You are invited to the 21st Annual Meeting of the American Society of Neurophysiological Monitoring

April 23-25, 2010
GAYLORD OPRYLAND HOTEL
Nashville, TN
21st Annual Meeting
Of the
American Society of Neurophysiological Monitoring

21st Annual Meeting Chairs
Program Co-Chairs:
Jay Shils, PhD, DABNM, FASNM
Michael McCaffrey, PhD, CNIM, DABNM, FASNM

Local Chairperson:
Kiara Ebinger PhD, FAAA, CNIM, DABNM

ASNM Executive Officers:
President: Rich Toleikis, PhD., DABNM, FASNM
President Elect: Michael McCaffrey, PhD, CNIM, DABNM, FASNM
Past President: Leo Towle, PhD, FASNM
Secretary/Treasurer: Clare Gale, CNIM, R.EEG T.
Associate Secretary/
Treasurer: Rebecca Clark-Bash, R.EEG/EPT, CNIM, CLTM, FASNM

To register for the ASNM 21st Annual Meeting
visit our website at: www.asnm.org

The American Society of Electroneurodiagnostic Technologists has granted ASET Continuing Education (ACE) credits for this program. Such crediting, however, should not be construed by program participants as an endorsement of any type of instrument or supplies mentioned or involved in these presentations.
Our 2010 Program

Thursday / April 22nd / 2010

Room A

6:00pm-8:00pm  CNIM Board Prep Sessions
Rebecca Clark-Bash, R.EEG/EP T.
CNIM, CLTM, FASNM
President, Knowledge Plus, Inc.
Lincolnshire, IL
Clare Gale, CNIM, R.EEG T.
President, SpineMon Inc.,
Baltimore, OH

5:00pm-7:00pm  DABNM Oral Board Prep
Tod Sloan, MD, MBA, PhD, FASNM
Professor and Associate Chair of
Development
Department of Anesthesiology
The University of Colorado at
Denver and Health Science Center,
Denver, CO

Friday / April 23rd / 2010

Technical Session / Room A

7:50am  Welcome and Announcements

8:00am-8:40am  Intraoperative Artifacts A-Z
Vernon L. Towle, PhD, FASNM
Professor of Neurology, Surgery, Pediatrics and Psychiatry
University of Chicago, Chicago, IL

8:45am-9:20am  Anesthetic Goals, Anesthetic Agents, Mechanisms of Action and
Contraindications to Neuromonitoring
Antoun Koht, MD
Professor of Anesthesiology, Neurological Surgery & Neurology
Chief, Neurosurgical Anesthesia / Director, Neurosurgical Anesthesia Fellowship
Northwestern University Feinberg School of Medicine

9:25am-9:55am  Electrode Cable and Equipment Layout in the Operating Room:
Managing the Landmines
Brett Netherton, MS, CNIM
Technical Director
ROCWorks, LLC Columbia, SC

9:55am-10:35am  EMG
Stanley Skinner, MD
Abbott Northwestern’s Neuroscience institute
Minneapolis, MN

10:35am-10:55am  Break

10:55am-12:00noon  Soleus H-Reflex Excitability Changes in Spinal Intact and Injured
DIGITIMER LECTURE
Subjects at Rest and During Locomotion
Maria Knikou, PT, PhD
Associate Professor
College of Staten Island / CUNY & Rehabilitation Institute of Chicago,
Northwestern University
FRIDAY / APRIL 23RD continued

12:00am-1:30pm  LUNCH

1:30pm-3:00pm  Real Time Data Interactive: What do the Tracings Tell Us: Differentiating Horses from Zebras
Antoun Koht, MD
Professor of Anesthesiology, Neurological Surgery & Neurology
Chief, Neurosurgical Anesthesia / Director, Neurosurgical Anesthesia Fellowship
Northwestern University Feinberg School of Medicine

Tod Sloan, MD, MBA, PhD, FASNM
Professor and Associate Chair of Development / Department of Anesthesiology
The University of Colorado at Denver and Health Science Center, Denver, CO

3:00pm-3:25pm  BREAK

3:30pm-3:55pm  Properties of Filters and Amplifiers and Their Effect on EEG and EP Signals
James Higgins, MA, BA, AS, REEGT, REPT, CNIM
Harrington Biomedical Institute
Arizona State University, Phoenix, AZ

4:00pm-4:25pm  Gray Matter vs. White Matter: Why Does It Matter?
Chris Slaymaker, R.EEG/EP T, CNIM
Manager of Neurosciences
Methodist Medical Center, Oak Ridge, TN

4:30pm-4:55pm  Intraoperative Neurophysiology During Brachial Plexus Surgery
David Houlden, PhD
Coordinator of Surgical Neuromonitoring
Associate Researcher, Sunnybrook Health Sciences Centre
Assistant Professor, Department of Surgery, University of Toronto
President, Canadian Association of Neurophysiological Monitoring (CANM)

FRIDAY / APRIL 23RD / 2010

ADVANCED SESSION / ROOM B

7:50am  Welcome and Announcements

8:00am-8:40am  IONM During Tumor and Vascular Surgery of the Brain
Antoun Koht, MD
Professor of Anesthesiology, Neurological Surgery & Neurology
Chief, Neurosurgical Anesthesia / Director, Neurosurgical Anesthesia Fellowship
Northwestern University Feinberg School of Medicine

8:45am-9:20am  Monitoring During Spinal Deformity Surgery
Gene Balzer, PhD, FAA, FASNM
President and Chief Executive Officer
the Biotronic NeuroNetwork
Medical Staff, Twin Cities Shriners Hospital for Children

9:25am-9:55am  Cranial Nerve Monitoring
Dr. George R. “Trey” Lee, MD
Assistant Professor of Neurology Vanderbilt University Medical Center
President, Real Time Neuromonitoring Associates, Nashville, TN
9:55am-10:35am 3-D Images of Current Pathways of Transcranial Stimulation
Michael J. Russell, PhD
Chief Executive Officer and Director of Research
Aaken Laboratories, Davis CA

10:35am-10:55am BREAK

10:55am-12:00noon Soleus H-Reflex Excitability Changes in Spinal Intact and Injured Subjects at Rest and During Locomotion
DIGITIMER LECTURE
Maria Knikou, PT, PhD
Associate Professor
College of Staten Island / CUNY & Rehabilitation Institute of Chicago,
Northwestern University

12:00noon-1:30pm LUNCH

1:30pm-1:55pm Complications in Neuromonitoring for Pedicle Screw Placement
Miriam Donohue, BS
Departments of Anatomy/Cell and Development Biology and Neurosurgery
SUNY Upstate Medical University, Syracuse, NY

2:00pm-2:25pm Broca’s Area and Language - New Monitoring Method
M.Sc. Maja Rogić
Department for Neuroscience
Laboratory for Human Experimental Neurophysiology School of Medicine,
University of Split, Croatia

2:30pm-2:55pm Mapping and Monitoring the Corticospinal Tract from Cortex to Spine
Charles Yingling PhD, DABNM, FASNM
Director of Education, Sentient, Hunt Valley, MD
Presidential and Chief Scientific Center
California Neuromonitoring Services, San Francisco, CA
Professor of Otolaryngology / Head and Neck Surgery
Stanford School of Medicine, Palo Alto, CA

3:00pm-3:25pm BREAK

3:30pm-3:55pm Electrophysiological Simulator for Intraoperative Monitoring Training
Michael J. Russell, PhD
Chief Executive Officer and Director of Research
Aaken Laboratories, Davis CA

4:00pm-4:25pm Monitoring During Spinal Cord Stimulation Placement
Jay L. Shils PhD, DABNM, FASNM
Assistant Professor and Director of Intraoperative Monitoring
Department of Neurosurgery / The Lahey Clinic / Burlington, MA

4:30pm-4:55pm Safety and Accuracy Issues in Transcranial Electrical Stimulation
Louis Journee MD, PhD
Department of Neurosurgery / UMCG Groningen
The Netherlands

5:00pm-8:00pm ASNM Evening Reception
### GENERAL SESSION

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>7:00am-7:45am</td>
<td>Breakfast with the Experts</td>
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<tr>
<td>7:50am</td>
<td>Welcome and Announcements</td>
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</tbody>
</table>
| 8:00am-8:25am | **Non-Surgical Changes in Neurophysiological Monitoring: Technical, Physiological, Pharmacological and Anesthetic Related Changes**  
Antoun Koht, MD  
Professor of Anesthesiology, Neurological Surgery & Neurology  
Chief, Neurosurgical Anesthesia / Director, Neurosurgical Anesthesia Fellowship  
Northwestern University Feinberg School of Medicine |
| 8:30am-9:25am | **What’s New in Neuromonitoring**                                                            
Mark Stecker MD, PhD, DABNM, FASNM  
Professor of Neuroscience and Director of Neurophysiology  
Marshall University School of Medicine / Cabell Huntington Hospital, Huntington, WV |
| 9:30am-9:55am | **Billing for Intraoperative Monitoring**                                                     
Marianna Hegedus, BA, CPC  
Operations, Department of Neurological Surgery  
University of Pittsburgh Medical Center, Pittsburgh, PA |
| 10:00am-10:20am | **BREAK**                                                                                   |
| 10:30am-10:55am | **Movement Disorders Surgery**                                                               
Terry Patterson, MD  
Associate Professor / Department of Neurosurgery  
Penn State University, Hershey, PA  
Patterson NeuroConsulting, Ltd. |
| 11:00am-12:00noon | **Intraoperative Neurophysiology in Pediatric Neurosurgery: A Tailored Approach**          
**PRESIDENTIAL LECTURER**  
Francesco Sala, MD  
Assistant Professor of Neurosurgery / Head Intraoperative Neurophysiology Unit  
Department of Neurological Sciences and Vistion  
University of Verona, Italy |
| 12:00am-1:30pm | **21st ANNUAL ASNM BUSINESS LUNCHEON**                                                       |
| 1:30pm-2:10pm | **Multimodality Functional Mapping of the Sensorimotor Cortex**                             
Jehuda P. Sepkuty, MD  
Medical Director, Epilepsy Center and Clinical Neurophysiology  
Swedish Neuroscience Institute, Seattle, WA |

### SUBMITTED PAPERS

2:15pm-2:35pm  
"Triggered EMG Monitoring during Fixation of the Cervical Spine: Different Outcomes for Lateral Mass and Pedicle Screws" by Robert N. Holdefer, PhD¹, Dan S. Heffez, MD², Bernard A. Cohen, PhD³ from ¹Dept. Rehabilitation Medicine, University of Washington, Seattle, WA; ²Milwaukee Neurological Institute, SC, Milwaukee, WI; ³Neurological Monitoring Associates, LLC, Milwaukee, WI, USA
2:40pm-3:00pm  "False Positive Rate of Transcranial Motor Evoked Potential Monitoring During Spine Surgeries When Inhaled Anesthetic Agents Were Used: Retrospective Cohort Study of 1497 Cases" by Arvydas Tamkus, MD, PhD, CNIM, D.ABNM and Kent Rice, MS, REPT, CNIM, D.ABNM from Biotronic.

3:00pm-3:25pm  BREAK

SUBMITTED PAPERS

3:30pm-3:45pm  "Multimodality Intraoperative Neurophysiologic Monitoring During Cervical Spine Surgery: Analysis of 261 Consecutive Cases" by Li Huang, PhD, CNIM1,2, Jeffrey S. Oppenheim, MD, DABNS1, Daniel E. Spitzer, MD, DABNS1, G. Alexander Jones, MD1, and Jeffrey W. Degen, MD, DABNS1 from 1Hudson Valley Neurosurgical Associates, Suffern NY; 2American Society of Neurophysiological Monitoring.

3:45pm-4:00pm  "Protecting the Genitofemoral Nerve during Direct Lateral Interbody Fusion (DLIF/XLIF) Procedures" by Faisal Jahangiri, M.D., CNIM, D.ABNM1, Jonathan Sherman, MD2, Robert Louis, MD2, Jeff Elias, MD2, Francisco Vega-Bermudez, MD3, from 1Impulse Monitoring Inc., Columbia, MD; 2University of Virginia Medical Center, Department of Neurosurgery, Charlottesville, VA; 3American Neuromonitoring Associates, Columbia, MD.

4:00pm-4:15pm  The neurophysiology research and education consortium (NREC)
Mark Stecker, Jay Shils, Terry Patterson, Jefferson Slimp.

4:15pm-4:30pm  "Mapping and Monitoring of Motor Cortex in Awake Surgery" by Andrea Szelféyi, MD PhD, Ines Kropff MD, Rüdiger Gerlach MD PhD, Hartmut Vatter MD PhD, Ági Oszvald MD, and Volker Seifert MD, PhD from Department for Neurosurgery, Hospital of the Johann Wolfgang Goethe University.

4:30pm-4:45pm  "Magnetoneuronography (MNoG)" by Q. Yue, MD, PhD, from Department of Audiology, Bloomsburg University of Pennsylvania, Bloomsburg, PA.

4:45pm-5:00pm  "Density spectral array processing of spontaneous electromyography: A preliminary investigation" by Lawrence R. Wierzbowski, Au.D., D.ABNM, Baoqing Wang, MD, D.ABNM, Alice M. Kamp B.S., CNIM., Tracey Lacey CNIM., Yutong Zhang, MD, from Neurological Monitoring Services, West Reading, PA.

5:30pm-7:00pm  “New” Member Reception in the Presidential Suite
<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>7:55am</td>
<td>Welcome and Announcements</td>
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<tr>
<td>8:00am-10:25am</td>
<td>Medical Deposition: Practical Tools for the IONM Practitioner</td>
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<tr>
<td></td>
<td>Bernard Allen Cohen PhD, DABNM, CNIM</td>
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<td>Neurological Monitoring Associates, LLC</td>
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<td>Milwaukee, WI</td>
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<td>10:25am-10:45am</td>
<td>BREAK</td>
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<tr>
<td>10:45am-11:30am</td>
<td>Recurrent Laryngeal Nerve Monitoring: Surgical Perspective</td>
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<tr>
<td></td>
<td>Denise Mugnol Carneiro-Pla, MD</td>
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<td></td>
<td>Assistant Professor, Department of Surgery,</td>
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<td>Medical University of South Carolina, SC</td>
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<td>11:30am-12:15pm</td>
<td>Recurrent Laryngeal Nerve Monitoring: Neuromonitorist Perspective</td>
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<td>Leo Happel PhD, DABNM, FASNM</td>
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<td></td>
<td>Emeritus Professor, Department of Neurology and Neurosurgery</td>
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<td>Louisiana State University Health Sciences Center, New Orleans, LA</td>
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<tr>
<td>12:15pm</td>
<td>Closing Remarks</td>
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<td>Michael McCaffrey, PhD, CNIM, DABNM, FASNM</td>
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<td></td>
<td>Executive Director, Clinical Services</td>
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<td>US NeuroMonitoring</td>
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<td>President, ASNM</td>
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<td>2010-2011</td>
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# Registration Form

**The 21st Annual Meeting of the American Society of Neurophysiological Monitoring**  
**April 23 – 25, 2010**  
**Nashville, TN**

## Registration Fees

<table>
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<tr>
<th>Category</th>
<th>Fee</th>
</tr>
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<tbody>
<tr>
<td>ASN Member</td>
<td>$495</td>
</tr>
<tr>
<td>Non-Member</td>
<td>$595</td>
</tr>
<tr>
<td>Students – with written documentation</td>
<td>$295</td>
</tr>
<tr>
<td>Single Day Rate (select one only: □ Friday □ Saturday □ Sunday)</td>
<td>$300</td>
</tr>
<tr>
<td>CNIM Board Prep Session (additional payment is required to attend)</td>
<td>$95</td>
</tr>
<tr>
<td>DABNM Oral Board Prep (additional payment is required to attend)</td>
<td>$95</td>
</tr>
<tr>
<td>Friday Reception (Single day registrants and guests of registered attendees must pay additional fee to attend reception)</td>
<td>$50</td>
</tr>
<tr>
<td>Printed Meeting Syllabus – Pre Order Only, Not Available for Purchase at the Meeting (Upon check in, all registered attendees will receive USB flash drive with preloaded syllabus at no additional charge)</td>
<td>$55</td>
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## Additional Information

Name ____________________________________________ Degree _______

Specialty ________________________________________

Day Phone __________________ Fax __________________

e-mail __________________________________________

Address ____________________________________________

City __________________________ State ________ Zip __________________

- □ Check enclosed (U.S. funds only), payable to The University of Chicago (Tax ID# 36-2177139)
- □ Charge $___________ to my □ MasterCard □ Visa □ American Express

Card # __________________________ Exp Date _____ / _____

Signature ______________________________________

**Accessibility**  
ASN and The University of Chicago are committed to providing equal access appropriate to need and circumstance and complies fully with the legal requirements of the Americans with Disabilities Act. If you are in need of special accommodation, please contact The University of Chicago Center for Continuing Medical Education at 773-702-1056 or via email at cme@bsd.uchicago.edu

**Cancellation Policy**  
If you cancel your registration for ASNM 2010, the registration fee less a $95 administrative processing charge, will be refunded when written notification is received by April 16, 2010. No refunds will be made after April 16, 2010.

Register online at [http://www.asnm.org/meetings.aspx](http://www.asnm.org/meetings.aspx) (credit card payments only)

Fax this form with payment to: 773/702-1736 (credit card payments only)

Mail this form with payment by check to: The University of Chicago  
c/o: ASNM 2010  
950 E. 61st Street, Suite 101  
Chicago, IL 60637

Telephone registrations cannot be accepted. Registration questions? Please call the University of Chicago at 773-702-1056.
**Frist Center for the Visual Arts:** Housed in a magnificent Art Deco building, the Frist Center for the Visual Arts is at the forefront of Nashville’s burgeoning art scene. Both a museum and an interactive art center, the Frist offers something for everyone.

**Country Music Hall of Fame:** Spanning an entire city block, this must-see venue features live performances, miles of memorabilia and Elvis’ ’61 Cadillac.

**Nashville Zoo at Grassmere:** Covering 200 acres, the Nashville Zoo at Grassmere features animals from all over the world and unique animal habitats, such as the Giraffe Savannah, the African Wild Dog Habitat, and the Alligator Cove.

**Parthenon:** A full-scale replica of the original Parthenon in Athens, Greece, this grand structure is a monument to a pinnacle of classical architecture.

**The Hermitage:** Visit one of this country’s most authentic early presidential sites at The Hermitage, the one-time home of President Andrew Jackson.

**Cheekwood Botanical Gardens:** This private home and estate encompasses acres of specialty gardens, greenhouses, and landscaped vistas and art museum.

**Belle Meade Plantation:** A 30-acre historic site that sits 6 miles west of downtown Nashville, the centerpiece of the Belle Meade Plantation is the Belle Meade Mansion.

**Belmont Mansion:** Built by one of America’s wealthiest women, this 36-room “summer cottage” is famous for its gardens, statuary and ornate furnishings.