JOIN US IN KANSAS CITY FOR OUR 60th Anniversary!

How would you like to attend a conference that not only offers a wealth of knowledge and networking in your profession, but also happens in a city that National Geographic anointed as one of the Best Trips in 2019? Join us in America’s heartland for ASET’s 60th Anniversary Conference in Kansas City, Missouri!

KCMO, as locals like to call it, is experiencing a modern renaissance that incorporates world class dining, vibrant arts and entertainment districts, flourishing distilleries and breweries in addition to its longstanding tradition of great jazz, barbeque and pro sports. The city also takes pride in being nicknamed the “City of Fountains,” and for good reason. More than 200 majestic fountains adorn the city, from quaint neighborhoods to major town landmarks, including the newly renovated J.C. Nichols Memorial Fountain located in the Country Club Plaza.

Travel along the totally free 2.2-mile KC Streetcar line to discover some of Downtown KC’s most lively and colorful districts. The route includes 16 stops throughout the Crossroads Arts District, Power & Light District and River Market, each as interesting and diverse as the last. Located in Kansas City’s historic River Market, the farmers’ market is the largest in the region with an annual attendance topping more than 1.3 million people. The River Market also boasts a wide variety of unique gift shops and restaurants.

For those who love art, Kansas City is home to Kemper Museum, a leader among modern art museums in the nation. It has grown to nearly 1,000 works of art since its opening in 1994. The museum offers a growing permanent collection, temporary exhibitions, as well as free public programs. With more than 34,500 pieces of art, from ancient Chinese ceramics to modern art in the Bloch Building, The Nelson-Atkins Museum of Art is a world-class treasure located right in the heart of Kansas City. The ever-expanding collection makes The Nelson unique each time visitors explore.

History lovers definitely will not be disappointed by a visit to Kansas City, where the National World War I Museum and Memorial is within walking distance to Crown Center. Or take a step back in time by exploring the largest pre-civil war collection of artifacts in the country at the Arabia Steamboat Museum in the city’s River Market.

Located in Crown Center, the Hallmark Visitors Center honors the story of one of the world’s largest greeting card companies and one of Kansas City’s most celebrated businesses. The interactive exhibit allows visitors to follow Hallmark’s 100-year journey as well as observe different greeting card trends throughout the years.

And last but not least, no trip to KCMO is complete without experiencing its world famous barbeque! With so many options to choose from, the KC BBQ Experience app now makes it even easier to find some of the city’s best spots for great barbeque.

With all there is to see, do, eat and drink in Kansas City, it is definitely an ASET conference that is not to be missed!

We hope to see you there in August!
It Takes A Team

Strategies for Clinical Teaching: How to Facilitate Learning in a Healthcare Environment

Do you work in a hospital neurodiagnostic department and want to increase your staff by participating in an Neurodiagnostic program as a clinical site? Are you a program director and need to increase your clinical sites to allow your program to grow? “It Takes a Team” focuses on helping Neurodiagnostic and IONM programs identify ways to recruit clinical sites while providing hospital personnel information about becoming a clinical site. The partnership between educational programs and hospital clinical sites will be explored during this networking session.

Most clinical educators in Neurodiagnostics were not formally trained as teachers. “Strategies for Clinical Teaching: How to Facilitate Learning in a Healthcare Environment” will review the fundamental concepts of teaching in a clinical environment, essential qualities needed to become a good clinical educator and how to adequately assess and evaluate Neurodiagnostic students during clinical training.

The role of the CAAHEP Standards and Guidelines for the Accreditation of Educational Programs in Neurodiagnostic Technology and the Standards and Guidelines for the Accreditation of Educational Programs in Intraoperative Monitoring will be discussed.

Upon completion of this workshop, participants will:

1. Identify the Standards that relate to clinical education as a critical component of them.
2. Describe communication strategies used by Neurodiagnostic and IONM programs when working with clinical sites.
3. Identify general teaching theories and relate them to teaching strategies.
4. Explore how to work with program developed course materials.
5. Describe methods to assess and evaluate student performance.
6. Identify strategies commonly used when communicating with program faculty.

Please visit the CoA-NDT website to register for this free workshop: www.coa-ndt.org
Courageous Leadership: Living a Life of Influence

On November 23, 2013, Dan Meers came within inches of losing his life while practicing a bungee jump and zip line stunt at Arrowhead Stadium, home of the Kansas City Chiefs. What Dan anticipated being the thrill of a lifetime ended up being the spill of a lifetime. The stunt went terribly wrong and Dan plummeted 75 feet before crashing into the stadium seats. Miraculously, Dan survived. He spent nine days in the hospital and got some really big scars and a big scare! Dan smiles when he says, “Scars are just tattoos that come with a cool story.” During this powerful presentation, Dan shares his incredible story and the important lessons that he learned about leadership and about life during his long road to recovery.

Dan Meers has been the Kansas City Chiefs Mascot since 1989. In addition to football-related mascot duties, KC Wolf also appears at major and minor league baseball games, community activities, conventions, grand openings, parades and other events. In the inaugural class of 2006, he became the first NFL mascot inductee into the Mascot Hall of Fame. Dan began his career in 1986 at the University of Missouri at Columbia. Dressed as the school mascot, Truman Tiger, it didn’t take long for Dan to establish himself as one of the top college mascots in the nation. After finishing second in 1988, Dan was selected the nation’s #1 college mascot at the 1989 National Collegiate Mascot Championships. As graduation approached, Dan began to receive offers to use his talents at the professional level. Today Dan is widely known as KC Wolf, the official mascot of the Kansas City Chiefs. He travels throughout the United States and the world entertaining thousands of people both in and out of costume. Dan is in high demand not only as a mascot but also as a humorous and motivational speaker to audiences of all ages. His enthusiasm, optimism and love for life are contagious and makes Dan an inspiration to all those he meets.

This Keynote Address is sponsored in perpetuity by ABRET in memory of Lewis Kull.

Up in Flames: Health Care Worker Burnout

It is important to recognize the signs of job burnout in the workplace. This presentation will begin by examining the definition of burnout, its prevalence in the health care setting and what is known about factors predisposing health care workers to burnout. The second half of the presentation will focus on what changes can be made at the individual and institutional levels to combat burnout and improve job satisfaction and engagement. Dr. Hall will discuss her own experience with burnout and provide highlights of the current literature on the topic. Interactive dialogue with the audience will follow the discussion.

Dr. Ara Hall is an Assistant Professor of Pediatrics in the Division of Neurology at Children’s Mercy in Kansas City, MO. She completed her child neurology residency at the University of Texas Health Science Center at Houston in 2011 and her pediatric epilepsy fellowship at Children’s Hospital of Colorado in 2013. Dr. Hall is the director of the Neuro–NICU Program at Children’s Mercy, which focuses on timely evaluation, treatment and long-term follow up for infants at risk for neurologic impairment. Her research interests include clinical trials of new drug options for treatment of children with epilepsy, use of the ketogenic diet in epilepsy treatment and best practices for the prevention of burnout in medical staff. Dr. Hall enjoys teaching learners from different backgrounds and lectures to numerous groups including medical students, residents, family organizations and allied health professionals. She is a member of the American Epilepsy Society and the American Academy of Neurology.

The View from Here: A Perspective on Neurodiagnostic Technology

Over the past fourteen years in her role as ASET’s Director of Education, Faye McNall has had the unique opportunity and privilege of communicating with many people every day, from across the country to around the globe. The diverse range of callers include neurodiagnostic technologists, physicians and those seeking advice to enter the field. Her presentation will include a reflection on the many questions asked, and most pressing concerns shared with her. Based on the “top ten” questions asked by callers, she has determined the key trends and concerns related to the practice of Neurodiagnostic Technology. Key workforce issues and supporting data will be included. She will also provide suggestions for resources that can be used to address those questions. While contemplating the overall message that becomes apparent in reviewing her many years of conversations with neurodiagnostic professionals, Faye has found that that there are many uplifting and inspirational thoughts to be shared.

Faye served as ASET’s Director of Education from 2004 to May of 2019. She began her career in Neurodiagnostic Technology in 1978, when she attended a one-year program in EEG Technology. She worked in clinical EEG at several hospitals in Worcester, Massachusetts, including nine years as Chief Technologist at the University of Massachusetts Medical Center. She moved to Boston in 1990 to work at Children’s Hospital, as an instructor and clinical coordinator for the Boston Children’s Neurodiagnostic Training Program. She acquired her Master’s Degree in Education at Cambridge College while serving in this role. Faye has served on many ASET committees, on the ASET Board of Trustees and has been an Associate Examiner for ABRET. She has also served on the American Clinical Neurophysiology Society Program Committee and as Commissioner for the Commission for Accreditation of Allied Health Education Programs. In 2004, she began her most rewarding phase of her career as Director of Education for ASET. She recently retired and is looking forward to community volunteering and developing a cookbook on Maine food.
# SCHEDULE OF EVENTS — August 15, 2019

<table>
<thead>
<tr>
<th>Platform Presentations</th>
<th>LTM/Epilepsy</th>
<th>Pediatric Neurodiagnostics</th>
<th>Evoked Potentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Committee:</td>
<td>Course Director:</td>
<td>Course Director:</td>
<td>Course Director:</td>
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</table>

### 8:15 a.m. – 9:15 a.m.  
**Plenary Session: Keynote Address**

**Courageous Leadership: Living a Life of Influence**  
- Dan Meers (KC Wolf) Kansas City Chiefs Mascot

### 9:20 a.m. – 10:15 a.m.  
**NDE Symposium**

- **9:20 a.m. – 10:15 a.m.**  
  Non-Epileptic Events in the EMU  
  Lebron Paige, M.D.

- **9:20 a.m. – 10:15 a.m.**  
  Artifacts in Pediatric EEG & How to Resolve Them  
  Lalit Bansal, M.D.

### 10:15 a.m. – 11:00 a.m.  
**Break in the Exhibit Hall with Poster Viewing**

### 11:00 – 11:55 a.m.  
**Clinical Classifications of Neonatal Seizures**  
Ahmed Abdelmoity, M.D.

### 11:00-11:55 a.m.  
**Somatosensory Evoked Potentials**  
Mamatha Pasnoor, M.D.

### 12:00 p.m. – 1:30 p.m.  
**Annual Business Meeting Lunch**

### 1:30 p.m. – 2:15 p.m.  
**BAEPs: The Old and the New**  
Christopher Halford, BA, R. EEG/EP T., CNIM

**Hemorrhagic Complications with Subdermal Needle Electrodes in Intraoperative Neurophysiologic Monitoring (IONM) of Endovascular Procedures**  
Eric Jones, R. EEG/EP T, CNIM, CLTM

**2:00 p.m. – 2:30 p.m.**  
Loss of Lower Extremity Sensation with Preserved Cortical SSEP in Spinal Cord Tumor Surgery: What Can We Learn About the Neurophysiology  
Richard Vogel, PhD, FASNM, DABNM

### 2:30 – 3:15 p.m.  
**Educational Technology Use in Neurodiagnostic Technology Clinical Skills Training**  
Maggie Marsh-Nation, PhD, R. EEG/EP T., CNIM

### 3:00 p.m. – 4:15 p.m.  
**Acute Necrotizing Encephalopathy Associated with Influenza A**  
Heather E. Toomey, R. EEG T.

### 4:15 p.m. – 5:15 p.m.  
**Ketogenic Diet for the Treatment of Epilepsy: Truth vs. Myth**  
Rhonda Sullivan & Rachel Finn

### 5:15 p.m. to 6:00 p.m.  
**Welcome Reception in the Exhibit Hall**
## SCHEDULE OF EVENTS — August 16, 2019

<table>
<thead>
<tr>
<th>Platform Presentations</th>
<th>IONM Key Topics</th>
<th>EEG Key Topics</th>
<th>Nerve Conduction Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Committee:</strong></td>
<td><strong>Course Director:</strong> Julie Trott, MS, CNIM</td>
<td><strong>Course Director:</strong> Brad Kinneman, BS, R. EEG T.</td>
<td><strong>Course Director:</strong> Alaa Bouzhar, R. EEG/EP T., R.N.C.S.T., CNIM</td>
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<tr>
<td>Anna-Marie Beck, MOL, R. EEG T., FASET</td>
<td>Anita Schneider, R. EEG/EP T., CNIM, CLTM, FASET</td>
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<td>Erik Padilla, MBA, R. EEG/EP T., CNIM, CLTM</td>
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<tr>
<td><strong>8:00 a.m. – 9:00 a.m.</strong></td>
<td><strong>Plenary Session: Ellen Grass Memorial Lecture</strong></td>
<td><strong>9:05 a.m. – 10:00 a.m.</strong></td>
<td><strong>9:05 a.m. – 10:00 a.m.</strong></td>
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<tr>
<td><strong>Up in Flames: Health Care Worker Burnout</strong></td>
<td>Remote Neuromonitoring: Communication and Modality Selection</td>
<td>In the Reading Room: EEG Record Review</td>
<td>Better Late Than Never: Late Responses and Their Clinical Application</td>
</tr>
<tr>
<td>- Ara S. Hall, M.D.</td>
<td>Eric Arehart, M.D.</td>
<td>Nikesh Ardeshna, M.D.</td>
<td>Jerry Morris, MS, R.N.C.S.T., CNCT, FASET</td>
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<tr>
<td><strong>9:05 – 9:35 a.m.</strong></td>
<td>Providing Neurodiagnostic Care through Telemedicine</td>
<td><strong>9:05 a.m. – 10:00 a.m.</strong></td>
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<td><strong>9:35 a.m. – 10:00 a.m.</strong></td>
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<td><strong>Remote Neuromonitoring: Communication and Modality Selection</strong></td>
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<td>There’s No Place Like Home… Part 2 – Taking an Innovative EMU Design Collaboration from Concept to Reality</td>
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<td>Brian Goldis, BS, R. EEG T., CLTM</td>
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<tr>
<td><strong>10:00 a.m. – 10:45 a.m.</strong></td>
<td>Break in the Exhibit Hall with Poster Viewing</td>
<td><strong>10:45 a.m. – 11:15 a.m.</strong></td>
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<td><strong>10:45-11:15 a.m.</strong></td>
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<td><strong>Can a Twelve Pound Dog be a True Service Animal?</strong></td>
<td><strong>11:00 a.m. – 11:40 a.m.</strong></td>
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<tr>
<td>Tabitha Atthoff, MBA, R. EEG T., RSPSGT, RST</td>
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<td>Paul Camarata, M.D., FACS, FAANS</td>
<td>Eric Arehart, M.D.</td>
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<td><strong>11:15 – 11:40 a.m.</strong></td>
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<td>My Life, My Struggles - The Challenges of Being a Young Person Living with Multifocal Epilepsy, Tourette’s, Dyslexia, and Dyscalculia</td>
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<tr>
<td><strong>11:45 a.m. – 1:00 p.m.</strong></td>
<td>Luncheon and Awards Ceremony</td>
<td><strong>1:00 p.m. – 1:45 p.m.</strong></td>
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<td><strong>1:00 p.m. – 2:00 p.m.</strong></td>
<td>Becoming a Site Visitor for the Committee on Accreditation for Neurodiagnostic Education Programs</td>
<td><strong>1:00 p.m. – 1:45 p.m.</strong></td>
<td><strong>1:00 p.m. – 1:45 p.m.</strong></td>
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<td>Jackie L. Long-Goding, Ph.D., RRT-NPS, FAARC; Stephanie A. Jordan, R. EEG/EP T., CNIM, CLTM</td>
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<td>Update on Prion Disease</td>
<td>Diagnosing Neuromuscular Junction Disorders</td>
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<tr>
<td><strong>2:00 p.m. – 2:30 p.m.</strong></td>
<td>Noise Pollution in the Typical Family Household: Effects on Perceived Sleep Quality</td>
<td><strong>2:00 p.m. – 2:30 p.m.</strong></td>
<td><strong>2:00 p.m. – 2:30 p.m.</strong></td>
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<td>Brooke Quinn, BS, RPSGT</td>
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<td>Linked Quadrupolar Motor Evoked Potentials: Are they worth it?</td>
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<td><strong>2:30 p.m. – 3:15 p.m.</strong></td>
<td>Break in the Exhibit Hall with Poster Viewing</td>
<td><strong>2:30 p.m. – 3:15 p.m.</strong></td>
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<td><strong>3:15 p.m. – 4:15 p.m.</strong></td>
<td>How Blockchain Could Improve Crowdsourced EEG Annotations</td>
<td><strong>3:15 p.m. – 4:15 p.m.</strong></td>
<td><strong>3:15 p.m. – 4:15 p.m.</strong></td>
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<tr>
<td>Andrew Nguyen, PhD</td>
<td>Medical Negligence/Liability issues in IONM</td>
<td>Autoimmune and Paraneoplastic Epilepsy with Case Studies</td>
<td>Hands-On NCS Workshop</td>
</tr>
<tr>
<td><strong>3:45 p.m. – 4:15p.m.</strong></td>
<td>Emerging Opportunity for EEG Technologists in Growing a Modern CEEG Program to Serve a Large Healthcare System</td>
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<tr>
<td>Cheryl Plummer, R. EEG T., CLTM, FASET</td>
<td>Medical Negligence/Liability issues in IONM</td>
<td>Autoimmune and Paraneoplastic Epilepsy with Case Studies</td>
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<td></td>
<td>Panel Discussion: Richard Vogel, Ph.D., FASNM, D.ABNM; John Arena, JD; Kaillaish Powar, M.D.</td>
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<tr>
<td><strong>4:15 p.m. – 4:45p.m.</strong></td>
<td>Accomplishments and Updates of the Skin Safety Task Force</td>
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<td>Petra Davidson, BS, R. EEG/EP T., FASET</td>
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<td><strong>5:00 p.m. to 6:30 p.m.</strong></td>
<td>Sundown Seminars (ticketed event)</td>
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</table>

5:00 a.m. – 10:00 a.m. Better Late Than Never: Late Responses and Their Clinical Application
Jerry Morris, MS, R.N.C.S.T., CNCT, FASET
SCHEDULE OF EVENTS — August 17, 2019

<table>
<thead>
<tr>
<th>Advanced IONM</th>
<th>ICU Monitoring</th>
<th>Professional Development</th>
<th>Emerging Technologies</th>
</tr>
</thead>
<tbody>
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</table>

8:00 a.m. – 9:00 a.m. Plenary Session: Kathleen Mears Memorial Lecture
The View from Here: A Perspective on Neurodiagnostic Technology - Faye McNall, M. Ed, R. EEG T., FASET

9:05 a.m. – 10:00 a.m.
Neurophysiological Monitoring During Deep Hypothermic Circulatory Arrest
Caleigh Osborne, BS, CNIM

9:05 a.m. – 10:00 a.m.
Continuous EEG Recording in the ICU Setting
Marianna Spanaki-Varelas, M.D.

9:05 a.m. – 10:00 a.m.
How to Recognize and Cope with Bullies in the Workplace
Dorothy Gaiter, MHA, R. EEG T., R.NCS.T., CNCT, FASET

9:05 a.m. – 10:00 a.m.
Predicting Seizures Based on Biological Algorithms
Michelle Dougherty, M.D.

10:00 a.m. – 10:20 a.m. Break

10:20 – 11:15 a.m.
An Evolution of Intraoperative Cortical Mapping
Patrick Landazuri, M.D.

10:20 – 11:15 a.m.
Preservation of Skin Integrity in the ICU
Petra Davidson, R. EEG/EP T., FASET

10:20 – 11:15 a.m.
The Importance of Mentoring
Tabitha Althoff, MBA, R. EEG T., RPSGT, RST

10:20 – 11:15 a.m.
Assessing the Neurological Status in Utero: Fetal MEG
Kathy Gustafson, Ph.D

11:15 a.m. – 12:00 p.m.
IONM During Interventional Radiology and Open Intracranial Procedures for Cerebral Vascular Pathology
Koji Ebersole, M.D.

11:15 a.m. – 12:00 p.m.
The Ins and Outs of Remote ICU Monitoring
Sabrina Gallaway, R. EEG/EP T., CNIM, CLTM, FASET

11:15 a.m. – 12:00 p.m.
Building a Lifetime Career as a Neurodiagnostic Technologist
Mary Mantle, BA, R. EEG/EP T.

11:15 a.m. – 12:00 p.m.
New Alternatives to Epilepsy Surgery
Uthu Uysal, M.D.

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Uthu Uysal, M.D.

12:00 p.m. - 1:00 p.m. Interest Section Luncheon

1:00 p.m. – 1:45 p.m.
Nerve Action Potentials during Peripheral Nerve Surgery
Tom Epplin Zapf, MS, MA, CNIM

1:00 p.m. – 1:45 p.m.
ICU Monitoring Beyond Seizures
Toni Spears, R. EEG T.

1:00 p.m. – 1:45 p.m.
Making a Difference in the Medical Community
Susan Agnosti, R. EEG/EP T., CLTM, FASET

1:00 p.m. – 1:45 p.m.
Neurofeedback and Its Application in Seizures, ADD and Mood Disorders
John Putnam, R. EP T.

1:45 p.m. – 2:30 p.m.
Mapping & Monitoring for Intramedullary Spinal Cord Tumor Resection
Emily Kale, BS, R. EP T., CNIM

1:45 p.m. – 2:30 p.m.
Quality in the ICU
Michael LaRose, R. EEG T.

1:45 p.m. – 2:30 p.m.
Scientific Writing 101 for Neurodiagnostic Professionals
Anna Bonner, R. EEG T., RPSGT

1:45 p.m. – 2:30 p.m.
Autonomic Testing Update
James Schmelzer, CAP

2:40 p.m. – 4:10 p.m. Plenary Session: 2019 ASET Symposium
How to Ensure Your Safety in an Unsafe World

4:10 p.m. – 4:20 p.m. Closing Ceremony

WE’LL BE LIVE TWEETING DURING THE CONFERENCE. Tweet along with us!
Use the hashtag #ASET2019 when posting on social media.
Then track the conversation online to see what others have to say.
The Society for EEG Technologists of Nigeria was incorporated in January 1982. Numerous other EEG centers have been established around the country. The first EEG facility, Psychiatric Hospital, Aro, Abeokuta University College Hospital, Ibadan and Lagos University Teaching Hospital (LUTH), was established in Nigeria and now at least five graduates of the Academy of NDT are waiting to become the first to sit for the ABRET board test in Africa. Though EEG is the main NDT service provided in Africa right now, we believe that soon it will not be the only NDT modality of practice.

The center serves more than a population of eight million people. These technologists were the first graduates of Academy of Neurodiagnostic Technology (NDT), an online training of NDT courtesy of Maggie Marsh Nation and OSET. The practice of NDT services in Africa is now beyond Nigeria. The first NDT school will start soon in Lagos, Nigeria, and now at least five graduates of the Academy of NDT are waiting to become the first to sit for the ABRET board test in Africa. Though EEG is the main NDT service provided in Africa right now, we believe that soon it will not be the only NDT modality of practice.

**Reducing Accidental Needlesticks During IONM Procedures**

Grace Padilla-Kastenberg, MPH; Brent Tyler, CNIM

Intraoperative neuromonitoring (IONM) practitioners are at unique risk to needlestick injuries due to the placement of subdural needle electrodes during IONM procedures. Needlestick injuries place healthcare practitioners at risk to the potential transmission of bloodborne pathogens. We performed a retrospective comparative analysis on data reported by an IONM practice to determine the effect of various adhesive solutions on the mitigation of needlestick injuries. A study was conducted over a 12-year time span, and data was compiled on over 2,000 IONM procedures. These data were analyzed to compare various medical adhesives employed to determine which products reduced the chance of needle sticks.

**Alternate Stimulation Site at the Medial Tibia for Saphenous SSEPs**

Kathryn Overzet, MS; Derrick Mora, BS; Lindsay Krisko, CNIM; Dyanne Welch, R. EP T., CNIM

With the recent growth in popularity of the lateral lumbar interbody fusion procedure, multimodality monitoring of the femoral nerve has become more common and necessary to prevent lumbosacral plexus and peripheral nerve injury from positioning (table flexion), dilation, retraction, and hardware implantation. Common dysfunction following lateral fusion includes thigh pain, numbness or dysesthetic pain, and quadriceps palsy. Monitoring saphenous nerve SSEPs is a technique used to assess the integrity of the largest cutaneous branch of the femoral nerve. Our group established a protocol to monitor saphenous nerve SSEPs for all lateral approach procedures using the parameters described by Silverstein, et al. This abstract presentation will include discussion of obstacles encountered, alternate stimulation sites and the outcome regarding SSEP waveforms recorded.

**BAEPs: The Old and the New**

Christopher Halford, BA, R. EEG/EP T., CNIM; Orhan Bican M.D.

Brainstem auditory potentials/responses (BAEPs, ABRs, BAER) is the major monitoring modality for detection and prevention of Cranial Nerve VIII injury during surgeries where the nerve is at risk. The ACNS Guidelines for monitoring BAEPs recommend that the prominent peak of the Wave IV-V complex be monitored for specific changes in latency and/or amplitude (Guideline 11C). However, a common problem with recording BAEPs in the operating room is the ability to generate and maintain a stable and repeatable BAEP with the presence of a significant number of confounding variables like the introduction of the surgical microscope and high frequency tumor resection equipment. With the implementation of an additional channel, not currently recommended by the ACNS Guidelines (the Cz-Cs channel, along with the two standard recommended channels: Cz-Mi and Cz-Mc) we have seen an increase in our ability to identify and compare IV-V complexes between at least two of the three channels used during recordings, reducing the likelihood of reporting a false positive based off of changes to the BAEP. Currently we have documented 125 cases that compare the prominence of the Cz-Cs channel compared to the two standard recommended channels by comparing the amplitudes of the three channels.

**Hemorrhagic Complications with Subdermal Needle Electrodes in Intraoperative Neuropsychiologic Monitoring (IONM) of Endovascular Procedures**

Eric Jones, R. EEG/EP T., CNIM; Jaime Lopez, M.D.; Charlie Cho, M.D.; Leslie Lee, M.D.; Scheherazade Le, M.D.

IONM presents many unique challenges but is usually not associated with significant complications. Nonetheless, complications from IONM have been reported, amongst others, tongue bites and seizures from transcranial and cortical electrical stimulation, respectively. However, excessive and prolonged hemorrhage from routine subdural needle placement has not been greatly reported. We present a case series of five patients where the planned postoperative medical management caused unexpected, excessive needle-site hemorrhage, impacting postoperative care. All cases occurred during endovascular treatment of cerebrovascular disorders where high-dose combination antplatelet agents were used. Neurormonitoring using somatosensory and motor evoked potentials (EPs), and EEG was performed in all patients, using standard subdural needle electrodes. We identified a correlation between high dose anti-platelet treatment and post-procedure needle-site hemorrhagic complication. No short or long-term neurologic deficits or prolonged sequelae from bleeding were identified. Hemorrhagic short-term complications included subcutaneous hematomas, discomfort and patient concern.
Treatment included prolonged manual pressure to bleeding sites and pressure head bandage. These short-term complications led us to change our IONM protocol, using only surface electrodes in high risk patients on planned high-dose anti-platelet therapy. We have eliminated post-procedure hemorrhagic complications while successfully recording EEG and EPs since the change.

Loss of Lower Extremity Sensation With Preserved Cortical SSEP in Spinal Cord Tumor Surgery: What Can We Learn About the Neuropathophysiology

Richard Vogel, Ph.D., FASNIM, D.ABNM; Derek Connor, DHA, FACHE, CNIM; Adam Doan, DC, D.ABNM

Lower extremity SSEPs serve as a useful adjunct to a multimodality approach to monitoring intramedullary spinal cord tumor (ISCT) resection. When SSEPs from at least one cortical derivation are maintained through closure, it may be assumed that dorsal column somatosensory function is preserved. The present study is a case report of a high thoracic ISCT resection with multimodality monitoring. Lower extremity SSEPs were recorded with cortical derivations Cpc-Cp1 and Cpz-Fpz. During the procedure, SSEPs were lost from one derivation and completely maintained from the other. The patient woke with loss of lower extremity sensory function, despite the maintained cortical SSEP. This presentation will review the case, discuss the neuropathophysiology and make evidence-based recommendations for management of patient care.

Acute Necrotizing Encephalopathy Associated with Influenza A

Heather E. Toomey, R. EEG T.

A severe and unusual complication found in children with influenza is an acute necrotizing encephalopathy. A 19-month-old female with no significant past medical history, presented with a four-day history of worsening fever, upper respiratory symptoms, new onset altered mental status and episodes of extensor posturing. The initial concern was a dystonic reaction secondary promethazine following a recent diagnosis of influenza A virus. The PICU team did not think the patient’s posturing was due to promethazine after she was given a one-time dose of Benadryl without resolution of these events. A head CT and video EEG indicated concern for nonspecific edema and found focal slowing in the frontocentral regions with background slowing and no seizure activity. Initial MRI impression indicated possible acute hemorrhagic encephalitis or severe anoxic brain injury due to restricted diffusion in thalami and white matter of cerebral and cerebellar hemisphere, in a diffuse, symmetric pattern. A repeat MRI found new areas of restricted diffusion involving previously uninvolved supratentorial white matter and white matter tracts that are consistent with acute necrotizing encephalitis associated with flu.

Educational Technology Use in Neurodiagnostic Technology Clinical Skills Training

Maggie Marsh-Nation, Ph.D., R. EEG/EP T., CNIM

The shortage of clinical sites for neurodiagnostic technology and other allied healthcare students is limiting enrollments and subsequently limiting graduates from schools in the U.S. Potential use of educational technology prompted this study exploring the use of educational technology in providing EEG technology clinical skill training. This qualitative Delphi study was guided by experiential learning theory, cognitive constructivist epistemology and cognitive task analysis. Expert panels from neurodiagnostics and educational technology rated the effectiveness of educational technology methods in addressing EEG competencies. The competencies were derived by combining national EEG competencies or practice analysis from the United States, Australia, Canada and the United Kingdom. Results of the three rounds of the Delphi study were processed using the mean value and interquartile deviation for evaluation of consensus. Consensus among the expert panelists supported the potential effectiveness of educational technology to address EEG graduate competencies. In conclusion, the expert panel consensus was that EEG clinical skills can be addressed using educational technology. A post-graduate residency could provide clinical experience. Educational technology use could increase school capacity, increase graduate numbers, help sustain the existing schools, better supply the profession and increase public access to quality neurodiagnostic care.

Expanding “Clinicals” for Neurodiagnostic Programs

Mary Ellen Wells, Ph.D., R. EEG T., R.NCS.T., RPSGT
Sarah Hess, D.E.L., R. EEG T., RPSGT, RST

The need for more formal educational programs in neurodiagnostics is great, and these programs need clinical sites to provide students the dynamic “real-world” health care experience no classroom lab or simulation can provide. Clinical site availability has been a long-standing issue among formal education programs. Program directors have to navigate a multitude of challenges with clinical site availability, which can negatively impact students and ultimately result in program closures. This case study describes an innovative approach to give students expanded clinical experiences. The University of North Carolina Charlotte/Chapel Hill Bachelor of Science degree program in Neurodiagnostics and Sleep Science is an online degree program with students all over the United States.

The overall goal of the degree is to provide graduates with skills to become leaders in the field by understanding core elements of decision making, projecting future needs and understanding mechanisms for sustainability. Our clinical education course is designed to give our students technical and leadership experience in a broad array of clinical, administrative (including projects on development of business proposals) educational programs and quality assurance projects. This innovative approach has the direct benefit to the clinical site of performance of the projects, and the indirect benefit of the transference and modeling of specific techniques. Examples of non-traditional clinical locations and assignments will be included.

Non-Epileptic Events in the Epilepsy Monitoring Unit

A. Lebron Paige, M.D.

Non-epileptic events are often seen in the LTM lab, and proper assessment of events may be complicated, as many patients have both true seizure disorders and psychogenic non-epileptic events (PNES). It is a fascinating process to observe and analyze video and EEG findings to determine which events are seizures and which are not. Dr. Paige will discuss common factors in the development of PNES and will include case studies with video to illustrate clinical findings consistent with non-epileptic events.

Frontal Lobe Seizures: Evaluation and Treatment

Andrew Zillgitt, M.D.

Dr. Zillgitt is the head of adult epilepsy services at Beaumont Hospital in Royal Oak, Michigan. His presentation will include an overview of frontal lobe seizures, which can be the most challenging to diagnose since the EEG may not reveal epileptic discharges with the onset of the seizure. Clinical signs are also very varied and may include partial impaired awareness, motor symptoms, vocalizations and bizarre behavior. He will provide case studies to illustrate the fascinating array of clinical findings and discuss how the diagnosis is made when EEG findings are inconclusive.

Epilepsy Case Studies with Clinical Correlations

Nikesh Ardeshna, M.D.

Dr. Ardeshna is back by popular demand! He will present a series of case studies from his Epilepsy Monitoring Unit to illustrate the value of long-term monitoring. His dynamic approach and interaction with the audience will make this a “do-not-miss” session.
Neuro-Imaging for LTM
Andrew Ehrenberg, BS, R. EEG T., CNIM
Neuro-imaging is such an important part of the LTM work-up, used to localize the source of an epileptic focus. Andrew has many years’ experience in neurodiagnostics and will provide a detailed explanation of a variety of imaging studies, such as Magnetoencephalography, Functional MRI, and nuclear medicine studies, including Positron Emission Tomography (PET) and Single Photon Emission Computed Tomography (SPECT).

Intracranial Pattern Recognition
Cheryl Plummer, R. EEG T., CLTM., FASET
EEG pattern recognition with traditional scalp EEG can be challenging but when you are recording invasive EEG from grids, strips and depth electrodes, the patterns can be very different when doing a visual analysis. Cheryl manages the Epilepsy Monitoring Unit at the University of Pittsburgh Medical Center and has collected a fascinating series of invasive EEG recordings to share with you. You will see a wide variety of ictal and interictal patterns recorded from a variety of indwelling electrodes.

Minimally Invasive Diagnostics and Therapeutics in Epilepsy Surgery
Ammar Kheder, M.D., MRCP
There have been many innovative developments in the treatment of epilepsy when standard antiepileptic medications are not effective. Dr. Kheder will include a discussion of minimally invasive EEG recording options and the most current therapeutic options such as laser ablation.

Artifacts in Pediatric EEG and How to Resolve Them
Lalit Bansal, M.D.
While all EEGs are likely to have some artifacts, with pediatric patients, the likelihood of artifacts increases. It takes a special skill, patience and persistence to resolve artifacts to obtain the best EEG possible. Dr. Bansal’s presentation will include a variety of artifacts and ways to reduce or eliminate them.

Clinical Classifications of Neonatal Seizures
Ahmed Abdelmoity, M.D., FAAP
Recognizing clinical seizures in the neonate can be very challenging as clinical signs are unique in this age group. EEG findings can be vastly different than in older children and adults. Dr. Abdelmoity is a pediatric epileptologist at Children’s Mercy Hospital and has many years experience diagnosing and treating neonatal seizures. He will provide a comprehensive overview of neonatal seizures, and ictal and interictal EEG patterns.

It’s Not Just Kids Play: Taking the Epilepsy Monitoring Unit to the Next Level with Patient Family Support Services
Allison Bowring & Amy Stucky
The Mercy Children’s Hospital LTM unit is a special place, where all staff strive to make the hospital admission and LTM procedures as stress-free as possible. Allison Bowring is the patient activity dog handler and Amy Stucky is the child life specialist who are part of the team who work with pediatric patients to support them and their families during their hospital stay. They will share with you the various techniques and programs that you can implement to support young patients throughout the diagnostic work-up.

ACNS Guidelines for Pediatric EEG
Asim Shahid, M.D.
Dr. Shahid is a pediatric epileptologist at Rainbow Babies and Children’s Hospital in Cleveland. His presentation will provide an overview of the Guidelines for Pediatric EEG published by the American Clinical Neurophysiology Society (ACNS). He will explain the rational for the guidelines and include EEG samples to illustrate components of the guidelines. This is very helpful for anyone working with pediatric EEG and also helpful information for those preparing for the EEG Registry Exam.

Ketogenic Diet for the Treatment of Epilepsy: Truth vs Myth
Rhonda Sullivan & Rachel Finn
For many pediatric patients who do not do well with traditional antiepileptic medication regimens, the ketogenic diet is a viable option, but patients must be monitored closely and parents must be educated on how to provide the diet. Rhonda Sullivan is a clinical nutritionist and Rachel Finn is the educational coordinator at Mercy Children’s Hospital. They work as a team to support patients and families through the ketogenic diet process. They will discuss the mechanism of the diet, its pros and cons and how they help families safely use the diet.

Pediatric Intracranial Epilepsy Monitoring
James Riviello, M.D.
Taking our youngest patients through the pre-surgical and surgical phases of the epilepsy work-up is very challenging. The implantation of intracranial electrodes and the monitoring session require unique techniques and skills when dealing with such small and vulnerable patients. The seizure types and causes are also unique to pediatric patients. This presentation will provide an insight into the best techniques to provide an ideal outcome. Dr. Riviello is Associate Section Head for Epilepsy, Neurophysiology, and Neurocritical Care, Section of Neurology and Developmental Neuroscience at Texas Children’s Hospital.

EVOKE POTENTIALS

Overview of the Brainstem Auditory Evoked Potential
Jamie Kennison, BA, R. EP T., CNIM
This presentation will provide an overview of the anatomy of structures of the ear and brainstem, and the theory behind recording auditory evoked potentials and stimulation settings. Jamie will also include an overview of typical waveforms and abnormal findings in various disease states.

Somatosensory Evoked Potentials
Mamatha Pasnoor, M.D.
This presentation will comprehensively cover the basics of Somatosensory Evoked Potentials and will be helpful for technologists doing clinical SSEPs, or working with intraoperative SSEPs. A review of the anatomy and function of the somatosensory pathway will be followed by a discussion of technical components, including recommended instrument setting and stimulation parameters, followed by examples of waveforms, expected latencies and abnormal findings.

Visual Evoked Potentials
Kathleen Gustafson, Ph.D.
This presentation will include a review of the structure and function visual pathway and the basics of recording VEPs: recording parameters, stimulator setting options and how to change settings to obtain optimal waveforms.
Physicians and Technologist workflows so that the transition this program was to create as little change for the Lurie Children's medical record as well as Physician reporting. The goal behind existing HL7 integration and Technologist workflows within our hospitals has been able to provide other institutions with access to Telemedicine Department, Technology Department, and partner Children's Epilepsy Center with the collaboration of our own Pediatric Epilepsy experts and real time Video EEG monitoring.

We designed a Telemedicine Video EEG service by utilizing our Ara S. Hall, M.D.

Up in Flames: Health Care Worker Burnout
Ara S. Hall, M.D.

Plenary Session: Ellen Grass Lecture
Up in Flames: Health Care Worker Burnout
Ara S. Hall, M.D.

Hands-On Evoked Potential Workshop

There will be three work stations, one for each Evoked Potential modality. Workshop participants may spend as much time as they wish at each station, practicing the hands-on skills of recording BAEPs, VEPs and SSEPs, with the guidance of the workshop facilitators.

SESSION DESCRIPTIONS
FRIDAY, AUGUST 16

Plenary Session: Ellen Grass Lecture
Up in Flames: Health Care Worker Burnout
Ara S. Hall, M.D.

Providing Neuromodulatory Care through Telemedicine
Erik Padilla, MBA, R. EEG/EP T., CNIM, CLTM

As Telemedicine transforms the way we deliver healthcare, Lurie Children’s Epilepsy Center with the collaboration of our own Telemedicine Department, Technology Department, and partner hospitals has been able to provide other institutions with access to our Pediatric Epilepsy experts and real time Video EEG monitoring. We designed a Telemedicine Video EEG service by utilizing our existing HL7 integration and Technologist workflows within our medical record as well as Physician reporting. The goal behind this program was to create as little change for the Lurie Children’s Physicians and Technologist workflows so that the transition between Lurie patient care and telemedicine patient care would be seamless for our providers. This has allowed us to create a sustainable Telemedicine Video EEG program focused on best practices and utilizing our technology to reach patients beyond our institution.

Brainstem Auditory Evoked Potentials in Neonatal Hearing Screening
Steven Shapiro, M.D.

The Brainstem Auditory Evoked Potential remains one of the best methods to assess the hearing pathway of the neonate. It is essential to discover hearing loss as quickly as possible during infancy so that measures can be taken to allow for normal development of speech and overall cognitive development. Dr. Shapiro is a pediatric neurologist at Mercy Children’s Hospital and has a special interest in the assessment of hearing in the newborn.

There’s No Place Like Home… Part 2 - Taking an Innovative EMU Design Collaboration from Concept to Reality
Brian Galdis, BS, R. EEG T., CLTM; Pamela Parker, R. EEG T.; Brian Hindslay, RRT; David Burdette, M.D.; Mohammad Ayman Haykal, M.D.

In our ever-changing health care environment, adapting to the needs of our patients is paramount to their health success. While recent advancements in treatments options for epilepsy patients have thrived, our ability to significantly increase diagnostic yield in EMUs has remained stagnant in all probability due to the hospital rooms within these units. In a survey of 77 epileptologists across the nation, conducted by our epilepsy team, most respondents (74%) thought they were not seeing a need for a new EMU room design due to multiple limitations in current design. The majority (80%) agreed that the current artificial environment may reduce the likelihood of seizures/events. In 2016, we presented a poster of a new EMU design concept to increase diagnostic yield and patient safety. Since 2016, this design concept has flourished and now been approved for development within Spectrum Health’s Level 4 Adult EMU. The concept will allow patients to ambulate in a safe room while engaging in physical and mental activity that more closely simulates everyday life. We hypothesize that such a design will significantly impact diagnostic yield, decrease length of stay and readmission rates, and positively impact our patient experience entirely.

Can a Twelve Pound Dog be a True Service Animal?
Tabitha Althoff, MBA, R. EEG T., RPSGT, RST

Many wonder what it takes to have a seizure dog and what is the difference between an emotional support animal and a service dog. It is becoming more common to see dogs of all breeds and sizes with a service dog vest on. Does this make them a real service dog or a fake? How do you know and what are you allowed to ask? How should you act when you see a service animal? Do you know what to do if you see a service dog without an owner? Learn the answers to all these questions and more.

My Life, My Struggles - The Challenges of Being a Young Person Living with Multifocal Epilepsy, Tourette’s, Dyslexia, and Dyscalculia
Anna-Marie Beck, MOL, R. EEG T., FASET; Addison Beck

As technologists, we work with patients with a variety of neurological problems. Some of us live with patients with a neurological problem as well. My daughter was diagnosed with multifocal epilepsy when she was five; that was not the last diagnosis we would receive, however. We have also been given diagnoses of dyslexia, dyscalculia and Tourette’s. Neurological disorders can come with their own problem set; the hard part is knowing what they might be. There is a saying about being given only what you can handle, but sometimes, we need to rely on others to help us. In conjunction with my daughter, we will share our struggles with you.

Becoming a Site Visitor for the Committee on Accreditation for Neurodiagnostic Education Programs
Jackie L. Long-Goding, Ph.D., RRT-NPS, FAARC; Stephanie A. Jordan, R. EEG/EP T., CNIM, CLTM

The Committee on Accreditation for Neurodiagnostic Education Programs is actively seeking volunteers to become site visitors. Explore this exciting opportunity to visit formal programs to assess compliance with our educational standards. This presentation describes the critical role of the site visit in the comprehensive accreditation process. Participants will learn how to become a site visitor for the CoA-NDT, and the responsibilities included in preparing for and participating in the site visit.

Noise Pollution in the Typical Family Household: Effects on Perceived Sleep Quality
Brooke Quinn, BS, RPSGT; Mary Ellen Wells, Ph.D., RPSGT, R.EEG T., R.NCS T.; Sarah Hess, D.E.L., R.EEG T., RPSGT, RST

Noise is a common environmental exposure in the US with over 50% of the population having an exposure high enough to be considered harmful to human health. Numerous studies demonstrate chronic noise pollution exposure causes multiple adverse health effects, including sleep disturbance. Millions of Americans are subject to these interruptions in the sleep cycle due to noise in the environment, ranging from slight unconscious autonomic perturbation to full awakenings. Current research demonstrates that interruptions and fragmentation of the sleep cycle due to environmental noise have vast implications on health and well-being. Despite these negative implications, noise pollution does not typically receive the same reduction efforts as other environmental pollutants. This study compares two different commercially available modes of noise pollution masking (e.g. white noise machines and sound barriers). Subjects completed the Pittsburgh Sleep Quality Index (PSQI) questionnaire and a researcher-developed “sounds” questionnaire. Overall, total sleep time was slightly increased for both groups during the test nights, sleep latency showed little difference and both groups reported at least a 60% increase in subjective sleep quality.
How Blockchain Could Improve Crowdsourced EEG Annotations
Andrew Nguyen, Ph.D.; Jordan Freitas; William Bosi, Ph.D.
We previously presented our work on a platform for crowdsourcing EEG annotations to assist researchers who need gold standard labels on EEG data, while simultaneously providing educational and training opportunities for EEG professionals. Given our focus on crowdsourcing, this platform uses key concepts highlighted in blockchain literature, including voting mechanisms, consensus algorithms, incentives, decentralization, and trust. However, other aspects of our platform are notably distinct from typical blockchain applications. As such, we review the relevance of these concepts to crowdsourcing EEG annotations and present a grounded exploration of blockchain in the context of our crowdsourcing work. Participants contributing EEG labeling and annotation will have a stake in whether those labels are ultimately deemed as correct by the consensus, while researchers and clinicians have a stake in the consensus process reliably selecting accurate labels. Smart contracts using blockchain technology can be used to facilitate fair and honest elections among verified eligible voters and enable more trust and transparency in the process; however, there are trade-offs.

Emerging Opportunity for EEG Technologists in Growing a Modern CEEG Program to Serve a Large Healthcare System
Cheryl Plummer, R. EEG T., CLTM, FASET; Noir Zaher, M.D.; Alexandra Urban, M.D.; Anto Bagic, M.D., Ph.D.
This presentation will describe a new critical care EEG 24/7 analyst program serving a multi-hospital health care system. Continuous critical care EEG services have grown immensely over the last ten years, resulting in an increased demand for skilled EEG technologists. Many studies have shown a correlation between seizure burden (both electrographic and clinical) and outcome measure, highlighting the importance of reporting seizures in a timely manner to initiate treatment and prevent further seizure activity. This requires monitoring of studies around the clock which is labor-intensive, and there is an active debate on how frequently studies should be screened and reported. At the University of Pittsburgh Medical Center (UPMC), we started a new critical care EEG 24/7 Core Analyst Program (CAP) with impressive results. Prior to the CAP, studies were reviewed and reported every 8-12 hours with a potential of up to 8-hour delay from time of seizure to medical intervention. At present, updates provided for clinical care are no longer than 2 hours from an electrographic un witnessed event. While the EEG analyst service is not directly billable, there are indirect financial gains such as increased number of patients that are monitored which by itself was shown to decrease in-hospital mortality (Hill et al. 2019). We look forward to expanding this service to more of the 44 (and growing) hospitals in our system.

Accomplishments and Updates of the Skin Safety Task Force
Petra Davidson, BS, R. EEG/EP T., FASET; Cinthia Jenkinson, R. EEG T., CLTM
The Skin Safety Task Force was created as a part of the Standards and Practices Committee of ASET in September of 2014. Our mission was to provide information to our membership and help develop standards and best practices for preventing and improving skin integrity during long-term EEG monitoring. Over the last five years, we conducted polls and surveys. Our team completed a literature research with a best practices statement. We have published Skin Safety Guidelines, created a course on Skin Safety providing our colleagues with 3 free CEUs and high-quality education. It is now time for a suspension of the task force, as task forces by nature are temporary, but we have left future goals to be achieved as more knowledge becomes available.

IONM KEY TOPICS
Remote Neuromonitoring: Communication and Modality Selection
Eric Arehart, M.D.
In today’s expanding field of Intraoperative Neurophysiologic Monitoring, providers must implement effective tools for communication between surgical neurophysiologists and overseeing physicians, particularly those providing remote oversight. This lecture will examine modes of perioperative communication between surgical neurophysiologist, remote monitoring physician and surgical team in optimizing patient outcomes.

Auditory Brainstem Implant with IONM
Paul Camarata, M.D., FACS, FAANS
This fascinating case presentation examines the surgical approach and technique of a successful auditory brainstem implant insertion, including the use of neurophysiologic mapping and monitoring techniques. Dr. Camarata is a neurosurgeon at the University of Kansas Medical Center, and he specializes in vascular and skull base neurosurgery.

Linked Quadripolar Motor Evoked Potentials: Are They Worth It?
Jodi Parsons, DC, CNIM
Quadripolar tcMEP stimulation is one of the newest techniques used for optimizing results with tcMEP data acquisition in the operating room; yet the technique’s benefits and pitfalls are still being examined by practitioners. In this session, a surgical neurophysiologist shares experience with the technique’s success, including data collection and anecdotal notes.

Intraoperative Neurophysiologic Monitoring and Anesthesia
Erin Plaza, M.D.
Dr. Erin Plaza is an anesthesiologist at the University of Kansas Medical Center. Her discussion will highlight optimal anesthetic techniques associated with successful neurophysiologic monitoring, including a discussion of common obstacles from the perspective of the anesthesiologist.

Medical Negligence/Liability issues in IONM
Sabrina Faust, R. EEG/EP T., CNIM, CLTM and Panel Discussion: Richard Vogel, Ph.D., FASNM, D.ABNM; John Arena, JD; Kailash Pawar, M.D.
Given the expanding use of intraoperative neurophysiologic monitoring (IONM), this data collection is useful to those involved in litigating medical malpractice cases of patients who suffer postoperative neural deficit. This lecture and panel discussion examine the perspective of the neurophysiologist, overseeing physician and the legal team. Various topics are explored, such as practice guidelines and documentation, supervision and interpretation, as well as surgeon communication. The panel discussion will include dynamic interaction with the audience.

In the Reading Room: EEG Record Review - Nikesh Ardesha, M.D.
Dr. Ardesha’s EEG record review sessions always receive rave reviews! Everyone agrees that it is the most entertaining way to learn pattern recognition. You will have the opportunity to view many EEG samples and discover what they mean, recognize artifacts, normal variants and various EEG abnormalities.

Neurophysiology of Syncope - Stephan Schuele, M.D., MPH
Patients with a differential diagnosis of syncope versus seizure are often referred for an EEG, and perhaps autonomic testing as well. It is
**Update on Prion Disease**
A. Lebron Paige, M.D.

Prion diseases are a category of neurodegenerative diseases including the one best known in neurophysiology, Creutzfeldt-Jakob disease (CJD), which causes irreversible and fatal degeneration of the brain. This presentation will include important updates on CJD and other prion diseases, and the distinctive EEG findings in CJD. The methods of exposure to infection are variable, and there are cases of contamination from transplanted tissue and surgical instruments. In recent months there has been articles in the news about prion disease in deer, “Chronic Wasting Disease” and some questions regarding transmission to humans by handling or consuming venison from infected animals, similar to the past concern about “Mad Cow Disease” (Bovine Spongiform Encephalopathy).

**ECG Patterns and Cardiac Events that Resemble Seizures**
Alyssum Phillips, R. EEG T.

This is an important topic which will help explain the necessity of including an ECG channel on every EEG. EEG recordings may include artifacts generated by the heart which resemble seizure discharges. This presentation will include case studies and samples to help you determine whether a pattern is truly ictal or a cardiac event.

**Autoimmune and Paraneoplastic Epilepsy with Case Studies**
Evan Sandok, M.D.

Dr. Sandok is an epileptologist at the Marshfield Clinic and in his busy practice he has treated patients with uncommon and difficult-to-diagnose disorders. He will explain two such epilepsies and use case studies to illustrate the clinical and EEG features of each. Among the one-third of adults with epilepsy of unknown etiology, it is estimated that in at least 20% of cases an autoimmune cause is a factor. These cases do not respond well to traditional antiepileptic medication. Paraneoplastic epilepsy can occur as a complication of tumors and other malignancies.

**Temporal Territory: A Clinical Exploration of the Temporal Lobe**
Lisa Adams, R. EEG T., CLTM

One can make the case for the temporal lobe being the most fascinating area of the brain! This interesting presentation will include an overview of the neurophysiology of the temporal lobe, temporal lobe function and dysfunction, temporal lobe variants and the many manifestations of temporal lobe seizures.

**NERVE CONDUCTION STUDIES**

**Better Late Than Never: Late Responses and Their Clinical Application**
Jerry Morris, MS, R.NCS.T., CNCT, FASET

Jerry Morris is the recipient of the ASET Outstanding Educator Award and he is always willing to share his enthusiasm for nerve conduction studies! His presentation will include a discussion of late responses and their use in the detection of peripheral nerve dysfunction. He will include examples of prolongation of H reflex and F response findings which can been seen in a variety of peripheral neuropathies, and axonal and segmental demyelination.

**The Good, the Bad, and the Ugly: NCS Pitfalls**
James Lewis, R.NCS.T., CNCT

In this presentation, Jim will explain the common pitfalls one encounters when performing nerve conduction studies. The patient can be “good,” the technique can be “bad,” and the anomalies found can be “ugly.” Jim is a favorite NCS speaker and shares his wealth of knowledge and expertise with a slice of humor, making learning an entertaining process.

**Diagnosing Neuromuscular Junction Disorders**
Constantine Farmakidis, M.D.

Dr. Farmakidis is a neurologist at the Kansas University Medical Center. He is involved in research studies in myasthenia gravis, amyotrophic lateral sclerosis (ALS), hereditary spastic paraplegia (HSP), myotonic dystrophy and facioscapulohumeral dystrophy (FSHD). His presentation will focus on disorders of the neuromuscular junction and the nerve conduction findings in these disorders.

**NCS in Uncommon Neuromuscular Disorders**
Raghav Govindarajan, M.D., FAAN

Dr. Raghav Govindarajan specializes in neuromuscular medicine at the University of Missouri. His discussion will focus on the uncommon referring diagnoses, and the less routine nerve conduction studies such as the blink reflex and assessment of the lateral cutaneous nerve.

**Hands-On NCS Workshop**
Jerry Morris, MS, R.NCS.T., CNCT; James Lewis, R.NCS.T., CNCT; and Wendy Sebetka, R.NCST., CNCT

Three work stations will be set up, with expert instructors serving as your guides and facilitators to help workshop participants practice basic to advanced NCS studies, with the opportunity to customize your learning. You will be able to watch demonstrations, practice skills and ask for technical tips during the hands-on NCS workshop. Bring all your questions and problem cases!

**SESSION DESCRIPTIONS**

**Saturday, August 17**

Plenary Session: Kathleen Mears Memorial Lecture
The View from Here: A Perspective on Neurodiagnostic Technology
Faye McNall, M. Ed, R. EEG T., FASET

**ADVANCED IONM**

Neurophysiological Monitoring During Deep Hypothermic Circulatory Arrest
Caleigh Osborne, BS, CNIM

Deep hypothermic circulatory arrest in conjunction with cardiopulmonary bypass is often employed during repairs of the ascending aorta. This session explores the unique risks associated with these procedures and how intraoperative neurophysiologic monitoring can play a vital role in reducing postoperative neurologic deficit.

An Evolution of Intraoperative Cortical Mapping
Patrick Landazuri, M.D.

Dr. Landazuri is the Epilepsy Fellowship Program Director at the University of Kansas Medical Center and he has a special interest in the surgical treatment of refractory epilepsy. This session will include a review of the historical roots of electrical cortical stimulation and its contribution to the basic understanding of neuroanatomy. It will conclude with an overview of optimal utilization that guides modern clinical interpretation and decision-making.
IONM During Interventional Radiology and Open Intracranial Procedures for Cerebral Vascular Pathology
Koji Ebersole, M.D.
Intraoperative neuromonitoring is commonly employed during cerebral aneurysm coiling and clipping, as well as during treatment of other various cerebral vascular procedures. Dr. Ebersole specializes in vascular and endovascular neurosurgery at the University of Kansas Medical Center. This lecture provides a surgeon’s perspective of the advances in these surgical techniques and the critical role of IONM.

Nerve Action Potentials during Peripheral Nerve Surgery
Tom Epplin Zapt, MS, MA, CNIM
Nerve action potentials (NAPs) are a particularly helpful intraoperative neuromonitoring modality for the classification and monitoring of individuated nerves and fascicles during peripheral nerve surgery. This presentation explores the role of NAPs in several key surgery types, as well as a system of troubleshooting for this communication-dependent modality.

Mapping and Monitoring for Intramedullary Spinal Cord Tumor Resection
Emily Kale, BS, R. EP T., CNIM
Intramедullary spinal cord tumor is a rare condition that requires refined surgical technique combined with advanced level neurophysiologic mapping and monitoring. This lecture provides a practical approach to the technical setup and data interpretation associated with intraoperative neurophysiologic monitoring during these complex procedures. As part of the Duke University intraoperative neuromonitoring team, Emily participates in many unique surgical cases.

Preservation of Skin Integrity in the ICU
Petra Davidson, R. EEG/EP T., FASET
Prolonged Continuous EEG Monitoring in the ICU puts the patient at risk for skin breakdown at the electrode sites. Petra has been involved with the ASET Skin Safety Task Force since its inception and has done a great deal of research into the causes and prevention of skin breakdown. Her discussion will include an explanation of why the critically ill patient is more susceptible to skin injury and tips for how to prevent skin breakdown under these circumstances.

The Ins and Outs of Remote ICU Monitoring
Sabrina Galloway, R. EEG/EP T., CNIM, CLTM, FASET
The most recent development in the monitoring of EEG in the ICU is remote monitoring – the patient is in the hospital and the technologist and interpreting physician are outside the hospital. Sabrina has many years’ experience in this technology and has been instrumental in its inception as a viable option for conducting continuous EEG. This presentation will include an overview of the technology involved, how cases are covered and the advantages and disadvantages of a remote monitoring program. Case studies will be included to illustrate utilization.

ICU Monitoring Beyond Seizures
Toni Spears, R. EEG T.
The overall focus of cEEG service in the past has focused on seizures for patients in the ICU setting. With the increase utilization of extracorporeal membrane oxygenation (ECMO), hypothermia and intracranial pressure (ICP) monitoring we can now validate physiological changes with these processes compared to EEG and improve intervention times for critically ill patients. This presentation also includes how patients on the icat-illterial continuum are monitored in situations such as FIRES (Febrile Infection Related Epilepsy Syndrome) and in the setting of Traumatic Brain Injury.

Quality in the ICU - Michael LaRose, R. EEG T.
Michael comes to us from Texas Children’s Hospital where a new and innovative ICU EEG monitoring program has been implemented. He will provide an overview of implementation of high reliability processes into neurophysiology testing in the ICU setting. This program provides the highest quality monitoring service and improves patient outcome in a dedicated 11-bed unit with technologist and neurologist coverage 24/7. Customized notification criteria are developed for each individualized patient so that significant changes in the EEG are reported to the interpreting reader immediately so intervention can be initiated.

Building a Lifetime Career as a Neurodiagnostic Technologist
Mary Mantle, BA, R. EEG/EP T.
While there are many career ladder options for neurodiagnostic technologists, including moving up the ranks of lab management, education or moving from the clinical setting to become a vendor representative, one should not feel obliged to seek promotions into these areas when the clinical work is the most appealing for many. Mary has been a registered EEG Technologist for 44 years and she will provide testimony to the rewarding career of continuing in clinical neurodiagnostics. Accruing years of experience is very meaningful and the expertise developed over time contribute greatly to the function of a neurophysiology service.

How to Recognize and Cope with Bullies in the Workplace
Dorothy Gaiter, MHA, R. EEG T., R.NCS.T., CNCT, FASET
Bullying behavior in the workplace damages morale and reduces productivity. Many victims do not even recognize that they are being bullied until the situation has become out-of-control. The bully may be your co-worker or even your boss! It will be advantageous to attend this session to help you identify signs of bullying behavior and learn how to cope with such behavior. It is a good tool to have in your professional tool-kit.

The Importance of Mentoring
Tabitha Althoff, MBA, R. EEG T., RPSGT, RST
As new neurodiagnostic technologists starting out, we may have enjoyed the support of a mentor, if we were lucky. Mentoring is one of the most valuable ways in which we can contribute to our profession, and can be done informally by taking a new staff technologist under your wing to teach essential skills or can be a formal relationship with students during their clinical rotations. This inspirational presentation will help you discover the joys of mentoring. Many people think they are not qualified to mentor others but, in fact, do have skills to share. Mentoring boosts your confidence and self-respect while helping others.

Making a Difference in the Medical Community
Susan Agostini, R. EEG/EP T., CLTM, FASET
Many of us are so involved in our daily work and home routines that we overlook opportunities to contribute to the local medical community. Susan has been active in her local medical community for years and she will share her uplifting experiences with you. She will help you find the right niche: It might be the local chapter of the Epilepsy Foundation, a hospital task force or a charitable event to raise funds for medical research, or a regional or national organization such as ASET, where Susan has contributed so much.
Scientific Writing 101 for Neurodiagnostic Professionals
Anna Bonner, R. EEG T, RPSGT
Scientific publication is the key to building knowledge from existing knowledge and advancing our understanding of the ourselves and the world around us. It is how we contribute to improving health and the living condition. If you have read articles in ASET’s Neurodiagnostic Journal and thought to yourself, “I would love to be a published author,” this presentation will help you get started. Through scientific writing you have a direct opportunity to contribute toward improving patient care, sharing techniques that improve the way we do our work, or introducing innovative practices that will affect change and policy—ultimately benefiting the patients we care for and positively impacting the lives of those who come to us for help. In this presentation, Anna will discuss aspects of technical writing and introduce a variety of publication types in which you can use to communicate your expertise, from technical tips and waveform windows to scholarly research and case studies.

EMERGING TECHNOLOGIES

Predicting Seizures Based on Biological Algorithms
Michelle Dougherty, M.D.
Computer science and biology have shared a long history together. For many years, computer scientists have designed algorithms to process and analyze biological data. Artificial Intelligence and Crowd-sources are tools that can be used to help gather and process data and come up with patterns. Dr. Dougherty will explain how this innovative technique can be used to predict seizures. Prediction of seizures has been an elusive but desirable goal, which would improve the lives of patients living with epilepsy and reduce the chance of injury.

Assessing the Neurological Status in Utero: Fetal MEG
Kathy Gustafson, Ph.D.
It is utterly amazing to think that technology exists that allows us to assess the neurological state of the unborn fetus. Dr. Gustafson has been involved in the development and use of fetal magnetoencephalography (MEG) at the Hoglund Brain Imaging Center at the University of Kansas Medical Center. She will explain the ways in which the MEG record evoked brain activity elicited by auditory and visual stimulation from the fetus, and possibly spontaneous brain activity as well.

New Alternatives to Epilepsy Surgery
Utku Uysal, M.D.
There are some patients with intractable seizures which do not respond to standard antiepileptic medication and who are not good candidates for surgical resection of epileptogenic tissue. There have been recent innovations in medicine and technology which provide alternatives that successfully reduce or eliminate seizures, such as implantable devices. Dr. Uysal is an epileptologist at the University of Kansas Medical Center where he has a busy clinical practice and participates in research. He will discuss the newest options for ground-breaking treatment of seizures.

Neurofeedback and Its Application in Seizures, Attention Deficit Disorders, and Mood Disorders
John Putnam, R. EP T.
Neurofeedback (NFB), is a treatment technique that presents the client/user with real-time EEG feedback on brainwave activity (as measured by surface electrodes on the scalp). These oscillations in potential are digitally filtered and then mapped into a visual representation - typically in the form of a video game. The purpose is to enable the person to gain conscious control of their brainwave activity. When the brainwave activity changes in the desired direction, a positive signal is fed back to the person. The training has been shown to be effective in treating symptoms and disorders such as epilepsy, attention deficit disorders, depression, anxiety and sleep disturbances. This presentation will explain how NFB works and its applications, the relevant brain physiology as it relates to NFB and evidence for NFB’s efficacy.

Autonomic Testing Update
James Schmelzer, CAP
Autonomic testing is on the rise, providing essential measurements for how the systems in the body that are controlled by the autonomic nerves respond to stimulation. Data collected during testing indicates if the autonomic nervous system is functioning as it should, or if nerve damage has occurred. Jim has been managing the autonomic testing lab at Mayo Clinic and has been on the ground floor of the development of testing techniques. He will discuss new findings in autonomic nervous system disorders and updates in techniques and innovations in testing equipment.

SATURDAY, AUGUST 17
2:40 - 4:10 p.m.
Plenary Session: 2019 ASET Symposium
How to Ensure Your Safety in an Unsafe World

Every day the news includes stories of dangers and threats that someday may be faced in the workplace. Four expert panelists will convene to share their advice on how health care workers can maintain their own individual safety. This symposium will include presentations about how to deal with assaultive or sexually aggressive patients, active shooter scenarios and cyber security and protecting oneself from identify theft and scams in the workplace. Since many technologists now go into patients’ homes to prepare them for testing, there also will be a discussion of how to stay safe when conducting home visits and traveling to and from parking lots, commuting to work and other situations. Interactive audience discussion will follow the panelist presentations.
<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
</table>
| Minimally Invasive Extraocular Cranial Nerve Monitoring              | Gregory M. Adams, BS, CNIM  
Parthasarathy D. Thirumala, M.D., PhD  |
| Collodion Exposure Safety During EEG Electrode Application          | Sedalia Cole, BS, R. EEG T., CLTM  
Keith Morgan, MBA, R. EEG T.  
Susan Agostini, R. EEG T., R. EP T., CLTM, FASET  
Anna Bonner, BA, R. EEG T., RPSGT  
Danica Harrier  |
| Epilepsy surgery in Panama: Establishment of a Successful Hybrid Program as a Model for Small Income Countries | Ameeta Grover, R. EEG T.  
Rubin Kuzniecky, M.D.  
Carmen Baez, M.D.  
Eveline Teresa Hidalgo, M.D.  
Howard Weiner M.D.  |
| Case Study Demonstrating Utility of IONM in Cardiac Procedures       | Timothy Hassett II, BS, CNIM  |
| A Retrospective Review of the Effectiveness of Standard IONM Techniques in Patients with High-risk Neuromuscular Scoliosis | Eric Jones, R. EEG T., R. EP T., CNIM, CLTM  
Jaime Lopez, M.D.  
Charlie Cho, M.D.  
Leslie Lee, M.D.; Scheherazade Le, M.D.  
Raidili Cristina Mateo Montero, M.D.  |
| The Ketogenic Diet Treatment for Infantile Spams                     | Khrystyna Moskalyk, BS, R. EEG T., CLTM  
Mariana Vicenteno AS, R. EEG T., CLTM  
Jacqueline Wolak, MSN, APN, FNP-C  
Sunita Misra Ph.D., M.D.  |
| Styling Patients’ Hair as a Standardized Procedure for the Care and Placement of EEG Leads | Svetlana Nix, R. EEG T.  
Rhonda C. Butler, R. EEG T.  |
| Creating a Hospital Based Neurodiagnostic Training Program: Engage, Retain and Grow | Erik Padilla, MBA-HCM, R. EEG/EP T., CNIM, CLTM  |
| Utilization of Transcranial Motor Evoked Potentials and Somatosensory Evoked Potentials for Cryoablation in Musculoskeletal Lesions | Michael D. Roth, BS, CNIM  
Colin Zertan, MS, CNIM  
Jack Jennings, M.D., Ph.D.  
Barry Raynor, BA, CNIM  |
| Case study: IONM for Determining Safe Blood Pressure Parameters      | Marcus Sherer, BS, CNIM  |
| Don’t Panic ... It’s Organic                                        | Tanya Wolf, MS  |
| EEG During the Cooling Phase of Cardiac Arrest                      | White JR, Roohani P, Mulder M, Wolfinberger L,  
Stanberry L, Lee P, Atkinson P, Pavlove M, Kinzy T,  
Normington J, Boland L, Seatter S, Mooney M  |
| The Yield of Ambulatory EEG-Video                                   | Patricia Trudeau, R. EEG T., CLTM, FASET  
Angélica Rivera-Cruz, M.D.  
Selim Benbadis, M.D.  
Lucy Sullivan R. EEG T., CLTM  |
| An Evaluation on Sleep Quality and Technology Usage in Bed in College Students | Eunmi Han, BS, RPSGT  
Mary Ellen Wells, Ph.D., RPSGT, R. EEG T., R.NCS.T.  
Sarah Hess, D.E.L., R. EEG.T., RPSGT, RST  |
| Seizures Which I Remember and Those Which I Do Not Remember          | Nikesh I. Ardeshna, M.D., MS (presenting with EEG technologists and neurology staff from McLaren Macomb Hospital)  |
| Finally, Someone Believes Me                                         | Maria Natratics, R. EEG T.  |
| Multimodality IONM Changes During Oblique Lateral Interbody Fusion  | Kathryn Overzet, MS, CNIM  
Lindsay Krisko, CNIM  |
| Example of Facial Motor Fibers Wrapping Brainstem Cavernoma Identified with Subcortical Mapping | Kathryn Overzet, MS, CNIM  
James Blaylock, DC, CNIM  
Harold Smith, M.D.  |
| The Prevalence of Sleep Disorders in Patients Diagnosed with Multiple Sclerosis | Richard Johnson, MS, RPSGT, CCHS, RRT, RCP  
Sarah Hess, D.E.L., R. EEG.T., RPSGT, RST  
Mary Ellen Wells, Ph.D., RPSGT, R. EEG T., R.NCS.T.  |
| CPAP vs BIPAP: Compliance and Patient Preference                     | Kristy Mackell, BS, RPSGT  
Sarah Hess, D.E.L., R. EEG.T., RPSGT, RST  
Mary Ellen Wells, Ph.D., RPSGT, R. EEG T., R.NCS.T.  |
| The Association between Obstructive Sleep Apnea and Depression       | Nicole Haddock, BS, RPSGT  
Mary Ellen Wells, Ph.D., RPSGT, R. EEG T., R.NCS.T.  |
SUNDOWN SEMINARS
FRIDAY, AUGUST 16 - 5:00 - 6:30 p.m.
(Separate registration fee of $30 is required to attend)

EEG Instrumentation Concepts Workshop – Elizabeth Bouffanie, MS, R. EEG T., CNIM
Elizabeth is back by popular demand to facilitate this workshop! This session will focus on EEG waveform analysis and is ideal for anyone who needs to brush up on EEG waveform measurement to calculate amplitude and duration and determine polarity of waveforms. This will be an interactive session where attendees will work through exercises to practice skills. Exam candidates and technologists who are new to the field will benefit from attending this workshop.

CPT Coding Workshop – Kathryn Hansen, BS, R. EEG T., CPC, CPMA
Kathryn is ASET’s go-to person for CPT coding expertise! She will provide an update on CPT codes related to neurodiagnostic procedures and will also discuss features of the ICD 10 (International Classification of Diseases). Your department will benefit from added revenue when billing is done correctly and claims are not denied due to errors. Kathryn enjoys taking questions from workshop participants and helping them solve specific billing problems so bring your troublesome cases with you for discussion.

TCD Workshop – Donnalee Davis, R.N.
Transcranial doppler is another diagnostic tool that is increasingly performed by neurodiagnostic technologists, often in the ICU or intraoperative neuromonitoring setting. Donnalee is nationally recognized for her skills as an instructor in this modality and she will cover the basics of blood vessel anatomy, instrumentation theory and common TCD techniques. She will bring TCD equipment to give workshop participants the hands-on opportunity to practice skills and to learn proper placement for obtaining optimal images.

IONM Instrumentation Workshop – Alessandro Pesce, MS, Andrew Warrington, CNIM
Alessandro and Andrew will co-present this workshop to help participants understand the features of IONM recording system equipment and how instrument settings can be used to enhance recorded waveforms. There will be a focus on troubleshooting techniques with examples and simulations to demonstrate a variety of situations that occur in intraoperative neuromonitoring.

Educator’s Open Forum (free event for educators)
Marjorie Tucker, R. EEG/EP T., CNIM, RNCS, CLTM, Chair of the Program Director’s Council
There is no set agenda for this session. Participants will select topics of importance to them and network with other educators to work on common issues and problems and together, come up with helpful advice and solutions. Representatives from the CoA-NDT, ASET and ABRET will participate as well.

EXHIBIT HALL — CHECK IT OUT!

ASET takes pride in providing you access to a diverse group of exhibiting companies that provide products and services to help support the Neurodiagnostic profession. We invite you to visit the Exhibit Hall during the following hours:

THURSDAY, AUGUST 15
10:00 a.m. - 6:30 p.m. Exhibit Hall Open
10:15 - 11:00 a.m. Refreshment Break
3:00 - 3:45 p.m. Refreshment Break
5:15 - 6:30 p.m. Welcome Reception

FRIDAY, AUGUST 16
10:00 a.m. - 3:15 p.m. Exhibit Hall Open
10:00 - 10:45 a.m. Refreshment Break
2:30 - 3:15 p.m. Refreshment Break

Neurodiagnostic Museum
An anchor piece of the festivities of ASET’s 60th Anniversary celebration will be the Neurodiagnostic Museum, which will be located in the Exhibit Hall. The museum will be a display of historical equipment, supplies, pictures and memorabilia showcasing the movement and development of neurodiagnostic technology over the past 60 years. Interactive displays on paste and electrodes through the years will be mounted and demonstrations of a fully functioning Grass Model 6 eight-channel analog machine will take place.

There is still time to donate or loan items of historical interest for the museum. Items that we think may be of particular interest include equipment and supplies from years past, e.g. old electroencephalography machines, electrodes through the years, instruction manuals, and pictorial records. Items that pre-date 1959 are also encouraged. If you have items that you would like to donate or loan for this museum, please contact Arlen Reimnitz, ASET Executive Director at 816.931.1120 x101 or at arlen@aset.org.
Conference Mobile App
To enhance your conference experience we are again providing a mobile conference app, which can be downloaded onto your smartphone or tablet. The conference app will give you access to all of the information you’ll need to make the most of the ASET 2019 annual conference right at your fingertips! Information on how to download the app will be distributed to pre-registered attendees before the conference, when the app becomes available.

ASET Foundation Silent Auction
Preparations are now underway for the ASET Foundation Silent Auction. Items for the silent auction will be on display in the Exhibit Hall. Bidding will be open Thursday morning and continue during the Exhibit Hall hours. The silent auction will close - and all funds will be collected - during the last 20-minutes of the final afternoon break in the Exhibit Hall on Friday.

The Foundation’s silent auction is its largest annual fundraising event and your help and generosity is needed to make this event successful. Please consider donating one or more items for the auction. Popular items in the past have included electronics (iPods, digital cameras, pocket camcorders, wireless reading devices), jewelry, and gift baskets. To make a donation, download the donation form (www.asetfoundation.org/downloads) and return to the Foundation no later than July 18, 2019.

Annual Meeting Business Luncheon
Thursday, August 15 | 12:00 p.m. - 1:30 p.m.
The Annual Meeting Business Luncheon is an important event not to be missed. This is your opportunity to hear about the state of affairs of ASET and to bring up any new business for the Society. All conference attendees are invited to attend. This event is included in the full conference registration as well as the Thursday-only registration. However, only ASET members in good standing with the Society and attending the meeting constitute the voting body.

Exhibit Hall Welcome Reception
Stop by the Exhibit Hall on Thursday, August 15, between 5:15 p.m. and 6:30 p.m. as we give you a warm welcome to ASET’s 60th Anniversary Conference! The reception offers attendees an opportunity to meet new friends and old acquaintances as well as the chance to explore the Exhibit Hall in a relaxed and casual atmosphere. Take a minute to visit with leading companies in the industry and inquire about new products and services. The Exhibit Hall reception is included with a full 3-day registration and guest passes.

Awards Ceremony Luncheon
Friday, August 16 | 11:45 a.m. - 1:00 p.m.
Join us to recognize your peers for their outstanding contributions to the Neurodiagnostic community. Induction to the 2019 Class of Fellows will take place and the 2019 graduating class of the ASET/ABRET Leadership Academy will be honored. As part of the 60th Anniversary celebration, participate in honoring the pioneers in the field and past leaders. All conference attendees are invited to attend. This event is included in the full conference registration as well as the Friday-only registration.

Memory Lane Social
Friday, August 16 | 8:00 p.m. - 10:00 p.m.
After dinner and before you retire for the night, join us for an informal gathering to reminisce over ASET’s past 60 years. Connect with old friends, share stories, and network with founders and leaders through the years. Discover the secret recipe for making paste and the technique for making your own electrodes “back in the day.” Enjoy the acoustic musical styling of a trio of The Dendrites while viewing videos from past ASET annual conference socials. Raise your commemorative anniversary wine glass in toasts throughout the evening while sampling the dessert buffet. Complimentary wine grown and produced in the Show Me State is being generously donated by the Missouri Wine & Grape Board. A cash bar also will be available. This is a free, non-ticketed event for all conference attendees.

Sundown Seminars
Friday, August 16 | 5:00 p.m. - 6:30 p.m.
The Sundown Seminars are designed to promote customized learning experience in an informal setting. There is a separate registration fee of $30 for the workshops with the exception of the Open Forum for Educators, which is a free event. We encourage you to register in advance, but will accept registrations on-site on a first-come, first-serve basis. A listing of the seminars is provided in this brochure.

Interest Section Luncheon
Saturday, August 17 | 12:00 p.m. - 1:00 p.m.
The ASET Interest Section Briefings in our quarterly publication, ASET News, and the Interest Section Forums on ASET.org are both great resources for ASET Members to engage in discussion about the latest in Neurodiagnostics. ASET’s Interest Sections are led by highly qualified and knowledgeable technologists who can help address your issues and questions as well as direct you to other invaluable resources. During this luncheon you will have the opportunity to ask questions in person. Simply pick a table representing the section that peaks your interest, then ask questions or share your feedback or suggestions. Separate registration is not required.

Timeline Dislay
As we celebrate ASET’s 60th Anniversary, walk through time and see how ASET and neurodiagnostic technology have changed over the last six decades!

Annual Conference T-Shirts
ASET has teamed up with Rhythmlink this year to provide all conference attendees with a complimentary 2019 Annual Conference t-shirt. Please choose your desired size when registering! The t-shirts are 100% pre-shrunk cotton with the 2019 60th Anniversary Conference logo on the front. Your registration must be received by July 5, 2019 to ensure your size.
**GENERAL INFORMATION**

**Confirmation Notice**
Registrations are normally processed within seven business days of receipt. A confirmation letter will be emailed once the registration has been processed. Please bring a copy of your registration confirmation with you to the pre-registration booth.

**Registration Desk**
Registration will be open during the following hours:

- **Wednesday, August 14** .................. 6:00 p.m. - 8:00 p.m.
- **Thursday, August 15** ................. 7:00 a.m. - 6:00 p.m.
- **Friday, August 16** ................... 7:00 a.m. - 5:00 p.m.
- **Saturday, August 17** ............ 7:30 a.m. - 2:00 p.m.

**Registration Policies**
- To register, payment must accompany your registration form. No registrations will be processed without payment.
- The full meeting registration fee includes a flash drive containing the course handouts, attendance and tickets to the plenary session lectures, course learning labs, Exhibit Hall reception, and food functions Thursday through Saturday.
- Registration fees for one or two-day attendance includes a flash drive containing the course handouts, admittance to plenary session lectures and courses for the day registered, and applicable meals.
- Guest meal package includes admittance to the Exhibit Hall reception, Memory Lane Social, and lunch, Thursday through Saturday.
- Only those individuals who are registered and have an unaltered badge may attend ASET events.
- Additional fees apply for the Sundown Seminars; refer to the meeting registration form for additional details.
- Attendees who lose their badge may be subject to a replacement fee.

**Cancellation Policies**
- All cancellations must be made in writing and must be mailed, faxed or emailed to the ASET Executive Office.
- Written notice of cancellation received by ASET on or before July 12, 2019, will result in a refund of fees paid less a $50 processing fee. There will be no refunds for cancellations received after July 12, 2019.

**Recommended Attire**
Business casual attire is strongly encouraged. Please dress comfortably to create the best learning environment. The August average daily high in Kansas City is 90 degrees. Temperatures at night average around 71 degrees. Please note, the meeting rooms may be cooler than expected. We suggest dressing in layers and bring a light jacket or sweater to keep you comfortable.

**Special Assistance Needs**
If you require special assistance or dietary consideration, please complete the applicable section on the conference registration form, or call the ASET Executive Office at 816.931.1120, ext 102 or email info@aset.org.

**Continuing Education Credits**
ASET continuing education units will be awarded to participants. Approximately 7.5 ASET-CEUs will be awarded for Thursday, 7.5 credits for Friday and 6.5 for Saturday. The Sundown Seminars will be awarded an additional 1.5 credits. You can earn up to 23 ASET-CEUs during this conference. Such crediting, however, should not be construed by program participants as an endorsement of any type of instruments or supplies mentioned or involved in the presentations.

**Hotel & Lodging**
The Sheraton Kansas City Hotel at Crown Center is our conference hotel, located at 2345 McGee Street, Kansas City, MO 64108. Set in a thriving downtown, the Sheraton Kansas City Hotel at Crown Center is linked to the shops, restaurants and entertainment of Crown Center and historic Union Station. The property is just minutes from The Plaza, Sprint Center, and the Kansas City Zoo as well as the Power & Light Entertainment District. Inside the hotel, relax in spacious rooms and suites, which feature Sheraton Signature beds, flat-screen TVs, large work areas and Wi-Fi.

ASET conferees can reserve a single or double occupancy room at the group rate of $149/night plus tax. The group rate reservation deadline is **July 22, 2019**. Reservations may be made by calling 866.932.6214, or online through the link provided on aset.org.

**Transportation**
The conference hotel is 22 miles (24 minutes) from the Kansas City International Airport (MCI). For convenient ground transportation options to and from the airport, visit https://www.flykci.com/getting-to-from/ground-transportation/. For SuperShuttle (800-258-3826) no reservations are required and offices/kiosks are near the baggage claims. Traditional taxi services is available at the airport. If calling from a personal phone, call 816.243.2345. Fares may be pro-rated (shared) when the originating passenger requests it and all other passengers agree. Rates are $2.50 plus $2.10 per mile. Rates may vary due to traffic delays and waiting time. Uber and Lyft also are options and most likely will be the least costly.
## ASET 2019 60th Anniversary Conference

**AUGUST 15 - 17, 2019**

**SHERATON KANSAS CITY CROWN CENTER**

**KANSAS CITY, MO**

### Important Dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Bird Registration Deadline</td>
<td>July 5</td>
</tr>
<tr>
<td>Registration Cancellation Deadline</td>
<td>July 12</td>
</tr>
<tr>
<td>Silent Auction Donation Forms Due</td>
<td>July 18</td>
</tr>
<tr>
<td>Hotel Reservation Deadline</td>
<td>July 22</td>
</tr>
<tr>
<td>Course Handouts Available Online</td>
<td>August 8</td>
</tr>
<tr>
<td>Advanced Registration Deadline</td>
<td>August 9</td>
</tr>
</tbody>
</table>

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**I'm going to Kansas City. Kansas City here I come!**