



Trauma Basic Principles



January 17, 2019 - January 20, 2019
Charlotte, NC, USA

This *Basic Principles of Fracture Management* course is designed to provide the participant with a fundamental knowledge of the operative treatment of fractures according to the AO principles.

The four guiding AO principles of fracture fixation are:

1. Anatomic reduction of the fracture fragments, particularly in joint fractures;
2. Stable fixation to ensure proper healing of the fracture while allowing surrounding tissue to move and strengthen;
3. Atraumatic surgical techniques to preserve the blood supply to the bone fragments and soft tissue;
4. Early, pain-free mobilization returning the patient to function as quickly as possible.

This course will also cover the concepts of absolute and relative stability of soft tissue injury as applied, in context, for each limb segment's major fracture types.

This course is the foundation for the AO North America curriculum, which **teaches the surgeon how to manage trauma and trauma reconstruction**. The goal of this course is not to advocate the treatment of all fractures by surgical fixation, but rather, to help ensure that when surgery is carried out, that it is done properly based upon principles, appropriate preoperative planning, and decision making.

All AO North America resident courses are developed and consistent with the Accreditation Council for Graduate Medical Education (ACGME) competencies and specialty specific Milestones program.



Event Summary

Tuition:

Level Name: Participant - Orthopaedic
Pricing Tier: Resident
Tuition: \$1,200.00

Level Name: Participant - Orthopaedic
Pricing Tier: Attending
Tuition: \$1,600.00

Course Prerequisite(s):

No Prerequisites

Venue:

Sheraton Charlotte Hotel
555 South McDowell St
Charlotte, North Carolina, USA
Phone Number: (704) 372-4100
www.sheratoncharlottehotel.com

Language(s):

English

Directly Provided by:



Professional Level Prerequisite(s):

- Residency Year 1
- Residency Year 2
- Residency Year 3
- Residency Year 4
- Residency Year 5
- Residency Year 6
- Residency Year 7
- Residency Year 8
- Attending
- Fellow

CME

Continuing Education Credit: 31.00

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 AO North America is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.
 AONA has been resurveyed by the Accreditation Council for Continuing Medical Education (ACCME) and awarded Accreditation with Commendation.
- Designation Statement** - AO North America designates this live educational activity for a maximum of 31.00 **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)

Learner Objectives

Upon completion, participants should be able to:

- Discuss the concepts of stability, their influence on bone healing, and how to apply implants to achieve appropriate stability
- Plan a treatment based on assessment, imaging, classification, and decision making
- Apply reduction techniques in fracture management with attention to the importance of the soft-tissue
- Apply related psychomotor skills to the practical application of orthopedic implants to fractured bones
- Plan the initial treatment of the polytraumatized patient

Faculty



Karunakar, Madhav - Co-Chairperson

MD
Professor/Fellowship Director
Orthopaedic Traumatologist
Department of Orthopaedic Surgery
Carolinas Medical Center
Charlotte, North Carolina



Large, Thomas - Co-Chairperson

MD
Orthopaedic Trauma Services
Mission Hospital
Asheville, North Carolina

Originally from South Bend, IN, I graduated Summa Cum Laude from Duke University and Alpha Omega Alpha from Indiana University School of Medicine before completing my internship and orthopaedic surgery residency at Carolinas Medical Center in Charlotte, NC in 2006. I was then on active duty with the US Air Force including two tours at Bagram Airbase, Afghanistan, the largest and busiest trauma center in Operation Enduring Freedom. My military service culminated as Chief of Orthopaedic Surgery at Travis AFB, CA. After five months of volunteer work at Bedford Orthopaedic Hospital, Nelson Mandela University, Mthatha, S. Africa, I worked as a visiting surgeon with Professor Schildhauer in Bochum, Germany and then completed an AO fellowship with Professor Gebhard in Ulm, Germany. My trauma training concluded with fellowship at Harborview Medical Center in Seattle, WA. I am a practicing orthopaedic trauma surgeon at Mission Hospital in Asheville, NC since 2012. I am committed to improving trauma care and education in the developing world and have done additional volunteer work in Ghana and Uganda. I enjoy hiking and other adventures with my family, travel, golf, photography, and old cars.



Adams, Mark - Lecturer

MD
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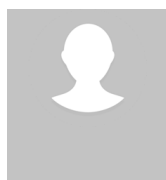
Bernstein, Mitchell - Lecturer

MD, FRCSC
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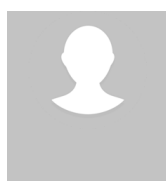
Blaisdell, Gregory - Lecturer

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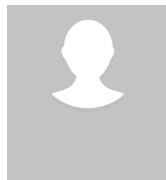
Broderick, J. Scott - Coach

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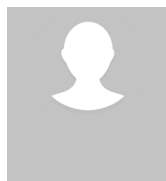


Cunningham, Bryce - Lecturer

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**Dumpe, Jarrod - Lecturer**

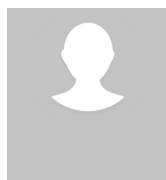
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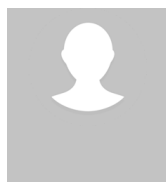
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**Forsh, David - Lecturer**

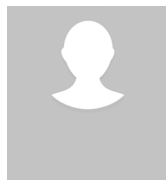
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**Gardner, Warren - Lecturer**

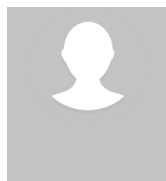
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**Garner, Matthew - Lecturer**

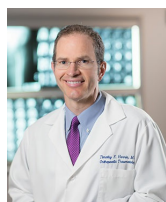
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**Gaski, Greg - Lecturer**

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**Harris, A. Michael - Coach**

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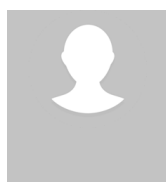
**Harris, Timothy - Lecturer**

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Hsu, Joseph - Lecturer

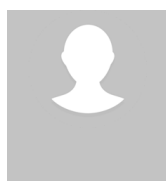
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Jeray, Kyle - Lecturer

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Dr. Kyle Jeray is the Chairman for the Department of Orthopaedic Surgery at the Greenville Health System and the University of South Carolina, Greenville. He is a Professor of Orthopaedic Surgery at the University of South Carolina School of Medicine- Greenville. He also has 2 appointments with Clemson University; Clinical Professor in the Department of Health Research and Adjunct Assistant Professor in the Department of Bioengineering. Dr. Jeray is a graduate of the University of Illinois School of Medicine in Chicago. He completed his Orthopaedic Surgery Residency at the Greenville Hospital System in Greenville, SC and, subsequently did his Orthopaedic Traumatology fellowship at the Carolinas Medical Center, in Charlotte, NC. Upon completion of his fellowship, Dr. Jeray joined the faculty of the Greenville Health System. He is currently the past chair of the Own the Bone Steering Committee and current chair of the Critical Issues Committee of the American Orthopaedic Association. He is a Past President of the South Carolina Orthopaedic Association and Southeastern Fracture Consortium. Dr. Jeray's research has focused upon the care of patients with musculoskeletal injuries and fragility fractures. Currently, Dr. Jeray was a Co-Principal Investigator of the study titled Fluid Lavage of Open Fracture Wounds (FLOW) sponsored by the US Department of Defense. Dr. Jeray's clinical interests include the management of open fracture wounds, complex upper extremity fractures, fractures of the pelvis and acetabulum and fragility fractures.



Kaufman, Adam - Lecturer

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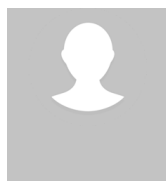
Kellam, James - Lecturer

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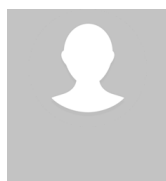
Learned, James - Lecturer

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Levine, Ari - Lecturer

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Little, Milton - Lecturer

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**Miller, Anna - Lecturer**

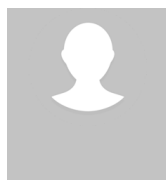
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**Sims, Stephen - Lecturer**

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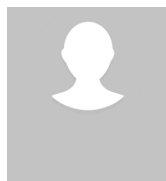
**Tonne, Brian - Lecturer**

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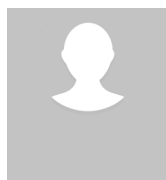
**Volgas, David - Coach**

MD
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Columbia, Missouri

David Volgas is an orthopaedic surgeon who specializes in trauma. He has practiced at University of Missouri Health System since Sept 2010. His special interests are in pilon fractures, calcaneus fractures, proximal humerus fractures and in soft tissue reconstruction.

**Weiss, David B. - Lecturer**

MD
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**Westrick, Edward - Lecturer**

MD
Assistant Professor, Drexel University College of Medicine
Co-Director, Orthopaedic Trauma
Allegheny General Hospital
Allegheny Health Network
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Dr. Edward Westrick is the Co-Director of Orthopaedic Trauma and Assistant Trauma Fellowship Director at Allegheny General Hospital of the Allegheny Health Network in Pittsburgh, PA. He is also Assistant Professor of Orthopedic Surgery at Drexel University College of Medicine. He obtained his medical degree and orthopedic residency at the University of Pittsburgh School of Medicine in Pittsburgh, PA. He completed his trauma fellowship at the University of Washington – Harborview Medical Center in Seattle, WA. His clinical practice includes traumatic upper and lower extremity fractures, pelvis and acetabular fractures, complex repair involving non-unions and malunions, as well as periprosthetic fractures and revision arthroplasty.

Agenda

Day1

Thursday, January 17, 2019 - 07:45 - 18:55 - (includes breaks, travel-time and meals)

Schedule	Title	Moderator	Faculty	Room
07:45 - 08:00	Introduction / Welcome		Karunakar, M Large, T	
08:00 - 08:20	AIRS PreTest		Karunakar, M Large, T	
08:20 - 09:20	MODULE 1: SOFT TISSUE	Kellam, J		
08:20 - 08:35	History of Fracture Care and Evolution of Principles		Kellam, J	
08:35 - 08:45	Bone: Fracture Classification - A Guide to Clinical Decision Making		Garner, M	
08:45 - 09:00	Soft Tissue Injury and Compartment Syndrome		Dumpe, J	
09:00 - 09:10	Open Fractures		Adams, M	
09:10 - 09:20	Questions / Answers and AIRS		Kellam, J	
09:20 - 10:20	MODULE 2: STABILITY AND BONE HEALING	Forsh, D		
09:20 - 09:35	Bone Healing		Levine, A	
09:35 - 09:50	Spectrum of Stability		Cunningham, B	
09:50 - 10:05	Surgical Reduction Techniques: Respecting the Behavior of Bone		Tonne, B	
10:05 - 10:20	Questions / Answers and AIRS		Forsh, D	
10:20 - 10:40	Coffee Break			
10:40 - 11:30	MODULE 3: PRINCIPLES - ABSOLUTE STABILITY	Harris, T		
10:40 - 10:50	Screw Design and Function		Westrick, E	
10:50 - 11:00	Plate Design and Function		Kaufman, A	
11:00 - 11:10	Tension Band Principles		Gaski, G	
11:10 - 11:30	Questions / Answers and AIRS		Harris, T	
11:30 - 12:15	Lunch			
12:15 - 13:55	PRACTICAL EXERCISE I: (Absolute Stability); A. Introduction to Implants; B. Lag Screw; C. Neutralization Plate; D. Buttress Plate	Forsh, D Levine, A		
13:55 - 14:05	Break			
14:05 - 15:45	PRACTICAL EXERCISE I: (Absolute Stability-Continued); E. Axial Compression with Plates; F. Oblique Fracture: Lag Through Plate; G. Olecranon Fixation	Harris, T Kaufman, A		
15:45 - 16:05	Coffee Break / Travel to Lectures			
16:05 - 17:15	MODULE 4: PRINCIPLES - RELATIVE STABILITY	Firoozabadi, R		
16:05 - 16:15	External Fixation Relative Stability		Blaisdell, G	
16:15 - 16:30	Bridge Plating with Traditional Implants and Techniques		Learned, J	
16:30 - 16:45	Locked Plating - Biology, Biomechanics, Clinical Applications		Bernstein, M	
16:45 - 16:55	Intramedullary Techniques, Relative Stability		Little, M	
16:55 - 17:15	Questions / Answers and AIRS		Firoozabadi, R	
17:15 - 17:25	Travel to Lab			
17:25 - 18:55	PRACTICAL EXERCISE II: (Relative Stability); A. External Fixation; B. Bridge Plating; C. Comparison of Locked and Unlocked Screws in Osteoporotic Bone	Bernstein, M Blaisdell, G		

Day2

Friday, January 18, 2019 - 07:15 - 17:50 - (includes breaks, travel-time and meals)

Schedule	Title	Moderator	Faculty	Room
08:00 - 09:30	Discussion Group One: Review of Principles and Decision Making			
09:30 - 09:40	Travel to Lab			

09:40 - 11:40	PRACTICAL EXERCISE III: AO Skills Lab		
11:40 - 12:30	Lunch		
12:30 - 13:40	MODULE 5: DIAPHYSEAL MANAGEMENT	Miller, A	
12:30 - 12:40	Radiation Safety		Reisman, W
12:40 - 12:50	Femur		Firoozabadi, R
12:50 - 13:00	Tibia		Garner, M
13:00 - 13:10	Humerus		Gardner, W
13:10 - 13:20	Radius & Ulna		Hsu, J
13:20 - 13:40	Questions / Answers and AIRS		Miller, A
13:40 - 13:50	Travel to Breakouts		
13:50 - 14:40	Discussion in Small Group Roms: Review of Intramedullary Nailing		
14:40 - 14:50	Travel to Lab		
14:50 - 16:00	PRACTICAL EXERCISE IV: (Intramedullary Nailing); A. Femur; B. Tibia	Garner, M Reisman, W	
16:00 - 16:10	Travel to Lectures		
16:10 - 16:25	Unique Learning Resources of the AO Foundation		Kellam, J
16:25 - 16:40	Preoperative Planning		Miller, A
16:40 - 17:50	PRACTICAL EXERCISE V: Preoperative Planning - Forearm Model	Miller, A	

Day3

Saturday, January 19, 2019 - 07:15 - 18:45 - (includes breaks, travel-time and meals)

Schedule	Title	Moderator	Faculty	Room
08:00 - 09:30	Discussion Group Two: Diaphyseal Fractures			
09:30 - 09:40	Travel to Lab			
09:40 - 10:50	PRACTICAL EXERCISE VI: Fixation of Radius / Ulna	Hsu, J Sims, S		
10:50 - 11:00	Coffee Break / Travel to Lectures			
11:00 - 12:00	MODULE 6: LOWER EXTREMITY - ARTICULAR FRACTURES	Jeray, K		
11:00 - 11:10	Principles of Management - Articular		Levine, A	
11:10 - 11:25	Ankle Fractures		Learned, J	
11:25 - 11:35	Introduction to Pilon Fractures		Forsh, D	
11:35 - 11:45	Introduction to Tibial Plateau		Gardner, W	
11:45 - 12:00	Questions / Answers and AIRS		Jeray, K	
12:00 - 12:45	Lunch			
12:45 - 13:50	PRACTICAL EXERCISE VII: Ankle Fractures - Type C Malleolar	Jeray, K Learned, J		
13:50 - 14:00	Travel to Lectures			
14:00 - 14:50	MODULE 6 (continued): LOWER EXTREMITY - ARTICULAR FRACTURES	Weiss, D		
14:00 - 14:10	Distal Femur		Little, M	
14:10 - 14:20	Extracapsular Hip Fracture		Adams, M	
14:20 - 14:30	Intracapsular Hip Fracture		Tonne, B	
14:30 - 14:40	Olecranon and Patellar Fractures		Westrick, E	
14:40 - 14:50	Questions / Answers and AIRS		Weiss, D	
14:50 - 15:00	Travel to Lab			
15:00 - 16:15	PRACTICAL EXERCISE VIII: Fixation of an Intertrochanteric Hip Fracture - Nail vs. Plate	Tonne, B Weiss, D		
16:15 - 16:25	Coffee Break / Travel to Lectures			
16:25 - 17:10	MODULE 7: UPPER EXTREMITY - ARTICULAR FRACTURES	Hsu, J		
16:25 - 16:35	Proximal Humerus		Blaisdell, G	

16:35 - 16:45	Distal Humerus	Weiss, D
16:45 - 16:55	Distal Radius	Jeray, K
16:55 - 17:10	Questions / Answers and AIRS	Hsu, J
17:10 - 18:45	MODULE 8: SPECIAL FRACTURE PROBLEMS	Sims, S
17:10 - 17:25	Polytrauma	Weiss, D
17:25 - 17:35	Radiographic Evaluation and Classification of Pelvic Ring Disruptions	Reisman, W
17:35 - 17:45	Acute Management of Pelvic Ring Injuries	Firoozabadi, R
17:45 - 17:55	Questions / Answers and AIRS	Sims, S
17:55 - 18:45	AIRS PostTest	Karunakar, M Large, T

Day4

Sunday, January 20, 2019 - 07:30 - 11:40 - (includes breaks, travel-time and meals)

Schedule	Title	Moderator	Faculty	Room
07:30 - 08:45	Discussion Group Three: Articular Fractures			
08:45 - 08:50	Travel to Lab			
08:50 - 10:20	PRACTICAL EXERCISE IX: (External Fixation); A. Pelvic Fracture; B. Spanning External Fixation	Adams, M Firoozabadi, R		
10:20 - 10:25	Travel to Lectures			
10:25 - 11:40	MODULE 8 (Continued): SPECIAL FRACTURE PROBLEMS	Reisman, W		
10:25 - 10:40	Infection		Hsu, J	
10:40 - 10:50	Nonunions		Kaufman, A	
10:50 - 11:00	Malunions		Harris, T	
11:00 - 11:20	Violations of AO Principles: How Not To Do AO		Sims, S	
11:20 - 11:30	Questions / Answers and AIRS		Reisman, W	
11:30 - 11:40	Closing Comments (Introduce Principles II) / End of Course AIRS Questions		Karunakar, M Large, T	

AONA 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.

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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.

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:

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Acknowledgment

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.