



PRINCIPLES AND PRACTICE OF
**INTRAOPERATIVE
NEUROMONITORING**

NOV. 2-4, 2018

UPMC
LIFE CHANGING MEDICINE

Course Objectives

Principles and Practice of Intraoperative Neuromonitoring is designed for advanced professionals who perform or support intraoperative neuromonitoring (IONM) procedures. This includes but is not limited to:

- Neurologists
- Surgical Neurophysiologists
- PM&R physicians
- Neurological Surgeons
- Anesthesiologists
- Orthopedic Surgeons
- Board Certified Neurophysiologists
- Vascular Surgeons
- Senior Neurophysiology Technologists
- ENT Surgeons

The course will highlight practice specifications, multimodality protocols, recent advances in the field, pre-/post-operative neurological evaluation and management, and telemedicine. Presentations will make reference to current literature, technical developments, methodologies and clinical efficacy. The faculty includes University of Pittsburgh Medical Center physicians and neurophysiologists with extensive clinical and academic expertise in IONM. The course is designed to expose the participants to material that will allow them to acquire a comprehensive understanding of IONM and how it relates to a wide variety of relevant topics such as:

- Advanced principles for neurophysiological monitoring, including instrumentation, neuromonitoring protocols, alarm criteria and clinical efficacy
- Minimally invasive spine surgery, including transposas approaches
- Pre-, peri- and post-operative evaluation of neurological complications including stroke, cognitive deficits, seizure and spinal cord injury
- Multimodality monitoring techniques for a broad array of procedures including spine and vascular
- Microelectrode recording during Deep Brain Stimulation (DBS)
- Cranial nerve monitoring during skull base procedures
- Interpretation and communication with surgical team
- Development of a Policy & Procedure manual; documentation and communication with the technologist; development of quality assurance metrics; and staff training
- Problem based learning with real-time data analysis and formulation of differential diagnoses

Hands-on Workshops

What sets this course apart is the inclusion of a 4 hour hands-on workshop for all attendees. Participants will receive instruction and guidance while placing electrodes for cranial nerve EMG monitoring on cadavers (including the extra-ocular muscles). Participants will also learn to place upper and lower extremity EMG electrodes accurately on anatomical models, build multi-modality tests with IONM equipment, and engage in a unique case study review section. There will also be ample opportunity for interaction between the faculty and the audience.

Due to the time constraints associated with such a workshop, space will be very limited. Be sure to reserve your spot early!

Course Directors

Jeffrey R. Balzer, Ph.D., FASN, DABNM

Associate Professor of Neurological Surgery, Neuroscience and Acute and Tertiary Care Nursing Director, Clinical Operations, Center for Clinical Neurophysiology Director, Cerebral Blood Flow Laboratory University of Pittsburgh Medical Center

Partha Thirumala, M.D., FACNS, FAAN

Associate Professor of Neurological Surgery and Neurology Medical Director, Center for Clinical Neurophysiology University of Pittsburgh Medical Center

Course Coordinator

R. Joshua Sunderlin, M.S., CNIM

Education Specialist - Procirca Center for Clinical Neurophysiology

Faculty

Katherine Anetakis, M.D.

University of Pittsburgh Department of Neurological Surgery

Paula Araya, M.D.

Instituto De Neurocirugia Dr. Alfonso Asenjo

Jeffrey Balzer, Ph.D.

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Mindy Corridoni, B.S., CNIM

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Donald Crammond, Ph.D.

University of Pittsburgh Department of Neurological Surgery

Ronald Emerson, M.D.

Hospital for Special Surgery, Department of Neurology

Sébastien Fournier, Ph.D.

University of California San Francisco Department of Neuromonitoring

Paul Gardner, M.D.

University of Pittsburgh Department of Neurological Surgery

Peter Gerszten, M.D.

University of Pittsburgh Department of Neurological Surgery

Thomas Gleason, M.D.

University of Pittsburgh Department of Cardiothoracic Surgery

Bradley Gross, M.D.

University of Pittsburgh Department of Neurological Surgery

Adam Kanter, M.D.

University of Pittsburgh Department of Neurological Surgery

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Rachel Mihal, B.S., CNIM

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Ryan Quallich, B.S., CNIM

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R. Joshua Sunderlin, M.S., CNIM

Procirca Center for Clinical Neurophysiology

Partha Thirumala, M.D.

University of Pittsburgh Department of Neurological Surgery

Day 1: Friday Nov 2nd

7:00A-7:30A Continental Breakfast

7:30A-7:45A Welcome Address

Principles of Intraoperative Monitoring:

7:45A-8:15A Perioperative Neurology and Physiological Basis of Neuromonitoring Partha Thirumala MD

8:15A-9:00A Principles of EEG Monitoring during surgery Katherine Anetakis, MD

9:00A-9:45A Principles of SSEP during surgery Donald Crammond, Ph.D.

9:45A-10:30A Principles of TcMEP during surgery Jeffrey Balzer, Ph.D.

10:30A-11:00A Principles of BAEP during surgery Partha Thirumala, Ph.D.

11:00A-11:45A Lunch break

IONM for Spinal Surgery:

11:45A-12:15P Anthropology of Spine Surgery Peter Gerszten, MD

12:15P-1:00P Scoliosis and Spinal Deformity Katherine Anetakis, MD

1:00P- 1:30P Minimally Invasive Spine Surgery Part 1 Adam Kanter, MD

1:30P-2:15P Minimally Invasive Spine Surgery Part 2 Jeffrey Balzer, Ph.D.

2:15P- 2:30P Break

Procedure Specific Neuromonitoring:

2:30P -3:00P Neuro-interventional Procedures Part 1 of 2 Bradley Gross, MD

3:00P- 3:30P Neuro-interventional Procedures Part 2 of 2 Jeffrey Balzer Ph.D.

3:30P- 4:00P Case study presentation Sebastien Fournier, Ph.D.

4:00P- 4:30P EEA for skull base tumor Paul Gardner, MD

4:30P Adjournment

5:30P- 7:30P Meet and Greet with Faculty & Vendors, Hilton Garden Inn Forbes Ballroom. Hors d'oeuvres and open bar

Day 2: Saturday Nov 3rd

7:00A-7:30A Continental Breakfast

7:30A-7:45A Morning announcements

IONM in South America

7:45A- 8:15A Case study presentation Paula Araya MD

IONM and Stroke prevention:

8:15A-8:30A IOM to prevent stroke Partha Thirumala, MD

8:30A-9:00A Carotid Endarterectomy Part 1 Brian Jankowitz, MD

9:00A-9:30A Carotid Endarterectomy Part 2 Partha Thirumala, MD

9:30A-9:45A Break

9:45A-10:15A Aortic Aneurysm Part 1 Thomas Gleason, MD

10:15A-10:45A Aortic Aneurysm Part 2 Jeffrey Balzer, Ph.D.

Day 2: Saturday Nov 3rd (continued)

Keynote Speech:

10:45A-11:30A SSEP Ronald Emerson, MD.

11:30A-12:30P Lunch in the vendor area

Workshops:

12:30P- 1:00P Bloodborne pathogens lecture and exam, Instructions for workshops Josh Sunderlin, MS, CNIM

1:00P- 5:10P Workshops

Station 1: Placing EMG electrodes for Cranial Nerve EMG (cadaver lab) Ryan Quallich CNIM / Jeff Balzer, Ph.D.

Station 2: Upper and Lower Extremity EMG placement (1105b) Rachel Mihal CNIM / Donald Crammond, Ph.D.

Station 3: Building IONM tests with equipment (1105c) Andrew Moyer CNIM / Katherine Anetakis, MD

Station 4: Case study review section (S921) Partha Thirumala, MD / Josh Sunderlin MS, CNIM

5:10P Adjournment

Day 3: Sunday Nov 4th

7:00A-7:30A Continental Breakfast

7:30A-7:45A Day 3 Announcements

IONM for Functional Neurosurgery:

7:45A-8:30A Deep Brain Stimulator placement Donald Crammond, Ph.D.

8:30A-9:15A Awake Craniotomy Jeff Balzer, Ph.D.

Improving IONM Practice:

9:15A-9:45A Policy, Procedure, and training Ryan Quallich, CNIM/ Jeff Balzer Ph.D.

9:45A-10:15A Troubleshooting Josh Sunderlin, MS, CNIM/ Partha Thirumala MD

10:15A-10:30A Break

10:30A-11:00A Controversies in IONM: Determining Alarm Criteria Partha Thirumala, MD

11:00A -11:30A Quality Assurance Mindy Corridoni, CNIM/ Katherine Anetakis, MD

11:30A-12:00P Communication and Documentation: Medico-legal implications Jeff Balzer, Ph.D.

12:00P Conference Adjournment

Sponsored by Procirca and University of Pittsburgh School of Medicine Center for Continuing Education in the Health Sciences

Tuition

\$700 for physicians and other attendees seeking CME credits
\$550 for all other healthcare professionals seeking CEU credits

Registration and Payment

Please register and pay directly from our website:
<http://www.procirca.com/intraoperative-neuromonitoring/Pages/neuromonitoring-workshop.aspx>.

On-site registration will not be permitted.

CME Accreditation and Designation

The University of Pittsburgh School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The University of Pittsburgh School of Medicine designates this live activity for a maximum of 19.75 *AMA PRA Category 1 Credits*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other health care professionals are awarded 1.9 continuing education units (CEUs) which are equal to 19 contact hours.

ASET - The Neurodiagnostic Society has granted 19.0 Continuing Education Units [ASET-CEUs] for this program. Such crediting, however, should not be construed by program participants as an endorsement of any type of instruments or supplies mentioned or involved in these presentations.

Faculty Disclosure

All individuals in a position to control the content of this education activity are required to disclose all relevant financial relationships with any proprietary entity producing, marketing, re-selling, or distributing health care goods or services, used on, or consumed by, patients.

Special Needs

Participation by all individuals is encouraged. Advance notification of any special needs will help us provide better service. Please notify us of your needs at least two weeks in advance of the program by calling 412-647-1453.

Cancellation Policy

- Registration fee is 100% refundable up until September 3, 2018
- A 50% refund of the registration fee will be offered between September 4 and October 3, 2018
- After October 3, 2018 - NO REFUNDS GRANTED

Cancellation requests should be sent to:

Josh Sunderlin, Course Coordinator
Procirca Center for Clinical Neurophysiology
Phone: 412-647-1453 Email: sunderlinj@procirca.com

Course location and hotel accommodations

Location:

UPMC Presbyterian Hospital

Biomedical Science Tower
Room S120
Pittsburgh, PA 15213

Hotels within walking distance of campus:

Hilton Garden Inn Pittsburgh University Place

454 Forbes Avenue
Pittsburgh, PA 15213 Phone: (412) 683-2040

Distance from campus is 0.3 miles;
travel time on foot is five minutes.

A block of rooms is being held at the Hilton Garden Inn University Place at a rate of \$141.00/Night.

http://hiltongardeninn.hilton.com/en/gi/groups/personalized/P/PITUCGI-PPIN-20181101/index.jhtml?WT.mc_id=POG

Wyndham Pittsburgh University Center

100 Lytton Avenue
Pittsburgh (Oakland), PA 15213
Phone: (412) 682-6200

Distance from campus is 0.7 miles;
travel time on foot is 10 minutes.

Wyndham nightly parking charge: \$10.00

The University of Pittsburgh is an affirmative action, equal opportunity institution.

Procirca Center for Clinical Neurophysiology

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Space is very limited. Register today at
[procirca.com/intraoperative-neuromonitoring/
Pages/neuromonitoring-workshop.aspx](http://procirca.com/intraoperative-neuromonitoring/Pages/neuromonitoring-workshop.aspx)