




## AO Spine NA Course—Advanced MISS Techniques (With Human Anatomical Specimens)

 October 24, 2025 - October 25, 2025  
Raynham, Massachusetts, USA

This 2-day course covers advanced techniques of minimally invasive spine surgery, focusing on MIS TLIF with navigation, LLIF, and ALIF procedures. It provides advanced training by giving an overview of evidence-based, state-of-the-art management strategies, active learning through case-based discussions, as well as practical exercises with expert faculty.

Participants will have the opportunity to share their experiences with colleagues and leading regional experts to gain the best possible understanding of minimally invasive spine surgery.

Online self-directed learning: 4 weeks before the in-person event, participants will have access to short self-study modules, including surgical videos.

Target Audience: Spine surgeons (orthopedic surgeons and neurosurgeons) with some experience in MISS techniques, but not with complex MISS.



### Event Summary

**Tuition:**

Level Name: Participant - Spine  
Pricing Tier: Attending  
Tuition: \$1,750.00

Level Name: Participant - Spine  
Pricing Tier: Fellow  
Tuition: \$1,500.00

**Course Prerequisite(s):**

No Prerequisites

**Venue:**

[Courtyard by Marriott Boston Raynham](#)

Phone Number: 508-822-8383  
<https://www.marriott.com/en-us/hotels/pvdry-courtyard-boston-raynham/overview/>

[J & J Institute - Raynham](#)  
325 Paramount Drive  
Raynham, Massachusetts, USA  
Phone Number: 508-880-8383  
[JNJInstituteRaynham@its.jnj.com](mailto:JNJInstituteRaynham@its.jnj.com)

**Language(s):**

English

**Directly Provided by:****Professional Level Prerequisite(s):**

No Prerequisites

## CME

### Continuing Education Credit: 12.75



- AO North America is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

**Designation Statement** - AO North America designates this live educational activity for a maximum of 12.75 **AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The Continuing Medical Education (CME) mission of AO North America (AONA®) is to provide comprehensive multidisciplinary needs based education to surgeons, fellows, and residents in the specialties of orthopedic, hand, craniomaxillofacial, spine, neurosurgery, and veterinary surgery in the areas of trauma (i.e., operative reduction and fixation), degenerative disorders, deformities, tumors, and reconstruction.

Expected results of AONA's CME activities for surgeons, fellows, and residents are to:

- Increase their knowledge base and surgical skill level
- Improve competence by applying advances of knowledge in patient care in the areas of trauma, degenerative disorders, deformities, tumors, and reconstructive surgical techniques
- Address practice performance gaps by improving management of aspects of traumatic injuries and musculoskeletal disorders (i.e., pre-operative planning to post-operative care)

## Learning Objectives

Upon completion, participants should be able to:

- Identify the different types of approaches that can be performed in minimally invasive spine surgery
- Recognize the anatomical structures that must be identified before and intraoperatively
- Differentiate approaches for performing direct and indirect decompression
- Diagnose the patient's problem by correlating clinical findings with imaging and workup
- Recognize appropriate indications based on the patient's clinical picture and images, and the surgeon's MISS skills and experience
- Select the appropriate MISS procedure for the pathology and indication, and recognize when MISS is not the appropriate option
- Correctly configure the technology, operating room and equipment for the procedure
- Perform MISS fusion procedures (TLIF, LLIF, and ALIF) and apply strategies to optimize arthrodesis

## Faculty



### Härtl, Roger - Co-Chairperson

MD  
Director of Spinal Surgery  
Weill Cornell Medicine  
New York, New York

Roger Härtl, M.D., is the Hansen-MacDonald Professor of Neurological Surgery and Director of Neurosurgery Spine at Weill Cornell Medicine. In addition, he is the Neurosurgical Director at Och Spine at New York-Presbyterian/Weill Cornell Medical Center and the Director of Och Spine at New York-Presbyterian at the Weill Cornell Medicine Center for Comprehensive Spine Care as well as the Founder of the Weill Cornell Medicine Global Neurosurgery Initiative in Tanzania. He also serves as the official neurosurgeon for the New York Giants Football Team. Dr. Härtl's clinical interest focuses on simple and complex spine surgery for degenerative conditions, tumors, and trauma as well as biological approaches for disc repair and regeneration. He is a world-renowned pioneer and leader in minimally invasive spinal surgery and computer-assisted spinal navigation surgery and augmented reality. He is actively involved in improving neurosurgical care in emerging countries as the leader of Weill Cornell's Global Neurosurgery Initiative in Tanzania. In order to achieve the very best in patient outcomes, Dr. Härtl's practice emphasizes an interdisciplinary approach to spinal disease. He collaborates closely with other specialists such as neurologists, pain specialists, sports medicine doctors and physical therapists. His patients come from all over the globe and include many physicians, surgeons, and even other neurological spine surgeons. He has been repeatedly named to the lists of New York Super Doctors, America's Top Surgeons, and America's Best Doctors, and has been included on the list of New York's Best Doctors in New York magazine. He has authored more than 250 scholarly articles in peer-reviewed journals and is the editor of four books on minimally invasive spinal surgery and biological disc repair and regeneration. He is the 2022 recipient of the AANS Humanitarian Award, one of the highest honors bestowed by the American Association of Neurological Surgeons. Dr. Härtl has provided commentary for numerous television shows on ABC, NBC, and CBS in addition to national radio shows. His expertise has been sought through interviews in the New York Times, The New York Post, The New York Daily News, and other media outlets.



### Hofstetter, Christoph - Co-Chairperson

MD, PhD, FACS  
Professor  
Director of Spine Surgery, UWMC  
Spine Surgery Fellowship Co-Director  
University of Washington  
Seattle, Washington

Christoph Hofstetter, M.D., Ph.D., is a neurosurgeon at UW Medicine and a UW associate professor of Neurological Surgery. Dr. Hofstetter specializes in complex spine surgery with an emphasis on minimally invasive techniques and a focus on degenerative spinal disorders and spinal oncology. Dr. Hofstetter earned his M.D. from University of Vienna, and Ph.D. at Karolinska Institute in Stockholm. Dr. Hofstetter's research interests include minimally invasive motion preserving spinal procedures, endoscopic spine surgery and complex revision surgery. His laboratory works on development of ultra high frequency ultrasound to study hypo perfusion of the contused spinal cord in patients with traumatic spinal cord injury. He is also developing novel neuroprotective treatment strategies and innovative interventions to promote regeneration following spinal cord injury.



### Abd-El-Barr, Muhammad - Lecturer

MD, PhD  
Professor  
Vice-Chair, International Affairs  
Chief, Endoscopic Spine Surgery  
Spine Fellowship Co-Director  
Department of Neurosurgery  
Duke University School of Medicine  
Durham, North Carolina

Muhammad M. Abd-El-Barr is currently Professor of Neurosurgery, Vice-Chair, International Affairs, Chief of Endoscopic Spine Surgery at Duke University and Spine Fellowship Co-Director. He completed his MD and PhD degrees at Baylor College of Medicine. He completed his Neurosurgery residency at the Brigham and Women's/Boston Children's Hospitals/Harvard Medical School. He completed a fellowship in Spine at the Brigham and Women's Hospital/Harvard Medical School under the tutelage of Michael Groff, MD. He has been at Duke University since 2017. He specializes in Minimally Invasive techniques in spine surgery including endoscopic fusions and awake fusions. He has published more than 150 papers in peer reviewed journals and is actively involved in basic, translational and clinical research.

**Agarwal, Nitin - Lecturer**

MD

Associate Professor, Neurological Surgery and Bioengineering  
 Director, Minimally Invasive Spine and Robotics Surgery  
 Associate Program Director, Neurological Surgery Residency  
 Co-Director, Complex and Minimally Invasive Spine Deformity Fellowship  
 Department of Neurological Surgery  
 University of Pittsburgh Medical Center

Pittsburgh, Pennsylvania

Nitin Agarwal, M.D. is an Associate Professor of Neurological Surgery and Bioengineering at the University of Pittsburgh. As part of his educational mission, he serves as the Associate Program Director of the Residency Program and Co-Director of the Complex and Minimally Invasive Spine Deformity Fellowship. On the clinical front, he is Director of Minimally Invasive Spine and Robotics Surgery. Dr. Agarwal completed a minimally invasive and complex spine fellowship at the University of California, San Francisco. He completed residency as well as enrolled spine and sports medicine fellowships at the University of Pittsburgh Medical Center. He has funded investigations in four concentrations: neurotrauma outcomes after severe traumatic brain injury and acute spinal cord injury, spine outcomes, socioeconomic research, and patient education. To date, he has published over 300 peer-reviewed articles. Outside of Neurological Surgery, Dr. Agarwal has been deeply dedicated to martial arts. He credits martial arts with providing mental and physical discipline as well as adherence to a strict honor code.

**El Naga, Ashraf - Lecturer**

MD

Assistant Clinical Professor  
 Department of Orthopaedic Surgery  
 University of California, San Francisco  
 Director, Orthopaedic Spine Service  
 ZSFGH Orthopaedic Trauma Institute  
 San Francisco, California

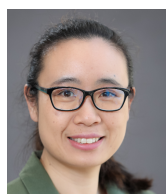
Dr. Ashraf El Naga is an orthopedic surgeon who specializes in treating traumatic injuries, such as broken bones. He has expertise in spinal conditions and treats fractures of the spine, pelvis, arms and legs. He directs the Orthopedic Spine Service at Zuckerberg San Francisco General Hospital, a level 1 trauma center. El Naga's research focuses on patient recovery following fractures and spine trauma, the management of polytrauma patients, and injuries to the lumbosacral junction. He also studies how to improve outcomes and long-term physical function for patients who have spinal surgery. After earning his medical degree at UCSF, El Naga completed a residency in orthopedic surgery at Baylor College of Medicine. He completed fellowships in orthopedic trauma at UCSF and Hannover Medical School in Germany, as well as a spine surgery fellowship at the Harborview Medical Center, an affiliate of the University of Washington. He enjoys contributing to the AO's educational and research missions, as the AO has been instrumental to his development as both a spine surgeon and orthopaedic traumatologist.

**Gendelberg, David - Lecturer**

MD

Assistant Professor  
 Department of Orthopaedics  
 University of California, San Francisco - Orthopaedic Trauma Institute  
 San Francisco, California

Dr. Gendelberg is an orthopedic surgeon who specializes in complex spinal surgery and trauma. His expertise in spinal conditions includes care for degenerative spine conditions, scoliosis, minimally invasive techniques and spinal fractures. Dr. Gendelberg's expertise covers a wide spectrum of orthopedic conditions. His primary focus revolves around complex spinal surgeries, encompassing spinal trauma, degenerative disorders, deformities, infections, and oncology. Dr. Gendelberg is known for his commitment to incorporating minimally invasive techniques and pushing the boundaries of innovation to optimize treatment outcomes for his patients. Additionally, Dr. Gendelberg directs the orthopedic spine service at Washington Hospital Healthcare System of Fremont. In addition to his clinical responsibilities, Dr. Gendelberg invests a significant portion of his time in research, particularly aimed at improving treatment strategies for underserved populations. Dr. Gendelberg's research focuses on management of spinal injuries, delivering care to the underserved, minimally invasive techniques and bone health. Dr. Gendelberg is a co-director of UCSF SPARC (Spine Pathology Advanced Research Center), and he is also on faculty of the UCSF Spine Fellowship. After earning his medical degree at Rutgers- Robert Wood Johnson, Dr. Gendelberg completed a residency in orthopedic surgery at Penn State Hershey Medical Center. He completed fellowships in spine surgery at the University of Washington - Harborview Medical Center as well as in minimally invasive spinal surgery under Neel Anand MD at Cedars Sinai in Los Angeles.

**Yu, Elizabeth - Lecturer**

MD

Associate Professor  
 Fellowship Director, Orthopaedic Spine Surgery  
 Department of Orthopaedics  
 Division of Spine Surgery  
 The Ohio State University Wexner Medical Center  
 Columbus, Ohio

I am a Professor in the Department of Orthopaedic Surgery at The Ohio State University Wexner Medical Center. I am the Division Chief of the Orthopaedic Spine Division and the Program Director of The Ohio State University Spine Fellowship Program. I completed my orthopaedic spine surgery fellowship at Stanford University/San Francisco and my orthopaedic residency at The Mayo Clinic in Rochester, Minnesota.

## AO NA Disclaimer Information

### Faculty Disclosure:

It is the policy of AO North America to abide by the Accreditation Council for Continuing Medical Education Standards for Commercial Support. Standard 2: "Disclosures Relevant to Potential Commercial Bias and Relevant Financial Relationships of Those with Control over CME Content," requires all planners, including course directors, chairs, and faculty, involved in the development of CME content to disclose their relevant financial relationships prior to participating in the activity. Relevant financial relationships will be disclosed to the activity audience. The intent of the disclosure is not to prevent a faculty with a relevant financial or other relationship from teaching, but to provide participants with information that might be of importance to their evaluation of content. All potential conflicts of interest have been resolved prior to the commencement of this activity.

### Off-Label / Experimental Discussions:

Some medical devices used for teaching purposes and/or discussed in AO North America's educational activities may have been cleared by the FDA for specific uses only or may not yet be approved for any purpose. Faculty may discuss off-label, investigational, or experimental uses of products/devices in CME certified educational activities. Faculty have been advised that all recommendations involving clinical medicine in this CME activity are based on evidence that is accepted within the profession of medicine as adequate justification for their indications and contraindications in the care of patients.

All scientific research referred to, reported or used in this CME activity in support or justification of a patient care recommendation conforms to the generally accepted standards of experimental design, data collection and analysis.

### Disclaimer:

AONA does not endorse nor promote the use of any product/device of commercial entities. Equipment used in this course is for teaching purposes only with the intent to enhance the learning experience.

### USE THE BELOW TEXT FOR DIDACTIC COURSES ONLY!

The opinions or views expressed in this live continuing medical education activity are those of the faculty and do not necessarily reflect the opinions or recommendations of AO North America or any commercial supporter. The certificate provided pertains only to the participants' completion of the course.

### Conflict of Interest Resolution Statement:

When individuals in a position to control or influence the development of the content have reported financial relationships with one or more commercial interests, AO North America utilizes a process to identify and resolve potential conflicts to ensure that the content presented is free of commercial bias.

### Liability Statement:

AO North America faculty and staff assume no personal liability for the techniques or the use of any equipment and accessories used for teaching purposes in the laboratory. The certificate provided pertains only to the participants' completion of the course and does not, in any way, attest to the proficiency of the participants' clinical experience.

### Laboratory Waiver:

To participate in this surgical skills course, you will be required to sign a waiver of liability prior to the course. In order to participate, AONA's policy mandates that every individual must wear appropriate protective garments provided by AO NA during the lab sessions. Participants who do not sign the waiver and wear protective garments will not be allowed to participate in the laboratory sessions.

### Human Anatomic Specimens:

This course will involve exposure to and contact with human anatomic specimens. These specimens are being utilized for purposes of teaching and learning and are to be treated with the utmost respect. Participants should be familiar with and understand the potential risks involved and will be required to observe all customary safety procedures.

## Acknowledgment

### In-Kind Support

AO North America gratefully acknowledges in-kind support for equipment and technical staff from J&J MedTech.

### Educational Grant

AO North America gratefully acknowledges funding for its education activities from the AO Foundation. The AO Foundation receives funding for education from Synthes GmbH.