

40th
ANNIVERSARY



2017 ASNM ANNUAL MEETING

Honoring the Pioneers: 40 Years of IOM

MAY 5 - 7, 2017

INTERCONTINENTAL CLEVELAND
CLEVELAND, OHIO

2017 ASNM Annual Meeting

Meeting Objectives

Attendees should come away with:

1. A clearer understanding of state of the art methodologies and practice of IONM from the neurophysiologists and surgeons perspective.
2. A clearer understanding of how IONM data can be used to advance the field of IONM.
3. A clearer understanding of the various practice models of IONM.
4. A clearer understanding of the evidence for IONM.

Session Description

Sessions will be covering information on electrical safety in the operating room, billing and coding, neuromonitoring during different procedures, evidence based discussions and much more. On Friday and Saturday, the course has been split into two tracks taking place simultaneously.

Track I will focus on the methodology for the practice of IONM from both the neurophysiologist as well as the surgeon. The track is designed to have paired lectures by a surgeon discussing the surgical procedures and their perspective on IONM and then having a neurophysiologist discuss the application of state of the art methods for IONM.

Track II will focus on these areas of IONM: (1) Optimization of signal acquisition, interpretation and communication; (2) Practice guideline; (3) Technical notes on lateral spread and cranial nerve monitoring; (4) IONM moving from injury to prediction.

Target Audience

Beginner and advanced IOM practitioners including technologists, neurophysiologists, physicians, and individuals involved in the business aspect of intraoperative neuromonitoring.

Location

InterContinental Cleveland

9801 Carnegie Avenue Cleveland, Ohio 44106



Room Locations

Registration

2nd Floor Foyer

Exhibits and Friday Networking Reception

The Founder's Ballroom

Continental Breakfast and Breaks

(Friday and Saturday)

The Founder's Ballroom

Continental Breakfast and Breaks

(Sunday)

Amphitheater A (3rd Floor Foyer)

ABNM Board Prep

Room 202

CNIM Board Prep

Room 203

Business Lunch

(Members Only)

Amphitheater A (3rd Floor Foyer)

Sessions

Track 1 - Amphitheater A

Track 2 - Amphitheater B

Planning Committee

Antoun Koht, MD
Matthew Eccher, MD, MS, FAAN, FACNS
Jay Shils, PhD, DABNM, FASNM, FACNS
Carol Ingmanson, MBA, Executive Director, ASNM
Jennifer Fininis, Meeting Coordinator, ASNM

Continuing Education

ASNM Continuing Education Credit

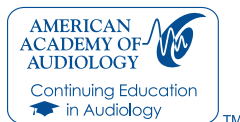


ASNM is an ABRET approved provider of continuing education for their IONM related credentials. ABRET is the credentialing board for Electroencephalographic (EEG) Technologists, Evoked Potential (EP) Technologists, and Neurophysiologic Intraoperative Monitoring (CNIM) Technologists, Long Term Monitoring (CLTM) Technologists, and Autonomic Testing Professionals (CAP). Such crediting, however, should not be construed by program participants as endorsement of any type of instruments or supplies mentioned or involved in these presentations. Please be advised that for continuing education hours to apply towards the EEG test, they must be ASET CEUs; however, ASNM CEUs are eligible for the recertification of the EEG credential as well as towards CNIM and EP credentials and recertification. For more information about ASNM Continuing Education credits, please visit: www.ASNM.org/ASNMCCEUs



Continuing Medical Education Credit (CME)

The American Society of Neurophysiological Monitoring ("ASNM") designates this live activity for a **maximum of 16.5 AMA PRA Category 1 Credit(s)TM**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.



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The American Society of Neurophysiological Monitoring ("ASNM") is pending approval by the American Academy of Audiology to offer Academy CEUs for this activity. The program is worth a **maximum of 1.65 CEUs**. Academy approval of this continuing education activity is based on course content only and does not imply endorsement of course content, specific products, or clinical procedure, or adherence of the event to the Academy's Code of Ethics. Any views that are presented are those of the presenter/CE Provider and not necessarily of the American Academy of Audiology.

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2017 ASNM Annual Meeting

Thursday, May 4, 2017

8:00 AM - 5:00 PM

ASNM Board of Directors Meeting
Six Continents Room

6:00 PM - 8:00 PM

Registration Open
2nd Floor Foyer

6:00 PM - 8:00 PM

ABNM Board Prep (additional charge)
Jeffrey R. Balzer, PhD, FASNM, DABNM
Room 202

6:00 PM - 8:30 PM

CNIM Board Prep (additional charge)
James Watt, CNIM
Room 203

Friday, May 5, 2017

7:00 AM - 7:45 AM

Breakfast with Exhibitors
The Founder's Ballroom

7:45 AM - 8:00 AM

Welcome and Introductions

Track I

Amphitheater A

Moderator

Gene Balzer, PhD

8:00 AM - 8:30 AM

Surgical Updates for Spine Surgery
Michael Steinmetz, MD

8:30 AM - 9:00 AM

Monitoring During Intradural Spine Procedures
Richard Vogel, PhD, DABNM

9:00 AM - 9:30 AM

Monitoring During Interventional Procedures
Anthony K. Sestokas, PhD, DABNM, FASNM

9:30 AM - 10:00 AM

Reflections on the History and Guarded Future of IONM
Jack Kartush, MD, FASNM

Track II

Amphitheater B

Moderator

Matthew Eccher, MD, MS, FAAN, FACNS

8:00 AM - 8:30 AM

Optimization of Neuroelectric Recordings in a Patient
under Anesthesia
Aage Møller, PhD, D. Med. Sci

8:30 AM - 9:00 AM

Optimization of Signal Interpretations
John McAuliffe, III, MD, MBA, DABNM, FAAP

9:00 AM - 9:30 AM

Warning Criteria for Evoked Potentials, Revisited
Matthew Chan, MD

9:30 AM - 10:00 AM

Electrical Interference and IOM
Brett Netherton, MS, CNIM, FASNM, FASET

10:00 AM - 10:30 AM

Break with Exhibitors
The Founder's Ballroom

Friday, May 5, 2017

Track I

Amphitheater A

Moderator

Gene Balzer, PhD

10:30 AM - 11:00 AM

Cochrane - Evidence Based, ASNM I

Robert Holdefer, PhD

11:00 AM - 11:30 AM

Cochrane - Evidence Based ASNM II

Christoph Seubert, MD, PhD, DABNM

11:30 AM - 12:00 PM

IONM as Surrogate Markers: The Locus of Focus

Robert Holdefer, PhD

12:00 PM - 12:30 PM

Anesthesia for IOM

Tod Sloan, MD, PhD

12:30 PM - 2:00 PM

Lunch on Own

Moderator

Joseph J. Moreira, MD

Track II

Amphitheater B

Moderator

Matthew Eccher, MD, MS, FAAN, FACNS

10:30 AM - 11:00 AM

Monitoring Jugular Oximetry

Deepak Sharma, MBBS, MD, DM

11:00 AM - 12:30 PM

ASNM Professional Practice Guidelines Presentation
to the Membership

Moderator

George R. "Trey" Lee, III, MD, MS

2:00 PM - 2:30 PM

Evidence in IONM: Moving from Injury Prediction
to Injury Prevention

Stanley Skinner, MD, FASNM

2:30 PM - 3:00 PM

Technical Notes for MEP Monitoring

Andrea Szelényi, MD, PhD

2:30 PM - 3:00 PM

Monitoring and Surgical Positions, Technical Pearls

Antoun Koht, MD

3:00 PM - 3:30 PM

Growing Pains - The Adolescence of IONM in Australia

Adam Hastings, CNIM

3:00 PM - 3:30 PM

Intraoperative Use of Nerve Action Potentials and Direct
Nerve Evoked Potentials

George R. "Trey" Lee, III, MD, MS

3:30 PM - 4:00 PM

Break with Exhibitors

The Founder's Ballroom

Friday, May 5, 2017

Track I

Amphitheater A

Moderator

Joseph J. Moreira, MD

4:00 PM - 4:30 PM

Intradural Spine Surgery: A Team Approach to
Techniques and Strategies

Edward Benzel, MD

4:30 PM - 5:00 PM

IOM During Major Spine Instrumentation Procedures

Eva Katharina Ritzl, MD

5:00 PM - 5:30 PM

Monitoring During Minimally Invasive Spine Surgery

Faisal Riaz Jahangiri, MD, CNIM, DABNM, FASNM

5:30 PM - 6:00 PM

The Predictive Value of IOM During Spine Surgery

Jeffrey Balzer, PhD, FASNM, DABNM

Track II

Amphitheater B

Moderator

George R. "Trey" Lee, III, MD, MS

4:00 PM - 4:30 PM

Technical Notes for Cauda Equina Procedures

Stanley Skinner, MD, FASNM

4:30 PM - 5:00 PM

Technical Notes for Cranial Nerve EMG

George R. "Trey" Lee, III, MD, MS

5:00 PM - 5:30 PM

Transcranial Doppler Ultrasonography

Deepak Sharma, MBBS, MD, DM

6:00 PM - 8:00 PM

Networking Reception with Exhibitors

The Founder's Ballroom

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Saturday, May 6, 2017

7:00 AM - 7:45 AM

Breakfast with Exhibitors
The Founder's Ballroom

7:45 AM - 8:00 AM

Welcome and Introductions

Joint Session - History of IOM

Amphitheater A

Moderator

Antoun Koht, MD

7:30 AM - 8:00 AM

Governmental Regulations
Gene Balzer, PhD

8:00 AM - 8:30 AM

Early Establishment of SEP Landmarks
Marc Nuwer, MD, PhD

8:30 AM - 9:00 AM

Outcomes and Cost-Effectiveness Research in Intraoperative Neurophysiologic Monitoring
John Ney, MD, MPH

9:00 AM - 9:30 AM

How is IOM Funded in Canada?
David Houlden, PhD

9:30 AM - 10:00 AM

Break with Exhibitors
The Founder's Ballroom

10:00 AM - 10:30 AM

Reflections on the German Neurosurgical Experience in Developing IOM
Johannes Schramm, MD

10:30 AM - 11:00 AM

Reflections on the Origin of S.C.E.P. Monitoring
Clyde Nash, MD

11:00 AM - 11:45 AM

Presidential Speaker - Reflections on the History of IOM / Japanese Experience
Tetsuya Tamaki, MD, PhD

12:00 PM - 2:00 PM

Business Lunch (ASNM Members Only)

Saturday, May 6, 2017

Track I

Amphitheater A

Moderator

Laura Hemmer, MD

2:00 PM - 2:30 PM

Monitoring During Awake Craniotomy

Matthew Eccher, MD, MS, FAAN, FACS

2:30 PM - 3:00 PM

Monitoring During Vascular Procedures

Christoph Seubert, PhD

3:00 PM - 3:30 PM

Monitoring During Microvascular Decompression

Joseph J. Moreira, MD

3:30 PM - 4:00 PM

Break with Exhibitors

The Founder's Ballroom

4:00 PM - 4:30 PM

Posterior Fossa Surgery

Varun Kshetry, MD

4:30 PM - 5:00 PM

Monitoring Cranial Nerves III Through VIII

Jeffrey Balzer, PhD, FASNM, DABNM

5:00 PM - 5:30 PM

Monitoring Lower Cranial Nerves VIII - XII

Lanjuan Guo, MD, MSc, DABNM

Track II

Amphitheater B

Moderator

Michael McCaffrey, PhD

2:00 PM - 2:30 PM

Visual Evoked Potentials

David Houlden, PhD

2:30 PM - 3:00 PM

Cortical and Spine Mapping

Charles Yingling, PhD, CNIM, DABNM, FASNM, FACS

3:00 PM - 3:30 PM

Communications During Monitoring

Clare Gale, CNIM, R.EEG/EPT, FASNM, FASET

4:00 PM - 4:30 PM

Pedicle Wall Integrity

Neil Holland, MD

4:30 PM - 5:00 PM

Technical Notes for Lateral Spread

Matt Cotton, MS, CNIM, FASNM

5:00 PM - 5:30 PM

Simulation Education in Neurophysiological Monitoring:

Needs Assessment

Ljuba Stojiljkovic, MD, PhD

7:00 PM - 10:00 PM

40th Anniversary Gala Dinner Honoring the Pioneers

(Additional fee)

Cleveland Botanical Garden

Join us to honor the pioneers whose research, clinical expertise, and leadership have made great strides for the field of intraoperative neuromonitoring and the Society.

Cocktail Attire Preferred

Thank You to Our Anniversary Dinner Sponsors!



Sunday, May 7, 2017

7:00 AM - 8:00 AM

Breakfast

Amphitheater 3rd Floor Foyer

Joint Session

Amphitheater A

Moderator

W. Bryan Wilent, PhD, DABNM

8:00 AM - 8:30 AM

Monitoring of Pelvic Procedures

Stanley Skinner, MD, FASN

8:30 AM - 9:00 AM

Monitoring During Spinal Cord Stimulation, Collision Test

Matthew Eccher, MD, MS, FAAN, FACNS

9:00 AM - 9:30 AM

Complications of Intraoperative Monitoring

Jeff Gertsch, MD

9:30 AM - 10:00 AM

Break

10:00 AM - 1:00 PM

Abstracts and E-Posters

1:00 PM - 1:30 PM

Awards Presentations and Closing Remarks

Faculty

Gene Balzer, PhD

Chief Executive Officer
Allied Managed Process, LLC

Jeffrey R. Balzer, PhD, FASN, DABNM

Associate Professor
Neurosurgery, Neuroscience and Acute and Tertiary Care Nursing
University of Pittsburgh Medical Center

Edward Benzel, MD

Emeritus Chairman
Cleveland Clinic Department of Neurosurgery

Matthew Chan, MD

Professor
The Chinese University of Hong Kong

Matt Cotton, MS, CNIM, FASN

Senior Technologist
Northwestern Medicine

Matthew Eccher, MD, MS, FAAN, FACS

Neurophysiologist, SpecialtyCare, and,
Assistant Professor, Neurology and Neurosurgery
Case Western Reserve University

Clare Gale, CNIM, R.EEG/EPT, FASN, FASET

Owner
eLearnEND, LLC

Jeff Gertsch, MD

Associate Professor, Neuroscience
University of California, San Diego

Lanjun Guo, MD, MSc, DABNM

Senior Surgical Neurophysiologist
University of California, San Francisco

Adam Hastings, CNIM

Consultant Anaesthetist
Westmead Hospital - Sydney, Australia

Robert Holdefer, PhD

Associate Professor
University of Washington, Rehabilitation Medicine

Neil Holland, MD

Chair of Neurology
Geisinger Health System

David Houlden, PhD

Neurophysiologist
The Ottawa Hospital - Canada

Faisal Riaz Jahangiri, MD, CNIM, DABNM, FASN

President and Chief Executive Officer
Jahangiri Consulting LLC

Jack Kartush, MD, FASN

Emeritus Professor
Michigan Ear Institute, Wayne State University

Antoun Koht, MD

Professor, Anesthesiology, Neurological Surgery and Neurology
Northwestern University

Varun Kshetry, MD

Associate Staff, Skull Base & Cerebrovascular Surgery
Cleveland Clinic

George R. "Trey" Lee, III, MD, MS

President
Real Time Neuromonitoring Associates

John McAuliffe, III, MD, MBA, DABNM, FAAP

Anesthesiologist-in-Chief
Cincinnati Children's Hospital Medical Center

Aage Møller, PhD, D. Med. Sci

Professor
The University of Texas at Dallas

Joseph J. Moreira, MD

President Elect - ASNM
J.J. Moreira MD.P.C.

Clyde Nash, MD

Professor Emeritus, Orthopedic Surgery
Case Western Reserve University

Brett Netherton, MS, CNIM, FASN, FASET

Managing Director
Signal Gear

John Ney, MD, MPH

Assistant Professor
Veterans Affairs Medical Center
Boston University

Marc Nuwer, MD, PhD

Professor and Vice Chair
UCLA Department of Neurology

Eva Katharina Ritzl, MD

Assistant Professor, Neurology
Johns Hopkins University

Johannes Schramm, MD

Professor Emeritus, Neurosurgery
Bonn University, Bonn, Germany

Faculty

Anthony K. Sestokas, PhD, DABNM, FASNM

Chief Clinical Officer, IONM
SpecialtyCare

Christoph Seubert, MD, PhD, DABNM

Professor of Anesthesiology and Neurosurgery
University of Florida College of Medicine

Deepak Sharma, MBBS, MD, DM

Division Chief Neuroanesthesiology & Perioperative Neurosciences
University of Washington

Jay Shils, PhD, DABNM, FASNM, FACNS

Director, IONM
Associate Professor, Anesthesiology
Rush University Medical Center

Stanley Skinner, MD, FASNM

Medical Director, Neurophysiology
Allina

Tod Sloan, MD, PhD

Professor Emeritus
University of Colorado School of Medicine

Michael Steinmetz, MD

Professor and Chairman, Neurosurgery
Cleveland Clinic

Ljuba Stojiljkovic, MD, PhD

Associate Professor, Anesthesiology
Northwestern University

Andrea Szelényi, MD, PhD

Prof. Dr. med., Senior Physician
Neurophysiology
Ludwig Maximilian University Hospital Munich

Tetsuya Tamaki, MD, PhD

Professor Emeritus
Wakayama Medical University

Richard Vogel, PhD, DABNM

Director of Clinical Services
Safe Passage Health

Charles Yingling, PhD, CNIM, DABNM, FASNM, FACNS

Chief Executive Officer
Golden Gate Neuromonitoring

Faculty Disclosure Statements

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Jeffrey R. Balzer, PhD, FASNM, DABNM

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Edward Benzel, MD

has disclosed no relevant financial relationships

Matthew Chan, MD

has disclosed no relevant financial relationships

Matt Cotton, MS, CNIM, FASNM

has disclosed no relevant financial relationships

Matthew Eccher, MD, MS, FAAN, FACNS

has disclosed no relevant financial relationships

Clare Gale, CNIM, R.EEG/EP T., FASNM, FASET

has disclosed income from SignalGear as a Clinical Consultant

Jeff Gertsch, MD

has disclosed income Advisory board income from Corticare, Inc.

Lanjun Guo, MD, MSc, DABNM

has disclosed no relevant financial relationships

Adam Hastings, CNIM

has disclosed no relevant financial relationships

Robert Holdefer, PhD

has disclosed no relevant financial relationships

Neil Holland, MD

has disclosed no relevant financial relationships

David Houlden, PhD

has disclosed no relevant financial relationships

Faisal Riaz Jahangiri, MD, CNIM, DABNM, FASNM

has disclosed no relevant financial relationships

Jack Kartush, MD, FASNM

has disclosed consultant income from Magstim

Antoun Koht, MD

has disclosed no relevant financial relationships

Faculty Disclosure Statements

Varun Kshetry, MD

has disclosed no relevant financial relationships

George R. “Trey” Lee, III, MD, MS

has disclosed no relevant financial relationships

John McAuliffe, III, MD, MBA, DABNM, FAAP

has disclosed no relevant financial relationships

Aage Møller, PhD, D. Med. Sci

has disclosed no relevant financial relationships

Joseph Moreira, MD

has disclosed no relevant financial relationships

Clyde Nash, MD

has disclosed no relevant financial relationships

Brett Netherton, MS, CNIM, FASNM, FASET

has disclosed ownership income from Signal Gear, LLC

John Ney, MD, MPH

has disclosed consultant income from SpecialtyCare and Ceribell, Inc.

Marc Nuwer, MD, PhD

has disclosed investment income from Corticare

Eva Katharina Ritzl, MD

has disclosed no relevant financial relationships

Johannes Schramm, MD

has disclosed no relevant financial relationships

Anthony K. Sestokas, PhD, DABNM, FASNM

has disclosed income from Inomed Co., consultant and research income in the field of neuromonitoring

Christoph Seubert, MD, PhD, DABNM

has disclosed no relevant financial relationships

Deepak Sharma, MBBS, MD, DM

has disclosed no relevant financial relationships

Jay Shils, PhD, DABNM, FASNM, FACNS

has disclosed income from Globus, Inc., advisory board, and Intellihat, Inc. and Engineerix, Inc., ownership interest

Stanley Skinner, MD, FASNM

has disclosed Research income from Medtronic, Inc.

Tod Sloan, MD, PhD

has disclosed no relevant financial relationships

Michael Steinmetz, MD

has disclosed consultant income from Biomet Spine, Intellirod, Elsevier and Globus Spine; and Speaker Bureau income from Stryker Spine

Ljuba Stojiljkovic, MD, PhD

has disclosed no relevant financial relationships

Andrea Szelényi, MD, PhD

has disclosed speaker income from Inomed Co., Germany

Tetsuya Tamaki, MD, PhD

has disclosed no relevant financial relationships

Richard Vogel, PhD, DABNM

has disclosed income from Medtronic, consultant and speaker income

Charles Yingling, PhD, CNIM, DABNM, FASNM, FACNS

has disclosed no relevant financial relationships

Reviewer Disclosure Statements

John D. Hastings, MD, DABNM, FASNM

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J. Richard Toleikis, PhD, DABNM, FASNM

has disclosed no relevant financial relationships

Planning Committee / Administration Disclosure Statements

Antoun Koht, MD

has disclosed no relevant financial relationships

Jay Shils, PhD, DABNM, FASNM

has disclosed income from Globus, Inc., advisory board, and Intellihat, Inc. and Engineerix, Inc., ownership interest

Jennifer Fininis, Meeting Coordinator, ASNM

has disclosed no relevant financial relationships

Matthew Eccher, MD, MS, FAAN, FACNS

has disclosed no relevant financial relationships

Carol Ingmanson, MBA, Executive Director, ASNM

has disclosed no relevant financial relationships

E-Posters

Sunday, May 7
10:00 AM - 1:00 PM
Amphitheater A

Benefit of Intraoperative Neurophysiological Monitoring (IONM) in a Pediatric Patient With Spinal Dysmorphysim, Split Cord and Scoliosis

Faisal R. Jahangiri, MD, CNIM, D.ABNM, FASNM^{1,2}; Samir Al Sayegh, MD³; Moutasem Azzubi, MD⁴; Abdulrahman M. Alrajhi⁵; Monerah M. Annaim⁶; Shmoukh A. M. Al-Sharif⁶; Tanweer Aziz, MD⁷; Sami Al Eissa, MD³

Elastomeric Artificial Joints and Intervertebral Prosthesis Systems

Ervin Caballes, CNIM

Intraoperative Monitoring (IONM) Alerts in a Pediatric Deformity Center

Zuccaro M.; Zuccaro J.; Samdani A.; Hwang S.; Pahys J.

Intraoperative SSEPs Detecting Midline Shift due to Malpositioned Mayfield Pins and the Benefits of an MRI-OR

Taylor Mazurek, CNIM; Nicholas Chulski CNIM

Intraoperative SSEPs and TcMEPs Lost During a Last Distraction in a Scoliosis Case

Shuiping Dai PhD, CNIM

Intravenous Catheter Infiltration Causing Intraoperative Neurophysiologic Alerts: A Case Report

Zuccaro M.; Zuccaro J.; Samdani A.; Hwang S.; Pahys J.

IONM SSEP and LQP-TceMEP: Technical Advancement with Navigation

Ernesto Lima, MD¹; Srikant S. Chakravarthi, MD, MSc²; Bernard A. Cohen, PhD¹; Amin B. Kassam MD²; Lisa J. Mueller, DPT¹

Linked Quadri-Polar TceMEP (LQP-TceMEP) Technique During a Scoliosis Procedure: A Case Report

Ernesto Lima MD, DABNM, CNIM; Lisa Mueller DPT; Bernard Cohen, PhD, FASNM, FACNS

Loss of Bilateral Erbs Responses without the Reduction of Cortical and or Cervical Responses During a Posterior Lumbar Spine Fusion Procedure: A Unique Case of Brachial Plexus Compression

Anand Immaneni, PhD, CNIM

Low Threshold Linked Quadri-Polar (LQP) TceMEP During Left Middle Cerebral Artery Aneurysm Clipping: A Case Report

Ernesto Lima MD, DABNM, CNIM; Lisa Mueller DPT; Bernard Cohen, PhD, FASNM, FACNS

Muscle Evoked Potentials after Spinal Cord Stimulation Can Monitor Motor Tract

Muneharu Ando¹ MD, PhD and Tetsuya Tamaki² MD, PhD

Neuromonitoring in Pediatric Deformity Surgery: Comparison of Two Practice Models

Zuccaro J.; Zuccaro M.; Samdani A.; Hwang S.; Pahys J.

Neuromonitoring During Surgical Treatment of Thoracic Outlet Syndrome

Jeremy S. McCallister, AuD, CNIM, DABNM; Ralph Ierardi, MD, FACS, ARDMS; Sonya Tuerff, MD, FACS, ARDMS

Pattern of Corticospinal Projections Defined by Brain Mapping During Resective Epilepsy Surgery in a Patient with Congenital Hemiparesis and Intractable Epilepsy

Tsui-Fen Yang; Hsin-Hung Chen; Chien Chen; Jan-Wei Chiu

The First Clinical Trial of a Cortical Visual Prosthesis

Vernon L. Towle, PhD; Marty Bak, BSEE; Stuart Cogan, PhD; Gislin Dagnelie, PhD; Glenn DeMichele, MSEE; John Maunsell, PhD; Doug McCreery, PhD; Janet Szlyk, PhD; Philip Troyk, PhD, PI

Using a Subdural Strip to Define the Lowest Functional Conus Medullaris During Detethering Surgery of Tethered Cord Syndrome

Tsui-Fen Yang; Muh-Lii Liang; Jan-Wei Chiu

Utilization of Multimodality Monitoring During Cerebrovascular Procedures: Relative Sensitivity, Specificity, and Odds Ratios for Motor Deficits

W. Bryan Wilent, PhD, DABNM; Eric A. Tesdahl, PhD; Tony Sestokas, PhD, DABNM, FASN



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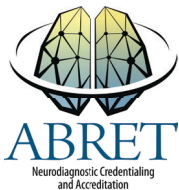
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Signal Gear®

Signal Gear® is a medical device company focused on designing neurodiagnostic accessories. Founded on the premise that passionate, thoughtful study is key to innovation and creativity, we study the scientific literature, the patient and clinical practice. All Signal Gear® products will be the best or we won't sell them. www.signalgear.com



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Physicians and hospitals should always have the best possible means to ensure the most positive patient outcomes, while being able to maintain their own financial health and success. To help our customers achieve this, we are committed to delivering exceptional care outcomes, patient safety, and financial results in over 1,000 hospitals and health systems, supporting 13,000 physicians during 350,000+ procedures annually. www.specialtycare.net

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Trusted Neurodiagnostics Academy

Trusted Neurodiagnostics Academy is dedicated to bringing the technologist in the electroneurodiagnostic field to the highest level. We offer online courses that meet ABRET's education requirements and the essentials that a technologist will need to sit

for the board. Experienced technologists can choose any of our ASET approved courses for their CEU needs as well. The courses are completed on the technologist's time without the cost of travel or loss of case coverage for their training. Reports are available for supervisors to check the status of their employees progress during their membership.

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solutions are designed to deliver efficient workflow, quality data, reliable performance and easy reporting wherever and whenever you need it. Our brands include Arc EEG, LTM and ICU cEEG; Sierra® EMG and EP with integrated ultrasound; Cascade® IONM; Easy® PSG and CadLink™ data management. Our global sales and support teams serve physicians and medical centers worldwide. We take pride in combining customer input with our employees' expertise and USA-made components to provide the best solutions in the industry. www.cadwell.com



Consolidated Neuro Supply

Located in the heart of the technology district in Milford, OH, Consolidated Neuro Supply, Inc. is a leading provider of healthcare products used to monitor critical neurological

structures during high-risk surgical procedures. With nearly \$5 million in annual sales, product offerings include subdermal needle electrodes, pedicle screw and direct nerve stimulators, laryngeal electrodes, surface electrodes, and other IONM accessories. Our line includes our own brands as well as those from other industry leaders. The company has been in business since June 2003.

www.neurosupply.com



Max Neuro Supply

Max Neuro Supply Inc. is a provider of health-care products used to diagnose neurological disorders, and monitor critical neurological structures during high-risk

surgical procedures. The product line includes sub-dermal needles, surface electrodes, disposable bipolar, mono-polar, and concentric direct nerve probes. www.maxneurosupplyinc.com

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Medtronic is the world's largest medical technology company, offering an unprecedented breadth and depth of innovative therapies to alleviate pain, restore health, and extend life. Surgical Technologies business comprises our Ear, Nose, and Throat (ENT); Neurosurgery; & Advanced Energy organizations. Our products and procedural solutions encompass a broad variety of surgical applications, including neurosurgical spine, cranial, and orthopaedics; ENT; and surgical oncology – more than any other Medtronic business. Our core products include advanced surgical navigation and imaging solutions, powered surgical tools and systems, intraoperative nerve monitoring devices, advanced energy-based tools for hemostatic sealing & tissue dissection, and implantable hydrocephalus management products. www.medtronic.com



SafePassage Neuromonitoring

Safe Passage Neuromonitoring is a professional Medical Services firm specialized in Pre, Peri and Intraoperative Monitoring (IOM) services. With headquarters in New York, NY, Safe Passage places a local approach to service, striving to maintain continuity of care by keeping familiar faces in the operating room. Through an experienced and highly certified team of IOM professionals, Safe Passage aims to provide the highest quality in IOM services with patient safety and surgeon satisfaction as the highest priorities. www.safepassagenm.com

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Knowledge Plus, Inc.

Knowledge Plus is the PREMIER neurodiagnostic & polysomnographic continuing education provider whose mission is to design and implement programs that enhance the effectiveness of health-care professionals and companies. Knowledge Plus helps companies and people in health-care achieve their organizational and personal continuing education goals through training and health-care education programs and products.



Natus Medical Incorporated

Natus is a provider of healthcare products used for the screening, detection, treatment, monitoring and tracking of common medical ailments in newborn care, hearing impairment, neurological dysfunction, epilepsy, sleep disorders, and balance and mobility disorders. The product line includes neurodiagnostic systems for audiology, neurology, polysomnography, and neonatology, as well as newborn care products such as hearing screening systems, phototherapy devices for the treatment of newborn jaundice, head-cooling products for the treatment of brain injury in newborns, incubators to control the newborn's environment, and software systems for managing and tracking disorders and diseases for public health laboratories. www.natus.com

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Ad-Tech Medical Instrument Corporation

Since 1983, Ad-Tech Medical has provided the finest devices for the surgical treatment of epilepsy as well as devices for neurosurgery. Ad-Tech's epilepsy monitoring products have become known as the "gold standard". Today, Ad-Tech's devices are registered and approved for use in over 60 countries. As Ad-Tech Medical enters its 32nd year serving the neurological/neurosurgical market, it continues its commitment to develop the next level of technology for neuro-monitoring devices. www.adtechmedical.com



Ambu, Inc.

Ambu Inc. in Glen Burnie, MD is a private company established in 1983. Leading the way in the design and development of high quality single-use electrodes for accurate monitoring, Ambu offers a complete range of electrodes for different applications to meet your needs: Blue Sensor electrodes for Cardiology (ECG): 12-lead ECG, Holter, Stress, Neonatal, Monitoring; Neuroline electrodes and needles for Neurophysiology: EMG, EEG, Evoked Potentials, Nerve Conduction Studies, Intraoperative Monitoring and Polysomnography; Sleepmate sensors for Polysomnography (Sleep Studies). www.ambuusa.com



Apex IONM Solutions

Apex IONM Solutions is committed to helping your intraoperative neuromonitoring company succeed. Years of experience in running a successful IONM company have given this braintrust the knowledge, skills and abilities to help support your IONM business. Apex offers turn-key solutions that can help enhance your time and profitability, including best-in-class, billing services; ABRET CEU-approved educational offerings; technology solutions; and administrative leadership such as credentialing, contracts, and more. www.apexionmsolutions.com



Encompass Healthcare Billing

Encompass Healthcare Billing offers full service medical billing for your practice, specializing in Intraoperative Monitoring (IOM) billing and collections. With over 30 years experience in medical billing, our staff excels in our goal to maximize reimbursements for all healthcare practices for both in and out of network billing. We have developed a proprietary system to link our clients to our billing professionals. This allows for quicker and more efficient processing and collections. We look forward to working with you. <http://encompasshb.com>



Ideal Health Careers, Inc.

Ideal Health Careers is a specialty recruitment firm focused exclusively on the field of Neurophysiology. Our mission is to assist both technologists and neurologists in fulfilling career objectives in IOM by providing a unique approach that is confidential, discreet, and individually tailored to meet your career needs. We have placed over 100 neurophysiology professionals since 2005 in meaningful positions, from entry-level technologists to experienced reading physicians. Whether you are a job candidate seeking a more meaningful career or an employer seeking top talent, please stop by our booth and see how we can help. You have nothing to lose and everything to gain. www.idealhealthcareers.com

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US Monitoring, Inc (USMON)

USMON (U.S. Monitoring, Inc.) is the ultimate HIPAA compliant, ONC Certified EHR, work-flow solution for companies who need to manage medical data. USMON features a simple, user-customizable interface, along with a comprehensive, high performing, robust workflow system that dynamically links users with the resources and applications necessary to do their jobs. With our consistent, automated processes and integrated insurance billing software, USMON provides all the services you need at an affordable price, saving you time and money. www.usmon.com

Not-for-Profit Associations



ABRET

ABRET Neurodiagnostic Credentialing & Accreditation offers five credentials (R. EEG T.®, R. EP T.®, CNIM®, CLTM®, CAP®) the CMEG certificate program, and three laboratory accreditation programs (LAB-EEG, LAB-NIOM, and LAB-LTM.) Learn more about credentialing, laboratory accreditation, view resources and receive assistance in recruiting neurodiagnostic technologists. www.abret.org



ASET

The American Society of Electroneurodiagnostic Technologists is the largest national professional association for individuals involved in the study and recording of electrical activity in the brain and nervous system. Organized in 1959, ASET's mission is to provide leadership, advocacy and professional excellence for our members, creating greater awareness of the profession and establishing standards and best practices to ensure quality patient care. www.aset.org

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2017 Fall Symposium

September 9-10, 2017
Hilton Baltimore
Baltimore, Maryland

2018 Annual Conference

February 23-25, 2018
Walt Disney World Swan and Dolphin
Lake Buena Vista, Florida



Neuromonitoring in the Interventional Radiology Suite

Wednesday, May 24, 2017
7:00 PM EST

James A. Watt, Jr.
VP of Neuromonitoring Services -
Comprehensive Neuromonitoring Services

Monitoring in Pediatric Neurosurgery

Wednesday, August 30, 2017
7:00 PM EST

George Jallo, MD
Director - Johns Hopkins All Children's
Institute for Brain Protection Sciences



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