

# Joshua Mergos

University of Michigan School of Kinesiology  
Observatory Lodge 1114 OBL  
1402 Washington Heights  
Ann Arbor, MI 48109-2214  
office: 734-647-2905  
e-mail: jmergos@med.umich.edu

## **Professional Experience**

2014 – Present                      *University of Michigan*  
   *Clinical Assistant Professor, School of Kinesiology*  
   *IONM Program Director*

Direct CAAHEP-accredited IONM program. Teach and update IONM courses and labs within the Movement Science degree program. Develop affiliations with outside hospitals for clinical rotation placements. Coordinate with clinical site neurophysiology supervisors to provide standard of care clinical rotation opportunities. Develop and coordinate job placement opportunities for graduates of IONM program.

2012 – 2014                      *University of Michigan*  
   *Adjunct Clinical Assistant Professor, School of Kinesiology*

Developed the IONM field's first CAAHEP-accredited program.  
Taught IONM-specific courses to students focusing on Movement Science within the School of Kinesiology.

- MVS 361 - Introduction to Surgical Neuromonitoring (3 cr)
- MVS 362 - Surgical Neuromonitoring Lab (2 cr)
- MVS 363 - Intraoperative Neurophysiological Monitoring (4 cr)
- MVS 465 - Neuroanesthesia and Advanced Topics for IONM (3 cr)
- MVS 464, 466, 467 - Clinical Rotations for IONM (I, II, & III)

2010 - 2016                      *University of Michigan Health System – Ann Arbor, MI*  
   *Intraoperative Neuromonitorist, Department of Neurology*  
   *Educational Coordinator, Department of Neurology - IONM*

Organize and provide weekly education content for Department of Neurology – IONM including: case study reviews, literature reviews, presentations of new techniques, and advances in the field of IONM. Provide annual IONM education to other hospital departments, including Anesthesia, Orthopedics, and Neurosurgery. Perform continuous real-time monitoring and mapping of the central and peripheral nervous system on patients during surgical procedures including adult and pediatric spinal fusions and deformity corrections; craniotomies for aneurysm and fistula/malformation treatment; resection of supra- and infratentorial brain tumors; and interventional radiology endovascular procedures including aneurysm or fistula/malformation embolization.

2008 – 2010                      *Beaumont Hospital – Royal Oak, MI*  
*Intraoperative Neuromonitorist, Clinical Neurophysiology Department*

Performed intraoperative monitoring during procedures including peripheral nerve tumor resections, spinal fusions, and otolaryngology procedures.

Trained and mentored new hires in intraoperative neurophysiology in both didactic and clinical settings and presented case study reviews at group educational meetings

## **Education**

2011                                      *M.S., Biomedical Engineering, Concentration in Neurophysiology*  
*Wayne State University – Detroit, MI*  
*Directed Study: Motor & Sensory Differences in Peripheral Nerve Excitability*

2006                                      *B.S., Electrical Engineering*  
*University of Michigan – Dearborn, MI*  
*Senior Project: Autonomous GPS-guided RF aircraft*

## **Professional Organizations**

2016 – current                      Member – Committee on Accreditation for Education in  
Neurodiagnostic Technology

2014 – current                      ASNM Education Committee Chair

2009 – current                      Member - American Society of Neurophysiological Monitoring

2011 – current                      Member – ASET – The Neurodiagnostic Society

2012 – 2015                        ASET Formal Education Task Force

2012 – 2014                        ASNM Membership Committee

2011 – 2012                        ASNM Newsletter Editorial Committee Acting Chair

## **Invited Lectures**

*“Formalized Education for Intraoperative Neurophysiological Monitoring”. February 2015. American Society of Neurophysiological Monitoring Regional Symposium – Scottsdale, AZ*

*“Intraoperative Neurophysiologic Monitoring”. November 2014. Michigan Society of Clinical Engineers Meeting – Ann Arbor, MI*

*“A Bachelor’s Degree Program for the Neuromonitorist”. September 2014. Michigan Neurodiagnostic Society Fall Meeting – Novi, MI*

*“Challenges and Special Considerations for Monitoring EMG”. May 2014. American Society of Neurophysiological Monitoring Annual Meeting – Chicago, IL*

*“Case-specific Electrical Techniques and Considerations for Tce-MEPs”. September 2013. Southern Society of Electroneurodiagnostic Technologists – Savannah, GA.*

*“Pitfalls of Monitoring Intracranial Pathology”. February 2013. American Society of Neurophysiological Monitoring Winter Symposium – San Antonio, TX.*

## **Invited Lectures (continued)**

*“Intraoperative Neurophysiological Monitoring in the Interventional Neuroradiology Suite”. October 2012. Southern Society of Electroneurodiagnostic Technologists*

*“Technical Considerations for Brain IONM”. May 2012. American Society of Neurophysiological Monitoring Annual Meeting – Salt Lake City, UT*

## **Invited Training**

Presented three day lecture course on IONM including basic techniques for various monitoring modalities and their application for various surgical procedures. March 2014. *Queen Elizabeth Hospital Department of Neurosurgery & Institute of Advanced Nursing Studies – Kowloon, Hong Kong.*

Presented and taught neurophysiological monitoring techniques during spinal cord and cauda equina surgery. October 2010. *Makati Medical Center - Manila, Philippines.*

Taught didactic sessions on the fundamental theory of intraoperative monitoring and its applications for various surgeries. October 2010. *Audiomed, Co., Ltd – Bangkok, Thailand*

Demonstrated techniques in intraoperative monitoring for spinal cord and tethered cord surgery & trained anesthesiology staff on specific applications of various modalities for procedures. Trained OR personnel on fundamentals of electrical interference with IONM. Presented to Department of Neurosurgery on indications for and benefits of intraoperative monitoring for spinal cord tumor and tethered cord surgery. October 2010. *King Chulalongkorn Memorial Hospital – Bangkok, Thailand*

Presented IONM techniques to electroneurodiagnostic personnel and neurosurgery faculty. Discussed the fundamentals of IONM and its applications for neurosurgery. March 2010. *Dr. Soetomo Hospital - Surabaya, Indonesia*

Presented on the technique of IONM and its utility for spine surgery and its specific application for minimally invasive approaches. March 2010. *Sahid Sahirman Memorial Hospital Spine Center- Jakarta, Indonesia*

## **Meetings Chaired**

*“Intraoperative Neurophysiology for Interventional Neuroradiology”. American Society of Neurophysiological Monitoring Fall Symposium. September, 2015. Philadelphia, PA*

*“Perioperative Perspectives in Intraoperative Neurophysiological Monitoring”. American Society of Neurophysiological Monitoring Fall Symposium. September, 2014. Ann Arbor, MI*

## **Publications and Abstracts**

### ***Abstracts and Posters***

Mergos J, Werner NL, Chulski N, Villa C, Stacey W, Rojas-Pena A, Neumar RW. "Scalp-recorded Somatosensory Evoked Potentials in Swine are Viable for Studying Cerebral Ischemic Injury and Recovery Secondary to Cardiac Arrest". Poster at American Clinical Neurophysiology Society Annual Meeting – Orlando, FL. February, 2016.

Mergos J, Singh V, Minecan D, Pandey A. "Clinical Utility and Yield of Pharmacologic Provocative Testing During 'High' and 'Low' Risk Spinal Endovascular Procedures". Poster at American Clinical Neurophysiology Society Annual Meeting – Orlando, FL. February, 2016.

Singh V, Mergos J, Glynn S, Bush B, Kushwaha R, Minecan D. "Safety of Transcranial Electrical Motor Evoked Potential in Patients with Epilepsy". Poster at American Clinical Neurophysiology Society Annual Meeting – Houston, TX. February, 2015.

Mergos J. "A Bachelor's Degree Program for the Neuromonitorist". Platform Presentation at ASET – The Neurodiagnostic Society Annual Meeting – Asheville, NC. August, 2014.

Mergos J, Bush B, Khan F, Minecan D, and Hart R. "Dexmedetomidine's Effect on Transcranial Electric Motor Evoked Potential Monitoring for Pediatric Patients Undergoing Spinal Correction Surgery". Poster at American Clinical Neurophysiology Society Annual Meeting – San Antonio, TX. February, 2012.

### ***Book Chapters***

Mergos J, Kale E, Husain A. "Training Curriculum for NIOM." *A Practical Approach to Intraoperative Neurophysiologic Monitoring*. 2<sup>nd</sup> ed. Ed. Aatif M. Husain. Demos Medical, 2014. 334 - 353. Print.

## **Grants**

The University of Michigan Center for Research on Learning and Teaching, "Creation of Integrated Surgical & Neurophysiologic Video Data Streams to Enhance Student Visual Learning", \$6,000, **Principal Investigator**. 2014.

## **Certifications**

Certification in Neurophysiologic Intraoperative Monitoring – American Board of Registration of EEG & EP Technologists (2008)

## **Honors & Awards**

Mary Stecker Travel Award for Aspiring Students in the field of IOM – ASNM Annual Meeting – 2008