



PRINCIPLES AND PRACTICE OF
**INTRAOPERATIVE
NEUROMONITORING**
OCTOBER 4-6, 2019

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
- Cardiac 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 transpoas 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
- 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

Interactive Workshop Stations

- Instruction and the opportunity to practice placing cranial nerve EMG electrodes on a cadaver (including the extra-ocular muscles)
- Case study review session where participants will work through differential diagnoses
- Cerebrovascular anatomy and the role of IONM in Neurointerventional procedures
- Explore technical problems in IONM and how to develop algorithms for troubleshooting

Course Directors

Jeffrey R. Balzer, PhD, FASNM, 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, MD, 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, MD

University of Pittsburgh Department of Neurological Surgery

Jeffrey Balzer, PhD

University of Pittsburgh Department of Neurological Surgery

Patrick Bosch, MD

University of Pittsburgh Department of Orthopedic Surgery

Carly Brog, CNIM

Procirca Center for Clinical Neurophysiology

James Castellano, MD

University of Pittsburgh Department of Neurological Surgery

Mindy Corridoni, CNIM

Procirca Center for Clinical Neurophysiology

Uma Duvvuri, MD

University of Pittsburgh Department of Otolaryngology

Wendy Fellows-Mayle, PhD

University of Pittsburgh Department of Neurological Surgery

Robert Friedlander, MD

University of Pittsburgh Department of Neurological Surgery

Ashutosh Jadhav, MD

University of Pittsburgh Department of Neurological Surgery

Rachel Mihal, CNIM

Procirca Center for Clinical Neurophysiology

Andrew Moyer, CNIM

Procirca Center for Clinical Neurophysiology

David Okonkwo, MD

University of Pittsburgh Department of Neurological Surgery

Ryan Quallich, CNIM

Procirca Center for Clinical Neurophysiology

Nishanth Sampath, MD

SIMS Institutes for Medical Science, New Dehli

Mirela Simon, MD

Department of Neurology, Harvard Medical School

Jay Shils, PhD

Department of Anesthesiology, Rush Medical College

Raymond Sekula, MD

University of Pittsburgh Department of Neurological Surgery

Jeremy Shaw, MD

University of Pittsburgh Department of Orthopedic Surgery

Ibrahim Sultan, MD

University of Pittsburgh Department of Cardiovascular Surgery

R. Joshua Sunderlin

Procirca Center for Clinical Neurophysiology

Partha Thirumala, MD

University of Pittsburgh Department of Neurological Surgery

Elizabeth Tyler-Kabara, MD

University of Pittsburgh Department of Neurological Surgery

Shyam Visweswaran, MD, PhD

University of Pittsburgh

DAY 1: FRIDAY, OCT. 4th

7:00A-7:30A Continental Breakfast

7:30A - 7:45A Welcome address Jeff Balzer PhD/Josh Sunderlin MS, CNIM

Principles of Intraoperative Neuromonitoring:

7:45A-8:15A IONM: The History and Physiological Basis Partha Thirumala MD

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

9:00A-9:45A Principles of SSEP Monitoring During Surgery James Castellano, MD

9:45A-10:30A Principles of TcMEP Monitoring During Surgery Jeffrey Balzer, PhD

10:30A-11:00A Principles of BAER Monitoring During Surgery Partha Thirumala, PhD

11:00A-11:45A Lunch break

IONM For Spinal Surgery:

11:45A-12:15P Pediatric scoliosis procedures Patrick Bosch, MD

12:15P-1:00P Minimally Invasive Spine Procedures Jeff Balzer, PhD

1:00P- 1:30P Complex Adult spinal deformity David Okonkwo, MD

1:30P - 2:00P Cervical and Thoracic Spine Trauma Jeremy Shaw, MD

2:00PM - 2:15P BREAK (15 min)

IONM and Stroke:

2:15P - 2:45P IONM for stroke prevention Partha Thirumala, MD

2:45P - 3:15P Carotid Endarterectomy Robert Friedlander, MD

3:15P - 3:45P Therapeutic options for Perioperative Stroke Ashutosh Jadhav, MD

Microvascular Decompression:

3:45P-4:30PM MVD procedures Ray Sekula, MD

4:30P Adjournment

5:30P - 7:30P Meet and Greet with Faculty & Exhibitors, Hilton Garden Inn

DAY 2: SATURDAY, OCT. 5th

7:00A-7:30A Continental Breakfast

7:30A - 7:45A Day 2 Announcements Jeffrey Balzer PhD/Josh Sunderlin MS

Outside the box:

7:45A- 8:15A Artificial Intelligence in Medicine Shyam Visweswaran, MD, PhD

Procedure Specific IONM:

8:15A - 8:45A Pediatric Neurosurgical Procedures Elizabeth Tyler-Kabara, MD

Day 2: Saturday OCT. 5th (continued)

8:45A - 9:15A RLN/SLN Monitoring in Thyroidectomy Uma Duvvuri, MD

9:15A - 9:30A BREAK (15min) - Exhibitor area

9:30A - 10:00A Neurophysiologic techniques for improving DBS lead placement and post-operative optimization Jay Shils, PhD

10:00A - 10:45A IOM for cardiovascular procedures Ibrahim Sultan, MD

Keynote Speech:

10:45A - 11:30A "The Multimodality Neurophysiologic Mapping Technique in Supratentorial Surgery - An Evolving Journey" Mirela Simon, MD

11:30A - 12:30P Lunch in Exhibitor area

Workshops:

12:30P- 1:00P Bloodborne Pathogens lecture and exam Josh Sunderlin, MS

1:00P - 5:15P Interactive Workshop Stations

Station 1: Placing cranial nerve EMG electrodes on cadavers Wendy Fellows-Mayle PhD/Ryan Quallich, CNIM

Station 2: Interactive Case Study Review Session Partha Thirumala, MD/Josh Sunderlin, MS, CNIM

Station 3: Cerebrovascular Anatomy and Interactive Case Studies Jeffrey Balzer, PhD/Carly Brog, CNIM

Station 4: Troubleshooting Technical Problems with IONM Equipment Katherine Anetakis, MD/Andrew Moyer, CNIM

5:15P Adjournment

DAY 3: SUNDAY, OCT. 6th

7:30A - 7:45A Day 3 Announcements Jeffrey Balzer PhD/Josh Sunderlin MS

IONM in India

7:45A-8:30A IONM in India Nishanth Sampath, MD

Improving IONM Practice:

8:30A - 9:15A Managing IOM practice Ryan Quallich, CNIM/Partha Thirumala, MD

9:15A - 9:45A Formal Education in IONM Josh Mergos, MS

9:45A - 10:00A BREAK (15min)

10:00A - 10:30A Troubleshooting in IONM Josh Sunderlin, MS

10:30A - 11:15A Quality Assurance Mindy Corridoni CNIM/Katherine Anetakis, MD

11:15A - 12:00P Communication and Documentation (Medico-legal implications) Jeffrey Balzer, PhD

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 20.5 *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 2.0 continuing education units (CEUs) which are equal to 20 contact hours.

ASET - The Neurodiagnostic Society has granted 19.5 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 August 3, 2019
- Registration fee is 50% refundable up to 15 days prior to the start date of the course.
- If you cancel within 15 days of the start of the course, **NO REFUNDS** will be 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 \$144.00/Night.

https://hiltongardeninn.hilton.com/en/gi/groups/personalized/P/PITUCGI-PPIN-20191003/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)