clinical neurophysiology techniques; 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 Educations (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 a maximum 18.75 AMA PRA Category I Credit(s)<sup>TM</sup>. Physicians should claim only credit commensurate with the extent of their participation in the activity.

ACNS designates the Annual Courses for the maximum number of AMA PRA Category 1 Credit(s)<sup>TM</sup>.

#### Epilepsy Surgery/Invasive EEG Course Part I

6.5 AMA PRA Category I Credit(s)™

**Central EEG Technical** 1.5 AMA PRA Category I Credit(s)<sup>™</sup>

**Neurophysiologic Intraoperative Monitoring (NIOM) Part I** 6.5 AMA PRA Category I Credit(s)<sup>™</sup>

**Intensive Care Unit EEG Monitoring (ICU EEG) Part I** 7 AMA PRA Category I Credit(s)™

Video-EEG Part I 2 AMA PRA Category I Credit(s)™

**Central EEG Technical** 1.5 AMA PRA Category I Credit(s)<sup>™</sup>

**EMG/Peripheral Nervous System** 5 AMA PRA Category I Credit(s)<sup>™</sup>

**EMG Demo** 2 AMA PRA Category I Credit(s)<sup>™</sup>

**Epilepsy Surgery/Invasive EEG Course Part II** 1.5 AMA PRA Category I Credit(s)™

**Neurophysiologic Intraoperative Monitoring (NIOM) Part II** 6.5 AMA PRA Category I Credit(s)<sup>™</sup>

Intensive Care Unit EEG Monitoring (ICU EEG) Part II 3 AMA PRA Category I Credit(s)™

# **CONTINUING MEDICAL EDUCATION (CME) INFORMATION**

## Autonomic Neurophysiology

1.5 AMA PRA Category I Credit(s)™

**5th Annual CNP Program Director's Symposium** 2 *AMA PRA Category I Credit(s)*<sup>™</sup>

**Basic EEG** AMA PRA Category I Credit(s)<sup>™</sup>

Video-EEG Part II 1.5 AMA PRA Category I Credit(s)™ **Evoked Potentials** 1.5 AMA PRA Category I Credit(s)TM

Neonatal EEG 1.5 AMA PRA Category I Credit(s)™

**Neuromodulation/Stimulation** 3 AMA PRA Category I Credit(s)<sup>™</sup>

\*These credit counts are estimates and subject to change as agendas are confirmed.

# **CALL FOR POSTER ABSTRACTS**

## **Submission Dates**

Poster abstract submission will open on October 1, 2018. All abstracts must be submitted online by Thursday, November 15, 2018 at 11:59pm ET. No exceptions will be made.

## **Online Abstract Submission**

Poster abstracts must be submitted through the ACNS Session Management website (https://www.conferenceharvester.com/harvester2/login. asp?EventKey=MTCBASXX). Complete instructions for submission are available online. Abstracts that have been mailed, emailed or faxed will not be accepted. Anyone may submit a poster abstract to ACNS. Membership in ACNS is not required for poster abstract submission.

## **Abstract Review**

All abstracts submitted will be reviewed, evaluated for scholarly and relevant content, and graded in blinded fashion by the ACNS Program Committee. The review process takes approximately four weeks, and acceptance notification will be made by email no later than December 15, 2018.

## **Abstract Categories**

Abstracts submitted to the 2019 ACNS Annual Meeting must fit into one of the following categories to be considered for presentation:

Autonomic Function and its Disorders **Basic Neurophysiology** Critical Care Monitoring **Deep Brain and Cortical Stimulation** Digital/Quantitative EEG and Topography EEG **EMG/NCV** Testing **Epilepsy: Clinical** Epilepsy: Pathophysiology **Evoked Potentials** Functional Imaging Intraoperative Monitoring Magnetoencephalography Peripheral Neuropathy/Neuromuscular Sensory/Motor Physiology Sleep Video-EEG Monitoring for Epilepsy

## **Abstract Types**

Two types of poster abstracts submissions will be accepted: Poster Abstract Regular Submission or Poster Abstract Case Report Submission. Both types of submissions will follow the same review process. Abstract tiles are limited to 60 characters and 200 words for the additional required fields listed below for each submission type:

#### **Poster Abstract Regular Submission**

Introduction Methods Results Conclusion

Poster Abstract Case Report Submission

Introduction Case Report/Case History Conclusion

## **Previous Publication or Presentation**

Abstracts which have been published in journals, meeting proceedings, or other publication, as well as those presented at meetings prior to the ACNS meeting are eligible and welcome for submission. All poster abstracts presented at the Annual Meeting will be published in the *Journal of Clinical Neurophysiology*.

## **Author Attendance Requirement**

By submitting an abstract to 2019 ACNS Annual Meeting, abstract authors are agreeing that at least one author will attend the meeting and will be available to present on the date and time assigned by the Program Committee. Authors will be notified of presentation dates and times at the time of notification of acceptance and are expected to make appropriate travel arrangements to ensure that at least one of the abstract's authors will be in attendance. In addition, presenting authors are expected to register to attend the meeting by the deadline set forth in their acceptance notification. Abstracts for which an author is not pre-registered by the dates set forth will automatically be withdrawn from the program. Poster setup is tentatively scheduled for Thursday, February 7 and displayed Friday, February 8 – Saturday, February 9, 2019.

## **Poster Cancellation Policy**

At least one author or co-author on all posters is expected to register to attend the meeting for which they are accepted by the deadlines set forth in their acceptance notification. If this author cancels their registration prior to the meeting, the poster may be withdrawn from the program.

## Young Investigator Travel Award

Several young physician investigators will be awarded travel fellowships of \$1,000 each. These fellowships are determined based upon the ranking of the applicant's abstract by the Program Committee.

#### **Eligibility Criteria**

Applicant must be: (1) a current ACNS member or apply for membership concurrent with application for Travel Award; (2) a resident, fellow, or junior faculty within two years of completion of fellowship training; and (3) be the first author of an abstract submitted to the Annual Meeting. Applicant must meet the entire aforementioned criteria in order to be considered for the Young Investigator Travel Award. Prior recipients of Travel Fellowships are not eligible for additional Travel Fellowship awards.

#### Selection

Awardees will be chosen based on the quality of submitted abstracts, as ranked by the ACNS Program Committee. A total of six travel fellowships will be awarded for the ACNS 2019 Annual Meeting. Additional travel awards may be awarded if funding is available.

#### Award

Awardees will receive complimentary registration for the meeting and reimbursement of travel funds up to \$1,000, upon provision of an expense voucher, and original receipts. Awardees will be recognized at an award ceremony during the Annual Meeting. Awards are one-time only.

#### Procedures

Upon close of abstract submission, the ACNS Program Committee will review, evaluate, and rank abstracts, including all candidates for consideration to receive a travel award. The Program Committee Co-Chairs will select the final six awardees based on the collective rankings from the Program Committee. ACNS will notify awardees of decision no later than December 1, 2018. Awardees will then be expected to accept invitation by the deadlines set forth in their acceptance notifications, as well as register for the Annual Meeting, and secure travel arrangements. Upon provision of an expense voucher, including original receipts, reimbursement will be provided to award recipients, no later than 30 days after the Annual Meeting.

#### **Cancellation Policy**

Award recipients are expected to register to attend the Annual Meeting by the deadlines set forth in their acceptance notification. If an award recipient cancels their registration prior to the meeting, the Travel Award may be withdrawn from the individual and designated to another candidate.

# **ANNUAL COURSES**

Wednes	day, February 6, 2019	12:00pm	Lunch
9:00am-5:00pm		1:00pm	Role of Source Imaging Richard C. Burgess, MD, PhD, FACNS
<b>Neurophysiologic Intraoperative Monitoring (NIOM) Part I</b> Co-Directors: Aatif M. Husain, MD, FACNS and Mirela V. Simon, MD, MSc, FACNS		1:30pm	HFO and Epilepsy Surgery TBD
9:00am 9:05am	Welcome and Introductions SEP Monitoring	2:00pm	PMG and PVNH Francois Dubeau, MD
9.03411	Parthasarathy Thirumala, MD, FACNS	2:30pm	Insular Epilepsy
9:45am	MEP Monitoring Ronald Emerson, MD, FACNS	3:00pm	<i>DK Nguyen, MD, PhD, FRSC</i> Break
10:25am	Break	3:15pm	Epilepsy Surgery. Implantation and Resection
10:40am	BAEP Monitoring Alan D. Legatt, MD, PhD, FACNS	·	Steven N. Roper, MD
11:20am	EEG Monitoring	3:45pm	Laserablation: Outcome TBD
12:00pm	<i>Olga Selioutski, DO, FACNS</i> Discussion	4:15pm	Indication for RNS and DBS Lawrence J. Hirsch, MD, FACNS
12:15pm	Lunch	9:00am-	5:00pm
1:15pm	EMG and Nerve Recordings Francisco Soto, MD	Intensive C	Care Unit EEG Monitoring (ICU EEG) Part I : Jong Woo Lee, MD, PhD, FACNS & Courtney J. Wusthoff, MD, FACNS
1:55pm	Anesthesia Iryna Muzyka, MD, FACNS	9:00am	Overview of ICU EEG Monitoring in Neonates, Children and Adults Nicholas S. Abend, MD, MSCE, FACNS
2:35pm	Error Avoidance in the OR: Technical and Non-technical Issues Stanley Skinner, MD, FACNS	9:40am	Guidelines and Logistics of ICU EEG Monitoring Susan T. Herman, MD, FACNS
3:15pm	Break	10:30am	cEEG Interpretation: Background, Reactivity, Artifacts, and ACNS
3:30pm	Medicolegal Issues Jaime R. Lopez, MD, FACNS	10.504111	Terminology Suzette M. LaRoche, MD, FACNS
4:10pm	Billing Issues <i>Marc Nuwer, MD, PhD, FACNS</i>	11:30am	Treatment of Nonconvulsive Seizures and Status Epilepticus Sarah E. Schmitt, MD, FACNS
4:50pm	Discussion	12:00pm	Lunch
<b>9:00am</b> -!	5:00pm	1:00pm	CEEG of Anoxic Brain Injury and Targeted Temperature Management
Co-Directors.	<b>Irgery/Invasive EEG Course Part I</b> Stephan U. Schuele, MD, MPH, FACNS and Giridhar Kalamangalam,	1:30pm	Michel van Putten, MD, PhD EEG of NORSE, FIRES, and Autoimmune Disorders Nicolas Gaspard, MD, PhD
<i>MD, DPhil, Fi</i> 9:00	ACNS Introduction and Overview <i>Giridhar Kalamangalam, MD, DPhil, FACNS</i>	2:00pm	ICU EEG Reading Session: Adult Cases Elizabeth Gerard, MD, FACNS and Andres Rodriguez-Ruiz, MD
9:05am	Noninvasive and Invasive Evaluations Chris Skidmore, MD	2:30pm	cEEG Interpretation: Neonates Tammy Tsuchida, MD, PhD, FACNS
9:40am	Epileptogenic Zone Defined by Invasive EEG Patrick Chauve, MDI	3:10pm	ICU EEG Reading Session: Neonatal and Pediatric Cases Jessica L. Carpenter, MD
10:15am	Break	3:40pm	EEG in Toxic Metabolic Encephalopathy Peter W. Kaplan, MD, FRCP, FACNS
10:30am	Intracranial EEG: Physiologic and Abnormal Patterns Birgit Frauscher, MD, PhD	4:10pm	Finances, Billing and Coding
11:00am	Temporal Lobe <i>Giridhar Kalamangalam, MD, DPhil, FACNS</i>	4:50pm	Mark R. Nuwer, MD, PhD, FACNS Panel Q&A
11:30am	Extratemporal Lobe Stephan U. Schuele, MD, MPH, FACNS		

# **ANNUAL COURSES**

## Thursday, February 7, 2019

#### 7:00-8:30am

<b>Epilepsy Surgery/Invasive EEG Course Part II: SEEG</b> <i>Co-Directors: Stephan U. Schuele, MD, MPH, FACNS and Giridhar P.</i> <i>Kalamangalam, MD, DPhil, FACNS</i>		
7:00am	Intracranial EEG: Physics and Physiology: <i>Jean Gotman, PhD, FACNS</i>	
7:25am	Planning Placements Giridhar P. Kalamangalam, MD, DPhil, FACNS	
7:45am	Data Interpretation and Mapping Stephan U. Schuele, MD, MPH, FACNS	
8:05am	Surgical Aspects and Resection Strategy <i>Nitin Tandon, MD</i>	
8:25am	Panel Discussion	
7:00-8:30am		
Evoked Potentials		

*Director: Elayna Rubens, MD, FACNS* Agenda coming soon!

#### 7:00-8:30am

Central EEG Technical
Director: Susan T. Herman, MD, FACNS
Agenda coming soon!

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

## Intensive Care Unit EEG Monitoring (ICU EEG) Part II

mitensive cur		
Co-Directors: Jong Woo Lee, MD, PhD, FACNS & Courtney J. Wusthoff, MD, FACNS		
9:00am	Quantitative EEG: Theory and Tools <i>Hiba A. Haider, MD</i>	
9:30am	Quantitative EEG for Seizure Detection Cecil D. Hahn, MD, MPH, FACNS	
10:00am	Quantitative EEG for Ischemia Detection M. Brandon Westover, MD, PhD, FACNS	
10:50am	Multimodal monitoring in Acute Brain Injury Jan Claassen, MD, PhD, FNCS	

11:30am QEEG Cases Emily J. Gilmore, MD and Sahar F. Zafar, MBBS

#### 9:00am-5:00pm

#### Neurophysiologic Intraoperative Monitoring (NIOM) Part II

Co-Directors: Aatif M. Husain, MD, FACNS and Mirela V. Simon, MD, MSc, FACNS

9:00am	Welcome and Introductions
9:05am	VEP Monitoring Aatif M. Husain, MD, FACNS
9:45am	Monitoring for Brachial Plexus and Nerve Repair Surgery Jorge E. Gutierrez, MD, MSc
10:25am	Break
10:40am	Monitoring for Spinal Cord Tumor Surgery <i>Eva K. Ritzl, MD, FACNS</i>

11:20am	Monitoring for Lower Spinal Column Surgery (Pedicle Screws, MEPs, Dermatomal MEPs and Reflex Monitoring) <i>Paulo Andre Kimaid, MD, PhD</i>
12:00pm	Discussion
12:15pm	Lunch
1:15pm	Corticobulbar MEP Monitoring with Aases (and Brainstem Reflexes?) <i>Kyung-Seok Park, MD</i>
1:55pm	Cranial Nerve Monitoring Jaime R. Lopez, MD, FACNS
2:35pm	Monitoring for Vascular Surgery Leslie Lee, MD, FACNS
3:15pm	Break
3:30pm	Sensorimotor Mapping and Monitoring for Supratentorial Tumors Mirela V. Simon, MD, MSc, FACNS
4:10pm	Language Mapping and Electrocorticography Ioannis Karakis, MD, PhD, MSc
4:50pm	Question and Answer
9:00am-	3:00pm
EMG/Perip	heral Nervous System

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

9:00am	Nerve Conduction Studies — Basics and Pitfalls Ruple S Laughlin, MD
9:45am	EMG Waveform Examples — Spontaneous and Basic Motor Unit Potentials <i>Devon I. Rubin, MD</i>
10:45am	EDX Approach to CTS and Ulnar Neuropathies Cory Kogelschatz, MD
11:30am	EDX Approach to Radiculopathies Paul Barkhaus, MD
1:15pm	EDX Approach to Peripheral Neuropathies Zachary London, MD
2:00pm	EDX Approach to Myopathies <i>Priya Dhawan, MD</i>

## 3:00-5:00pm

#### EMG Demo

*Course Directors: Devon Rubin, MD, FACNS and Ruple Laughlin, MD* 

3:00pm NCS Demonstration: Common, Uncommon, and Pitfalls Devon Rubin, MD, FACNS and Ruple Laughlin, MD

# **ANNUAL COURSES**

#### 11:30am-2:00pm

#### **CNP Director's Symposium**

Course Director: Jeffrey Britton, MD, FACNS

11:30am	Lunch
12:00pm	Introduction Jeffrey Britton, MD, FACNS
12:05pm	Closing Gaps Identified in ACNS Inservice Exam – Neurophysiology and Instrumentation <i>Brian Lundstrom, MD, PhD</i>
12:30pm	IOM and Evoked Potentials <i>Matt Hoffmann, DO, PhD</i>
1:00pm	ACGME Revised Core Requirements Padmaja Kandula, MD
1:30pm	ACGME Self-Study Lily Wong-Kisiel, MD

#### 1:30-3:00pm

### Autonomic Neurophysiology

Co-Directors	: Claus Reinsberger, MD, PhD, FACNS and Jeffrey Liou, DO
1:30pm	Introduction, Anatomy & Physiology of the Autonomic Nervous System <i>Claus Reinsberger, MD PhD FACNS</i>
1:45pm	Autonomic Testing Jeffrey Liou, DO
2:10pm	Neurological Disorders with Central Autonomic Failure Alexandra Hovaguimian, MD
2:35pm	Peripheral Autonomic Failure Brent Goodman, MD

## 3:00-5:00pm

#### Video EEG Part I

*Course Co-Directors: William Tatum, DO, PhD, FACNS and Phillip Pearl, MD, FACNS* 

3:00pm	Predicting the Epileptogenic Zone using Scalp-based VEM <i>William O. Tatum, DO, FACNS</i>
3:35pm	Predicting the Epileptogenic Zone with Intracranial VEM Greg Worrell, MD, FACNS
4:15pm	Localizing the Epileptogenic Zone in Pediatric Patients with VEM <i>Phillip Pearl, MD, FACNS</i>
4:50pm	Q&A

## Friday, February 8, 2019

#### 7:00-8:30am

#### **Neonatal EEG Workshop**

Course Director: Shavonne Massey, MD, MSCE

7:00am	Evolution of the Classification of Neonatal Seizures <i>Eli Mizrahi, MD</i>
7:30am	Neonatal Seizure Quantification: Novel Methods to Address a Common Dilemma <i>Eli Mizrahi, MD</i>
8:00am	Standardizing Neonatal EEG Background Interpretation: Addressing Issues of Inter-rater Agreement <i>Shavonne Massey, MD, MSCE</i>

## 8:30-10:00am

#### Video EEG Cases Part II

Course Co-Directors: William Tatum, DO, PhD, FACNS and Phillip Pearl, MD, FACNS

Ste	e Unclassified Patients
9:30am My	ephan Schuele, MD, FACNS
Ph	ystery Pediatric Cases <i>iillip Pearl, MD, FACNS</i>

#### 7:00-10:00am

#### **Neuromodulation/Stimulation**

*Course Director: Greg Worrell, MD, FACNS* Agenda coming soon!

#### 7:00-10:00am

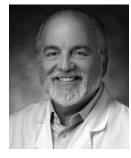
#### **Basic EEG**

*Course Co-Directors: Ionnis Karakis, MD, PhD, MSc and Jay S. Pathmanathan, MD, PhD* 

7:00 am	Normal Adult EEG Jay S. Pathmanathan, MD, PhD
7:30am	Normal Neonatal and Pediatric EEG <i>Nicholas Abend, MD, MSCE, FACNS</i>
8:00am	Normal EEG Variants <i>Ioannis Karakis, MD, PhD, MSc</i>
8:30am	Artifacts Jeffrey Britton, MD, FACNS
9:00am	Non Epileptiform Abnormalities M. Brandon Westover, MD, PhD, FACNS
9:30am	Epileptiform Abnormalities Andreas Alexopoulos, MD, MPH

# **AWARD RECIPIENTS & LECTURES**

## 2019 Pierre Gloor Award Presentation & Lecture



Peter W. Kaplan, MD, FRCP, FACNS

The Gloor Award is presented annually for outstanding current contributions to clinical neurophysiology research. Dr. Peter Kaplan will be recognized and will deliver the 2019 Gloor Address on Friday, February 8, 2019.

Dr. Kaplan grew up in Geneva, Switzerland Went to the University of London, England for Medicine Endocrinology Research. He then served his *Resident Etranger* at the College of Medicine, Paris, France before beginning his residency at Duke University and serving his Fellowship Career at Johns Hopkins University School of Medicine, Baltimore. Dr. Kaplan is Professor of Neurology, Johns Hopkins University School of Medicine.

## 2019 Herbert H. Jasper Award Presentation & Lecture



Jean Gotman, PhD, FACNS

The Jasper Award is presented annually to an individual who has made a lifetime of outstanding contributions to the field of clinical neurophysiology. Dr. Gotman will be recognized during a general session on Saturday, February 9, 2019.

Dr. Jean Gotman received an engineering degree from the University of Paris and a PhD in Neuroscience from McGill University in Montreal. He pioneered the automatic detection of spikes and seizures during long-term EEG monitoring and made his methods widely available through Stellate, a company he created in 1986, which developed and sold all over the world equipment and software for EEG, epilepsy monitoring and polysomnography. He published over 300 peer-reviewed papers and 40 chapters. His research interests include analysis of the EEG, mechanisms of epileptogenesis, seizure generation and spread in humans, High Frequency Oscillations and functional imaging in the diagnosis and study of epilepsy. He received the Research Recognition Award from the American Epilepsy Society, the Pierre Gloor Award of the American Clinical Neurophysiology Society, the Penfield Award of the Canadian League against Epilepsy, was named Ambassador for Epilepsy by the International League against Epilepsy, and gave the Lennox-Lombroso lecture at the American Epilepsy Society. Dr. Gotman is a Professor in the Department of Neurology and Neurosurgery at McGill University.

## 2019 Robert S. Schwab Award



## Michael Aminoff, MD

The Schwab Award is presented annually to an individual who has made significant contributions in the area of clinical neurophysiology. Dr. Aminoff will be recognized and will deliver the 2019 Schwab Lecture on Saturday, February 9, 2019.

Dr. Michael Aminoff is a clinical neurologist and neurophysiologist, clinical investigator, university professor, author, and editor with a special interest in medical history. He was born and educated in England, graduating from University College London in 1962 and as a physician from University College Hospital Medical School in 1965. He subsequently trained in neurology and neurophysiology at The National Hospital (Queen Square) in London, and in 1974 moved to UCSF where he has been Professor of Neurology since 1982. He was Director of the Clinical Neurophysiology Laboratories at UCSF until 2004, when he became Executive Vice Chair of the department of neurology. He also directs the UCSF Parkinson's Disease Clinic and Research Center, a National Parkinson Foundation Center of Excellence.

## Friday, February 8, 2019

#### 7:00-10:00am

#### Women's Leadership Symposium

*Course Director: Gloria M. Galloway, MD, MBA, FACNS* \*Women's Leadership Symposium is included in the overall meeting registration rate and does not have a separate registration fee

7:00am	Defining the Problem of Gender Disparity in Medicine: What Does the Data Reveal <i>Gloria M. Galloway, MD, MBA, FACNS</i>
7:30am	Recruitment and Retention of Female Faculty - What Are The Challenges and What Opportunities are Available? <i>Linda Boxer</i>
8:00am	Why Does Gender Research Matter? Sarah E. Schmitt, MD, FACNS
8:30am	Helping 'Women Find a Voice-Recommendations For Moving Forward <i>TBD</i>

## 9:00am Panel discussion

#### 10:00-10:30am - Coffee Break

#### 10:30am-12:15pm - Opening General Session

10:30am	Welcome
10:40am	President's Lecture Tobias Loddenkemper, MD, FACNS
11:30am	Gloor Award Presentation and Lecture Peter W. Kaplan, MD, FRCP, FACNS

#### 1:30-3:30pm - Concurrent Sessions

#### The Business Side of Clinical Neurophysiology

1:30pm	I've Just Been Asked to Serve as Medical Director- Now What Do I Do? Suzette M. LaRoche, MD, FACNS
1:40pm	Building a comprehensive EEG Monitoring Program <i>Dave Burdette, MD, FACNS</i>
2:20pm	Quality Improvement, Accreditation and Board Certification: <i>Matt W. Luedke, MD</i>
2:45pm	Work Life Balance: Preventing Provider and Technologist Burnout <i>Cormac O'Donovan, MD, FACNS</i>
3:15pm	Panel Discussion

# Current and Future Clinical Practice of High Density EEG and Electrical Source Imaging in Epilepsy

1:30pm	Opportunities for Presurgical Localization Using HD-EEG Source Localization <i>Robert Knowlton, MD</i>
2:00 pm	Methods for HD EEG ESI and Lesion-Constrained ESI Jurriaan Peters, MD, PhD
2:30pm	ldentification and Significance of Spike Ripple Events in Scalp HD EEG <i>Catherine Chu, MD</i>
3:00pm	Beyond the Spike: HD EEG to Map Epileptic Networks and Eloquent Cortex <i>Leonardo Bonilha, MD, PhD</i>

#### Multimodality Monitoring in the EMU

#### 1:30pm – Introduction 1:35pm Peri-ictal Respiratory Dysfunction - Insights From The EMU Nuria Lacuey, MD 1:55pm Respiratory Function Monitoring - Insights From the Lab George Richerson, MD 2:15pm Electrocardiographic Monitoring Maromi Nei, MD 2:35pm Non-Invasive Blood Pressure Monitoring Sam Lhatoo, MD 2:55pm Mapping of Cardiorespiratory Function with Brain Stimulation William Nobis, MD

#### Critical Care ECoG: How to Integrate It into Your Practice

1:30pm	Critical Care ECoG: History, Rationale and Evidence <i>Emily Gilmore, MD</i>
2:00pm	How to Start an ICU ECoG Monitoring Program <i>Ramini Balu, MD, PhD</i>
2:30pm	ECoG Untangled: Integrating ECoG with Other Multimodality Monitoring <i>Brandon Foreman, MD, FACNS</i>
3:00pm	ICU Clinical Case Scenarios: How ECoG Adds to Patient Care <i>Eric Rosenthal, MD</i>

#### **Beyond QEEG: Artificial Intelligence in Clinical Neurophysiology**

1:30pm – Introduction		
	M. Brandon Westover, MD, PhD, FACNS	
1:35pm	Standards and Validation of Al Algorithms Jon Halford, MD, FACNS	
1:50pm	Annotating Large Datasets for AI Applications Jing Jin, PhD	
2:05pm	Al for Sedation Monitoring: Monitoring ICU Sedation and Delirium Using Deep Neural Networks <i>Haoqi Sun, PhD</i>	
2:20pm	Al for Predicting Outcome of Coma Following Cardiac Arrest Michel van Putten, MD, PhD	
2:35pm	Sleep Changes Systematically Over the Course of a Lifetime <i>M. Brandon Westover, MD, PhD, FACNS</i>	
2:50pm	Al for Analysis of Sleep <i>Jimeng Sun, MD</i>	
3:05pm	"Routine EEGs" are a Central Part of the Medical Evaluation for Patients with Neurological Disorders <i>Siddharth Biswal, MD</i>	
3:15pm	Panel Discussion	

#### **Coffee Break - Visit Exhibitors and Poster Viewing**

#### 4:00-5:30pm - Concurrent Sessions

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Brachial Plexe	opathies - Improving Your Diagnostic Skills
4:00pm	What a Close Relationship with the Surgeon Teaches You <i>Carlos Otto Heise, MD, PhD</i>
4:30pm	ENMG Techniques for Evaluation of Brachial Plexopathy Devon I. Rubin, MD, FACNS
5:00pm	Ultrasound Imaging of Brachial Plexus Ana Lucila Moreira, MD
Brain-Compu	ter Interface: The Dawn of a New Era for Patients w

# Brain-Computer Interface: The Dawn of a New Era for Patients with Neurological and Motor Deficits

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4:00pm	Introduction- BCI: A Revolution in Clinical Neurophysiology Meriem Bensalem-Owen, MD, FACNS
4:30pm	DARPA and Innovations in Neural Interface Technology Justin Sanchez, PhD
5:00pm	The Quest for Memory Restoration through BCI TBD
Clinical Neuro	ophysiology Resident and Fellow Special Interest Group
4:00pm	SIG Introduction

·	Andrea Hakimi, DO, FACNS, FAES
4:05pm	Case Presentations

#### 5:30-5:45pm - Walking Break

#### 5:45-7:00pm - Neurophys Bowl

#### 7:00-8:30pm - Welcome Reception

Join us at the official Welcome Reception of the 2019 Annual Meeting. You will have the chance to connect with colleagues, meet other attendees, view posters, and visit exhibit booths on the opening day of Congress sessions.

## Saturday, February 9, 2019

#### 8:00-9:30am - Concurrent Sessions

Decision Making w	ith Neurostimulation
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8:00 am	Future of Neurostimulation Dawn Eliashiv, MD, FACNS
8:30am	Responsive Neurostimulation What We Learn From Chronic Recordings <i>Lawrence J. Hirsch, MD, FACNS</i>
8:50am	VNS Novel Strategies Steve Karceski, MD
9:10am	DBS Approval at Last Robert E. Gross, MD, PhD

# Of Dreams & Spells - The Neurophysiological Tools of REM Sleep & Epilepsy

8:00am	Physiology & Polysomnography of REM Sleep <i>Milena Pavlova, MD</i>
8:30am	EEG & Quantitative EEG of REM Sleep in Epilepsy Marcus C. Ng, MD, FRCPC, CSCN(EEG)
9:00am	Neurophysiology of REM Sleep & SUDEP in Epilepsy Gordon Buchanan, MD, PhD

#### Mapping Human Language Networks with Intracranial EEG Spectra

8:00am	Introduction Ravindra Arya, MD, DM
8:05am	Spatiotemporal Mapping of Language Networks at the Bedside with Intracranial EEG in Adults <i>Nathan E. Crone, MD</i>
8:25am	3D and 4D Mapping of Speech and Language in Children with Epilepsy <i>Eishi Asano, MD, PhD</i>
8:45am	Development of Information Sharing in Human Language Neocortex <i>Ravindra Arya, MD</i>
9:05am	Multimodal Prediction of Post-Operative Language Outcomes Abbas Babajani-Feremi, PhD

### Intraoperative Neurophysiologic Monitoring in special situations. American-Mexican Clinical Neurophysiology Symposium

8:00am	IOM in Neuromuscular Diseases Jaime López, MD
8:30am	IOM in Neonates <i>Erika Rivera, MD</i>
9:00am	IOM in Elderly <i>Daniel San-Juan, MD</i>

# Mastering Semi-quantitative Motor Unit Potential Analysis Skills in 90 Minutes!

8:00am	Overview of Skills of Semi-Quantitation Devon I. Rubin, MD, FACNS
8:30am	Assessment of MUP Recruitment Devon I. Rubin, MD, FACNS
9:00am	Recognizing MUP Morphologic Changes Devon I. Rubin, MD, FACNS

## 9:30-10:00am - Coffee Break - Visit Exhibits and Poster Viewing

#### 10:00-11:00am - General Session

10:00am	Young Investigator Travel Award Presentation
10:15am	Jasper Award Presentation and Lecture: Developing Tools for Neurophysiology <i>Jean Gotman, PhD, FACNS</i>

#### 11:00-11:15am - Walking Break

#### 11:15am-12:45pm - Concurrent Sessions

#### Can Clinical Neurophysiology Improve the Recovery from Sports Induced Injuries ?

11:15am	Neurophysiological Assessment Tools to Enhance Recovery After Concussion — Between Theory and Evidence <i>Nicholas Jerome Milano, MD</i>
11:45am	New Ways to Approach Recovery After Concussion — Focus On the Vestibular and Autonomic Nervous System <i>Claus Reinsberger, MD, PhD, FACNS</i>
12:15pm	The Role of Sleep in Recovery From Neurological Injuries and Its Relevance to Sports Medicine TBD

#### The Diagnostic Challenge of Small Fibre Neuropathy

11:15am	Clinical Features of Acquired Small Fiber Neuropathy Rayaz Malik, MB, ChB, PhD
11:45am	Neurophysiological Evaluation of Small Fiber Neuropathy Jordi Serra, PhD, MS
12:15pm	Approach to the Evaluation of Small Fiber Peripheral Neuropathy <i>Brent Goodman, MD</i>

# Wide-band EEG for Epilepsy: Which is Already Established Tool or Still Research Topic?

11:15am	HFO is the Established Tool or Still Research Topic? <i>Jean Gotman, PhD</i>
11:35am	DC Shifts are the Established Tool or Still Research Topic? Akio IKEDA, MD, PhD, FACNS
11:55am	Current Situation for MEG Application Stefan Rampp, MD
12:15pm	Scalp-Recorded, Wide-Band EEG Pradeep Modur, MD, MS

#### The Motor Evoked Potential: Fundamentals and Clinical Applications. A High-Level Scientific Symposium.

11:15am	Setting the Stage. The Potential of the MEP and Its Challenges. Jonathan A. Norton, PhD
11:30am	Activation of the Motor Pathway; How, What and Why? <i>John Rothwell, PhD</i>
12:00pm	Clinical Application of MEPs & Where Should TMS fit in Clinical Neurophysiology? <i>Mark Hallett, MD, FACNS</i>
12:30pm	Alarmed by Alarm Criteria? Developing a Scientifically Based Approach to MEPs in the Clinical Setting. <i>Jonathan A. Norton, PhD</i>

#### 12:45-2:00pm - Lunch - Visit Exhibits and Poster Viewing

#### 1:30-2:00pm - Annual Business Meeting

#### 2:00-3:30pm - Concurrent Sessions

#### Joint ACNS/IFCN Latin American Chapter: Beyond Traditional Monitoring During Spine Surgery

- 2:00pm MEPs for Lumbar Spine Surgery: Advantages and Pitfalls Armando Tello, MD, PhD 2:30pm MEPs for Tumors of the Lower Spine and Conus Jorge Gutiérrez, MD, MS 3:00pm **MEPs for Nerve Root Monitoring** Parastou Shilian, DO, FACNS Are MEG Practitioners Fulfilling Your Expectations? Thus Spoke the NAEC Centers' Directors..." 2:00pm Anto Bagić, MD, PhD, FACNS 2:30pm "Evidence-Supported MEG Indications in Epilepsy" Andrew Zillgitt, DO
- 3:00pm "This is What You Should Expect from a MEG Report" Richard C. Burgess, MD, PhD, FACNS

#### Electrophysiologic Assessment of Weakness in the ICU

2:00pm	Electrophysiological Testing Approach for Respiratory Failure in the ICU <i>Ruple S. Laughlin, MD</i>
2:30pm	Critical Illness Myopathy: Clinical and Electrophysiological Findings Brent Goodman, MD
3:00pm	Critical Illness Neuropathy: Clinical and Electrophysiological Features <i>Christopher S. Nance, MD</i>
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#### Setting Up for Success in Long-Term Monitoring

2:00pm	The Value of ABRET Credentials & LAB-LTM accreditation Janice Walbert, MS,CAE, FACNS
2:30pm	Expanding the Role of the Neurodiagnostic Technologist in the Long- Term Monitoring Unit
	Susan Agostini, R. EEG/EP T., CLTM, FASET
3:00pm	New Initiatives in Long-Term Monitoring
	Erik Padilla, R.EEG/EPT., CNIM, CLTM, MBA

#### 3:30-3:45pm - Walking Break

#### 3:45-5:15pm - Concurrent Sessions

#### Brainstem and Supratentorial Surgery Monitoring, New Developments and Current Understanding

3:45pm	Brainstem and Spinal Cord Reflexes, Neurophysiology and IOM
	Perspective. Vedran Deletis, MD, PhD
4:45pm	Supra Tentorial Brain Tumor Surgery: IOM Update- What is New?
	Andrea Szelenyi MD, PhD

### Advanced Autonomic Testing

3:45pm	Autonomic Testing
	Thomas Chelimsky, MD
4:15pm	Central Dysautonomia, MD <i>Max J. Hilz, MD</i>
4:45pm	Quantitative Evaluations of Autonomic Failure, Overactivity and Severity Small Fiber Neuropathy <i>Peter Novak, MD, PhD</i>

# SEEG Planning Based on Presurgical Evidence - Illustrative Case Discussions, Interactive.

3:45pm	"Guiding Principles in the Use of SEEG" Jun T. Park, MD, FAES
4:05pm	" Illustrative Cases-Pediatric" Elia M. Pestana-Knight, MD, FACNS
4:25pm	"Illustrative Cases-Adult" Guadalupe Fernandez Baca-Vaca, MD
4:45pm	"Illustrative Cases-Adult/Pediatric" Asim Shahid, MD

#### Advances in Continuous EEG in Targeted Temperature Management

3:45am	Machine Learning of Continuous EEG Data <i>Michel Van Putten, MD, PhD</i>	
4:15pm	ERP in Anoxic Brain Injury <i>Edilberto Amorim, MD</i>	
4:45pm	cEEG, MRI, and Other Biomarkers of Anoxic Brain Injury After TTM Jong Woo Lee, MD, PhD, FACNS	
5·15-5·30pm - Walking Break		

## 5:15-5:30pm - Walking Break

#### 5:30-7:00pm - General Session

5:30pm	Research Highlights Program
	The Research Highlights Program is designed to present the best of
	the best in research in various Clinical Neurophysiology fields.
6:15pm	Schwab Award Presentation and Lecture Michael J. Aminoff, MD

## Sunday, February 10, 2019

## 8:00-9:30am - Concurrent Sessions

#### Functional Brain Mapping Using Invasive Electrodes

8:00am	Introduction
8:10am	FBM with Subdural Grids Elson Lee L. So, MD, FACNS
8:30am	Localization and FBM with SEEG Patrick Chauvel, MD
8:50am	Advanced FBM Antony L. Ritaccio, MD
9:10am	ECOG and FBM Jessica W. Templer, MD

# Advances in the Neurophysiologic Assessment of Neuromuscular Junction Disorders

8:00am	Repetitive Nerve Stimulation: Advances, Techniques, and Limitations Devon Rubin, MD, FACNS
8:30am	Update in Single Fiber EMG and Concentric Needle EMG in the Diagnosis of Neuromuscular Junction Disorders <i>Carolina Barnett-Tapia, MD, PhD</i>
9:00am	Advancing Neurophysiologic Techniques in the Evaluation of Neuromuscular Junction Disorders <i>Hans D. Katzberg, MD, MSc, FRCPC</i>

#### Night Moves: Common and Uncommon Parasomnias Clinical Neurophysiologists Need to Know

	iologists need to know
8:00am	Value of Video-Polysomnography, Stereo-EEG and Functional Connectivity to Understand NREM Arousal Disorders in Adults <i>Madeleine Grigg-Damberger, MD</i>
8:30am	Uncommon Parasomnias in Infants and Children Sometimes Misdiagnosed as Sleep-Related Epilepsy <i>Kathy M. Wolfe, MD</i>
9:00am	Treatable Parasomnias and Sleep-Related Movement Disorders Which Herald Neuropathology in Older Adults <i>Nancy Foldvary-Schaefer, DO</i>
10:00-11	:30am - Concurrent Sessions
Peripheral	Nerve Trauma: From the ER to the OR (Joint ACNS/
Colombian	Association of Electrodiagnostic Medicine Symposium)
	issociation of Licenoulagnostic incurance symposium,
10:00am	Pathophysiology of Peripheral Nerve Injury: Sequence of Events and its Electrodiagnostic Correlation Jorge Gutierrez, MD, MSc
10:00am 10:25am	Pathophysiology of Peripheral Nerve Injury: Sequence of Events and its Electrodiagnostic Correlation

11:15am Q&A

### Epileptic Spasms and Hypsarrhythmia: Lessons from Modern Techniques

10:00am	fMRI and MEG Contribution to the Pathophysiology, Diagnosis and Anagement of Epileptic Spasms. <i>Ana Carolina Coan, MD</i>
10:20am	Slow and Fast Frequency Oscillations in Patients with Epileptic Spasms. <i>Eishi Asano, MD, PhD, MS (CRDSA)</i>
10:40am	Surgery Versus no Surgery in Epileptic Spasms: Does the EEG Matters?" <i>Ahsan Moosa Naduvil, MD</i>
11:00am	Case Discussion Elia M Pestana Knight, MD, FACNS
Noninvasiv	re Brain Stimulation
10.00am	Noninvasive Brain Stimulation: An Overview

10:00am	Noninvasive Brain Stimulation: An Overview Charles Epstein, MD, FACNS
10:20am	Focused Ultrasound Stimulation Seung-Schik Yoo, PhD, MBA
10:40am	Transcranial Electrical Stimulation Giulio Ruffini, PhD
11:00am	Improving Noninvasive Brain Stimulation by Preclinical Research <i>Alexander Rotenberg, MD, PhD</i>

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# **ADVANCE REGISTRATION FORM**

## AMERICAN CLINICAL NEUROPHYSIOLOGY SOCIETY **2019 ANNUAL MEETING & COURSES**

February 6-10, 2019       Caesar's Palace         (Please type or print clearly.)	Las Vegas, Neva	da		
ACNS ID# (optional)				
First (Given) Name		_ Middle Initial	Last (Family) Name	
Designation (MD, PhD, DO, etc.)	_Institution			
Mailing Address				
City			State/Province	
Zip/Postal Code		_ Country		
Phone	Fav		Email	

## ANNUAL COURSES – Wednesday, February 6 – Friday, February 8, 2019

Please note that the scheduled times of some Courses listed below may conflict. Please refer to the Preliminary Program for complete Course scheduling information to make your selections.

		ACNS Members	Non-Members	ACNS Junior & Technologist Members	Non-Member Residents, Fellows, Technologists
Wednesday, Feb	ruary 6		1	-	<u> </u>
9:00am-5:00pm	601: Epilepsy Surgery/Invasive EEG Course Part I	□ \$175	□ \$230	□ \$95	□ \$140
9:00am-5:00pm	602: Intensive Care Unit EEG (Part I)	□ \$175	□ \$230	□ \$95	□ \$140
9:00am-5:00pm	603: Neurophysiologic Intraoperative Monitoring (NIOM) Part I	🗆 \$175	□ \$230	□ \$95	□ \$140
Thursday, Febru	ary 7				
7:00-8:30am	701: Evoked Potentials	□ \$75	□ \$95	□ \$35	□ \$65
7:00-8:30am	702: Central EEG Technical	□ \$75	□ \$95	□ \$35	□ \$65
7:00-8:30am	703: Epilepsy Surgery/Invasive EEG Course Part II	□ \$85	□ \$100	□ \$45	□ \$75
9:00am-12:00pm	711: Intensive Care Unit EEG (Part II)	□ \$85	□ \$100	□ \$45	□ \$75
9:00am-3:00pm	713: EMG/Peripheral Nervous System	□ \$175	□ \$230	□ \$95	□ \$140
9:00am-5:00pm	712: Neurophysiologic Intraoperative Monitoring (NIOM) Part II	🗆 \$175	□ \$230	□ \$95	□ \$140
11:30am-2:00pm	721: 5th Annual CNP Program Director's Symposium	□ \$30	□ \$30	□ \$30	□ \$30
1:30-3:00pm	731: Autonomic Neurophysiology	□ \$75	□ \$95	□ \$35	□ \$65
3:00-4:30pm	741: Video-EEG (Part I)	□\$85	□ \$100	□ \$45	□ \$75
3:00-4:30pm	742: EMG Demo	□\$85	□ \$100	□ \$45	□ \$75
Friday, February	8				
7:00-10:00am	801: Basic EEG	□\$85	□ \$100	□ \$45	□ \$75
7:00-10:00am	802: Neuromodulation/Stimulation	□ \$85	□ \$100	□ \$45	□ \$75
7:00-10:00am	804: Neonatal EEG	□ \$75	□ \$95	□ \$35	□ \$65
8:30-10:00am	805: Video EEG (Part II)	□ \$75	□ \$95	□ \$35	□ \$65
			Annual Cou	ırses Total (A):	

## ANNUAL MEETING/SCIENTIFIC PROGRAM - Friday, February 8 through Sunday, February 10, 2019

	ACNS Members	Non-Members	ACNS Junior & Technologist Members	Non-Member Residents, Fellows, Technologists
Friday, February 8 - Sunday, February 10				
Annual Meeting Scientific Program	□ \$350	□ \$500	□ \$235	□ \$330
Annual Meeting Scientific Program One-Day Registration	□ \$210	□ \$300		
		A	······································	

Annual Meeting Total (B):\_

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Annual Meeting & Courses

FEBRUARY 6-10, 2019 + CAESAR'S PALACE HAS VEGAS, NEVADA

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# **ADVANCE REGISTRATION FORM**

Please check below the sessions you plan to attend which are included in the Annual Meeting registration fee. Pick one from each time segment. This information will be used to assign sessions to available rooms based on anticipated attendance. You are not obligated to attend the sessions you check.

## Friday, February 8

#### 7:00-10:00am

B03: Women's Leadership Symposium

#### 1:30-3:30pm

- 811: The Motor Evoked Potential: Fundamentals and Clinical Applications. A High-Level Scientific Symposium
- 812: Beyond QEEG: Artificial Intelligence in Clinical Neurophysiology
- 813: Critical Care ECoG: How to Integrate It Into Your Practice
- □ 814: Current and Future Clinical Practice of High Density EEG and Electrical Source
- □ 815: The Business Side of Clinical Neurophysiology

#### 4:00-5:30pm

- 821: Brachial Plexopathies Improving Your Diagnostic Skills
- □ 822: Brain-Computer Interface: The Dawn of a New Era for Patients with Neurological and Motor Deficits
- □ 823: Clinical Neurophysiology Resident and Fellow Special Interest Groups

## Saturday, February 9

#### 8:00-9:30am

- 901: Intraoperative Neurophysiologic Monitoring in Special Situations. American-Mexican Clinical Neurophysiology Symposium
- 902: Mapping Human Language Networks with Intracranial EEG Spectra
- 903: Mastering Semi-Quantitative Motor Unit Potential Analysis Skills in 90 Minutes!
- 904: Of Dreams and Spells The Neurophysiological Tools of REM Sleep and Epilepsy
- □ 905: Decision Making with Neurostimulation

#### 11:15am-12:45pm

- 911: The Diagnostic Challenge of Small Fibre Neuropathy
- □ 912: Functional Brain Mapping Using Invasive Electrodes
- 913: Joint ACNS/IFCN Latin American Chapter: Beyond Traditional Monitoring During Spine Surgery
- □ 914: Multimodality Monitoring in the EMU

#### 2:00-3:30pm

- □ 921: Are MEG Practitioners Fulfilling Your Expectations?
- 922: Can Clinical Neurophysiology Improve the Recovery from Sports Induced Injuries?
- 923: Electrophysiologic Assessment of Weakness in the ICU
- $\square$  924: Setting Up for Success in Long-Term Monitoring
- 925: Transcranial Magnetic Stimulation: German Society for Neurology

#### 3:45-5:15pm

- 931: Advanced Autonomic Testing
- 932: Advances in Continuous EEG in Targeted Temperature Management
- 933: Brainstem and Supratentorial Surgery Monitoring, New Developments and Current Understanding
- 934: SEEG Planning Based on Pre-Surgical Evidence: Illustrative Case Discussions, Interactive

## Social & Networking Events (no additional charge)

- □ I will attend the Welcome Reception on Friday, February 8 from 7:00-8:30pm.
- □ I would like to participate in the Neurophys Bowl on Friday, February 8. Please contact me with details!
- 🗆 I am interested in taking part in the ACNS Mentorship Program. Please contact me for more information.

□ I would like to be a mentor. □ I would like to be a mentee.

I am interested in donating the ACNS Strategic Fund.		
General Strategic Fund	\$	
Educational Fund	\$	
Research Fund	\$	
International Fund	\$	
Total Donation (C):		

## Sunday, February 10

#### 8:00-9:30am

- □ 1001: Advances in the Neurophysiologic Assessment of Neuromuscular Junction Disorders
- 1002: Night Moves: Common and Uncommon Parasomnias Clinical Neurophysiologists Need to Know
- □ 1003: Wide-band EEG for Epilepsy: Which is Already Established Tool or Still Research Topic?

#### 10:00-11:30am

- □ 1011: Noninvasive Brain Stimulation
- □ 1012: Peripheral Nerve Trauma: From ER to the OR (Joint ACNS/Colombian Association of Electrodiagnostic Medicine Symposium)
- □ 1013: Epileptic Spasms and Hypsarrhythmia: Lessons from Modern Techniques

# **ADVANCE REGISTRATION FORM**

## **Payment Information**

Courses Total (A):	+ Annual Meeting Total (B):	+ Donation (C):	= GRAND TOTAL:	
<ul> <li>□ Company Check – Make check p</li> <li>□ Credit Card (check one): □ VIS</li> <li>□ Please invoice me.</li> </ul>	bayable to American Clinical Neurophysiolog A 🗆 MasterCard 🗆 Discover	ıy Society (in US Dollars, drawn on a	US bank)	
Credit Card Number			Expiration Date	
Card Holder Name				
Authorized Signature			Date	

\*Registrations will not be processed without payment and signature.\*

Signature of Agreement. Please retain a copy for your records. You are hereby registering to attend the 2019 ACNS Annual Meeting & Courses, February 6-10, 2019, at Caesar's Palace in Las Vegas, Nevada. I understand that the event registration rate listed above will be charged to the credit card I have listed. I understand further that all registration charges must be paid in full upon completion of this form. If registration is not paid for in full at time of event, I may be asked to provide payment upon arrival at the meeting. Cancellation Policy. Refund requests must be submitted in writing to ACNS prior to January 20, 2019. A \$20 processing fee will be charged for all refunds. We regret refunds will not be guaranteed for requests postmarked or received after January 20, 2019.

**Waiver.** Submission of this registration form and payment of associated fee serves as agreement by the delegate to release the American Clinical Neurophysiology Society, Caesar's Palace, their respective agents, servants, employees, representatives, successors, and assigns, from any and against all claims, demands, causes of action, damages, costs, and expenses, including attorneys' fees, for injury to person or damage to property arising out of attendance at the ACNS Annual Meeting & Courses. In addition, the delegate hereby grants permission to use his/her likeness in a photograph or other digital reproduction in any and all of its publications, including website entries, without payment or any other consideration, agreeing that these materials will become the property of ACNS which has the right to edit, alter, copy, exhibit, publish or distribute this photo for purposes of publicizing its programs or for any other lawful purpose. Additionally, the delegate waives any right to royalties or other compensation arising or related to the use of the photograph.

Policies. I have been made aware of ACNS' data privacy and conduct policies and understand that my signature means that I will adhere to the said terms and policies.

 $\Box$  I wish to be included on the delegate list provided to supporters.

□ I wish to be included on any published delegate list including programs, mobile apps, etc.

#### SPECIAL NEEDS

□ I have a religious or allergy-related dietary restriction. Please explain:

□ I have a need for physical assistance. Please explain:

## How did you hear about this meeting?

I'm an ACNS Member	ACNS Website
ACNS Emails	ACNS Postcard

Through another organization/meeting - Please specify:

Other - Please specify: \_\_\_\_\_\_

#### Please return this registration form with required payment to

American Clinical Neurophysiology Society, Attn: Meetings Department 555 E. Wells Street, Suite 1100 • Milwaukee, WI 53202 • Fax: (414) 276-3349 • E-mail: info@acns.org

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ACNS Executive Office 555 E Wells St, Suite 1100 Milwaukee, WI 53202

