



Neurotrauma and Neurocritical Care Course

(With Hands-On Sessions for Neurosurgery Residents & Advanced Practice Providers and ***NEW*** Special Nursing Track)

Faculty Meeting & Mixer for Course Faculty and Residents Friday August 22

Saturday - Sunday, August 23-24, 2025

Hosted by: Medical College of Wisconsin Department of Neurosurgery
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. RubianoPresident, Global Neuro Foundation

Course Description and Statement of Need

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.

The field of neurotrauma is evolving rapidly and there is a need for dissemination of both long-standing and new concepts to trainees and practicing providers. The complexities of neurotrauma injuries, physiologic management, and changing environments of care require frequent refreshers on medical knowledge and procedural skills. Patient outcomes can be profoundly impacted by maintaining current competencies in the nursing, advanced practice provider, and physician communities. These clinical communities cross numerous disciplines which are involved in the care of the neurotrauma patient.

Target Participants

The Global Neuro Course in Neurotrauma and Neurocritical Care has been developed for neurosurgical residents, advanced practice providers (APPs), 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, Saturday evening, and Sunday morning sessions will be open to practicing physicians, APPs, and nurses and both CME and CEU credits will be offered. Physician Assistants may claim Category I AMA CME credits. Nurse practitioners may claim CEU credits.

The hands-on surgical laboratory session will be for residents and APPs only.

There will be a separate critical care nursing track in which nurses and APPs will be able to interact directly with an internationally acclaimed nurse educator. The Anatomage virtual learning system will be utilized for this session (more information @ https://anatomage.com)

Didactic sections will be punctuated with audience response system (ARS) questions and answers in the style of popular game shows. This will help the faculty gauge the level of knowledge to address areas of need and provide a bit of interactive fun for each session.

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. Discuss current neurotrauma diagnoses, treatments, and associated controversies.
- 3. Describe the surgical anatomy and key steps for performing ventriculostomy, decompressive craniectomy, subdural hematoma evacuation, and internal fixation of occiput to C2, subaxial cervical spine, and thoracolumbar spine injuries.
- 4. Identify recent innovations in the care of neurotrauma patients and explain their potential clinical impact.
- 5. Discuss controversies in neurotrauma, including areas of equipoise and lack of evidence.

Course Overview

Saturday Morning (All Attendees Welcome)

Session I: Diagnosis and Prognosis for Traumatic Brain Injury

Session II: Fundamentals of Neurotrauma Management

Saturday Afternoon (Residents, APPs, Nurses)

Session III: Hands-On Sessions for Residents and APPs

Session IV: Hands-On Session for Nurses and APPs

Saturday Late Afternoon (All Attendees Welcome)

Session V: Special Topics in Neurotrauma I (Pearls) Session VI: Special Topics in Neurotrauma II (Pearls)

Sunday Morning (All Attendees Welcome)

Session VII: Controversies and Emerging Issues

Course Chairs

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



Local Hosts
Nathan Zwagerman, MD
Kunal Gunta, MD, PhD

Kunal Gupta, MD, PhD Francis Jareczek, MD



Milwaukee, WI Milwaukee, WI Milwaukee, WI



Invited Faculty

Rocco A. Armonda, MD Randall M. Chesnut, MD

Kunal Gupta, MD, PhD

Hirad Hedayat, MD

Shekar N. Kurpad, MD, PhD

Sean M. Lew, MD

Linda Littlejohns, RN, MSN

Geoffrey T. Manley, MD, PhD

Michael McCrea, PhD

T. Jayde Nail, MD

John D. Nerva, MD

Laura B. Ngwenya, MD, PhD

Matthew W. Pease, MD

P.B. Raksin, MD

Emily P. Sieg, MD

Douglas P. Terry

Aditya Vedantam, MD

Sharon Webb, MD

Nathan Zwagerman, MD

Washington, DC Seattle, WA Milwaukee, WI Milwaukee, WI Milwaukee, WI Milwaukee, WI

San Juan Capistrano, CA

San Francisco, CA

Milwaukee, WI

Boston, MA

Milwaukee, WI

Cincinnati, OH

Indianapolis, IN

Chicago, IL

Louisville, KY

Nashville, TN

Milwaukee, WI

Greenville, SC

Milwaukee, WI

Logistics

Linda Domeisen, Global Neuro Allison Dall-Knox, MCW Katherine "Katie" Krahn, MCW Allison Schroeder, MCW

Friday, August 22, 2025 (Non-CME)

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

17:45 H

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

20:00 H

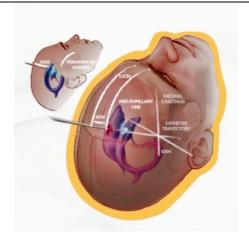
Shuttle Bus Departs from the Hub to Transport Faculty to Renaissance Hotel

20:15 - 20:45 H

Shuttle Bus Departs from the Hub to Transport Residents to Hotel(s)

All resident attendees and all faculty are asked to kindly stay for the entire duration of the course.

Registration Fee: \$100.00 for all Attendees, with gratitude to our sponsors.



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 Hub for Collaborative Medicine Lobby / Dunn Auditorium

07:00 - 08:00

Session I: Diagnosis and Prognosis (115 Minutes)

MCW Hub for Collaborative Medicine Dunn 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) **Neuroimaging Innovations in TBI and SCI** (20 Minutes) **Q&A / Open Discussion** (10 Minutes)

Chesnut Okonkwo

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

Ngwenya Terry

Coffee Break (20 Minutes)

Hub for Collaborative Medicine Lobby

09:55-10:15 H



Session II: Fundamentals of Neurotrauma Management (120 Minutes)

MCW Hub for Collaborative Medicine Dunn 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)

Management of Pediatric Spine Trauma (15 Minutes)

Q&A/Open Discussion (10 Minutes)

Nail Lew

Management of Occiput to C2 Trauma (20 Minutes)

Management of Sub-axial Cervical Spine Trauma (15 Minutes)

Management of Thoracolumbar Trauma (20 Minutes)

Zwagerman

Sieg Vedantam

Q&A/Open Discussion (10 Minutes)

Working Lunch (60 Minutes)

MCW Hub for Collaborative Medicine Dunn Auditorium 12:15 – 13:15 H

Transition to Room (5 Minutes)

Local Attractions (3 Minutes)

Gupta

Let's Make a Deal! (10 Minutes) (Non-CME)

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.

Technique Overviews 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 (5 Minutes)

Transition to Lab for Neurosurgery Residents and APPs (7 Minutes)

Session III: Hands-On Sessions for Residents and APPs (180 Minutes)

MCW Medical Education Form and Function Laboratory

13:15 - 16:15 H (Rotate at 14:45)

Doors #1 and #2

90 Minutes - 10 Stations - 30 Attendees

Door #1: Ventriculostomy and Craniotomy

This session is designed with realistic cranial models, fixation devices, intraparenchymal 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 other cranial procedures.

Set up for 8 stations, 3 Attendees @ Each Station

2 Stations: EVD, Neuromonitoring Techniques, Pupillometry (6 Attendees, 3 Each)

3 Stations: Decompressive Craniotomy (9 Attendees, 3 Each)

3 Stations: SDH Evacuation (9 Attendees, 3 Each)

DC Leader: Chesnut EVD Leader: Webb

SDH Evacuation Leader: Gupta

Other Faculty: Lew, Manley, Raksin, Timmons

Door #2: Neurovascular Simulator

This session will allow attendees to perform endovascular catheter interventions on a simulator including the opportunity to deploy endovascular devices.

Set up for 2 stations, 3 attendees each

1 Neuroendovascular Simulator Exercise 1 (3 Attendees)

1 Neuroendovascular Simulator Exercise 2 (3 Attendees)

Leader: Armonda

Other Faculty: Hedayat

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Session III: Hands-On Sessions for Residents and APPs (180 Minutes)

MCW Medical Education Form and Function Lab

13:15 - 16:15 H (Rotate at 14:45)

Door #3: Spine Fixation Techniques

90 Minutes - 10 Stations - 30 Attendees

This session is designed to provide experience with various fixation techniques of the occiput to C2 and the sub-axial cervical spine. Goals are to be facile with the instrumentation, understand landmarks and trajectories, and indications for techniques.

Set up for 10 stations, 3 Attendees @ Each Station

3 Stations: Occiput to C2 (9 Attendees, 3 Each)

3 Stations: Subaxial C-Spine (9 Attendees, 3 Each)

2 Stations: Thoracolumbar Spine 1 (6 Attendees, 3 Each) 2 Stations: Thoracolumbar Spine 2 (6 Attendees, 3 Each)

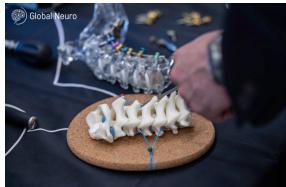
Occiput to C2 Leader: Zwagerman Sub-Axial C-Spine Leader: Sieg

Thoracolumbar Spine 1 Leader: Okonkwo Thoracolumbar Spine 2 Leader: Nail

Other Faculty:

Cervical Spine: Hawryluk, Ngwenya, Pease Thoracolumbar Spine: Kurpad, Vedantam

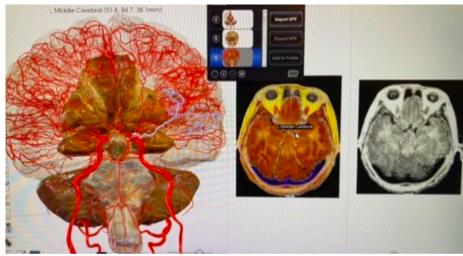






SPECIAL SESSION NURSING TRACK





Led by internationally renowned educator, Linda Littlejohns, RN, MSN, SCRN, CNRN, FAAN, this session will provide interactive and engaging neuroanatomy education utilizing state-of-the art 3-dimensional imaging and case-based learning.

Session IV: 3D Correlative Brain & Spinal Cord Anatomy & Assessment (180 Minutes) MCW Medical Education Building Form and Function Lab Classroom 13:15 – 16:15 H

Neuroscience patient care is built upon a foundation of normal anatomy knowledge. This session will explore the normal structures, pathways, and vasculature of the brain, brainstem, cerebellum, and spinal cord. Patient assessment scenarios and case studies will prepare the learners for potential complications such as increased intracranial pressure, hydrocephalus, cerebral edema, and vascular injury. Slides will be presented on one screen (textbook images and scans) and normal structures and blood supply will be presented in 3D on a second screen, which will enhance the learning experience. Together, learners and faculty can look at the complexities of the brain's lobes and connections, brainstem and cranial nerves, the cerebellum and spinal cord, and will identify challenges in the neurotrauma population.

Faculty: Littlejohns

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

Session V: Special Topics in Neurotrauma I (Pearls) (75 Minutes)

MCW Hub for Collaborative Medicine Dunn 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) (Non-CME)

Nerva Pease

Post-Traumatic Seizure Disorders (15 Minutes)

Penetrating Brain Injury Management (15 Minutes)

Penetrating Brain Injury Guidelines (15 Minutes)

Q&A / Open Discussion (5 Minutes)

Armonda Hawryluk

Wrap-Up and Prize Distribution (15 Minutes) (Non-CME)

17:45 - 18:00 H

Networking Reception with Faculty, Sponsors, Attendees (60 Minutes) (Non-CME)

(Soft Drinks, Wine, Beer, Hors d'oeuvres)

MCW Hub for Collaborative Medicine Dunn Auditorium

18:00 - 19:00 H

19:00 H

Shuttle Buses Depart from the Hub to Return Resident Attendees to Hotel Residents—Dinner on Own

19:15 H

Shuttle Bus Departs from the Hub to Transport Faculty and Sponsors to Dinner

Faculty Dinner Off-Site with Sponsors (120 Minutes) (Non-CME)

19:30 - 21:30 H

Sunday, August 24, 2025

Continental Breakfast (30 Minutes) and Luggage Storage

MCW Hub for Collaborative Medicine Lobby

07:30 - 08:00 H

Session VI: 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)

Decompressive Craniotomy (15 Minutes)

Biomarkers in TBI and SCI (15 Minutes)

Emerging Biomarker Trends in Sports and Military (15 Minutes)

Reversal of Antithrombotic Medications (15 Minutes)

Raksin

Q&A / Open Discussion / Prizes (10 Minutes)

Session VII: 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: Raksin

Armonda Gupta McCrea

Coffee Break (10 Minutes)

MCW Hub for Collaborative Medicine Lobby

10:05 - 10:15 H

Session VII: 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: Timmons

> Chesnut Manley Okonkwo

Management of Chronic SDH (30 Minutes) Moderator: Pease

> Ngwenya Nerva Webb

Session VIII: 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 Classification (15 Minutes) Manley Quality Registries, Benchmarking, and Timmons

Certification (15 Minutes)

The Price is Right (10 Minutes)

Kurpad 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.

Global Clinical Burden of Neurotrauma (15 Minutes) Zwagerman Global Financial Burden of Neurotrauma (15 Minutes) Vedantam

Global Neurotrauma Panel Discussion (25 Minutes) Moderator: Zwagerman

> Kurpad Vedantam

Thank Yous, Reminders, and Wrap-Up (5 Minutes) 13:20 - 13:25 H	Timmons
NOTES	
	
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Global Neuro Funding Sources

Unrestricted educational grants from different sources are collected and pooled together centrally or for specific events by the Global Neuro Foundation. All events are planned and scheduled by local and regional Global Neurosurgeon groups based on local needs assessment. We rely on commercial partners for in-kind support to run simulations/skills training if educationally needed.

Global Neuro Foundation—Principles of Educational Events

1) Academic independence

Development of all curricula, design of scientific event programs, and selection of faculty are the sole responsibilities of volunteer surgeons from the Global Neuro network. All education is planned based on needs assessment data, designed and evaluated using concepts and evidence from the most current medical education research, and involves the expertise of the Global Neuro Education Institute (www.globalneuro.org). Industry participation is not allowed during the entire curriculum development and planning process to ensure academic independence and to keep content free from bias.

2) Compliance to accreditation and industry codes

All planning, organization, and execution of educational activities follow existing codes for accreditation of high-quality education:

- Accreditation Criteria of the Accreditation Council for Continuing Medical Education, USA (www.accme.org)
- ACCME Standards for Commercial Support: Standards to Ensure Independence in CME Activities (<u>www.accme.org</u>)
- Criteria for Accreditation of Live Educational Events of the European Accreditation Council for Continuing Medical Education (<u>www.uems.eu</u>)
- Events that receive direct or indirect unrestricted educational grants or in-kind support from industry also follow the ethical codes of the medical industry, such as:
- Eucomed Guidelines on Interactions with Healthcare Professionals (www.medtecheurope.org)
- AdvaMed Code of Ethics on Interactions with Health Care Professionals (<u>www.advamed.org</u>)
- Mecomed Guidelines on Interactions with Healthcare Professionals (<u>www.mecomed.org</u>)

3) Branding and advertising

No industry logos or advertising (with the exception of the Global Neuro Foundation) are permitted in the area where educational activities take place. Sponsors providing financial or inkind support are allowed to have a promotional booth or run activities outside the educational area with approval from the event chairperson.

4) Personnel

Industry staff are not allowed to interfere with the educational content or engage in educational activities during the event.

General Information

Registration

Please click on the registration link below to register for the Global Neuro Course—

Neurotrauma: https://globalneuro.org/EN/education/event-detail/102.html

Course certificate

The course certificates can only be provided if the participant attends the entire event (100%) and will be available at the end of the event.

Evaluation guidelines

All Global Neuro events apply the same evaluation process, either online (pre-and post-event evaluation) and/or onsite by paper and pencil questionnaires. This helps Global Neuro to ensure that we continue to meet your training needs.

Dress code

Casual

Language

English

No insurance

The event organization does not take out insurance to cover any individual against accidents, theft, or other risks.

Security

Security checks may be conducted at the entrance of the building. Wearing a name tag is compulsory during lectures, practical exercises, and group discussions.

Mobile phone use

The use of mobile phones is not allowed in the lecture halls and other rooms during educational activities. Please be considerate of others by turning off your mobile phone.

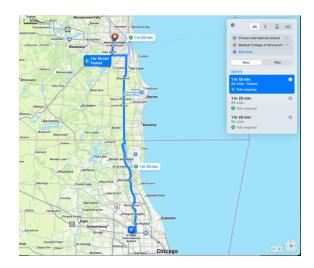
Intellectual property

Event materials, presentations, and case studies are the intellectual property of the event faculty. All rights are reserved. Check hazards and legal restrictions on: www.globalneuro.org/legal

Recording, photographing, or copying of lectures, practical exercises, case discussions, or any course materials is strictly forbidden. Participants violating intellectual property will be dismissed. The Global Neuro Foundation reserves the right to film, photograph, and audio record during their events. Participants must understand that in this context, they may appear in these recorded materials. The Global Neuro Foundation assumes participants agree that these recorded materials may be used for Global Neuro marketing and other purposes and made available to the public.

Global Neuro Course ~ Neurotrauma and Neurocritical Care Navigating Milwaukee





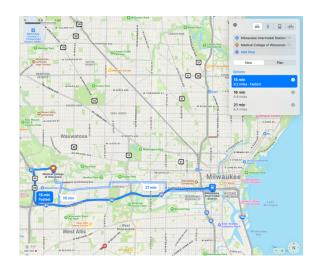
Global Neuro Course Hotels - Note Rooms are Limited at Negotiated Rates!

For Faculty:

Renaissance Hotel
 2300 N. Mayfair Road
 miles from MCW
 Block of 25 rooms - \$199 rate

For Attendees:

2. Sonesta Milwaukee West / Wauwatosa 10499 Innovation Drive1.3 miles from MCW Block of 20 rooms - \$99 rate



Milwaukee Intermodal Station

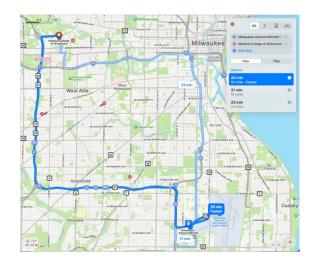
Located in Downtown Milwaukee 433 West St. Paul Avenue Milwaukee, WI 53203 Uber & Lyft Pick Up at Main Entrance Approximate cost \$15-20)

For Attendees:

 SpringHill Suites Milwaukee West / Wauwatosa 10411 Watertown Plank Road 1.1 miles from MCW Block of 18 Rooms - \$159 rate

For Attendees:

4. Residence Inn Milwaukee West 1300 Discovery Parkway 0.6 miles from MCW Block of 25 Rooms - \$129 rate



Milwaukee Mitchell International Airport

Located 6 miles south of downtown 5300 S. Howell Ave, Milwaukee, WI 53207 Taxi Pick-Up Station Outside of Baggage Claim 3 Uber & Lyft, Follow Signs to Pick-Up Near Carousel 2 Approximate cost \$25-\$40

Physician Accreditation Statement

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of AO North America (AONA) and Global Neuro Foundation. AONA is accredited by the ACCME to provide continuing medical education for physicians.

Physician Credit Designation

AO North America designates this live activity for a maximum of 13.75 AMA PRA Category 1 $Credits^{m}$. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nursing Continuing Education

Global Education Group is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center's Commission on Accreditation. This educational activity for 13.75 contact hours including pharmacotherapeutic contact hours is provided by Global Education Group. Nurses should claim only the credit commensurate with the extent of their participation in the activity.

AONA Contact Information

For information about the ACCME accreditation of this program, please contact tricia.wilson@aona.org.

Global Contact Information

For information about the ANCC accreditation of this program, please contact Global at 303-395-1782 or cme@globaleducationgroup.com.

Instructions to Receive Credit

In order to receive credit for this activity, the participant must log into the Global Neuro website, complete a course evaluation, and attest to only those hours attended.

Fee Information& Refund/Cancellation Policy

There is a \$100 fee for this educational activity and there will be no refunds for cancellations.

Disclosure of Unlabeled Use

This educational activity may contain discussion of published and/or investigational uses of agents that are not indicated by the FDA. Global, AONA, and Global Neuro Foundation do not recommend the use of any agent outside of the labeled indications.

The opinions expressed in the educational activity are those of the faculty and do not necessarily represent the views of any organization associated with this activity. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications, and warnings.

Disclosures of Relevant Financial Relationships

AONA adheres to the policies and guidelines, including the Standards for Integrity and Independence in Accredited CE, set forth to providers by the Accreditation Council for Continuing Medical Education (ACCME) and all other professional organizations, as applicable, stating those activities where continuing education credits are awarded must be balanced, independent, objective, and scientifically rigorous. All persons in a position to control the content of an accredited continuing education program provided by AONA are required to disclose all financial relationships with any ineligible company within the past 24 months to AONA. All financial relationships reported are identified as relevant and mitigated by Global in accordance with the Standards for Integrity and Independence in Accredited CE in advance of delivery of the activity to learners. The content of this activity was vetted by AONA to assure objectivity and that the activity is free of commercial bias.

All relevant financial relationships have been mitigated.

The *planners and managers* have the following relevant financial relationships with ineligible companies:

Name of Planner or Manager	Reported Financial Relationship
AO North America Disclosures	
Tricia Wilson	Nothing to disclose
Global Education Group Disclosures	
Rhys Williams, MSN, FNP-C, RN	Nothing to disclose
Conor Hughes	Nothing to disclose
Amanda Glazar	Nothing to disclose
Andrea Funk	Nothing to disclose
Liddy Knight	Nothing to disclose
Ashley Cann	Nothing to disclose
Lauren Sinclair	Nothing to disclose
Deborah Sharkey	Nothing to disclose
Matthew Stern	Nothing to disclose
Global Neuro Disclosures	
Linda Domeisen	Nothing to disclose

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AO North America, Global Neuro and Global Education Group gratefully acknowledges in-kind support in the form of equipment and technical staff support from Integra, Johnson MedTech, Longeviti, Medtronic, Penumbra, ABS Med Inc and Neuroptics.

Global Neuro gratefully acknowledges funding for its educational activities from Integra.

Disclosures, Continued:

The *faculty* have the following relevant financial relationships with ineligible companies:

Name of Faculty or Presenter	Reported Financial Relationship
Rocco A. Armonda, MD	Nothing to disclose
Randall M. Chesnut, MD	Nothing to disclose
Kunal Gupta, MD, PhD	Nothing to disclose
Gregory W. Hawryluk, MD, PhD	Nothing to disclose
Hirad Hedayat, MD	Nothing to disclose
Francis Jareczek, MD	Nothing to disclose
Shekar Kurpad, MD, PhD	Nothing to disclose
Sean Lew, MD	Nothing to disclose
Linda Littlejohns, RN, MSN, FAAN	Nothing to disclose
Geoffrey T. Manley, MD, PhD	Nothing to disclose
Michael McCrea, PhD	Researcher: Abbott Laboratories
T. Jayde Nail, MD	Nothing to disclose
Laura B. Ngwenya, MD, PhD	Consultant: Sophysa
David O. Okonkwo, MD, PhD	Consultant: NuVasive Patent Holder/Royalties: Highridge
Matthew W. Pease, MD	Nothing to disclose
Patricia Raskin, MD	Nothing to disclose
Emily P. Sieg, MD	Nothing to disclose
Douglas P. Terry	Researcher: Amgen, Football Research Consultant: NFL Scientific Advisory Board: HitlQ
Shelly D. Timmons, MD, PhD	Nothing to disclose
Aditya Vedantam, MD	Nothing to disclose
Sharon Webb, MD	Nothing to disclose
Nathan Zwagerman, MD	Nothing to disclose

Disclaimer

Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented in this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed in this activity should not be used by clinicians without evaluation of patient conditions and possible contraindications on dangers in use, review of any applicable manufacturer's product information, and comparison with recommendations of other authorities.

Global Neuro Course- Neurotrauma and Neurocritical Care Faculty Affiliations

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NOTES	

Special thanks to the Medical College of Wisconsin Department of Neurosurgery Faculty and Staff!



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