




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

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, MBA, FACS
Acting Chief, Neurological Surgery
Site Director, Veterans Affairs Neurosurgery Residency
Director, Spine Computational Outcomes Learning Institute (SCOLI)
Veterans Affairs Pittsburgh Healthcare System
Pittsburgh, Pennsylvania

Nitin Agarwal, M.D. serves as the Acting Chief and Director of Education for Neurological Surgery at the Veteran Affairs Pittsburgh Healthcare System. 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.



Freedman, Brett - Lecturer

MD
Professor
Chair, Division of Spine Surgery
Department of Orthopedic Surgery
Mayo Clinic
Rochester, Minnesota

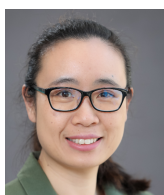
Brett A. Freedman, M.D., Professor of Orthopaedic Surgery and Chair, Division of Spine Surgery at Mayo Clinic, Rochester, MN



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
Professor
Division Chief
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. I completed my orthopaedic spine surgery fellowship at Stanford University/San Francisco and my orthopaedic residency at The Mayo Clinic in Rochester, Minnesota.

Agenda

Day 1

Friday, October 24, 2025 - 08:00 - 16:15 - (includes breaks, travel-time and meals)

Schedule	Title	Moderator	Faculty	Room
08:00 - 08:15	Welcome and Opening Comments		Hartl, R	
08:15 - 08:30	AO Spine Overview		Hofstetter, C	
08:30 - 11:35	DIDACTICS AND LAB (Rotation #1)			
08:30 - 11:35	Group 1 (Cases)			
08:30 - 09:25	Module One: Degenerative Spondylolisthesis			
08:30 - 08:40	Case Presentation - Degenerative Spondylolisthesis		Gendelberg, D	
08:40 - 08:55	Treatment Options / Literature - Degenerative Spondylolisthesis		Abd-El-Barr, M	
08:55 - 09:15	Panel Discussion - Degenerative Spondylolisthesis			
09:15 - 09:25	Case Resolution - Degenerative Spondylolisthesis		Gendelberg, D	
09:25 - 09:45	Break			
09:45 - 10:40	Module Two: Degenerative Scoliosis			
09:45 - 09:55	Case Presentation - Degenerative Scoliosis		El Naga, A	
09:55 - 10:10	Treatment Options / Literature - Degenerative Scoliosis		Gendelberg, D	
10:10 - 10:30	Panel Discussion - Degenerative Scoliosis			
10:30 - 10:40	Case Resolution - Degenerative Scoliosis		El Naga, A	
10:40 - 11:35	Module Three: Trauma			
10:40 - 10:50	Case Presentation - Trauma		Abd-El-Barr, M	
10:50 - 11:05	Treatment Options / Literature - Trauma		El Naga, A	
11:05 - 11:25	Panel Discussion - Trauma			
11:25 - 11:35	Case Resolution - Trauma		Abd-El-Barr, M	
08:30 - 11:35	Group 2 (LAB)			
08:30 - 09:00	Video and Step-By-Step Technique Discussion: TLIF			
09:00 - 11:35	Lab: Posterior Decompression and TLIF	Agarwal, N Hartl, R Hofstetter, C Yu, E		
11:35 - 12:30	Lunch			
12:30 - 15:35	DIDACTICS AND LAB (Rotation #2)			
12:30 - 15:35	Group 2 (Cases)			
12:30 - 13:25	Module One: Degenerative Spondylolisthesis			
12:30 - 12:40	Case Presentation - Degenerative Spondylolisthesis		Gendelberg, D	
12:40 - 12:55	Treatment Options / Literature - Degenerative Spondylolisthesis		Abd-El-Barr, M	
12:55 - 13:15	Panel Discussion - Degenerative Spondylolisthesis			
13:15 - 13:25	Case Resolution - Degenerative Spondylolisthesis		Gendelberg, D	
13:25 - 13:45	Break			
13:45 - 14:40	Module Two: Degenerative Scoliosis			
13:45 - 13:55	Case Presentation - Degenerative Scoliosis		El Naga, A	
13:55 - 14:10	Treatment Options / Literature - Degenerative Scoliosis		Gendelberg, D	
14:10 - 14:30	Panel Discussion - Degenerative Scoliosis			
14:30 - 14:40	Case Resolution - Degenerative Scoliosis		El Naga, A	

14:40 - 15:35	Module Three: Trauma	
14:40 - 14:50	Case Presentation - Trauma	Abd-El-Barr, M
14:50 - 15:05	Treatment Options / Literature - Trauma	El Naga, A
15:05 - 15:25	Panel Discussion - Trauma	
15:25 - 15:35	Case Resolution - Trauma	Abd-El-Barr, M
12:30 - 15:35	Group 1 (LAB)	
12:30 - 13:00	Video and Step-By-Step Technique Discussion: TLIF	
13:00 - 15:35	Lab: Posterior Decompression and TLIF	Agarwal, N Hartl, R Hofstetter, C Yu, E
15:35 - 15:45	Travel to Lecture Hall	
15:45 - 16:15	Recap Day 1, Q & A	Hartl, R Hofstetter, C

Day 2

Saturday, October 25, 2025 - 08:00 - 16:00 - (includes breaks, travel-time and meals)

Schedule	Title	Moderator	Faculty	Room
08:00 - 08:30	How to Adopt New Technologies into Your Practice		Hartl, R	
08:30 - 11:35	DIDACTICS AND LAB (Rotation #1)			
08:30 - 11:35	Group 2 (Cases)			
08:30 - 09:25	Module Four: Tumor			
08:30 - 08:40	Case Presentation - Tumor		Hartl, R	
08:40 - 08:55	Treatment Options / Literature - Tumor		Agarwal, N	
08:55 - 09:15	Panel Discussion - Tumor			
09:15 - 09:25	Case Resolution - Tumor		Hartl, R	
09:25 - 10:20	Module Five: Cervical			
09:25 - 09:35	Case Presentation - Cervical		Hartl, R	
09:35 - 09:50	Treatment Options / Literature - Cervical		Hofstetter, C	
09:50 - 10:10	Panel Discussion - Cervical			
10:10 - 10:20	Case Resolution - Cervical		Hartl, R	
10:20 - 10:40	Break			
10:40 - 11:35	Module Six: Complications			
10:40 - 10:50	Case Presentation - Complications		Agarwal, N	
10:50 - 11:05	Treatment Options / Literature - Complications		Yu, E	
11:05 - 11:25	Panel Discussion - Complications			
11:25 - 11:35	Case Resolution - Complications		Agarwal, N	
08:30 - 11:35	Group 1 (LAB)			
08:30 - 09:00	Video and Step-By-Step Technique Discussion - LLIF			
09:00 - 10:00	Lab: LLIF	Abd-El-Barr, M El Naga, A Freedman, B Gendelberg, D		
10:00 - 10:30	Video and Step-By-Step Technique Discussion - ALIF			
10:30 - 11:35	Lab: ALIF	Abd-El-Barr, M El Naga, A Freedman, B Gendelberg, D		
11:35 - 12:30	Lunch			

12:30 - 15:35	DIDACTICS AND LAB (Rotation #2)	
12:30 - 15:35	Group 1 (Cases)	
12:30 - 13:25	Module Four: Tumor	
12:30 - 12:40	Case Presentation - Tumor	Hartl, R
12:40 - 12:55	Treatment Options / Literature - Tumor	Agarwal, N
12:55 - 13:15	Panel Discussion - Tumor	
13:15 - 13:25	Case Resolution - Tumor	Hartl, R
13:25 - 14:20	Module Five: Cervical	
13:25 - 13:35	Case Presentation - Cervical	Hartl, R
13:35 - 13:50	Treatment Options / Literature - Cervical	Hofstetter, C
13:50 - 14:10	Panel Discussion - Cervical	
14:10 - 14:20	Case Resolution - Cervical	Hartl, R
14:20 - 14:40	Break	
14:40 - 15:35	Module Six: Complications	
14:40 - 14:50	Case Presentation - Complications	Agarwal, N
14:50 - 15:05	Treatment Options / Literature - Complications	Yu, E
15:05 - 15:25	Panel Discussion - Complications	
15:25 - 15:35	Case Resolution - Complications	Agarwal, N
12:30 - 15:35	Group 2 (LAB)	
12:30 - 13:00	Video and Step-By-Step Technique Discussion - LLIF	
13:00 - 14:00	Lab: LLIF	Abd-El-Barr, M El Naga, A Freedman, B Gendelberg, D
14:00 - 14:30	Video and Step-By-Step Technique Discussion - ALIF	
14:30 - 15:35	Lab: ALIF	Abd-El-Barr, M El Naga, A Freedman, B Gendelberg, D
15:35 - 15:45	Transfer to Lecture Hall	
15:45 - 16:00	Q & A, Course Summary and Closing,	Hartl, R Hofstetter, C

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.

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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.