

MEETING THE CHANGING THREAT
THROUGH MILITARY MEDICAL RESEARCH



MHSRS
2024

Breakout Sessions

Tuesday, 27 August



MHS Military Health System
health.mil

BREAKOUT SESSIONS

Tuesday, 27 August | 0800 – 1000

An Ounce of Prevention: Next Generation Vaccines and Passive Immunoprophylaxis to Enhance Warfighter Readiness

Moderators: COL Julie Ake, USA, MAJ Gina Griffith, USA

LOCATION: Coastal A

- 0800 – 0815 **Real-world Evaluation of Vaccine Strain Immune Escape through SARS-CoV-2 Genetic Sieve Analysis: Insights and Future Vaccine Applications** (MHSRS-24-11986)
Presenter: Simon Pollett, MBBS
- 0815 – 0830 **Army Liposome Formulation with QS21 (ALFQ): A Safe and Potent Adjuvant in Phase I Clinical Trials** (MHSRS-24-12077)
Presenter: Essie Komla, Ph.D.
- 0830 – 0845 **RV 575 Study: Dose Optimization Study of ALFQ Adjuvant in a Candidate HIV Vaccine Containing A244 and B.63521 HIV Envelope Proteins Conducted at the Walter Reed Army Institute of Research (WRAIR) - Results of a Blinded Interim Analysis** (MHSRS-24-11944)
Presenter: David Leggat, Ph.D.
- 0845 – 0900 **Epitope Disk Nanoparticle: Development of a Next-Generation Vaccine Platform** (MHSRS-24-13341)
Presenter: Shelby Foor, Ph.D.
- 0900 – 0915 **Injectable Scaffolds for Vaccination Against Implant-Associated Infection** (MHSRS-24-11394)
Presenter: Michael Super, Ph.D.
- 0915 – 0930 **Vaccine Associated Cardiac Adverse Events: Myocarditis and Subclinical Myocardial Injury Following Smallpox Vaccines Are Associated with Cardiovascular Disease Risk Factors and Post-Vaccine Cardiac Injury Biomarker Increases** (MHSRS-24-12122)
Presenter: Renata Engler, M.D.
- 0930 – 0945 **Efficacy of the Bispecific Antibody 10E8.4/iMab Against High-dose Intravenous SHIV Challenge in Rhesus Macaques** (MHSRS-24-12301)
Presenter: Caroline Subra, Ph.D.
- 0945 – 1000 **Clinical Development of Oral Biologics for Pre-exposure Prophylaxis Against All Major Pathogenic Enterotoxigenic Escherichia coli (ETEC) Strains** (MHSRS-24-12845)
Presenter: Lisa Cavacini, Ph.D.

Severe Burn Injury: Strategies to Accelerate Casualty Functional Recovery

Moderators: Robin K. Walker, Ph.D., Anne McKeague, Ph.D., Bonnie J. Woffenden, Ph.D.

LOCATION: Coastal 9

- 0800 – 0815 **Alternative Resuscitation Strategies Using Fresh Frozen Plasma to Reduce Fluid Requirements After Severe Burn in a Swine Model: A Pilot Study** (MHSRS-24-11285)
Presenter: Tina Rodgers, Ph.D.
- 0815 – 0830 **Urine Output Is Insensitive to Fluid Volume in the Initial 8 Hours After Burn in a Swine Model: Implications for Fluid Creep and the Use of Urine Output as an Endpoint to Resuscitation** (MHSRS-24-11240)
Presenter: Caroline Gusson Shimoura de Almeida Lima, Ph.D.
- 0830 – 0845 **Acute Development of Squamous Cell Carcinoma in a Burn Donor Site: A Case Report and Review of Literature** (MHSRS-24-11386)
Presenter: Madelyn Kamly, MSN
- 0845 – 0900 **Investigational Biological Ointment for Dermal Burns That Reduces the Risk of SIRS, Accelerates Healing, Prevents Scars by Directly Modulating Inflammation While Treating Infection Topically, on the Battlefield** (MHSRS-24-12338)
Presenter: Philippe Sollie, MSc

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BREAKOUT SESSIONS

Tuesday, 27 August | 0800 – 1000

- 0900 – 0915** **Innovative Full-Thickness Burn Care Solutions: Pre-Clinical Assessment of a Novel Silicone-Based Polymer (SBP) Wound Matrix for Combat Casualty Burn Care (MHSRS-24-10822)**
Presenter: Adam Jorgnesen, M.D., Ph.D.
- 0915 – 0930** **Commissuroplasty with Triangular Wedged Scar Excision and Mucosal Y-V Advancement Flap as Treatment for Burn-related Microstomia: A Case Series (MHSRS-24-13212)**
Presenter: Maria A. Lux, M.D.
- 0930 – 0945** **Low-level Endotoxin Preconditioning After Burn Injury Significantly Improves Survival Rate in Mouse Sepsis Model: Implications for Burn Casualties During Prolonged Field Care (MHSRS-24-11119)**
Presenter: MAJ Bradley Kearney, USA
- 0945 – 1000** **Bridging Gaps in Combat Medic Training: A Simulation-Based Approach for Burn Injury Management (MHSRS-24-11876)**
Presenter: Hannah Theriot, M.D.

TBI Management: Epidemiology and Down Range Management

Moderator: Caryn Stern, DrPH, MPH

LOCATION: Coastal C

- 0800 – 0815** **History of Musculoskeletal (MSK) and Traumatic Brain Injury (TBI): Depression Symptoms in Law Enforcement Personnel (MHSRS-24-11662)**
Presenter: James Onate, Ph.D.
- 0815 – 0830** **Service Member and Veteran Participants of the Department of Veterans Affairs Traumatic Brain Injury (TBI) Intensive Evaluation and Treatment Programs (IETPs): Who Are They? (MHSRS-24-12535)**
Presenter: Jessica Ryan, Ph.D.
- 0830 – 0845** **Advancing Prehospital Assessment of Traumatic Brain Injury (TBI) Patients with the Use of Machine Learning-based Modeling of Continuous Physiologic Data (MHSRS-24-11962)**
Presenter: LT Kenneth Dalton, USN
- 0845 – 0900** **Personalized, Augmented Cognitive Training for Veterans and Service Members with a History of mild Traumatic Brain Injury: Randomized Controlled Trial Results (MHSRS-24-11695)**
Presenter: Mark Ettenhofer, Ph.D.
- 0900 – 0915** **2-Deoxy-2-[18F]Fluoro-D-Glucuric Acid (18F-FGA) Detects mild Traumatic Brain Injury: Possible Positron Emission Tomography Screening Tool for mild Head Injury (MHSRS-24-13419)**
Presenter: Kelly Standifer, Ph.D.
- 0915 – 0930** **Hypobaric During Aeromedical Evacuation Increases Systemic Inflammation Following Porcine Traumatic Brain Injury (MHSRS-24-12191)**
Presenter: Michael D. Goodman M.D.
- 0930 – 0945** **Whole Blood Use in Patients with Traumatic Brain Injury Is Not Associated with Decreased Mortality (MHSRS-24-12650)**
Presenter: CPT Nina Eng, USA
- 0945 – 1000** **Intranasal N-Acetylcysteine (NAC) or Increasing Brain Levels of Glutathione (GSH) and Rapid Amelioration of Acute Post-Concussive Symptoms (MHSRS-24-13504)**
Presenter: Jeffrey Lewine, Ph.D.

BREAKOUT SESSIONS

Tuesday, 27 August | 0800 – 1000

Moving the Needle on Preventing Harmful Behaviors in the Military Community – Implementing Cross Agency Research Priorities – Current and Future State

Moderators: Tim Hoyt, Ph.D., MBA, Fuad Issa, M.D., Melissa Mehalick, Ph.D., Sharmila A. Chari, Ph.D.

LOCATION: Sun A

- 0800 – 0815** **The People First Task Force Inventory: Understanding One Service's Activities to Prevent and Respond to Harmful and Destructive Behaviors and Lessons Learned for Application across the Department of Defense** (MHSRS-24-12901)
Presenter: Theresa Jackson Santo, Ph.D., MPH
- 0815 – 0830** **Rapid Response Surveillance: A Naval Health Research Center Capability for At-Risk Navy Commands** (MHSRS-24-12321)
Presenter: Robyn M. Englert, MPH
- 0830 – 0845** **Cross-Cutting Prevention: Development of an Adaptable Model for Use Across Diverse Military Settings** (MHSRS-24-12473)
Presenters: Nicola Winkel, MPA, Kayla Stevenson, B.S.
- 0845 – 0900** **New Strategies to Address Substance Misuse in the Military** (MHSRS-24-13322)
Presenter: CAPT Erin Wilfong, USN
- 0900 – 0915** **Moving the Needle on Preventing Suicide in the Military Community - Implementing Cross Agency Research to Practice** (MHSRS-24-13190)
Presenter: Ramya Sundararaman, M.D., MPH
- 0915 – 0930** **Adopting Community-Based Participatory Research Approach to Address Suicide Risk Among Alaska Native Youth to U.S. Army Formations** (MHSRS-24-12549)
Presenter: James Morton Jr., Ph.D.
- 0930 – 0945** **Project Safe Guard: Challenges and Opportunities of a Universal Rollout of Peer-Delivered Lethal Means Safety Counseling at a U.S. Military Installation** (MHSRS-24-10797)
Presenter: Ian Stanley, Ph.D.
- 0945 – 1000** **Suicide Prevention Learning Collaborative in VA Community Care: Improving Equitable and Culturally Sensitive Care to Military/Veteran Populations** (MHSRS-24-11450)
Presenter: Patricia Russell, Ph.D.

Solutions to Accelerate Recovery from Neuromusculoskeletal Injury

Moderators: Elizabeth Russell Esposito, Ph.D., Brad D. Isaacson, Ph.D.

LOCATION: Sun B

- 0800 – 0815** **Exploring Changes in Neuromusculoskeletal Injury Incidence and Rehabilitation Utilization Among Active Duty Service Members During the COVID-19 Pandemic** (MHSRS-24-12341)
Presenter: Kalya Christine Jannace, Ph.D.
- 0815 – 0830** **Patient Reported and Biomechanical Outcomes for Servicemembers with ACLr Undergoing Rehabilitation at a MTF** (MHSRS-24-12397)
Presenter: Trevor Kingsbury, M.S.
- 0830 – 0845** **Factors Associated with Return-to-Duty Following Modified Bröstrom Repair for Chronic Ankle Instability** (MHSRS-24-11613)
Presenter: Megan Roach, Ph.D., ATC

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BREAKOUT SESSIONS

Tuesday, 27 August | 0800 – 1000

- 0845 – 0900** **Assessing the Feasibility and Compliance of Using a Virtual Reality System to Enhance Upper Extremity Rehabilitation and Recovery in DoD Beneficiaries (MHSRS-24-13028)**
Presenter: David Carlisle, B.A.
- 0900 – 0915** **The Impact of Blood Flow Restriction Training on Tibial Bone Stress Injury Rehabilitation: An Exploratory Case Series (MHSRS-24-12738)**
Presenter: MAJ Andrew Golden, USA
- 0915 – 0930** **Blood Flow Restriction Therapy Following Closed Diaphyseal Femur Fractures: A Prospective Randomized Trial (MHSRS-24-13329)**
Presenter: Daniel Stinner, M.D., Ph.D.
- 0930 – 0945** **Non-surgical Rehabilitative Treatments for Musculoskeletal Injuries Reduced Pain Immediately Following Treatment Sessions (MHSRS-24-11776)**
Presenter: Laura Talbot, Ph.D., EdD, RN
- 0945 – 1000** **Orthobiologics in Physical Medicine and Rehabilitation: Monitoring Practice Patterns and Outcomes Using the Military Orthopaedics Tracking Injuries and Outcomes Network (MOTION) (MHSRS-24-11130)**
Presenter: Xiaoning Yuan, M.D., Ph.D.

Force Health Protection: Operational Exposure Research and Predictive Risk Methods

Moderator: David R. Mattie, Ph.D., DABT

LOCATION: Sun C

- 0800 – 0815** **Emerging Evidence for Adverse Health Effects from Vaping Electronic Cigarettes and Delivery Systems in the Military – Relevance to Force Health, Readiness, and Resilience (MHSRS-24-11205)**
Presenter: Mark A. Williams, Ph.D.
- 0815 – 0830** **Collection and Analysis of Underivatized Aldehydes Using Mesoporous Silica and Selected Ion Flow Tube Mass Spectrometry and Thermal Desorption Mass Spectrometry (MHSRS-24-10826)**
Presenter: Mitch Rubenstein, Ph.D.
- 0830 – 0845** **Multi-Task Machine Learning Models for Predicting Health Risks from Chemical Exposures (MHSRS-24-13417)**
Presenter: Mary Versa Clemens-Sewall, B.S.
- 0845 – 0900** **Rapid Assessment of Risk to Potential Neurotoxins Using Non-Animal Test Methods (MHSRS-24-11286)**
Presenter: Teresa R. Sterner, MS
- 0900 – 0915** **Alveolus-on-a-Chip as a Model Platform for Assessing Toxicity after Exposure to Flight-related Compounds via Custom Soot/VOC Generation (MHSRS-24-12399)**
Presenter: Patrick M. McLendon, Ph.D.
- 0915 – 0930** **The Relationship Between DoD Firefighter Blood PFAS Levels, Age, and Sex (MHSRS-24-11889)**
Presenter: Beth T. Poitras, MPH
- 0930 – 0945** **Post-Occupational Impulse Noise Exposure Mediates the Development of Noise Induced Hearing Loss (MHSRS-24-10995)**
Presenter: Elliott W. Dirr, Ph.D.
- 0945 – 1000** **Biomarker Discovery in Controlled Normobaric Hypoxia Exposures (MHSRS-24-11492)**
Presenter: Sean W. Harshman, Ph.D.

BREAKOUT SESSIONS

Tuesday, 27 August | 0800 – 1000

Human Performance Optimization in Polar Environments

Moderators: Christopher Santee, MBA, PPM, Ronald Wayne Matheny, Ph.D., Camilla Mauzy, Ph.D., Doug Jones, Ph.D.

LOCATION: Coastal 4

Welcome

Presenter: Patrick Mason, Ph.D., SES

- 0800 – 0815** **Urinary Metabolites Measured at Sea Level Predict Altitude-induced Acute Mountain Sickness Outcome (MHSRS-24-12306)**
Presenter: Camilla Mauzy, Ph.D.
- 0815 – 0830** **Beyond the Scope of Altitude Predictive Risk: From Terrestrial to Extraterrestrial Life (MHSRS-24-13142)**
Presenter: Dylan T. Dahlquist, MSc
- 0830 – 0845** **Feeding the Gut-Muscle-Brain Axis to Support Warfighter Performance During Cold Weather Operations (MHSRS-24-11594)**
Presenter: Lynn Cialdella-Kam, Ph.D.
- 0845 – 0900** **Non-Invasive, Handheld Devices Integrated with Five Sensors for Rapid Assessment of Cold-Related Injury (MHSRS-24-10912)**
Presenter: Daniel Sim, Ph.D.
- 0900 – 0915** **Evaluation of the Performance of Chemical Exposure Management in Simulated Arctic Conditions (MHSRS-24-12322)**
Presenter: James Eazor, MPH
- 0915 – 0930** **Naval Aircrew Personal Protective Equipment Limitations in Arctic Operations (MHSRS-24-13065)**
Presenter: Bethany Shivers, Ph.D.
- 0930 – 0945** **Interdisciplinary South Pole Innovation & Research Expedition Study 2022 (INSPIRE22): Hormonal Adaptation and Body Composition in Military Men and Women Crossing Antarctica Unsupported (MHSRS-24-12001)**
Presenter: Wg Cdr Robert M. Gifford, RAF
- 0945 – 1000** **Discussion**

Military Female Health Research Aimed at Overcoming the Challenges and Barriers Impacting Optimal Warfighter Performance & Operational Readiness

Moderators: Genny M. Cook, MPH, Ava Marie S. Conlin, DO, MPH

LOCATION: Sun 4

- 0800 – 0815** **Breaking Barriers: Women in Army Special Operations Forces (ARSOF) Study (MHSRS-24-11547)**
Presenters: LTC Rachel Cepis, USA, Monica Moore, Ph.D.
- 0815 – 0830** **Musculoskeletal Injuries in Female U.S. Active Duty Service Members: Prevalence/Incidence, Healthcare Utilization, and Cost Analysis Spanning Fiscal Years 2016-2021 (MHSRS-24-11272)**
Presenter: Xiaoning Jenny Yuan, M.D., Ph.D.
- 0830 – 0845** **Women Medical Personnel as Pioneers in the Male Dominated Warzone (MHSRS-24-12819)**
Presenter: Ortal Tamam, M.D., MSc
- 0845 – 0900** **Maternal and Fetal Health Risks Among Female Military Aviation Officers (MHSRS-24-10988)**
Presenter: MAJ Christopher Stark, USA

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BREAKOUT SESSIONS

Tuesday, 27 August | 0800 – 1000

- 0900 – 0915** **I'd Rather Just Hold It: Examining Attitudes Towards Specialized Bladder Relief Devices for Female Warfighters**
(MHSRS-24-11231)
Presenter: LT Alexandra Kaplan, USN
- 0915 – 0930** **Dynamic Strength Index Differs Between Male and Female Entry-level U.S. Marines at the School of Infantry-West**
(MHSRS-24-11858)
Presenter: Joshua Winters, Ph.D.
- 0930 – 0945** **Dynamic Strength Index Differs Between Male and Female Entry-level U.S. Marines at the School of Infantry-West**
(MHSRS-24-11955)
Presenter: Melissa Sutter, BSN
- 0945 – 1000** **Discussion**

Tuesday, 27 August | 1300 – 1500

Improving Traumatic Wound Healing and Recovery

Moderator: Prem Yadav, Ph.D.

LOCATION: Coastal 9

- 1300 – 1315** **Handheld In Situ Printing of Macroporous Scaffolds for Wound Healing** (MHSRS-24-13227)
Presenter: Mohamadmahdi Samandari, Ph.D.
- 1315 – 1330** **mBMF164 Reduces Fibrosis and Improves Neuromuscular Function in the Treatment of Volumetric Muscle Loss**
(MHSRS-24-12187)
Presenter: Jessica Motherwell, Ph.D.
- 1330 – 1345** **Delayed Minced Muscle Autografting Does Not Improve Bone Healing or Muscle Function in Yucatan Minipigs Subjected to a Composite Tissue Injury Including a Segmental Bone Defect and Volumetric Muscle Loss**
(MHSRS-24-13124)
Presenter: Roman Natoli, M.D. Ph.D.
- 1345 – 1400** **High Surgical Complication Rate for Ballistic Proximal Femur Fractures Regardless of Fracture Location**
(MHSRS-24-11325)
Presenter: Rachel Seymour, Ph.D.
- 1400 – 1415** **Impact of Obesity on Inflammatory Markers in Patients with Aseptic Nonunions** (MHSRS-24-11435)
Presenter: 2LT Bradley J. Lauck, USANG
- 1415 – 1430** **Understanding the Role of Thrombospondin 1 and 2 in Aberrant Wound Healing and Preventing Heterotopic Ossification** (MHSRS-24-10913)
Presenter: Madysen Hunter, B.A.
- 1430 – 1445** **Cell Therapy Applications in Dermatology – A Potential Therapy for Amputees** (MHSRS-24-10850)
Presenter: Luis Garza, M.D., Ph.D.
- 1445 – 1500** **A Transformational Dermal Template That Allows Reconstruction of Full-thickness Skin Loss in a Single Surgical Step** (MHSRS-24-11726)
Presenter: Jason A. Spector, M.D.

BREAKOUT SESSIONS

Tuesday, 27 August | 1300 – 1500

Organ Support in Trauma

Moderators: Maj Liz Powell, USAF, Lt Col Richard Betzold, USAF, Col Ian J. Stewart, USAF

LOCATION: Sun A

- 1300 – 1315 **Nitric Oxide Releasing Circuitry and Nitric Oxide-Enhanced Sweep Gas for Heparin-Free Artificial Organ Support: 72-Hours In Vivo Validation** (MHSRS-24-10959)
Presenter: Teryn Roberts, Ph.D.
- 1315 – 1330 **Initiation Timing of Extracorporeal Membrane Oxygenation Therapy in Trauma Patients** (MHSRS-24-11700)
Presenter: Capt Connor Wakefield, USAF
- 1330 – 1345 **Domain-Specific PCAs of Biomarkers, Clinical, and Genetic Variables Improve Prediction of Complications in Polytrauma Patients** (MHSRS-24-11109)
Presenter: Henry Robertson, Ph.D.
- 1345 – 1400 **Small RNA Sequencing Identifies Early Differential Expression of Whole Blood MicroRNAs in Shocked Trauma Patients** (MHSRS-24-11161)
Presenter: MAJ Simon Tallwin, BMBS, MSc
- 1400 – 1415 **Teaching Old Drug New Tricks: Recombinant Human C1 Inhibitor Repurposing for Traumatic Hemorrhage-induced Endotheliopathy and Multiple-organ Dysfunction Syndrome in Prehospital Settings** (MHSRS-24-12798)
Presenter: Yansheng Feng, M.D., Ph.D.
- 1415 – 1430 **Predicting Multiple Organ Failure in a Combat-Relevant Polytrauma Model** (MHSRS-24-11412)
Presenter: Zhangsheng Yang, DVM, Ph.D.
- 1430 – 1445 **Resuscitation of Exsanguination Cardiac Arrest in a Porcine Model** (MHSRS-24-12854)
Presenter: Bryan S. Jordan, DNP, RN
- 1445 – 1500 **Evaluation of a Powerless Portable Dialysate Generator in a Porcine Model of Acute Kidney Injury** (MHSRS-24-12847)
Presenter: Mirza Zain Baig, M.D.

From Theory to Practice: Transitioning S&T Findings into Actionable Knowledge

Moderators: Kasey E. Moritz, Ph.D., James B. Phillips, Ph.D.

LOCATION: Coastal 4

- 1300 – 1315 **An Evaluation of a Medical Education Roadmap for DoD Healthcare Professionals: An Innovative Evidence Based Approach** (MHSRS-24-13457)
Presenter: Jeff Hillier, Ph.D.
- 1315 – 1330 **Developing Financially Sustainable Biomedical Products with Military Relevance** (MHSRS-24-11667)
Presenter: Brian Finrow, JD
- 1330 – 1345 **Leveraging Best Practices in Science Communications to Support Military Health System Research Agendas** (MHSRS-24-12044)
Presenter: Richard Breen Jr., APR
- 1345 – 1400 **Building Capacity for Translation of Research into Policy and Practice: Clinical Practice Guideline Deconstruction Tool Case Study** (MHSRS-24-12888)
Presenter: Richard Caldwell, MSN
- 1400 – 1415 **From Science to Policy: Translating Research to Develop Best Practices** (MHSRS-24-NA-01)
Presenter: LaGwyn Durden, ATC, LAT

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BREAKOUT SESSIONS

Tuesday, 27 August | 1300 – 1500

- 1415 – 1430** **Summary Findings from the State of the Technology for Neurotrauma, Assessment, Diagnosis, and Monitoring**
(MHSRS-24-11000)
Presenter: Janelle Hurwitz, M.S., MBA
- 1430 – 1445** **Technology Transfer (T2) Provides Law Enforcement with Lifesaving Access to DHA Medical Innovation**
(MHSRS-24-11026)
Presenter: Beth Drees, Ph.D., MBA
- 1445 – 1500** **A Venture Capital Investor Perspective: From Startup Company Formation to Scaling, Growth, and Dual-Use**
(MHSRS-24-11268)
Presenter: Corey Ritter, MBA

Advances in Regenerative Medicine from Point of Injury to Definitive Care and Beyond

Moderators: Jenifer Ojeda, Ph.D., Stephen M. Goldman, Ph.D.

LOCATION: Sun B

- 1300 – 1315** **Advanced Composite Material for the Regeneration of Complex Craniomaxillofacial (CMF) Bone Defects**
(MHSRS-24-13143)
Presenter: Simion Bran, M.D., Ph.D.
- 1315 – 1330** **4-aminopyridine Augments BMP2 Expression and Mesenchymal Stem Cell Differentiation to Accelerate Bone Healing Following Tibial Fracture** (MHSRS-24-13233)
Presenter: John Elfar, M.D.
- 1330 – 1345** **Advanced Regenerative Composite Material for Tibial Tuberosity Advancement (TTA) Rapid Technique for Canine Cranial Cruciate Ligament Disease** (MHSRS-13025)
Presenter: Ciprian Ober, Ph.D.
- 1345 – 1400** **Assessment of Systematic Micrografting for Mitigating Donor Site Morbidity in Skeletal Muscle Autografting**
(MHSRS-24-12202)
Presenter: Stephen Goldman, Ph.D.
- 1400 – 1415** **Robotic-arm In Vivo Printing of Patient-specific Bioinks for Treatment of Volumetric Muscle Loss** (MHSRS-24-13513)
Presenter: Mohamadmahdi Samandari, Ph.D.
- 1415 – 1430** **Stem Cell Therapy to Promote Tissue Repair, Regeneration and Functional Outcomes in Neuromusculoskeletal Injuries**
(MHSRS-24-10966)
Presenter: Shashikumar K. Salgar, Ph.D.
- 1430 – 1445** **Nerve Tape Assisted PEG Fusion for Immediate Restoration of Axon Continuity** (MHSRS-24-11552)
Presenter: Geetanjali Bendale, Ph.D.
- 1445 – 1500** **Safety and Efficacy of NTX-001 in the Treatment of Acute Single Transected Peripheral Nerve Injuries: A Phase 2 Randomized Controlled Trial** (MHSRS-24-11308)
Presenter: David Micah Brogan, M.D., MSc

BREAKOUT SESSIONS

Tuesday, 27 August | 1300 – 1500

Warfighter Brain Health: Advances in Optimizing and Sustaining Cognitive Performance

Moderators: Malena B. Rone, Ph.D., Tim Dunn, Ph.D., Lars Hungerford, Ph.D.

LOCATION: **Coastal A**

- 1300 – 1315 **DoD Warfighter Brain Health Initiative: Line of Effort 1 - Cognitive Health and Performance (MHSRS-24-NA-05)**
Presenter: Kathy Lee, MS, CRNP, ANP-BC
- 1315 – 1330 **Effects of Hypoxia and Extended Time on Task on Dynamic Stereoscopic Depth Tracking and Related Tasks (MHSRS-24-11234)**
Presenter: Leonard Temme, Ph.D.
- 1330 – 1345 **Accelerating Sensorimotor Learning in a Flight Training Simulation Using Transcutaneous Vagus Nerve Stimulation (tVNS) (MHSRS-24-13219)**
Presenter: Justin Estep, M.S.
- 1345 – 1400 **Evaluating the Impact of Cueing Modality and Sensitivity on Pupil Diameter and Eye Movement During Simulated Rotary-Wing Flight (MHSRS-24-12296)**
Presenter: Christopher Aura, M.S.
- 1400 – 1415 **We Cannot Optimize What We Cannot Measure: Can Cognitive State be Assessed Using Naturalistic Brain Measurements and Machine Learning? (MHSRS-24-13335)**
Presenter: Sujoy Ghosh Hajra, Ph.D.
- 1415 – 1430 **Unanticipated Effects of Cognitive Training on Quality of Life in Veterans with History of mTBI (MHSRS-24-13324)**
Presenter: Nicholas Davenport, Ph.D.
- 1430 – 1445 **Longitudinal Changes in Eye Movements During Simulated Military/Operational Tasks: Tracking mTBI Recovery in the Fusion VR Study (MHSRS-11703)**
Presenter: Mark Ettenhofer, Ph.D.
- 1445 – 1500 **Baselining Tier 1 Weapon Systems and Breaching Charges to Determine Their Effects on Warfighter Brain Health (MHSRS-24-13556)**
Presenter: Olivia Webster, B.S.

Assuaging Agony: Novel Pain Therapeutics

Moderators: Carmen Hinojosa-Laborde, Ph.D., MAJ Nathan Davidson, USA

LOCATION: **Sun C**

- 1300 – 1315 **Battlefield Analgesic Acquisition: Past Difficulties and Current Efforts (MHSRS-24-12158)**
Presenter: LTC Stephen Crimmins, USA
- 1315 – 1330 **Pain Management in Critical Combat Casualty Environments Using Degradable Poly(ester urea) Films for Sustained Delivery of Meloxicam and Bupivacaine (MHSRS-24-13211)**
Presenter: Matthew Becker, Ph.D.
- 1330 – 1345 **Sphenopalatine Ganglion Block for the Treatment of Acute Headache (MHSRS-24-11981)**
Presenter: Jason Cook, M.D.
- 1345 – 1400 **Pragmatic Biomarkers for Pain Management: A Preliminary Replication Analysis of Biomarkers in the Foundation Pain Index Among Individuals with Chronic Pain (MHSRS-24-12261)**
Presenter: Nicholas Ieronimakis, Ph.D.
- 1400 – 1415 **An Effective Novel Selective and Injectable Cryoneurolysis Treatment of Knee Pain (MHSRS-24-11795)**
Presenter: Lilit Garibyan, M.D., Ph.D.

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BREAKOUT SESSIONS

Tuesday, 27 August | 1300 – 1500

- 1415 – 1430** **Mitochondrial Uncoupler MP-201 Reduces Orofacial Neuropathic Pain** (MHSRS-24-10993)
Presenter: Karin Westlund, Ph.D.
- 1430 – 1445** **Efficacy and Safety of Bedtime TNX-102 SL (Sublingual Cyclobenzaprine HCl) for the Management of Fibromyalgia: Results from the Confirmatory Phase 3 Randomized, Double-Blind, Placebo-Controlled RESILIENT Trial** (MHSRS-24-12790)
Presenter: Seth Lederman, M.D.
- 1445 – 1500** **The Application of Interdisciplinary Pain Management to Complex, Service-Related Chronic Pain: Findings from an NCCIH-Funded Trial** (MHSRS-24-11323)
Presenter: Don McGeary, Ph.D.

Case Records of the Joint Trauma System

Moderators: Col Valerie Sams, USAF, CAPT Matthew Tadlock, USN

LOCATION: Sun 4

- 1300 – 1500** **Panels of Clinical Combat Casualty Care Experts Discuss the Management of Challenging Cases from the Combat Environments** (MHSRS-24-NAS701, MHSRS-24-NAS702)
Presenters: John Holcomb, M.D., LCDR Jan (Mike) Van Gent, USN, BG Elon Glassberg, IDF, LTC Andrew Beckett (CAN), Col Stacy Shackelford, USAF, Brian Eastridge, M.D., Ray Fang, M.D., CAPT Travis Polk, USN

Congressionally Directed Medical Research Programs and Defense Health Program Medical Research Funding Opportunities

Moderator: Rebecca A. Fisher, Ph.D.

LOCATION: Coastal C

- 1300 – 1415** **CDMRP Overview, Review Process, Program Information, and Strategies for Application Success** (MHSRS-24-NAS401)
Presenters: COL Mark Hartell, USA, Gayle Vaday, Ph.D., Sandy Snyder, Ph.D., Tian Wang, Ph.D., Christie Vu, Ph.D., Rebecca Fisher, Ph.D.
- 1415 – 1430** **Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Programs - Overview and Opportunities** (MHSRS-24-NAS402)
Presenter: James R. Myers, MBA
- 1430 – 1445** **USAMRDC and Other Transactions Agreements with the Medical Technology Enterprise Consortium (MTEC)** (MHSRS-24-NAS403)
Presenter: Sara Langdon, MBA
- 1445 – 1500** **Panel Q&A**

BREAKOUT SESSIONS

Tuesday, 27 August | 1530 – 1730

Non-traditional Treatments and Delivery Strategies for Wound Infections and Sepsis

Moderator: COL Robert J. Cybulski, USA

LOCATION: Coastal A

- 1530 – 1545 **The Layered Defense Strategy: Lactea-Lf Is a Safe and Effective First Defense Against Bacterial Biothreat Agents as a Potential Medical Countermeasure** (MHSRS-24-12575)
Presenter: Jonathan Snedeker, Ph.D.
- 1545 – 1600 **SEM-AI based Quantitative Assessment of Wound Biofilm Infection: Response to Electroceutical Dressing Intervention** (MHSRS-24-12786)
Presenter: Sashwati Roy, Ph.D.
- 1600 – 1615 **Blood Purification for the Treatment of Critically Ill Patients with Pathogen Associated Shock: A Multicenter, Randomized Controlled Feasibility Trial (PURIFY-RCT)** (MHSRS-24-11502)
Presenter: Col Ian Stewart, USAF
- 1615 – 1630 **Fully Human Monoclonal Antibodies Confer Robust Protection in a Mouse MRSA Sepsis Model** (MHSRS-24-12389)
Presenter: Zachary Rivas, Ph.D.
- 1630 – 1645 **Targeting Polysaccharides of Klebsiella pneumoniae for Wound Infection Treatment** (MHSRS-24-10949)
Presenter: Renee Fleeman, Ph.D.
- 1645 – 1700 **CMTX-101: A Non-Traditional Anti-Biofilm Therapeutic for Improving Clinical Outcomes for Difficult-to-Treat Bacterial Infections** (MHSRS-24-12220)
Presenter: Charles McOsker, Ph.D.
- 1700 – 1715 **Regulation of Gene Expression in Deep Tissues of Chronic Ulcers via Localized Needle-Free Transdermal Delivery of Micromist Containing Gene and Protein Therapeutics - A Paradigm Shift in Treating Non-Healing Wounds** (MHSRS-24-12567)
Presenter: Lakshmi Pulakat, Ph.D.
- 1715 – 1730 **A Comparison of Two Foaming Bleaches for Controlling Sink Drain Reservoirs of Clinically Relevant Bacteria in Two Hospitals** (MHSRS-24-11400)
Presenter: Rosslyn Maybank, M.S.

Remote Damage Control Resuscitation: Innovations to Prolong the "Golden Hour"

Moderators: Robert T. Gerhardt, M.D., MPH, Col Joseph Maddry, USAF

LOCATION: Coastal C

- 1530 – 1545 **Introduction to the Concept of Remote Damage Control Resuscitation** (MHSRS-24-NA-10)
Presenter: Robert T. Gerhardt, M.D., MPH
- 1545 – 1600 **Efficacy-testing of an Injectable, Expandable, Biodegradable, Synthetic Foam in a Porcine Junctional Hemorrhage Model** (MHSRS-24-11847)
Presenter: Al-Murtadha Al-Gahmi
- 1600 – 1615 **Evaluation of an Adaptive Closed Loop Hemorrhagic Shock Resuscitation Controller in a Large Animal Model** (MHSRS-24-12326)
Presenter: David Berard
- 1615 – 1630 **The Efficacy of CounterFlow in Halting Non-Compressible Truncal Hemorrhage in Swine Model Is Dependent on the Concentration of Thrombin** (MHSRS-24-12931)
Presenter: Youjie Zhang, ME
- 1630 – 1645 **Prehospital Dried Plasma as a Bridge to Whole Blood Resuscitation** (MHSRS-24-11894)
Presenter: Aron Shoara, Ph.D.

(Continued)

BREAKOUT SESSIONS

Tuesday, 27 August | 1530 – 1730

- 1645 – 1700 **A Hypovolemic Infusion of Human Methemoglobin in Golden Syrian Hamsters Provides Insight on Its Effect on the Microcirculation** (MHSRS-24-13339)
Presenter: Carlos Munoz
- 1700 – 1715 **Heparin-free Extracorporeal Interventions for Future LSCO: Antithrombin Dynamics During 72-Hour Venovenous Extracorporeal Life Support** (MHSRS-24-11058)
Presenter: Halle Kill
- 1715 – 1730 **Discussion**

Far Forward Battlefield Diagnostic Imaging

Moderator: Jonathan D. Monti, DSc, PA-C

LOCATION: **Sun A**

- 1530 – 1545 **BEFAST (Bubble-Enhanced FAST) for the Evaluation of Solid Organ Injury in Hemodynamically Stable Blunt Abdominal Trauma** (MHSRS-24-11867)
Presenter: Laura Oh, M.D.
- 1545 – 1600 **First Pragmatic Multi-Institutional Testing of a Mobile Handheld Dynamic Portable X-Ray Device During 72-Hour Ground and Simulated High Altitude Aeromedical Evacuation** (MHSRS-24-11304)
Presenter: Andriy Batchinsky, M.D.
- 1600 – 1615 **Automating Ultrasound eFAST Triage Using Artificial Intelligent Models** (MHSRS-24-12159)
Presenter: Austin Ruiz
- 1615 – 1630 **A Modular, Portable Computed Tomography (CT) System for Triage and Surgical Support in Far-Forward, Austere Environments** (MHSRS-24-12267)
Presenter: Rajiv Gupta, M.D., Ph.D.
- 1630 – 1645 **Impact of Adding Diagnostic Musculoskeletal Ultrasound to Forward Deployed Physical Therapists** (MHSRS-24-12069)
Presenter: LTC Jon Umlauf, USA
- 1645 – 1700 **Defense Health Agency Enterprise POCUS Solution: Preparation for Far Forward Imaging by Integrating at Home** (MHSRS-24-10888)
Presenter: COL Scott Grogan, USA
- 1700 – 1715 **Optical Imaging Approach to Measure Burn Wound Severity and the Percentage of Total Body Surface Area** (MHSRS-24-12095)
Presenter: Gordon Kennedy, Ph.D.
- 1715 – 1730 **Discussion**

Protecting the Warfighter from Nuclear Threats: Acute Radiation Syndrome and Radiation Polytrauma

Moderators: Whitney Greene, Ph.D., David W. Evans, MPM, MSIT

LOCATION: **Coastal 4**

- 1530 – 1545 **A Rat Polytrauma Model of Whole-Body Irradiation and Blast Exposure** (MHSRS-24-12938)
Presenter: SGT Matthew McCloskey, USA
- 1545 – 1600 **Hemorrhage Exacerbates the Hematopoietic Acute Radiation Syndrome Induced by Irradiation Combined with Hemorrhagic Trauma** (MHSRS-24-11328)
Presenter: Juliann Kiang, Ph.D.

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BREAKOUT SESSIONS

Tuesday, 27 August | 1530 – 1730

- 1600 – 1615** **The Influence of Extracellular Vesicles of Human Mesenchymal Stem Cells on the Regeneration Process of Radiation-induced Wounds (MHSRS-24-12003)**
Presenter: MAJ Julian Haupt, Bundeswehr, Germany
- 1615 – 1630** **A microRNA based Fingerstick Blood Test for Rapid Evaluation of Radiation Sickness (MHSRS-24-12424)**
Presenter: Naduparambil Jacob, Ph.D.
- 1630 – 1645** **Identification of Potential Prophylactic Medical Countermeasures Against Acute Radiation Syndrome (MHSRS-24-11053)**
Presenter: Rebecca Oberley-Deegan, Ph.D.
- 1645 – 1700** **BBT-059, a Promising Prophylactic Countermeasure for Radiation-induced Multi-organ Injury (MHSRS-24-11129)**
Presenter: Vidya Kumar, Ph.D.
- 1700 – 1715** **Identification of the Novel Medical Countermeasure LL244-3 Using In Vitro Models (MHSRS-24-11568)**
Presenter: Lynnette Cary, Ph.D.
- 1715 – 1730** **Expanding the Treatment Window for the FDA Approved Radiation Countermeasure NPLATE (MHSRS-24-11481)**
Presenter: Sanchita Ghosh, Ph.D.

Brain Impact of Sub-concussive Blast Exposure in Military Service Members: Implications for Prevention and Health

Moderators: Michael J. Roy, M.D., MPH, Raj K. Gupta, Ph.D.

LOCATION: Coastal 9

- 1530 – 1545** **Mitigation of Overpressure Exposures in Sniper Training: Findings from the COmbat and traINing QUeryable Exposure/event Repository (CONQUER) Operational Monitoring Program (MHSRS-24-13546)**
Presenter: Eric Schneider, Ph.D.
- 1545 – 1600** **Brain Impact of Subconcussive Blast Exposure During Heavy Weapons Training: the INVestigating training assoCiated blasT pAthology (INVICTA) Study (MHSRS-24-11099)**
Presenter: Michael J. Roy, M.D., MPH
- 1600 – 1615** **Subconcussive Blasts—Regardless of Magnitude—Lead to a Decline in Neuromotor Performance: Data from the INVICTA Study (MHSRS-24-11598)**
Presenter: Christopher Rhea, Ph.D.
- 1615 – 1630** **Quantifying Blast Safety Limits to Prevent Sub-concussive Traumatic Brain Injury During Heavy Weapons Training (MHSRS-24-11974)**
Presenter: Rika Carlsen, Ph.D.
- 1630 – 1645** **Neurological Correlates of Repeated Low-level Blast Exposure in Experienced Artillery Personnel (MHSRS-24-12811)**
Presenter: James Stone, M.D., Ph.D.
- 1645 – 1700** **It's About Time: Examining Sources of Variation for Amyloid Beta Biomarkers in Military Training Environments Involving Blast Exposure (MHSRS-24-13058)**
Presenter: Walter Carr, Ph.D.
- 1700 – 1715** **Impact of Low-Level Blast (LLB) Exposures on the Gut-Brain Axis During Tactical Training (MHSRS-24-12148)**
Presenter: Fatemeh Haghighi, Ph.D.
- 1715 – 1730** **High Lifetime Blast Exposure Using the Blast Exposure Threshold Survey (BETS) Is Associated with Worse Warfighter Brain Health Following mild Traumatic Brain Injury (MHSRS-24-12299)**
Presenter: Rael Lange, Ph.D.

BREAKOUT SESSIONS

Tuesday, 27 August | 1530 – 1730

Optimizing the Human Weapon System: Utilizing Wearable Sensors to Inform Readiness across the Joint Force

Moderators: Malena B. Rone, Ph.D., Andrew Midzak, Ph.D., James Christensen, Ph.D.

LOCATION: Sun B

- 1530 – 1545 **Optimizing the Human Weapon System (OHWS): Overview** (MHSRS-24-NA-06)
Presenters: Andrew Midzak, Ph.D., James Christensen, Ph.D.
- 1545 – 1600 **OHWS Infrastructure: A Cloud Architecture Built to Support Large-scale Human Performance Research and Transitions** (MHSRS-24-12405)
Presenter: Adam Strang, Ph.D.
- 1600 – 1615 **OHWS Air & Space: A Sustainable System to Facilitate the Rapid Development, Validation and Transition of Human Performance Products and Technology** (MHSRS-24-12211)
Presenter: Nicole Ray, Ph.D.
- 1615 – 1630 **OHWS Land: Integrated Ecosystem Development and Fielding: July 2020 to Present Day** (MHSRS-24-12149)
Presenter: Joseph Patterson, B.S.
- 1630 – 1645 **OHWS SEA: Steps Toward a Wearables-Based Capability for Monitoring Sleep and Readiness in United States Navy Populations** (MHSRS-24-15952)
Presenter: Rachel Markwald, Ph.D.
- 1645 – 1700 **Assessing and Augmenting Performance in Extreme Environments: Feasibility of Physiological Monitoring in Chemical, Biological, Radiological, and Nuclear Simulation Events at Bold Quest 2023** (MHSRS-24-13160)
Presenter: Joshua Hagen, Ph.D.
- 1700 – 1715 **Utilizing Wearable Technology to Assess Operational Performance in UMS Operators** (MHSRS-24-12228)
Presenter: Brandon Schrom, B.S.
- 1715 – 1730 **Question and Answer**

Food and Drug Administration Regulated Activities and Collaborations with DoD

Moderators: LTC Stuart Hobbs, USA, Chandar S. Thakur, Ph.D.

LOCATION: Sun C

- 1530 – 1545 **PL 115-92 and DoD Considerations for Regulatory Affairs** (MHSRS-24-NAS201)
Presenters: Dixon Rwakasyaguri, MPH, MBA, Rachel Hunnicutt, JD
- 1545 – 1600 **Animal Rule: Use within CBRND** (MHSRS-24-NAS202)
Presenter: Jennifer Dabisch, B.S.
- 1600 – 1615 **DoD-Funded FDA-Regulated Investigations: MRDC Office Of Human and Animal Research Oversight Review Activities** (MHSRS-24-NAS208)
Presenter: Kimberly Odam, M.S.
- 1615 – 1630 **Regulatory Pathways for New Innovated Medical Devices** (MHSRS-24-NAS203)
Presenter: Heather Agler, Ph.D.
- 1630 – 1645 **Regulatory Science Tools for Physiologic Closed-Loop Controlled Medical Devices** (MHSRS-24-NAS204)
Presenter: Ramin Bighamian, Ph.D.

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BREAKOUT SESSIONS

Tuesday, 27 August | 1530 – 1730

- 1645 – 1700** **ECHO Program: Genetic Characterization and Observation (MHSRS-24-NAS205)**
Presenter: CDR Todd Myers, USN
- 1700 – 1715** **Use of Real-World Evidence in Regulatory Decision Making (MHSRS-24-NAS206)**
Presenter: Peter Weina, Ph.D., M.D.
- 1715 – 1730** **One Health at FDA (MHSRS-24-NAS207)**
Presenter: CAPT Brianna Skinner, USPHS

From Benchtop to Battlefield - Transitioning Research to Fielded Products

Moderator: Kathleen L. Berst, MBA

LOCATION: Sun 4

- 1530 – 1545** **Introduction & Acquisition Overview (MHSRS-24-NAS501)**
Presenters: Kathleen Berst, MBA, Philip Smith, Ph.D.
- 1545 – 1600** **Requirements & Acquisition: A Panel Discussion (MHSRS-24-NAS502)**
Presenters: James Mancillas, Ph.D., Col Melinda Eaton, USAF, CAPT Matthew Weiner, USN
Facilitator: Taara Bhat, MPH
- 1600 – 1615** **Project Management & Acquisition Panel Discussion (MHSRS-24-NAS505)**
Presenters: Thomas Dunn, M.S., MBA, Christopher Wilson, M.S., MBA, John Notte, M.S.
Facilitator: Philip Smith, Ph.D.
- 1615 – 1630** **Acquisition Across the DoD (MHSRS-24-NAS506)**
Presenter: Jeff Zerhusen, MBA
- 1630 – 1645** **JHubMed: UK Medical Innovation (MHSRS-24-NAS504)**
Presenter: COL Giles Nordmann, M.D., MBBS
- 1645 – 1730** **Questions and Closing**
Presenter: Kathleen Berst, MBA