Global Neuro

Preliminary Program

Global Neuro Course in Neurotrauma and Neurocritical Care

(With Hands-On Sessions for Neurosurgery Residents and 3D Demonstrations for Nurses)

Friday – Sunday
August 22-24, 2025

Medical College of Wisconsin
Hub for Collaborative Medicine
Medical Education Building
8701 Watertown Plank Road
Milwaukee, Wisconsin 53226

Global Neuro welcomes you!

On January 1, 2018, AONeuro became Global Neuro to broaden our geographical reach and to collaborate with multiple partners. Our new foundation is incorporated in Switzerland and is ready to serve you and improve educational and practical experiences in patient care and outcomes.

We offer educational events across the world, with rigorously prepared and evaluated curricula in multiple cultural and educational formats. Global Neuro's educational offerings include lecture presentations, interactive case discussions, small group discussions, practical exercises, simulation exercises, and online education. Global Neuro strives to increasingly collaborate with regional, national, and international societies and organizations to deliver symposia and courses at congresses and annual meetings. These partnerships enable us to provide the best formats possible.

While our initial educational efforts began with neurosurgeons, we are increasingly collaborating with neurologists, emergency physicians, trauma surgeons, neurointensivists, neuro-anesthesiologists, neuroradiologists, and other neuro professionals to provide comprehensive education and program development opportunities. Emergency care, specific neurological care, and recovery are too complex to depend upon a single discipline. As such, collaboration is required to be able to make the greatest impact on our patients' progress and outcomes.

We hope this program meets your expectations, as it is based on continuous development, study, evaluation, and discussion. Please let us know if you have ideas or suggestions for how we can enhance your learning and educational experience.

Join our network of professionals as we work together to improve the results in neuro care and rehabilitation for all our patients.

Warm regards!

Andrés M. Rubiano
President, Global Neuro Foundation

Course description

This course covers the current best strategies and considerations for managing neurotrauma patients and is based on competencies defined in Global Neuro's curriculum. The course focuses on cranial, spinal, and other forms of neurotrauma. The content is delivered using multiple methods. Comprehensive lectures and audience response activities concentrate on the understanding of core material. Interactive case presentations further deepen this knowledge and enrich the discussion on trauma management. Practical sessions teach the application of Global Neuro principles to the surgical and procedural aspects of neurotrauma management.

Target participants

The Global Neuro Course in Neurotrauma and Neurocritical Care has been developed for neurosurgical residents, neurosurgeons, trauma surgeons and other physicians, and neurocritical care and neuroscience nurses. The course aims to provide additional education on the complex management issues surrounding traumatic injuries, including traumatic brain injury, spinal cord and spinal column injury, blunt vascular injury, and peripheral nerve injury. Hands-on sessions are provided for neurosurgery residents to stimulate interest in surgical and procedural techniques for managing the diverse injuries neurosurgeons face in training and in practice. Residents will be exposed to a variety of perspectives from neurotrauma leaders around the country on the use of multimodality neuromonitoring and complex management issues to augment their experiences in their home training programs. They will also be exposed to current thoughts on the future of the specialty.

The Saturday morning session will be open to practicing physicians and nurses and CME and CEU credits will be offered. The hands-on training session will be for residents only; however, some displays may be available for nurses or physicians to observe. The Sunday morning session is meant primarily for residents, but attending physicians and nurses may attend with prior reservations due to space limitations.

Transportation to and from organized course activities will be provided for non-local faculty and residents. Non-local residents are responsible for their own transportation on Saturday night. All local attendees are responsible for their own transportation to all events.

Learning objectives

By completing this course, participants will be better able to:

1. Review evidentiary bases for prognostication, diagnosis, and management of various neurotrauma injuries, including those to the brain, spinal cord, peripheral nerves, spinal column, craniofacial structures, and craniocervical vasculature.

2. Be familiar with the breadth and depth of neurotrauma diagnoses, treatments, and controversies.

3. Understand the surgical anatomy and be facile with basic techniques including: ventriculostomy, decompressive craniectomy, evacuation of subdural hematoma, and internal fixation for occiput to C2, subaxial cervical spine, and thoracolumbar spine injuries.

4. Be familiar with innovations taking place in the care of neurotrauma patients.

5. Discuss controversies in neurotrauma, areas of equipoise and lack of evidence, and understand the arguments for various positions regarding controversial management issues.

All resident attendees and all faculty are asked to kindly stay for the entire duration of the course. Sessions for practicing physicians and nurses are limited to Saturday morning.

Course Chairs

Shelly D. Timmons, MD, PhD	Milwaukee, WI
David O. Okonkwo, MD, PhD	Pittsburgh, PA
Gregory W. Hawryluk, MD, PhD	Cleveland, OH

Local Hosts

Nathan Zwagerman, MD
Kunal Gupta, MD, PhD

Invited Faculty

Rocco A. Armonda, MD	Washington, DC
Randall M. Chesnut, MD	Seattle, WA
Hirad Hedayat, MD	Milwaukee, WI
Shekar Kurpad, MD, PhD	Milwaukee, WI
Sean Lew, MD	Milwaukee, WI
Geoffrey T. Manley, MD, PhD	San Francisco, CA
Michael McCrea, PhD	Milwaukee, WI
T. Jayde Nail, MD	Boston, MA
John Nerva, MD	Milwaukee, WI
Laura B. Ngwenya, MD, PhD	Cincinnati, OH
Matthew W. Pease, MD	Indianapolis, IN
Patricia Raskin, MD	Chicago, IL
Emily P. Sieg, MD	Louisville, KY
Douglas P. Terry	Nashville, TN
Aditya Vedantam, MD	Milwaukee, WI
Sharon Webb, MD	Charleston, SC

Nursing Track

Linda Littlejohns, RN MSN FAAN

Friday, August 22, 2025

Faculty Meeting
18:00 – 19:00 H
Hub for Collaborative Medicine Conference Room 4001

Faculty /Residents Mixer
19:00 – 20:00 H
Hub for Collaborative Medicine 9th Floor
Residents can stay until 20:30 H.

Transportation

17:45H
Shuttle Bus Departs from Renaissance Hotel to Transport Faculty the Hub

18:15 – 18: 45 H
Shuttle Bus Departs from Hotel(s) for Residents to Transport them to the Hub

20:00H
Shuttle Bus Departs from the Hub to Transport Faculty to Renaissance Hotel

20:15 – 20:45 H
Shuttle Bus Departs from the Hub to Transport Residents to Hotel(s)

Saturday, August 23, 2025

Transportation

06:00 – 07:00 H
Shuttle Bus Transport Faculty and Residents to Medical Education Building

---

Continental Breakfast (60 Minutes)
MCW Medical Education Building Alumni Center
07:00 – 08:00 H

Session I: Diagnosis and Prognosis (115 Minutes)
MCW Medical Education Building Kerrigan Auditorium
8:00 – 9:55 H

Welcome and Introductions; Global Neuro Overview (5 Minutes) — Hawryluk

Whaddya Know? (10 Minutes) — Nail

- Based upon categories from the long-running public radio quiz show.
- Audience Response System to be used to ask ~10 questions about TBI and SCI diagnosis, prognosis, and management.
- Responses will be used to level-set knowledge level of audience and help faculty direct comments to level of sophistication.

Prognostication in TBI: What Do We Know? (20 Minutes) — Chesnut
Neuroimaging Innovations in TBI and SCI (20 Minutes) — Okonkwo
Q&A / Open Discussion (10 Minutes)

Neurocritical Care Issues in TBI Management (20 Minutes) — Ngwenya
Cognitive Sequelae and Rehabilitation After TBI (20 Minutes) — Terry
Q&A / Open Discussion (10 Minutes)

Coffee Break (20 Minutes)
9:55 – 10:15 H

Session II: Fundamentals of Neurotrauma Management (120 Minutes)
MCW Medical Education Building Kerrigan Auditorium
10:15 – 12:15 H

Wait, wait…Don't Tell Me! *(10 Minutes)* — Okonkwo

- Based upon the long-running public radio knowledge and trivia game, audience members will pit their knowledge of neurotrauma facts on management against expert panelists in a quick round of 10 questions.
- Categories: Current Events; Bluff the Residents; Limerick Challenge

Management of Craniofacial Trauma (20 Minutes) — Nail
Management of Pediatric Spine Trauma (15 Minutes) — Lew
Q&A / Open Discussion (10 Minutes)

Management of High C-Spine Trauma (20 Minutes) — Zwagerman
Management of Subaxial Cervical Spine Trauma (15 Minutes) — Sieg
Management of Thoracolumbar Trauma (20 Minutes) — Vedantam
Q&A / Open Discussion (10 Minutes)

Working Lunch (60 Minutes)
MCW Medical Education Building Alumni Center
12:15 – 13:15 H

Transition to Room (5 Minutes)
Local Attractions (3 Minutes) — Gupta

Let's Make a Deal! (10 Minutes) — Ngwenya

- Attendees will be asked to guess the value/cost of various supplies. Winners will receive door prizes, such as Global Neuro - and sponsor- branded items, models / sawbones, free registration for future courses, etc.

Video Demonstrations Over Lunch for All Three Sessions (36 Minutes)

Door #1: Ventriculostomy and Craniotomy (10 Minutes)
Door #2: Cervical Spine Fixation Techniques (10 Minutes)
Door #2: Thoracolumbar Spine Fixation Techniques (10 Minutes)
Door #3: Endovascular Simulator (6 Minutes)

Transition to Lab (6 Minutes)

Session III: Hands-On Sessions (180 Minutes) – see Nursing Track below

MCW Medical Education Form and Function Laboratory
13:15 – 16:15 H

Door #1 and Door #3 (90 Minutes - 27 Attendees)
Door #1: Ventriculostomy and Craniotomy (60 Minutes – 27 Attendees)

- This session is designed with realistic cranial models, fixation devices, intra-parenchymal monitors, and ventricular catheters. Goals are to be facile with instruments required to perform these procedures, understand external landmarks, be familiar with both basics and nuances of technique. Model also allows for evacuation of subdural hematoma, resection of intracranial tumor, placement of shunt.
- Set up for six stations, 3 attendees each:
    - Two Stations: EVD and Multi-Modality Monitoring
    - Two Stations: Decompressive Craniotomy
    - Two Stations: SDH Evacuation
    - Stations on non-invasive techniques, such as pupillometry
- Rotate Every 20 Minutes

Chesnut (Leader Crani)
Webb (Leader EVD)
tbd (Leader SDH Evacuation)
Other Faculty: Gupta, Lew, Manley, Timmons

Door #3: Neurovascular Simulator (30 Minutes)

- This session will allow attendees to perform endovascular catheter interventions on a simulator including the opportunity to deploy endovascular devices.
- Set up for three stations, 3 attendees each.

Leader (Hedayat)
Other Faculty: Armonda, Nerva, Webb

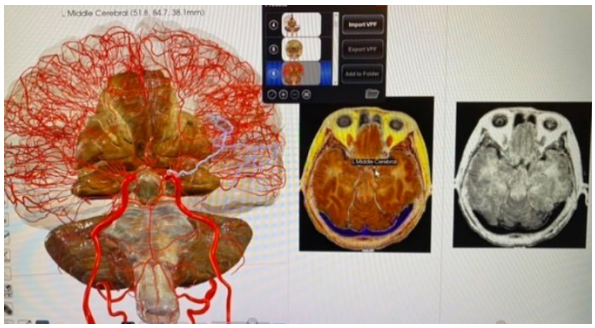
Door #2: Spine Fixation Techniques (90 Minutes, 27 Attendees)

- This session is designed to provide experience with various fixation techniques of the occiput to C2 and the subaxial cervical spine. Goals are to be facile with the instrumentation, understand landmarks and trajectories, and indications for techniques.
- Set up for nine stations, 3 each: Occiput to C2, Subaxial C-Spine, Thoracolumbar Spine
- Rotate every 30 minutes.

Zwagerman (Leader for Upper C-Spine)
Sieg (Leader Subaxial C-Spine)
Okonkwo (Leader Thoracolumbar Spine)
Nail (Leader Thoracolumbar Spine)
Other Faculty:
Cervical Spine: Hawryluk, Ngwenya, Pease

Thoracolumbar Spine: Kurpad, Vedantam

Session III (Nursing Track): 3D Correlative Brain and Spinal Cord Anatomy and Assessment (180 Minutes)



MCW Medical Education Building Kerrigan Auditorium
13:15 – 16:15 H

Neuroscience patient care is built on a foundation of normal anatomy knowledge. This session will explore the normal structures, pathways and vasculature of the brain, brainstem, cerebellum and spinal cord. The patient assessment scenarios, and case studies, will prepare you for potential complications such as increased ICP, hydrocephalus, edema and vascular injury. Having slides on one screen (textbook images and scans) in addition to normal structures and blood supply in 3D on a second screen, truly enhances the learning experience. Together we can look at the complexities of the brain's lobes and connections, brainstem and cranial nerves, the cerebellum and spinal cord and Identify challenges in the trauma population.

Faculty: Linda Littlejohns

Beverage Break and Transition to Lecture Hall (15 Minutes)
16:15 – 16:30 H

Session IV: Special Topics in Neurotrauma I (PEARLS) (75 Minutes)
MCW Medical Education Building Kerrigan Auditorium
16:30 – 17:45 H

Jeopardy! (10 Minutes) Zwagerman

- In the Style of Jeopardy, audience members will compete to answer 10 questions regarding special topics. The moderator will read the answer / clues until the correct answer is shouted out. The answer must be formulated as a question.

Blunt Vascular Injuries (15 Minutes)	Nerva
Post-Traumatic Seizure Disorders (15 Minutes)	Pease
Penetrating Brain Injury Management Pearls (15 Minutes)	Armonda
Penetrating Brain Injury Guidelines (15 Minutes)	Hawryluk
Q&A / Open Discussion (5 Minutes)	

Wrap-Up and Prize Distribution (15 Minutes)
17:45 – 18:00

Networking Reception with Faculty, Sponsors, Attendees (60 Minutes)
(Soft Drinks, Wine, Beer, Hors d'oeuvres)
MCW Hub for Collaborative Medicine Dunn Auditorium
18:00 – 19:00 H

19:00H
Shuttle Buses Depart from the Hub to Return Resident Attendees to Hotel
Residents—Dinner on Own
19:15H
Shuttle Bus Departs from the Hub to Transport Faculty and Sponsors to Dinner

Faculty Dinner Off-Site with Sponsors (120 Minutes)
Eldr & Rime, Renaissance Hotel
19:30 – 21:30

Sunday, August 24, 2025

Continental Breakfast (30 Minutes) and Luggage Storage

MCW Hub for Collaborative Medicine Dunn Auditorium Foyer
07:30 – 08:00 H

Session V: Special Topics in Neurotrauma II (PEARLS) (95 Minutes)

MCW Hub for Collaborative Medicine Dunn Auditorium
08:00 - 09:35 H

$10,000 Pyramid *(10 Minutes)* — Sieg

- Attendees will answer questions by neurotrauma categories: brain injury, spinal cord injury, spinal column injury, peripheral nerve injury, blunt vascular injury, and neurocritical care. The moderator will list single word clues for a particular syndrome associated with each category until the correct answer is shouted out.

Peripheral Nerve Injury (15 Minutes)	Webb
Decompressive Craniotomy (15 Minutes)	Timmons
Geriatric Patients with TBI (15 Minutes)	tbd
Reversal of Antithrombotic Medications (15 Minutes)	Sieg
Biomarkers in TBI and SCI (15 Minutes) Minutes)	Manley
Q&A / Open Discussion / Prizes (10 Minutes)	

Session VI: Controversies and Emerging Issues (30 Minutes)

MCW Hub for Collaborative Medicine Dunn Auditorium
09:35 - 10:05

To Tell the Truth

- Scripted statements on controversial topic citing evidence from three panelists making convincing arguments.
- Two are false and one is true.
- Audience must decide which statement is true and respond via ARS.
- Each panelist with a false statement then explains why their statement was false.
- Each panelist will provide multiple statements.

Use of Artificial Intelligence in Neurotrauma (30 Minutes) — Moderator Armonda Gupta

---

Coffee Break (10 Minutes)
MCW Hub for Collaborative Medicine Dunn Auditorium Foyer
10:05 - 10:15 H

Session VI: Controversies and Emerging Issues, Continued (90 Minutes)
MCW Hub for Collaborative Medicine Dunn Auditorium
10:15 - 11:45 H

Chronic Traumatic Encephalopathy (30 Minutes)	Moderator: Hawryluk Chesnut Okonkwo Terry
Steroids in Spinal Cord Injury (30 Minutes)	Moderator: Okonkwo Chesnut Manley Timmons
Management of Chronic SDH (30 Minutes)	Moderator: Ngwenya tbd Webb

---

Session VII: The Future of Neurotrauma with Boxed Lunches (95 Minutes)
MCW Hub for Collaborative Medicine Dunn Auditorium
11:45 - 13:20 H

A New Framework for TBI Nomenclature & Classification (15 Minutes)	Manley
Quality Registries, Benchmarking, Certification (15 Minutes)	Timmons
The Price is Right *(10 Minutes)* • The moderator will ask various questions about epidemiology, costs of care, societal burden, and other socioeconomic factors related to neurotrauma, and audience members will respond anonymously.	Kurpad
Global Clinical Burden of Neurotrauma (15 Minutes)	Zwagerman
Global Financial Burden of Neurotrauma (15 Minutes)	Vedantam
Global Neurotrauma Panel Discussion (25 Minutes)	Kurpad Vedantam Zwagerman

---

Thank Yous, Reminders, and Wrap-Up (5 Minutes) Timmons
13:20 - 13:25