



EXTREMITY WAR INJURIES XVI

Embracing Peace, Preparing for War

August 15-16, 2022
Washington, DC

Symposium Co-Chairs: CDR Scott M. Tintle, MD and David Teague, MD
Scientific Director: Lt Col Andrew Sheean, MD
EWI Oversight Chair: David Teague MD

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 the American Academy of Orthopaedic Surgeons and the Society of Military Orthopaedic Surgeons. The American Academy of Orthopaedic Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

SYMPOSIUM AGENDA

August 14, 2022

3:00–5:30 PM	EWI Symposium Check In	Foyer
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August 15, 2022

6:30 AM	EWI Symposium Check In	Foyer
6:30–7:00 AM	Coffee	
7:00–7:05 AM	Symposium Welcome: Embracing Peace, Preparing for War: Goals for Meeting CDR Scott M. Tintle, MD <i>Walter Reed National Military Medical Center</i>	
7:05–7:15 AM	EWI 2022: Why Are We Here? History of EWI COL (Ret) James Ficke, MD <i>John Hopkins University Medical Center</i>	
7:15–7:45 AM	Breakfast/Industry Update <i>*CME Not Available</i>	
7:45–7:55 AM	EWI to Funding- How Does It Work? Civilian Historical Perspective Andrew N. Pollak, MD <i>University of Maryland</i>	

7:55–8:05 AM	Burden of Musculoskeletal Disease and Funding Mismatch Lee Grossman <i>Orthopaedic Research and Education Foundation</i>	
8:05–8:20 AM	Utilization of the Department of Defense Peer-Reviewed Orthopaedic Research Program (PRORP): Combating Musculoskeletal Disease With PRORP LT Ashley B. Anderson, MD <i>Walter Reed National Military Medical Center</i>	
8:20–8:40AM	CDMRP/PRORP/USAMRAA-Research Alphabet Soup Explained Akua Roach, PhD <i>US Army Medical Research and Materiel Command</i>	
8:40–9:00 AM	Readiness of United States Navy Medicine RADM Bruce Gillingham, MD <i>Surgeon General United States Navy</i>	
9:00–9:20 AM	Break	
Session I Readiness Moderator: CDR Scott M. Tintle, MD		
9:20–9:30 AM	Civilian Navy Program Development at University of Pennsylvania- A Model for the Future? Col Jeremy Cannon, MD <i>Beth Israel Deaconess Medical Center</i>	
9:30–9:40 AM	Military and Civilian Partnership at Vanderbilt: A Model for the Future? LTC Daniel J. Stinner, MD <i>Vanderbilt University</i>	
9:40–9:50 AM	Level One Military Trauma Center LTC Jeanne Patzkowski, MD <i>San Antonio Military Medical Center</i>	
9:50–10:00 AM	The KSA Program and Military Surgical Readiness COL Danielle Holt, MD <i>Uniformed Services University of the Health Sciences</i>	
10:00–10:10 AM	SOMOS/AANA Collaboration: Is This a Model for Other Sub-specialties? Jonathan F. Dickens, MD <i>Duke University</i>	
10:10–10:40 AM	The Withdrawal from Afghanistan, Medical Lessons Learned Panel on Readiness: How do Military Orthopaedic Surgeons Stay Prepared to Deploy and for Stateside War Care? Moderator: CDR Scott M. Tintle, MD Panel: COL Kenneth J. Nelson, MD, <i>Fayetteville, NC</i> COL Jean-Claude DAlleyrand, MD, <i>Landstuhl Regional Medical Center</i> COL B. Kyle Potter, MD, <i>Walter Reed National Military Medical Center</i> CAPT George Nanos, MD, <i>Walter Reed National Military Medical Center</i> CDR Scott M. Tintle, MD, <i>Walter Reed National Military Medical Center</i>	

10:40–10:50 AM	Questions from Audience	
10:50–11:10 AM	Break	
Session II Lower Extremity Trauma Moderator: LCDR Chris Renninger MC USN		
11:10–11:20 AM	Combat Orthopaedic Surgery Trauma Surgery Course LCDR Christopher Renninger, MD <i>Walter Reed National Military Medical Center</i>	
11:20–11:30 AM	Amputation Optimization COL B. Kyle Potter, MD <i>Walter Reed National Military Medical Center</i>	
11:30–11:40 AM	Osseointegration Update CAPT Jonathan Forsberg, MD <i>Walter Reed National Military Medical Center/Johns Hopkins University</i> Julio Rivera, PhD <i>Henry Jackson Foundation</i>	
11:40–11:50 AM	Lower Extremity Amputations in the Civilian Setting David C. Teague, MD <i>University of Oklahoma</i>	
11:50–12:00 PM	METRC Update Michael J. Bosse, MD <i>Atrium Health Musculoskeletal Institute</i>	
12:00 –12:10 PM	Trauma Topic LTC Daniel J. Stinner, MD <i>Vanderbilt University</i>	
12:10–12:40 PM	LUNCH/INDUSTRY UPDATE * CME Credit Not Available	
12:40–1:05 PM	Dessert in Exhibit Hall	
Session III Upper Extremity/Orthoplastics Moderator: Jason Souza MD		
1:05–1:15 PM	Tips from the Experts on PRORP Success Akura Roach, PhD <i>US Army Medical Research and Materiel Command</i>	
1:15–1:25 PM	Orthoplastics in the United States Military- Does It Exist? Jason M. Souza, MD <i>Ohio State University</i>	
1:25–1:35 PM	Orthoplastics in the United Kingdom- Is This the Ideal Model for Success? Michael B. Kelly, MD <i>Southmead Hospital, Bristol, United Kingdom</i> Umraz Khan, MD <i>Southmead Hospital, Bristol, United Kingdom</i>	
1:35–1:45 PM	Orthoplastics from the Orthopaedic Surgeon Perspective Samir Mehta, MD <i>University of Pennsylvania</i>	

1:45–1:55 PM	Going it Alone- How to Succeed without Plastic Surgery Support – Is It Possible? Joseph R. Hsu, MD <i>Carolina Medical Center</i>		
1:55–2:15 PM	Orthoplastics Panel Discussion: Moderator: Jason M. Souza, MD, <i>Ohio State University</i> Panel: Jason M. Souza, MD, <i>Ohio State University</i> LCDR Christopher Renninger, MD, <i>Walter Reed National Military Medical Center</i> Michael B. Kelly, MD, <i>Southmead Hospital, Bristol, United Kingdom</i> Umraz Khan, MD, <i>Southmead Hospital, Bristol, United Kingdom</i>		
Track A- Trauma Moderator: LCDR Christopher Renninger, MD		Track B- Upper Extremity Moderator: CDR Scott Tintle, MD	
Title		Title	
2:20–2:30 PM	Abstract—Oxygen Robert V. O’Toole, MD <i>University of Maryland</i>	2:20–2:30 PM	TBD Kevin C. Chung, MD <i>University of Michigan</i>
2:30–2:40 PM	Postoperative Wound Infection After Extremity Fractures LTC Daniel J Stinner, MD <i>Vanderbilt University</i>	2:30–2:40 PM	Why Does Bone Health Matter to the Military? Jennifer M. Wolf, MD <i>University of Chicago</i>
2:40–2:50 PM	Infection: Updates in Management LTC Daniel J Stinner, MD <i>Vanderbilt University</i>	2:40–2:50 PM	PEG Fusion Update Jaimie T. Shores, MD <i>John Hopkins University</i>
2:50–3:00 PM	Ultrasound to Diagnose Acute Compartment Syndrome Meir Marmor, MD <i>University of California, San Francisco</i>	2:50–3:00 PM	Enhancing Peripheral Nerve Repair Options Jason M. Souza, MD <i>Ohio State University</i>
Research Highlights		Research Highlights	
3:00–3:05PM	33 - Humanitarian Medical Aid Mission following Muniton Explosion in Bata - Equatorial Guinea March 2021 <i>Lieutenant Colonel Amir Shlifer, MD, MHA, Israel Defense Forces</i>	3:00–3:05PM	46 - A Novel Funnel Conduit Reduces Neuroma Formation Post-Traumatic Extremity Injury <i>Erica Lee, MS, Johns Hopkins School of Medicine</i>
3:05–3:10PM	21 - Biomechanical Validation of the Field-Expedient Pelvic Splint <i>LT Jonathan C. Savakus, MD, Vanderbilt University Medical Center</i>	3:05–3:10PM	3 - A Missed Opportunity: Nerve Injuries in Combat-Related Extremity Limb Salvage <i>LT Marissa Dearden, MD, Walter Reed National Military Medical Center</i>

3:10–3:15PM	48 - Long-Term Health Outcomes of Limb Salvage vs. Amputation for Combat-Related Trauma <i>LT Jordan Tropp, MD, Walter Reed National Military Medical Center</i>	3:10–3:15PM	51 - Return to Running, Rucking and Shooting: Arthroscopic Bankart vs. Open Latarjet <i>LTC Joseph W. Galvin, DO, Madigan Army Medical Center</i>
3:15–3:20PM	60 - The Role of Cultures in Diaphyseal Tibia Nonunions: A Multicenter Study <i>Hannah Floyd, Atrium Health Musculoskeletal Institute</i>	3:15–3:20PM	49 - IGF-1 Nanoparticles Improve Functional Outcomes After Peripheral Nerve Injury <i>Tom Harris, MBChB, Johns Hopkins School of Medicine</i>
3:20–3:40PM	BREAK		
Breakout Sessions			
3:40–4:55 PM	Breakout Group 1- Orthopaedic Readiness- Gaps in Understanding and How to preserve Expertise <i>George Nanos, MD, Walter Reed National Military Medical Center</i>		
	Breakout Group 2- Orthoplastic Surgery- How Do We Make This a Reality in the United States? <i>Jason M. Souza, MD, Ohio State University</i>		
	Breakout Group 3- Amputation Surgery <i>B. Kyle Potter, MD, Walter Reed National Military Medical Center</i>		
	Breakout Group 4- Femur/Tibia/Hindfoot Injuries <i>Christopher Renninger, MD, Walter Reed National Military Medical Center</i>		
5:30–7:00 PM	Reception/Scientific Poster Session		
5:30–6:30 PM	Grant Funding Tips from the Experts Informal Coffee and Conversations Dr. Akura Roach, DOD Funded, PRORP Personnel		
7:00PM	EWI Faculty Dinner		

August 16, 2022		
6:30 AM	EWI Symposium Check In	Foyer
6:30–7:00 AM	Coffee	
7:00–7:05AM	Welcome / Review of Day Two <i>CDR Scott M. Tintle, MD Walter Reed National Military Medical Center</i>	
Session IV Readiness Research from the 30,000 Foot Perspective Moderators: TBD		
7:05–7:15 AM	State of Sports Medicine and Readiness Research: The AOSSM Perspective <i>Kurt Spindler, MD President, AOSSM, Cleveland Clinic</i>	

7:15–7:25 AM	Military Medical Readiness Research in 2021: Progress, Potential, and Challenges Jonathan F. Dickens, MD <i>Duke University</i>		
7:25–7:35AM	Discussion		
7:35–7:45 AM	Building a Multicenter Network: How to Do It and Lessons Learned John Clohisy, MD <i>Washington University</i>		
7:45–7:55 AM	Musculoskeletal Injury Rates Across the Military: What is the Burden of Disease and What are the Stakes? Daniel I Rhon, DPT, DSC <i>San Antonio Military Medical Center</i>		
7:55–8:05 AM	Discussion		
8:05–8:35 AM	BREAKFAST/INDUSTRY UPDATE <i>* CME Credit Not Available</i>		
8:35-8:55 AM	BREAK		
Track A		Track B	
Trauma Moderators: LCDR Michelle Gosselin, MD		Threats to Readiness: Non-Arthritic Hip Pain Moderators: LCDR Brian Barlow, MD	
8:55–9:05 am	FIXIT Robert V. O’Toole, MD <i>University of Maryland</i>	8:55–9:05 am	Management of Focal Chondral Lesions About the Hip Asheesh Bedi, MD <i>University of Michigan Health</i>
9:05–9:15 am	Updates on Severe Foot Trauma LCDR Michelle Gosselin, MD <i>Navy Trauma Training Center</i>	9:05–9:15 am	Managing Labral Injuries: From Debridement to Reconstruction Craig S. Mauro, MD <i>University of Pittsburgh Medical Center</i>
9:15–9:25 am	Update on Severe Hindfoot/Midfoot/Pilon Trauma- OUTLET Michael J. Bosse, MD <i>Atrium Health Musculoskeletal Institute</i>	9:15–9:25 am	Role for Periacetabular Osteotomy and Expected Clinical Outcomes TBD
9:35–9:45 am	Ballistic Trauma in Chicago Jason A. Strelzow, MD <i>University of Chicago, IL</i>	9:35–9:45 am	Extra-Articular Causes of Non-Arthritic Hip Pain J.W. Thomas Byrd, MD <i>Nashville Sports Medicine & Orthopaedic Center</i>
9:45–9:55 am	Discussion	9:45–9:55 am	Discussion
Research Highlights		Research Highlights	
9:55–10:05 am	70 - Local and Systemic Ketorolac and Rat Open Femur Fracture Healing <i>Katherine Li, MD, Atrium Health Musculoskeletal Institute</i>	9:55–10:05 am	7 – Evaluating Micro-Fragmented Adipose Tissue for Knee Arthritis: A Randomized, Controlled Study <i>Dustin L. Richter, MD, University of New Mexico</i>

10:05–10:15 am	16 - Potential Knee Osteoarthritis Predictors in Service Members with Limb Loss <i>Joseph G. Wasser, PhD, Walter Reed National Military Medical Center</i>	10:05–10:15 am	18 - 3D Bioprinted Osteochondral Plugs: A Potential Treatment for Osteochondral Injuries <i>Nicholas A. Chartrain, PhD, The Geneva Foundation; 4D Bio3 Center at the Uniformed Services University of the Health Sciences</i>
10:15–10:25 am	10 - 4-Aminopyridine Salvages Muscle Atrophy and Bone Loss Following Combined Nerve and Muscle Injury <i>John Elfar, MD, FACS, Penn State CORTS</i>	10:15–10:25 am	42 - Distance to Dislocation Predicts Failure Following Primary Arthroscopic Bankart Repair <i>Major Aaron E Barrow, MD, University of Pittsburgh Sports Medicine</i>
10:25–10:35 am	50 - Elective Amputation for Chronic Regional Pain Syndrome: A Reasonable Option? <i>LT Benjamin W. Hoyt, MD, Walter Reed National Military Medical Center</i>	10:25–10:35 am	9 - Comparison of Inflammatory Profiles Between ACL and Multiligament Knee Injuries <i>Cale Jacobs, PhD, University of Kentucky</i>
10:35–10:45 am	22 - Characterization of Combat-Related Lower Extremity Limb Salvage in the Military Health System <i>Stephen Goldman, PhD, Extremity Trauma & Amputation Center of Excellence</i>	10:35–10:45 am	19 - The Role of Fatigue in Return to Sport Testing Following Anterior Cruciate Ligament Reconstruction <i>Bradley S. Lambert, PhD, Houston Methodist Hospital</i>
10:50–11:00 AM	Break		
Track A		Track B	
Upper Extremity Non-Battle Injury Moderators: CDR Scott Tintle, MD		Threats to Readiness: Shoulder Moderators: LTC Joseph Galvin, DO	
11:00–11:15am	Scapholunate Dissociation: Advances in Care <i>Scott W. Wolfe, MD Hospital for Special Surgery</i>	11:00–11:10 am	Critical Issues in Shoulder Instability <i>Albert Lin, MD University of Pittsburgh Medical Center</i>
11:15–11:25am	Scaphoid Non-Union <i>Aviram M. Giladi, MD, MS Medstar Union Memorial</i>	11:10–11:20 am	In-Season Decision Making and Return to Play/Duty Considerations <i>Brian R. Waterman, MD Wake Forest University</i>
11:25–11:35 am	Scaphoid Non-Union: Vascularized Cartilage Replacement	11:20–11:30 am	Management of Focal Chondral Lesions About the Shoulder <i>Lance E. LeClere, MD Vanderbilt University</i>

11:35-11:45 am	Agonist Antagonist Myoelectric Interfaces - Update Matthew J. Carty, MD <i>Brigham and Women's Hospital</i>	11:30-11:40 am	Glenohumeral Osteoarthritis in the Young, Active Patient Robert U. Hartzler, MD <i>TSAOG Orthopaedics</i>
11:40-11:50 am	Discussion	11:40-11:50 am	Discussion
11:55 AM-12:25 PM	LUNCH/INDUSTRY UPDATE * CME Credit Not Available		
12:25-12:55 PM	Dessert in Exhibit Hall		
Session V			
Orthobiologics: From the Benchtop to Clinical Practice Moderators: CDR James Bailey, MD; LCDR Jennifer Smith, MD			
12:55-1:05PM	Basic Science Update Chelsea Bahney, PhD <i>University of California, San Francisco</i> <i>Steadman Philippon Research Institute (SPRI)</i>		
1:05-1:15 PM	Innovations in Point of Care Blood Product Collection and Delivery Adam Anz, MD <i>Andrews Institute for Orthopaedics and Sports Medicine</i>		
1:15-1:25 PM	Adipose-Derived Stem Cells: Overview and Clinical Applications Jason Drago, MD <i>University of Colorado</i>		
1:25-1:40 PM	Orthobiologics in My Clinical Practice James P. Bradley, MD <i>University of Pittsburgh Medical Center</i>		
1:40-1:45 PM	Discussion		
1:45-1:55 PM	Break		
Session VI			
Knee Chondral Injuries and Post-Traumatic Osteoarthritis Moderators: TBD			
2:00-2:10 PM	The Pathogenesis of PTOA: What Do We Know in 2022? Christian Latterman, MD <i>Brigham and Women's Hospital</i>		
2:10-2:20 PM	Orthobiologics as a Primary Treatment for PTOA Bert R. Mandelbaum, MD <i>Cedars Sinai Kerlan-Jobe Institute</i>		
2:20-2:30 PM	The Role of Osteotomy: When, Where, How Annunziato Amendola, MD <i>Duke University</i>		
2:30-2:40 PM	Surface-Based Treatment of Focal Knee Chondral Lesions Seth L. Sherman, MD <i>Stanford University</i>		

2:40–2:50 PM	Osteochondral Allograft Transplantation for Focal Knee Chondral Lesions Thomas DeBerardino, MD <i>San Antonio, TX</i>	
2:50–3:00 PM	Discussion	
3:00–3:10 PM	Break	
Session VII Innovations in Injury Surveillance and Non-Operative Therapeutics Moderators: Adam Popchak, PhD		
3:10–3:20 PM	Clinical Outcomes and Big Data: Implications for the DoD Jay Irrgang, PhD <i>University of Pittsburgh</i>	
3:20–3:30 PM	MIRROR in 2021: Current Capabilities and Future Directions Jenny Yuan, MD, PhD <i>Uniformed Services University</i>	
3:30–3:40 PM	Injury Surveillance Among Elite Tactical Athletes Jason Jadgechew <i>Naval Special Warfare Command</i>	
3:40–3:50 PM	Blood Flow Restriction Therapy: State of the Art in 2022 Johnny Owens, PT <i>Owens Recovery Science</i>	
3:50–4:00 PM	Discussion	
4:00–4:10 PM	Break and Transition to Breakout Sessions	
4:10–5:00 PM	Breakout Group 1- Wrist and Elbow Upper Extremity Non-Battle Injury CDR Scott M. Tintle, MD, <i>Walter Reed National Military Medical Center</i> Aviram M. Giladi, MD, MS, <i>Medstar Union Memorial</i>	
	Breakout Group 2- Biologics Justin W. Arner, MD, <i>UPMC</i> Chelsea Bahney, PhD, <i>University of California, San Francisco & Steadman Philippon Research Institute (SPRI)</i>	
	Breakout Group 3- Cartilage Restoration LTC Christopher Tucker, MD, <i>Walter Reed National Military Medical Center</i> Lance E. LeClere, MD, <i>Vanderbilt University</i>	
	Breakout Group 4- Hip Preservation Craig S. Mauro, MD, <i>UPMC</i>	

Posters

Readiness

32 - Increased Failure with Arthroscopic Bankart Repair Following Second Anterior Dislocation

Michael A. Fox, MD, University of Pittsburgh

52 - Rate and Time to Return to Running Following Arthroscopic Shoulder Surgery in Young Athletes

LTC Joseph W. Galvin, DO, Madigan Army Medical Center

65 - Stress Fractures in the Military Recruit: What's The Cost?

Shannon D. Lorimer, DO, Naval Medical Center Portsmouth

17 - 3D Printing a Potential Therapeutic Meniscus Tissue Device

George J Klarmann, PhD, Uniformed Services University- 4D-Bio3 Center

45 - New Screening Metrics for Bone Stress Injuries In Distance Runners

Aaron Carbuhn, PhD, University of Kansas Medical Center

8 - SLAP Repair vs. Biceps Tenodesis for Isolated Type II SLAP Tears: A Meta-Analysis and Expected-Value Decision Analysis

ENS Andrew J. Recker, BS, Wake Forest School of Medicine

41 - Hip-Spine Relationship in Femoroacetabular Impingement: Does Hip Arthroscopy Affect Pelvic Mobility?

LT Jessica R. Stambaugh, MD, Naval Medical Center San Diego

56 - Open Bankart vs. Arthroscopic Bankart with Remplissage for Anterior Glenohumeral Instability with Subcritical Glenoid Bone Loss

LT Jordan Tropf, MD, Walter Reed National Military Medical Center

Trauma

53 - Epidemiology of Surgical Cases at a Role III Field Hospital: Operation Inherent Resolve

MAJ Christopher M. Belyea, MD, MBA, Walter Reed National Military Medical Center

37 - Increased Cumulative Hypotension Suppresses the Adaptive Immune Response in Blunt Trauma Patients with Major Fractures

Todd McKinley, MD, Johns Hopkins

39 - 12 Month Results of the Trauma Collaborative Care Intervention

Stephen Wegener, PhD, Johns Hopkins

24 - 4-Aminopyridine Promotes Cutaneous Reinnervation and Accelerates Wound Healing

Jagadeeshaprasad Mashanipalya, PhD, Penn State College of Medicine

64 - Implementation of a Clinical Decision Support Toolkit for Controlled Substance Prescribing

Rachel Seymour, PhD, Atrium Health Musculoskeletal Institute

44 - Intraosseous Morphine Decreases Postoperative Pain and Medication Use Following TKA

Bradley S. Lambert, PhD, Houston Methodist Hospital

40 - The US Military Healthcare System Response to the Afghanistan Evacuation

CPT Timothy Murphy, MD, Walter Reed National Military Medical Center

1 - Lower Extremity Splinting: Comparing Novel Foam Splint verse Standard Splinting
2nd Lt Tyler Webb, BS, BA, Ohio State University Wexner Medical Center