MILITARY HEALTH SYSTEM
RESEARCH SYMPOSIUM

18-21 August 2014
Fort Lauderdale, FL

SYMPOSIUM GUIDE #MHSRS
Dear MHSRS Attendee:

Welcome to the 2014 Military Health System Research Symposium (MHSRS)! The MHSRS is the Department of Defense’s (DoD), and the nation’s, only scientific meeting completely focused on the unique medical needs of the Warfighter. Over the years, the MHSRS has served to accelerate collaboration among military medical care providers with deployment experience, DoD scientists, academia, and industry in order to meet the life-saving needs of battlefield medicine.

This year we received a record number of abstracts! As in past years, many of the nation’s premier medical scientists will present their research results either in scientific sessions or in posters. All of these efforts have one focus – to improve our support and care of the Warfighters! I hope you enjoy the conference and take full advantage of the presentations and discussions.

Jonathan Woodson, M.D.
August 17, 2014

Welcome to Fort Lauderdale!

Thank you for selecting our City as the site for the 2014 Military Health System Research Symposium on August 18-22, 2014. As you’ll soon discover, Fort Lauderdale offers endless opportunities for fun and excitement.

Our world-famous beach and 165 miles of scenic waterways make us the perfect location for every type of water activity imaginable. Enjoy deep-sea fishing, scuba diving, windsurfing and jet skiing, or sail up the New River as you take in the City’s sights aboard a water taxi or the legendary Jungle Queen Riverboat.

If arts and culture are what you desire, head to downtown’s Riverwalk Park, home to world-class theatre, music, dance and fine arts. Awaiting you are Broadway musicals and concerts at the Broward Center for the Performing Arts, modern and contemporary art collections at the Museum of Art, and more than 200 interactive exhibits at the Museum of Discovery and Science. Our City’s history comes to life before your very eyes at Old Fort Lauderdale Village and Museum, which features buildings that date back to the days of the City’s earliest pioneers.

When the sun goes down, Fort Lauderdale’s nightlife heats up. Las Olas Boulevard and Himmarshee Village feature award-winning restaurants, bistro and sidewalk cafes along with clubs and venues offering entertainment options to suit everyone’s tastes. For a truly romantic evening, climb aboard an authentic Venetian gondola for a one-of-a-kind tour of the majestic waterways that gave rise to Fort Lauderdale’s designation as the “Venice of America.”

Whether it’s Riverwalk, Las Olas Boulevard, Himmarshee Village or the beach, no other City offers you the chance to do so much or, if you prefer, so little.

Enjoy your stay in Fort Lauderdale and make sure to visit us again soon.

Very truly yours,

__________________________
John P. “Jack” Seiler
Mayor
SYMPOSIUM INFORMATION

SYMPOSIUM BADGES
Symposium badges must be worn at all times. There are NO EXCEPTIONS.

FAMILY MEMBERS & GUESTS
Family members are not allowed into the Symposium activities or on the shuttles unless registered as an attendee.

POSTER SESSIONS
There will be two poster sessions on Tuesday, 19 August. These will be held on the “B” Level at the Marriott.

SESSION 1: 1300-1500
Set-Up: 1100-1200
Removal: 1500-1600

SESSION 2: 1800-2000
Set-Up: 1600-1700
Removal: 2000-2030

Posters not removed will be discarded.

SYMPOSIUM MEALS
Breakfast and Lunch will be served Monday-Thursday. Dinner will be served on Monday as part of the Assistant Secretary of Defense (Health Affairs) Reception in the Grand Ballroom. Please note: Military and GS Employees, this is considered a meal to be reflected on your travel voucher. Meals are for registered attendees only.

TAX EXEMPT FORMS
There will be tax exempt forms available at the Special Requests desk at Symposium Registration.

REGISTRATION
Located in the Foyer outside of the Grand Ballroom.

HOURS OF OPERATION
Sunday, 17 August: 0700-1900
Monday, 18 August: 0700-1800
Tuesday, 19 August: 0700-1800
Wednesday, 20 August: 0700-1800
Thursday, 21 August: 0700-1530

IMPORTANT PHONE NUMBERS
MHSRS Information Desk: (877) 784-9303
Shuttle Information: (957) 650-9366

SHUTTLE SERVICE
Shuttle service is for registered MHSRS attendees only. From Sunday–Thursday, shuttle service will be provided to and from the Ft. Lauderdale airport for the following hotels: Harbor Beach Marriott, Sheraton Ft. Lauderdale Beach, Hilton Marina, Bahia Mar DoubleTree, and the Westin Ft. Lauderdale Beach. Shuttle service will also be provided between the hotels starting at 0600 Monday–Thursday. A complete shuttle schedule will be available at the Registration Desks.

AUDIO/VIDEO RECORDING
The use of audio/video devices to record any portion of the Symposium is expressly banned. Violation of this policy may result in ejection from the Symposium and forfeiture of registration fees.
CONTINUING MEDICAL EDUCATION (CME)
This activity offers CE credit for:

1. Physicians (CME)
2. Nurses (CNE)
3. Psychologists (APA)

All other clinicians either will receive a CME Attendance Certificate or may choose any of the types of CE credit being offered.

STATEMENT OF NEED
This annual event provides an academic-based venue to discuss and distribute new scientific knowledge resulting from military-unique research and development. In addition, it provides a scholarly forum for planning and development of future studies aimed at optimizing care for members of the Uniformed Services in operational settings.

Military and civilian medical clinicians, scientists and researchers will present their latest research results on a variety of topics including:

> Traumatic brain injury diagnosis and treatment
> Mental health care, including diagnosis and treatment of post-traumatic stress disorder and suicide prevention
> Hemorrhage control
> Advancements in treating traumatic wounds, including rehabilitation and prosthetics
> Infection control, including multi-drug resistant infections
> Emerging opportunities in regenerative medicine

LEARNING OBJECTIVES
At the end of this CE activity, participants should be able to:

> Translate current and emerging scientific evidence into clinical practice and individualized care decisions for members of the Uniformed Services in operational settings;
> Actively participate in discussions with experts, interdisciplinary team members, and colleagues regarding the challenges in daily clinical practice so that new insights can be applied to improve patient care;
> Describe best practices for diagnosis of, treatment of, and/or advances in traumatic brain injury, mental health care, hemorrhage control, infection control, regenerative medicine, traumatic wounds, including rehabilitation and prosthetics.

TARGET AUDIENCE
Attendees include military medical care providers with deployment experience, DoD scientists, educators, and industry leaders involved in medical training and health information sciences research.

CREDIT INFORMATION
CME Credit (Physicians): This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint sponsorship of CME Outfitters, LLC, and Isom Global Strategies. CME Outfitters, LLC, is accredited by the ACCME to provide continuing medical education for physicians. CME Outfitters designates this live activity for a maximum of 32 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

CNE Credit (Nurses): Provider approved by the California Board of Registered Nursing, Provider Number CEP 15510, for 32 contact hours.

CEP Credit (Psychologists): Commonwealth Educational Seminars is approved by the American Psychological Association to sponsor continuing education for psychologists. Commonwealth Educational Seminars maintains responsibility for this program and its content. (25.0 CE credits)
DISCLOSURE DECLARATION
It is the policy of CME Outfitters, LLC, to ensure independence, balance, objectivity, and scientific rigor and integrity in all of their CME/CE activities. Faculty must disclose to the participants any relationships with commercial companies whose products or devices may be mentioned in faculty presentations, or with the commercial supporter of this CME/CE activity. CME Outfitters, LLC, has evaluated, identified, and attempted to resolve any potential conflicts of interest through a rigorous content validation procedure, use of evidence-based data/research, and a multidisciplinary peer review process. Please see a full list of presenter disclosures at the Registration Desk.

UNLABELED USE DISCLOSURE
Faculty of this CME/CE activity may include discussions of products or devices that are not currently labeled for use by the FDA. The faculty have been informed of their responsibility to disclose to the audience if they will be discussing off-label or investigational uses (any uses not approved by the FDA) of products or devices. CME Outfitters, LLC, the faculty, and Sunovion do not endorse the use of any product outside of the FDA-labeled indications. Medical professionals should not utilize the procedures, products, or diagnosis techniques discussed during this activity without evaluation of their patient for contraindications or dangers of use.

CLAIMING CREDITS
In order to qualify for credits, we require you sign in at each eligible session. Starting on Friday, 22 August, you can visit: www.cmeoutfitters.com/IG001. Once you follow the step-by-step guide, you will receive a PDF file that contains your credit certificate. This certificate is suitable for printing.

Questions about this activity? Call us at 877-CME-PROS (877-263-7767).
## AGENDA: SUNDAY, 17 AUGUST

<table>
<thead>
<tr>
<th>TIME</th>
<th>PRESENTATION SUB-TIMES</th>
<th>PRESENTATION TITLE</th>
<th>SPEAKER OR EVENT</th>
<th>MEETING ROOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>0900-1615</td>
<td></td>
<td><strong>Air Force Medical Service Breakout</strong></td>
<td>0900-1200 - AFMS Business Meeting 1330-1615 - Scientific Presentations</td>
<td>Ocean 2/4</td>
</tr>
<tr>
<td>TIME</td>
<td>PRESENTATION SUB-TIMES</td>
<td>PRESENTATION TITLE</td>
<td>SPEAKER OR EVENT</td>
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<tr>
<td>0700-0800</td>
<td></td>
<td>Breakfast</td>
<td></td>
<td>Grand/Ocean 3030/Oceanview Terrace</td>
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<tr>
<td>0800-0815</td>
<td></td>
<td>Welcome &amp; Administrative Remarks</td>
<td>Moderators Terry Rauch, PhD COL Dallas Hack, USA</td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>0815-0841</td>
<td></td>
<td>Keynote Presentation</td>
<td>Dr. David J. Smith Deputy Assistant Secretary of Defense for Force Health Protection and Readiness</td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>0841-0907</td>
<td></td>
<td>Military Health System: RDA Transformation</td>
<td>Lt Gen Douglas J. Robb, USAF Director Defense Health Agency</td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>0907-0933</td>
<td></td>
<td>The DHA Research, Development, and Acquisitions Directorate: Update on Activities and Path Forward</td>
<td>Rear Admiral Bruce A. Doll, USN Director Research, Development &amp; Acquisition Defense Health Agency</td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>0933-1000</td>
<td></td>
<td>“Skating To Where the Puck Will Be”</td>
<td>Vice Admiral Matthew T. Nathan Surgeon General of the Navy</td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>1005-1030</td>
<td></td>
<td>Break</td>
<td></td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>1030-1200</td>
<td></td>
<td>Joint Trauma System Presentation &amp; Panel Discussion</td>
<td>Moderator COL Kirby Gross, USA</td>
<td>Ocean Ballroom</td>
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<tr>
<td>1030-1040</td>
<td></td>
<td>Clinical Questions to Clinical Guidance: The Military’s Continuously Learning System in Trauma</td>
<td>Rasmussen</td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>1040-1110</td>
<td></td>
<td>Products and Functional Means by Which JTS-JTTS Impact Combat Casualty Care Outcomes</td>
<td>Gross</td>
<td>Ocean Ballroom</td>
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<tr>
<td>1110-1200</td>
<td></td>
<td>Panel Discussion</td>
<td>Bailey, Gross, Stockinger, Butler, Geracci, Mabry, Nohrenberg, Spott, Shireman, Rice, Glassberg</td>
<td>Ocean Ballroom</td>
</tr>
<tr>
<td>1200-1300</td>
<td></td>
<td>Lunch</td>
<td></td>
<td>Grand/Ocean 3030/Oceanview Terrace</td>
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<tr>
<td>1300-1500</td>
<td></td>
<td>Breakout Sessions</td>
<td></td>
<td>Ocean 1</td>
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<tr>
<td>1300-1315</td>
<td></td>
<td>Training &amp; Skills Sustainment Combat Casualty Simulation &amp; Training</td>
<td>Moderator Janet Harris, PhD</td>
<td>Ocean 1</td>
</tr>
<tr>
<td>1315-1330</td>
<td></td>
<td>Overview of the Combat Casualty Training Initiative Strategic Plan</td>
<td>Harris</td>
<td>Ocean 1</td>
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<tr>
<td></td>
<td></td>
<td>Difficult Airway Management for Novice Physicians: A Randomized Trial Comparing Direct and Video-Assisted Laryngoscopy</td>
<td>Ambrosio</td>
<td>Ocean 1</td>
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<tr>
<td>TIME</td>
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<td>1330-1345</td>
<td>Recognition and Treatment of Nerve Agent Casualties: Evidence of Reduced Learner Engagement During Video Based Training</td>
<td>Bukoski</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1345-1400</td>
<td>Just in Time Learning is Effective in Helping First Responders Manage Weapons of Mass Destruction Events</td>
<td>Motola and Burns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1400-1415</td>
<td>Medical Simulations and Training: Defining Requirements from Frontline SOF Medical Providers to Influence Simulation Development with the Goal of Reducing Capability Gaps for Future Conflicts</td>
<td>Bowling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1415-1430</td>
<td>A Comparison of Two Medical Training Modalities for CAF Medical Technicians: Live Tissue Training and High Fidelity Patient Simulator</td>
<td>Savage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1430-1445</td>
<td>Bridging Combat Causality Burn Care Education with High Fidelity Human Patient Simulation</td>
<td>Hayes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1445-1500</td>
<td>Event Driven Surgical Gesture Recognition: Test and Performance Comparison</td>
<td>De Novi</td>
<td></td>
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<tr>
<td></td>
<td><strong>Trauma Care - Enroute Care</strong></td>
<td></td>
<td><strong>Moderators</strong></td>
<td>Ocean 2</td>
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<tr>
<td></td>
<td>Prehospital Blood Transfusions During Aeromedical Evacuations of Trauma Patients in Israel</td>
<td>Chen</td>
<td></td>
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<tr>
<td></td>
<td>Flow Cytometry Analysis of Myeloid Cells After Crush Injury and Simulated Flight</td>
<td>Schneider</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Utility of Vital Signs, Heart-Rate Variability and Complexity, and Machine Learning for Identifying the Need for Life-Saving Interventions in Trauma Patients</td>
<td>Liu</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Predicting Blood Transfusion Using Automated Analysis of Pulse Oximetry Waveforms and Lab Values</td>
<td>Shackleford</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Can an Intelligent Alerting System Identify Patients with Substantial Bleeding during Transport to a Trauma Center?</td>
<td>Reisner</td>
<td></td>
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<tr>
<td></td>
<td>En route Use of Parenteral Opioids, Ketamine, and Epidural Analgesia to Treat Pain in Patients Transported out of the Combat Theater by US Air Force Critical Care Air Transport Teams (CCATT)</td>
<td>Ervin</td>
<td></td>
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<td>Biological Effects of Vibration Simulating Helicopter Transport on Spinal Cord Injured Pigs</td>
<td>Cripton</td>
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<td>TIME</td>
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<tr>
<td>1445-1500</td>
<td></td>
<td>Pressure Ulcer Development in Critical Care Air Transport Team Patients: A Case-Control Study</td>
<td>Dukes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Trauma Care - Blood/Blood Products</strong></td>
<td>Moderator</td>
<td>Ocean 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Thrombus Formation and Platelet Adhesion: A Quantitative System to Evaluate Platelet Function in vivo</td>
<td>Heather Pidcoke, MD, PhD</td>
<td></td>
</tr>
<tr>
<td>1300-1312</td>
<td></td>
<td>Platelets Modulate Vascular Stability in Trauma and Hemorrhage: Assessing the Donor Variability and the Storage Lesion of Platelets</td>
<td>Pati</td>
<td></td>
</tr>
<tr>
<td>1312-1324</td>
<td></td>
<td>Magnesium Sulfate Supplementation Promotes the Response of Cold Stored Platelets to Aggregation and Coagulation Stimuli Over Eight Days</td>
<td>Meledeo</td>
<td></td>
</tr>
<tr>
<td>1324-1336</td>
<td></td>
<td>4°C Platelet Storage Reduces Reactive Oxygen Species, Preserves Mitochondrial Function, and Reduces Fibrinolysis</td>
<td>Bynum</td>
<td></td>
</tr>
<tr>
<td>1336-1400</td>
<td></td>
<td>Syndecan-1 Mediated Gut Protection by Fresh Frozen and Lyophilized Plasma After Hemorrhagic Shock</td>
<td>Kozar</td>
<td></td>
</tr>
<tr>
<td>1400-1412</td>
<td></td>
<td>A Freeze Dried Plasma Alternative to Fresh Frozen Plasma with Improved Handling to Enable Point-of-Injury Care</td>
<td>Pareta</td>
<td></td>
</tr>
<tr>
<td>1412-1424</td>
<td></td>
<td><strong>UPDATE - Clinical Development of a Spray Dried Solvent Detergent Treated Plasma</strong></td>
<td>Galiger</td>
<td></td>
</tr>
<tr>
<td>1424-1436</td>
<td></td>
<td>Whole Blood Treated with Riboflavin and UV Light: Inactivation of Malaria Parasite and Blood Conservation at 4°C</td>
<td>Goodrich</td>
<td></td>
</tr>
<tr>
<td>1436-1448</td>
<td></td>
<td>Blood Product Resuscitation Is Not Hemostatic In Trauma Patients Undergoing Surgical Debridement</td>
<td>Pidcoke</td>
<td></td>
</tr>
<tr>
<td>1448-1500</td>
<td></td>
<td>The Evolution of Pediatric Combat Transfusion Practice</td>
<td>Cannon</td>
<td>Ocean 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Psychological Health &amp; Rehabilitation &amp; Recovery Sensory Issues - Vision, Hearing &amp; Balance</strong></td>
<td>Moderators</td>
<td></td>
</tr>
<tr>
<td>1300-1303</td>
<td></td>
<td>Introduction</td>
<td>Hoffer, Henselman, and Crawford</td>
<td></td>
</tr>
<tr>
<td>1303-1316</td>
<td></td>
<td>A New ANSW2R to the Problem of Neurosensory Polytrauma</td>
<td>Packer</td>
<td></td>
</tr>
<tr>
<td>1316-1329</td>
<td></td>
<td>Restoration of Sight with Photovoltaic Sub-Retinal Prosthesis</td>
<td>Palanker</td>
<td></td>
</tr>
<tr>
<td>1329-1342</td>
<td></td>
<td>Warfighter Performance and Hearing Preservation: Achieving the Synergy</td>
<td>Yankaskas</td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>PRESENTATION SUB-TIMES</td>
<td>PRESENTATION TITLE</td>
<td>SPEAKER OR EVENT</td>
<td>MEETING ROOM</td>
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<tr>
<td>1342-1355</td>
<td>Evaluation of Aurally-Aided Visual Search Performance for Individuals Maneuvering on Foot</td>
<td>Brungart</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1355-1408</td>
<td>Military Medical Research Intelligence: Requirements and Solutions</td>
<td>Packer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1408-1421</td>
<td>Evaluation and Treatment of Single Sided Deafness</td>
<td>Boudin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1421-1434</td>
<td>Update on Vestibular Evaluation and Treatment</td>
<td>Esquivel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1434-1447</td>
<td>Tinnitus Re-Organization Training: Combining Modulated Music with Transcutaneous Vagal Nerve Stimulation to Alleviate Combat-Related Tinnitus</td>
<td>Lewine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1447-1500</td>
<td>Translational Research: From the Bench to the Battlefield</td>
<td>Balaban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1500-1530</td>
<td>Break</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1530-1730</td>
<td>Breakout Sessions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1530-1536</td>
<td><strong>BioInformatics - Supporting Warrior Care</strong></td>
<td>McVeigh and Loan</td>
<td>Ocean 1</td>
<td></td>
</tr>
<tr>
<td>1536-1555</td>
<td>The Impact of a Mobile Messaging System on Case Management Assessment, Contact Rate Requirements and Appointment Reminder Support</td>
<td>Pavliscsak</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1555-1614</td>
<td>A Concept Recognition Tool to Identify the Surgical Complications of Crohn’s Disease in Electronic Health Records</td>
<td>Dunn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1614-1633</td>
<td>Improving Human Computer Interaction in Electronic Medical Records through Design and Data Visualization</td>
<td>Kang</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1633-1652</td>
<td>Developing a Cognitive and Communications Tool for Burn ICU Clinicians</td>
<td>Nemeth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1652-1711</td>
<td>A Large-scale mTBI Informatics Database: Fostering Innovation, Research, and Development for mTBI/PTSD</td>
<td>Caban</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1711-1730</td>
<td>COPTADS: Clinical Online PTSD and TBI Analysis and Detection System</td>
<td>Kagan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1530-1531</td>
<td><strong>Trauma Care - Hemorrhage Control &amp; Resuscitation</strong></td>
<td>Moderators</td>
<td>Ocean 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>Michael Dubick, PhD</td>
<td>CAPT Zsolt Stockinger, USN</td>
<td></td>
</tr>
<tr>
<td>1531-1548</td>
<td>Junctional Hemorrhage Control: Update on Out-of-Hospital Interventions</td>
<td>Kragh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIME</td>
<td>PRESENTATION SUB-TIMES</td>
<td>PRESENTATION TITLE</td>
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<tr>
<td>1548-1605</td>
<td>Pre-Hospital Use Of Hemostatic Bandages By The Israeli Defense Force Medical Corps. A Report Of 31 Cases.</td>
<td>Glassberg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1605-1622</td>
<td>Aortic Hemostasis and Resuscitation: Sequential Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) and Selective Aortic Arch Perfusion (SAAP) in a Swine Model of Severe Hemorrhage and Cardiac Arrest</td>
<td>Manning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1622-1639</td>
<td>FFP and SDP Mitigate the Endotheliopathy of Hemorrhagic Shock (HS) and Trauma Associated Acute Lung Injury (ALI)</td>
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<td>1639-1656</td>
<td>A Controlled Resuscitation Strategy is Feasible and Safe in Hypotensive Trauma Patients: Results of a Prospective Randomized Pilot Trial</td>
<td>Schreiber</td>
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<td>1656-1713</td>
<td>Pre-Hospital Blood Products After Battlefield Trauma: Benefit Unclear</td>
<td>Smith</td>
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<td>1713-1730</td>
<td>Does TXA Matter? Refining Indications for its Use in the Combat Trauma Population</td>
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<td>1530-1600</td>
<td>Collaborative Primary Care for Depression and PTSD in the U.S. Military Health System: Design and Early Findings from STEPS UP, a Multisite Randomized Effectiveness Trial</td>
<td>Engel</td>
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<td>1600-1630</td>
<td>Neuropsychiatric Diagnoses Associated with Genitourinary Injury in Male Veterans of OEF/OIF Receiving Care at Veterans Administration Health Care Facilities</td>
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<td>1630-1700</td>
<td>Impact of Posttraumatic Stress Disorder and Inflammation on Somatic Symptoms: A Cross-Sectional Analysis of Combat-Exposed Service Members</td>
<td>Burson</td>
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<td>1700-1730</td>
<td>Virtual-Reality Exposure Therapy for Combat-Related PTSD: Examination of Perceived Contraindications and Iatrogenic Effect Trajectories</td>
<td>Beidel</td>
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<td>1530-1535</td>
<td>Introduction</td>
<td>Boswell and Stout</td>
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**Psychological Health & Rehabilitation & Recovery**

**Psychological Health - Post Traumatic Stress Disorder in Primary Care Settings**

**Moderator**
Ronald Hoover, PhD

**Meeting Room**
Ocean 3
<table>
<thead>
<tr>
<th>TIME</th>
<th>PRESENTATION SUB-TIMES</th>
<th>PRESENTATION TITLE</th>
<th>SPEAKER OR EVENT</th>
<th>MEETING ROOM</th>
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<tr>
<td>1535-1558</td>
<td>Monitoring Energy Expenditure in Amputees: A Prosthetic-Integrated Wearable Sensor System</td>
<td>Krepkovich</td>
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<td>1621-1644</td>
<td>Towards Clinically Viable Neural Control of Powered Lower-Limb Prostheses</td>
<td>Fey</td>
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<td>1644-1707</td>
<td>Using Multiple High-Count Electrode Arrays in Residual Arm Nerves to Restore Sensorimotor Function After Hand Amputation</td>
<td>Clark</td>
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<td>1707-1730</td>
<td>Blood Flow Restricted Training as a Rehabilitation Modality: A Case Series</td>
<td>Hayden</td>
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<td>1900-2100</td>
<td><strong>Assistant Secretary of Defense (Health Affairs) Reception</strong></td>
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# AGENDA: TUESDAY, 19 AUGUST

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<td>Breakfast</td>
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<td>Moderator Col Todd Rasmussen, USAF</td>
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<td>0805-0830</td>
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<td>Keynote Presentation</td>
<td>Brigadier Timothy J. Hodgetts, CBE, PhD, MMEd, MBA Medical Director, Joint Medical Command</td>
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<td>0830-0845</td>
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<td>Comparing Live Animal &amp; Simulator Alternatives for Training &amp; Assessing Hemorrhage &amp; Airway Procedures in a Tactical Field Situation</td>
<td>Robert M. Sweet, MD, FACS University of Minnesota Minneapolis, MN</td>
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<td>0845-0900</td>
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<td>Hypoxemia During Aeromedical Evaluation of the Walking Wounded</td>
<td>Col Jay Johannigman, USAFR, MD University of Cincinnati Cincinnati, OH</td>
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<td>0915-0930</td>
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<td>Storage of Platelets at 4° in Platelet Additive Solutions Prevents Aggregate Formation &amp; Preserves Platelet Functional Responses</td>
<td>Todd M. Getz, PhD U.S. Army Institute of Surgical Research Fort Sam Houston, TX</td>
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<td>0930-1000</td>
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<td>1000-1200</td>
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<td>Young Investigator Competition</td>
<td>Moderator David Baer, PhD Ocean Ballroom</td>
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<td>Competitive Abstract MHSRS-761 Emerging Role of Blood Biomarkers in TBI Clinical Trials: Initial Findings from the Phase II INTREPID2566 Trial</td>
<td>Mondella</td>
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<td>Competitive Abstract MHSRS-828 Evaluation of High-Dose Hydroxocobalamin and Ascorbic Acid as an Injectable Antidote for Carbon Monoxide Poisoning</td>
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<td>Competitive Abstract MHSRS-775 Moderate and Severe Brain Injury Among Combat Casualties: Secondary Insult Analysis</td>
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<td>Competitive Abstract MHSRS-402 Effectiveness of an Injury Prevention Warm-Up for Unit Physical Training</td>
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<td><strong>Competitive Abstract MHSRS-900</strong>&lt;br&gt;Nebulized Epinephrine Limits Pulmonary Vascular Hyperpermeability to Water and Proteins in Ovine Burn and Smoke Inhalation Injury</td>
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<td><strong>Competitive Abstract MHSRS-1012</strong>&lt;br&gt;Improved Clot Strength of Refrigerated Platelets for Transfusion</td>
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<td>1100-1110</td>
<td><strong>Competitive Abstract MHSRS-340</strong>&lt;br&gt;Can We Predict How Sleep Loss Impairs Human Performance?</td>
<td>Ramakrishnan</td>
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<td>1110-1120</td>
<td><strong>Competitive Abstract MHSRS-422</strong>&lt;br&gt;In-Theater mTBI Screening: Normative Versus Baseline ANAM4 Data</td>
<td>Haran</td>
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<td>1120-1130</td>
<td><strong>Competitive Abstract MHSRS-56</strong>&lt;br&gt;A Novel Anatomical and Physiological Scoring System for Military Pelvic and Perineal Blast Injuries Shows Significantly Superior Predictive Outcomes Than Current Scoring Systems; Injury Severity score-ISS, New ISS, Trauma ISS, Revised Trauma Score</td>
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<td>1130-1140</td>
<td><strong>Competitive Abstract MHSRS 351</strong>&lt;br&gt;The Adrenal Response to Injury in Mauritian Cynomolgus Macaques: A Comparison Between Isolated Hemorrhage and Polytrauma Models</td>
<td>Nelson</td>
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<td>1140-1150</td>
<td><strong>Competitive Abstract MHSRS-963</strong>&lt;br&gt;Porcine Large Total Body Surface Area (TBSA) Contact Burn for Investigating Immunomodulators to Reduce Systemic Inflammatory Response Syndrome (SIRS)</td>
<td>Burmeister</td>
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<td><strong>Competitive Abstract MHSRS-52</strong>&lt;br&gt;Design and Development of a Controlled Spinal Cord Impactor for Use in Large Animal Models of Acute Traumatic Spinal Cord Injury</td>
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<td>1215-1220</td>
<td>Lunchtime Breakout Session&lt;br&gt;Hyperbaric Oxygen Therapy (HBO2) for mild Traumatic Brain Injury (mTBI)&lt;br&gt;DoD Research Project</td>
<td>Moderator&lt;br&gt;CDR Rene Hernandez, USN</td>
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<td>1220-1235</td>
<td>Overview of DoD’s HBO2 Program: Results of USAF and Navy/VCU Studies</td>
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<td>Pilot Study: Hyperbaric Oxygen for Persistent Post-Concussive Syndrome after mTBI</td>
<td>Miller</td>
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<td>Day to Day Operations of the HBO2 Studies: Lessons Learned and Path Forward</td>
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<td>Current and Future DoD HBO2 studies</td>
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<td>1320-1400</td>
<td>Panel Discussion and Posters</td>
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<td>1530-1730</td>
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<td>Overview of the Medical Practice Initiative Strategic Plan</td>
<td>Kunkler</td>
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<td>1538-1554</td>
<td>Effectiveness of Hemodynamics Simulator in Teaching Notice Trainees the Treatment of Shock</td>
<td>Laufer</td>
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<td>1554-1610</td>
<td>Training and Retention Outcomes from Two Forms of Pediatric and Neonatal Intubation Training</td>
<td>Dooley-Hash</td>
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<td>1610-1626</td>
<td>Can Performance be Predicted Early On?</td>
<td>Kang</td>
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<td>1626-1642</td>
<td>Alternative Approach to Establish Inter-Rater Concordance</td>
<td>Baez</td>
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<td>1642-1658</td>
<td>Preparing Surgeons for Modern Combat Trauma Care: Experience with the Advanced Surgical Skills for Exposure in Trauma (ASSET) Course for Pre-Deployment Training</td>
<td>Bowyer</td>
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<td>Development of a Trauma Readiness Metric Score for Surgeons</td>
<td>Mackenzie</td>
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<td>1714-1730</td>
<td>Retention and Retraining of Integrated Cognitive and Psychomotor Surgical Skills</td>
<td>Skinner</td>
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<td>Introduction</td>
<td>McGurk &amp; Freed</td>
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<td>Comprehensive Soldier and Family Fitness (CSF2) Program Evaluation Initiatives</td>
<td>Nannini</td>
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<td>Annual Fitness Test Performance and Mental Health Outcomes in US Marines</td>
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<td>1621-1644</td>
<td>Attracting Substance Abusing Soldiers to Voluntarily Take Stock of Their Use: Preliminary Outcomes From the Warrior Check-Up MET Intervention</td>
<td>Walker</td>
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<td>Discussant Comment &amp; Discussion</td>
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<td>Utility of a Near-Infrared Reflectance Spectroscopy Oximeter in Shock</td>
<td>Wood</td>
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<td>Cardiac Output Monitoring Managing Intravenous Therapy (COMMIT) to Resuscitate Emergency Department Severe Sepsis</td>
<td>Shapiro</td>
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<td>Wearable Sensing and Machine Learning for Human Physical Activity Assessment</td>
<td>Liu</td>
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<td>Characterization of the Changes in Compensatory Reserve Index During Major Bleeding in Porcine Model</td>
<td>Glassberg</td>
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<td>Laser Speckle-Based Microvascular Blood Flow Monitoring for Critical Care</td>
<td>Ostraverkhov</td>
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<td>Expeditionary &amp; Sea Based Care &amp; Global Disaster Response</td>
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<td>Introduction</td>
<td>Cheatham and Glassberg</td>
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<td>Operations Unified Response and Pacific Partnership - Lessons Identified and Needed Capabilities</td>
<td>Johnson</td>
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<td>Experience and Lessons Learned During Israeli Defense Force Humanitarian Medical Missions</td>
<td>Glassberg</td>
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<td>Extending a Helping Hand Over a Hostile Border –Unique Ethical Dilemmas Involving the Humanitarian Aid Mission to the Victims of the Syrian Civil War</td>
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<td>Differential Impact of General and Deployment-Specific Stressors on Marines' Mental Health Outcomes</td>
<td>McWhorter</td>
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<td>1656-1712</td>
<td>Ratio Driven Resuscitation Predicts Early Fascial Closure in The Combat Wounded</td>
<td>Glaser</td>
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<td>1712-1728</td>
<td>Exploratory Laparotomy for Proximal Vascular Control Is Associated With Significant Morbidity In Combat Trauma</td>
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<td>Medical Evacuations from the United States Navy Submarine Fleet: January 2012 through December 2013</td>
<td>Welsh</td>
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<td>1744-1800</td>
<td>The Potential of Portable Oxygen Concentrators to Provide Oxygen for Remote Diving Casualties</td>
<td>Fothergill</td>
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<td>U.S. Navy/Marine Corps Service Breakout</td>
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# AGENDA: WEDNESDAY, 20 AUGUST

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<td>Keynote Presentation</td>
<td>Charles L. Rice, MD President, Uniformed Services University of the Health Sciences</td>
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<td>Safe, Effective, and Secure Medical Products - New Ways of Collaborating with the Food and Drug Administration</td>
<td>Suzanne Schwartz, MD MBA Director Emergency Preparedness/Operations and Medical Countermeasures, Office of the Center Director, Center for Devices and Radiological Health Food and Drug Administration</td>
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<td>Fall Prevention Training for Warfighters w/ Lower Extremity Amputations</td>
<td>Kenton R. Kaufman, PhD, PE Mayo Clinic Rochester, MN</td>
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<td>0915-0930</td>
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<td>Tactical CCC Guidelines Recommending Hetastarch Use at POI Do Not Require Revision</td>
<td>COL Kirby R Gross, USA, MD Joint Trauma System San Antonio, TX</td>
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<td>0930-0945</td>
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<td>The Power of Mobile: Enabling the Medical War Fighter Today and in the Future</td>
<td>COL Daniel R. Kral, USA, MS Telemedicine and Advanced Technology Research Center Ft Detrick, MD</td>
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<td>Early In-Theatre Management of Combat Related TBI: A Prospective, Observational Study to Identify Opportunities for Performance Improvement</td>
<td>Col Raymond Fang, USAF, MD US Air Force Center for Sustainment of Trauma and Readiness Skills Baltimore, Maryland</td>
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<td>Moderator Ronald Hoover, PhD</td>
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<td>1030-1045</td>
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<td>Cerebral Glucose Metabolism During Wake &amp; Sleep Predicts Response to Praosin in Military Veterans with PTSD</td>
<td>Anne Germain, PhD University of Pittsburgh Pittsburgh, PA</td>
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<td>1045-1100</td>
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<td>Impact of Anemia in Critically Ill Burned Casualties Evacuated From Combat Theatre Via CCATT</td>
<td>Maj Joshua A. Hamilton, USAF, MD San Antonio Uniformed Services Health Education Consortium San Antonio, TX</td>
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<td>1100-1115</td>
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<td>Sexual Trauma &amp; Adverse Health &amp; Military Occupational Outcomes of Women Serving in the US Military</td>
<td>LDCR Jeffrey Millegan, MD, PhD, USN Naval Medical Center San Diego San Diego, CA</td>
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<td>1115-1130</td>
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<td>Pathobiology of Impact Concussion &amp; Sequelae in a Mouse Model of mTBI</td>
<td>Lee Goldstein, MD NIH Alzheimer's Disease Center Boston University Boston, MA</td>
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<td>Brief Cognitive Behavioral Therapy Reduces Post Treatment Suicide Attempts in a Military Sample - Results of a Two Year Randomized Clinical Trial</td>
<td>M. David Rudd, PhD, ABPP University of Memphis Memphis, TN</td>
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<td>Brain Injury: Relationship to Military Occupational Hypobaric Exposure</td>
<td>Stephen McGuire, MD University of Texas Health Science Center San Antonio, TX</td>
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<td>Ft Benning Study (Methicillin Resistant Staphylococcus Aureus/Skin &amp; Soft Tissue Injury)</td>
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<td>Epidemiology of Skin and Soft-Tissue Infections in Trainees at Fort Benning</td>
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<td>Impact of the Nasal Microbiome on the Development of Staphylococcal Skin and Soft-Tissue Infections at Fort Benning</td>
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<td>A National Survey of Call-Shift Fatigue Experiences in Certified Registered Nurse Anesthetists</td>
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<td>Integrated Operational Tools to Monitor for Warfighter Fatigue</td>
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<td>Sleep Deprivation Decreases Fear Conditioned Skin Conductance Levels</td>
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<td>Effects of U.S. Navy Diver Training on Physiological Parameters, Time of Useful Consciousness, and Cognitive Performance During Periods of Normobaric Hypoxia</td>
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<td>An Evidence-Based Wellness and Safety Program Enhances the Performance Triad</td>
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<td>The SHIELD (Safety &amp; Health Improvement: Enhancing Law Enforcement Departments) Study: A New Health Enhancement Model For Active and Retired Military Personnel</td>
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<td>AMES Enhances Movement Performance in Both Impaired and Able-Bodied Adults</td>
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<td>Biomechanical Differences of the Warfighter When Wearing Load-Distributing Personal Protective Equipment Compared With Traditional Gear</td>
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<td>The Effects of Distraction, Restraints, Training, and Seat Location on Vehicle Egress Time</td>
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<td>Local Inflammatory Response May Be Affected By Distant Trauma in Combat-Related Extremity Wounds</td>
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<td>Near-Infrared Spectroscopy in the Sub-Acute Setting of Lower Extremity Trauma</td>
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<td>Contaminated Open Fracture Wounds Are Hypovascular But Hyperperfused</td>
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<td>Effect of Grafting Materials on Bone Healing in a Chronic Caprine Tibial Defect Model</td>
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<td>Factors Influencing Infection in 10-years of Combat Open Tibia Fractures</td>
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<td>The Lessons of War: Turning Medical Data into Clinical Decisions</td>
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<td>The Military Orthopaedic Trauma Registry: Quality Data Now Available</td>
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<td>American College of Surgeons Committee on Trauma Region 13 Resident Presentations</td>
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<td>Administration of FTY720 During Tourniquet-Induced Hind Limb Ischemia-Reperfusion Injury Attenuates Morbidity and Mortality</td>
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<td>Early Complications and Outcomes in Combat Injury-Related Invasive Fungal Infections: A Case-Control Analysis</td>
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<td>The Transfusion Effect Revisited – The Impact of Deceased Organ Donor Blood Transfusions on the Outcomes of 1990 Renal Grafts</td>
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<td>Training and Skills Sustainment - Combat Casualty Simulation and Training - A Comparison of Two Medical Training Modalities for CAF Medical Technicians: Live Tissue Training and High Fidelity Patient Simulator</td>
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<td>Moderators LTC Robert Mabry, USA Sylvain Cardin, PhD</td>
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<td>Rapid Sequence Induction of Anaesthesia via the Intraosseous Route: A Prospective Observational Study</td>
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<td>Evaluation of Hydroxocobalamin Compared to Hextend® for Resuscitation of Type III Hemorrhage in a Swine Model</td>
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<td>Feedback to the Field: Linking Postmortem Observations to Tactical Combat Casualty Care</td>
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<td>Role I Trauma Experience of the Israeli Defense Force on the Syrian Border</td>
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<td>Battlefield Trauma Care Documentation at the Point of Injury</td>
<td>Gross</td>
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<td>Implementation of a Joint Trauma System Pre-Hospital Trauma Registry in Afghanistan: Cracking the Code on Data Capture for Tactical Combat Casualty Care</td>
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<td>Identifying DOTmLPF-P Challenges in Operation ENDURING FREEDOM to Assure High Quality and Predictable Combat Capability in the Delivery of Pre-Hospital and Tactical Combat Casualty Care – Examples from the Afghanistan Campaign.</td>
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<td>Heat Stroke, Return to Duty Status, and the Impact of Heat Tolerance Testing</td>
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<td>Novel Biomarkers for the Determination of Heat Stroke Severity</td>
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<td>A New Rapid Field Assessment of Heat Stroke Severity Using cTnl Point-of-Care Test Strips</td>
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<td>Alteration in Circulating Metabolites During and After Heat Stress in the Conscious Rat: Potential Biomarkers of Exposure and Organ-Specific Injury</td>
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<td>A Mobile Application for Prediction of Acute Mountain Sickness, Work Performance, and Altitude Acclimatization</td>
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<td>Establishment of a Model for Investigating the Impact of Combined Environmental and Psychological Stressors</td>
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<td>Neutrophils Generate Microparticles Following Exposure to Inert Gases Due to Cytoskeletal Oxidative Stress</td>
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<td>Chronic CO2 Retention Induces Gastroesophageal Lesions in Rats</td>
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<td><strong>Moderator</strong> David Jackson, PhD</td>
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<td>Localized Low Dose rhBMP-2 is Effective at Promoting Bone Regeneration in a Pre-Clinical Mandibular Segmental Defect Model</td>
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<td>Repair of Rat Calvarial Critical Size Defects with Endothelial and Osteocyte Differentiated Adipose-Derived Stem Cells</td>
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<td>Collagen-Based Biomask as a Promising Skin Graft for Facial Burn</td>
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<td>Adipose Stem Cells are Able to Substitute for Fibroblasts and Support Keratinocyte Proliferation and Survival on a Collagen Matrix</td>
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<td>Subtotal Nasal Reconstruction: A Case Highlighting Military and Civilian Collaboration to Achieve an Optimal Restorative Outcome</td>
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<td>The Evolution of Structural Fat Grafting and Potential Military Applications</td>
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<td>Structural Fat Grafting for Craniofacial Trauma: A Project of the Biomedical Translational Initiative</td>
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<td>Subdermally Applied Drug Eluting Micro-Particles Delay Acute Rejection Within Vascularized Composite Allotransplant Grafts</td>
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<td>Military GME Research: The Opportunities</td>
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<td>Research and GME: Challenges/ Accreditation</td>
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<td>Intentional Mentorship of Research Faculty</td>
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<td>The Next Generation: Resident Research Success Stories</td>
<td>Borgman and Forsberg</td>
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<td>Does Creatinine Kinase Predict Renal Failure in Combat Casualties</td>
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<td>The Center for Devices and Radiological Health (CDRH) Autonomous Critical Care (ACC) Medical Countermeasures (EMCM) Initiative: Leveraging Regulatory Science to Enable the Advancement &amp; Integration of Critical Care Technologies</td>
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<td>The Future of Minimally Extracorporeal Life Support for Single and Multiorgan Failure</td>
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<td>Burn Intensive Care Unit Multidisciplinary Approach Facilitates Adult Extracorporeal Life Support Therapy</td>
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<td>Determinants of Mortality in Combined Burn/Trauma Injuries: Size Makes a Difference</td>
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<td>Pulmonary Emboli and Deep Vein Thromboses: Are They Always a Part of the Same Disease Spectrum?</td>
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<td>Determination of the Optimal Delirium Screening Tool for Burn Intensive Care Unit Patients</td>
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<td>Full-Thickness Burn Size: More Important Than Total Burn Size in Determining Fluid Needs During Burn Resuscitation?</td>
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<td>Prospective Multicenter Randomized Skin Graft Cover Dressing Clinical Trial</td>
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# AGENDA: THURSDAY, 21 AUGUST

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<td>CAPT Carmen T. Maher, USPHS Deputy Director, Office of Counter Terrorism and Emerging Threats Food and Drug Administration</td>
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<td>The ARMoR Program: DoD's Response to Escalating Antimicrobial Resistance</td>
<td>COL Emil P. Lesho, USA Walter Reed Army Institute of Research Forest Glen, MD</td>
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<td>0910-0925</td>
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<td>A Handheld Fluorescence Imaging Device for Assessment of Chronic Wound Infections: Pilot Clinical Results</td>
<td>Ralph DaCosta, PhD MolecuLight, Inc. Toronto, Canada</td>
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<td>Impulse Noise Injury Model</td>
<td>Philemon Chan, PhD L-3 Communications San Diego, CA</td>
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<td>Human Performance &amp; Occupational Health Injury Prevention - Sensory &amp; Musculoskeletal Injuries</td>
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<td>An Interim LAeq8 Criterion for Impulse Noise Injury</td>
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<td>Advanced Hearing Protection Requirements</td>
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<td>Blast Wave Pressure Dynamics at the Cornea as a Function of Eye Protection</td>
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<td>Biomechanics-Based Predictions of Recruit Injury and Performance Outcomes During US Army Basic Combat Training</td>
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<td>Non-Invasive Detection of Musculoskeletal Injuries: Use of Raman and Diffuse Reflectance Spectroscopy in Mice</td>
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<td>Hierarchical Development of Biomedically Validated Human Computational Models for Injury Prediction</td>
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<td>Dynamic Response Index is Not a Suitable Predictor of Spinal Injury Risk in Underbelly Blast</td>
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<td>Comparison of Injury Incidence Between the T-11 Advanced Tactical Parachute System and the T-10 Parachute</td>
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<td>Impairment of Olfactory Performance in Combat Troops Diagnosed with Traumatic Brain Injury: Prospective Controlled Study</td>
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<td>The Brain Injury Guidelines: A Prospective Analysis</td>
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<td>Postural Sway Metrics after Concussion: Implications for Balance Testing</td>
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<td>CHD-FA is a Highly Effective Topical Broad-Spectrum Antimicrobial for Drug-Resistant Wound Infections</td>
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<td>Competitive Abstract MHSRS-714 Is Simple Reaction Time the Best Indicator of White Matter Disruption in Service Members with Invisible Wounds of War?</td>
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<td>TEAM TBI: Diagnosis of White Matter Damage with High Definition Fiber Tracking in Patients with Chronic TBI</td>
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<td>Neuroradiology Findings in a Cohort of Military Service Members with Traumatic Brain Injury</td>
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<td>Visualizing “Invisible Wounds” and Developing Therapeutic Approaches for Blast-Wave Induced Mild TBI</td>
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<td>Evaluation of an Operational Return-to-Duty Assessment Program: Preliminary Assessment of the Construct Validity Using an Archived Database of Clinical Data</td>
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<td>Can “Return to Play” be Predicted From Brain Electrical Activity at Time of Concussive Injury in Athletes?</td>
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<td>Evaluating the Effectiveness of (Early) Psycho-Educational Intervention for Military Personnel with Mild Traumatic Brain Injury: A Cohort Study</td>
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<td>Infection Control Strategies: Current Perspectives and Emerging Challenges</td>
<td>LTC Wendy-Sammons-Jackson, USA</td>
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<td>Mathematical Models Can Identify Biomarkers and Mechanisms of Chronic Wound Inflammation</td>
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<td>Monoclonal Antibody Made Against the Type Six Secretion System of <em>Acinetobacter baumannii</em> Can Protect From Infection and Be Used as a Diagnostic</td>
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<td>Infection Reduction Observed in First-in-Man Use of a Novel Blood Plasma-Based Biomaterial Treatment for Open Tibia Fractures</td>
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<td>Early Complications and Outcomes in Combat Injury Related Invasive Fungal Wound Infections: A Case-Control Analysis</td>
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<td>Air Force Center for Sustainment of Trauma and Readiness Skills at the University of Maryland’s R. Adams Cowley Shock Trauma Center</td>
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<td>Operating a Military Level I Trauma Center Caring for Civilian Trauma - San Antonio Experience</td>
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<td>Sustaining Trauma Skills in Peacetime: Challenges Following Operation DESERT STORM</td>
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<td>Lessons of War: Combat-Related Injury Infections During the Vietnam War and Operation Iraqi and Enduring Freedom (OIF/OEF)</td>
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<td>Tranexamic Acid Administration and Infection Risk in Combat Casualties</td>
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<td>Psychological Health - Suicide</td>
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<td>Improving the Detection and Prediction of Suicidal Behavior Among Military Personnel by Measuring Suicidal Beliefs: An Evaluation of the Suicide Cognitions Scale</td>
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<td>Optimizing Screening and Risk Assessment for Suicide Risk in the U.S. Military</td>
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<td>Management of Suicide-Related Events During Deployment</td>
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<td>Post Admission Cognitive Therapy (PACT) for the Inpatient Treatment of Military Personnel with Suicide-Related Ideation and Behavior</td>
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<td>A Virtual Hope Box Smartphone App as an Accessory to Therapy: Proof of Concept in a Clinical Sample of Veterans</td>
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<td>The Effects of Combat-Related Mild Traumatic Brain Injury: Does Blast mTBI History Matter?</td>
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<td>The Natural History of Acute Recovery of Blast-Induced Mild Traumatic Brain Injury: A Case Series During War</td>
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<td>Multiple Past Concussions Are Associated with Ongoing Symptoms But Not Cognitive Impairment in Active Duty Army Soldiers</td>
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<td>Predictors of Mental Health Outcomes of Mild Traumatic Brain Injury: Concussion Clinics in Afghanistan</td>
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<td>Histopathological Changes and Cognitive Deficits Following Closed-Head Concussive Injury in Rats</td>
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<td>Chronic Post Concussive Symptoms in Soldiers Returning from Service in Iraq or Afghanistan and at 3 Months Follow-Up: A Prospective Cohort Study</td>
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<td>Differences in Symptom Severity in mTBI Patients With and Without PTSD</td>
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<td>In vivo Two-Photon Imaging Revealed Abnormal Cerebral Microcirculation Following Mild Traumatic Brain Injury</td>
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<td>Multicenter Comparison of Five Therapies Reveals Therapeutic Potential for Levetiracetam: Studies From Operation Brain Trauma Therapy</td>
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<td>The Isobolic Approach to Combination Drug Therapy Development for Traumatic Brain Injury</td>
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<td>Effect of the Nociceptin/Orphanin FQ Peptide Receptor Antagonist JTC-801 on Cytokine Expression, Pain and Anxiety Following Exposure to the Single Prolonged Stress Model of PTSD</td>
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<td>Traumatic Brain Injury Modulates Key Neurochemicals With Reciprocal Interactions in the Pain Pathway</td>
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<td>Prehospital Pain Medication Use by U.S. Forces in Afghanistan</td>
<td>Shackelford</td>
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<td>Pharmacological Studies of NOP-Related Agonists as Novel Analgesics in Nonhuman Primates</td>
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<td>Opioid-Sparing Therapeutic Regiment for Traumatic and Neuropathic Pain</td>
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<td>Preemptive Bupivacaine Treatment Blocks Long-Term Alldynic Responses in a Rat Spinal Nerve Ligation Model for Neuropathic Pain</td>
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<td>Treatment of Post-traumatic Neuropathic Pain and Complex Regional Pain Syndrome I (CRPS-I) by Decreasing Neuroinflammation via Modulation of the Glial Cannabinoid Type 2 (CB2) Receptor with a Novel Compound (MDA7)</td>
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<td>Antinociceptive Effects of 9 10 Nicotinic Acetylcholine Receptor (9 10 nAChR) Antagonists in a Thermal Injury-Induced Full-Thickness Rat Pain Model</td>
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<td>Infectious Disease &amp; Complications</td>
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<td>Infectious Disease Research &amp; Diagnostics</td>
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<td>Combating Staphylococcal Skin and Soft-Tissue Infections in Trainees at Fort Benning</td>
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<td>Unit Practice Council Successful Efforts for Implementing Use of Alcohol Port Protectors</td>
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<td>Changing the Way the DoD Performs Pathogen Surveillance: The Results of the Analysis of MERS-CoV in the Military Population</td>
<td>Starr</td>
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<td>Dramatic Decline of Respiratory Illness Among US Military Recruits After the Renewed Use of Adenovirus Vaccines</td>
<td>Hawksworth</td>
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<td>Lateral Flow Rapid Test for Diagnosis of Scrub Typhus – A Febrile Illness of Historical Military Importance In The Pacific Rim</td>
<td>Chao</td>
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<td>Intra-Operative Dip-Coating of Orthopedic Hardware Prevents Biofilm Formation and Supports Fracture Healing in a Large Animal Model</td>
<td>Schaer</td>
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### AGENDA/ADDITIONAL MEETINGS

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<td>By Invitation Only&lt;br&gt;USSOCOM Tactical Combat Casualty Care (TC3) IPT</td>
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<td>By Invitation Only&lt;br&gt;The Joint Trauma System Directors Group</td>
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<td>1900-2030</td>
<td>By Invitation Only&lt;br&gt;Armed Services Biomedical Research Evaluation and Management Meeting</td>
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<td>By Invitation Only&lt;br&gt;Center for the Sustainment of Trauma and Readiness Skills/CSTARS</td>
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<td>Joint Program Committee-6&lt;br&gt;Joint En Route Care Steering Committee</td>
<td>Marriott</td>
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<td>1300-1500</td>
<td>Navy En Route Care Research Discussion/Workshop</td>
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<td>Open to All&lt;br&gt;Medical Technology Enterprise Consortium (MTEC) Draft Solicitation and HORUS Vision Restoration Project&lt;br&gt;The MTEC is a new way to partner though collective sharing of research and partnerships to pursue ground-breaking solutions for the most complex battle related injuries. The pilot project will investigate using artificial vision to restore sight to those with traumatic ocular injuries.</td>
<td>Sheraton</td>
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<td>By Invitation Only&lt;br&gt;Joint Program Committee-8 Meeting</td>
<td>Sheraton</td>
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<td>By Invitation Only&lt;br&gt;Internal Program Management Review&lt;br&gt;Air Force Medical Service</td>
<td>Marriott</td>
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<td>Wednesday 20 Aug 2014</td>
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<td>0900-1030</td>
<td>Joint Program Committee-5&lt;br&gt;Working Group Chairs Meeting</td>
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<td>1530-1700</td>
<td>By Invitation Only&lt;br&gt;USSOCOM Biomedical RDT&amp;E Advisory Group (BRAG) (in lieu of the traditional BISC)</td>
<td>Marriott</td>
<td>Clearwater/Orlando</td>
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<tr>
<td>1800-2000</td>
<td>By Invitation Only&lt;br&gt;Combat Casualty Care Research Program Integrating Integrated Product Team Meeting</td>
<td>Sheraton</td>
<td>Point Room</td>
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<tr>
<td>1800-2100</td>
<td>By Invitation Only&lt;br&gt;Technology Enabled Capabilities Demonstration; Brain in Combat &amp; Environmental Sensors in Training Macro Study Issues and Discussion</td>
<td>Sheraton</td>
<td>Clipper A</td>
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<td>Friday, 22 August 2014</td>
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<tr>
<td>0800-1630</td>
<td>By Invitation Only&lt;br&gt;The Technical Cooperation Panel-12/North American Treaty Organization</td>
<td>Marriott</td>
<td>Clearwater/Orlando</td>
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2014 MHSRS POSTER PRESENTATIONS - POSTER SESSION 1

HUMAN PERFORMANCE AND OCCUPATIONAL HEALTH - ENVIRONMENTAL/OCCUPATIONAL HEALTH HAZARDS

MHSRS-156 Poster Session: 1 - Poster #1
Toxicokinetic Model Development for the Insensitive Munitions (IMX) Component 2,4-Dinitroanisole
Lisa M. Sweeney, Michelle R. Goodwin, Chester P. Gut, Jr.
1 Henry M. Jackson Foundation for the Advancement of Military Medicine, Naval Medical Research Unit Dayton (NAMRUD), Wright Patterson Air Force Base (WPAFB), OH
2 CAMRIS, NAMRUD, WPAFB, OH

MHSRS-229 Poster Session: 1 - Poster #2
A user-friendly mobile app for predicting potable water needs: the Soldier Water Estimation Tool (SWET)
Elizabeth M. Caruso
1 U.S. Army Research Institute of Environmental Medicine
2 Oak Ridge Institute for Science and Education

MHSRS-341 Poster Session: 1 - Poster #3
Can Mathematical Models Help Diagnose Lower-airway Lung Diseases?
Bora Sul, Anders Wallqvist, Michael Morris, Jaques Reifman, Vineet Rakesh
1 Biotechnology HPC Software Applications Institute, Telemedicine and Advanced Technology Research Center, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD, USA
2 Department of Medicine, San Antonio Military Medical Center, Fort Sam Houston, TX, USA
*Presenter

MHSRS-342 Poster Session: 1 - Poster #4
Predicting What We Cannot Measure: Heat Stress in Specific Organs
Vineet Rakesh, Jonathan D. Stallings, Bryan G. Helwig, Lisa R. Leon, David A. Jackson, Jaques Reifman
1 Biotechnology HPC Software Applications Institute, Telemedicine and Advanced Technology Research Center, U.S. Army Medical Research and Materiel Command, Fort Detrick, MD, USA
2 Biomarkers Program, U.S. Army Center for Environmental Health Research, Fort Detrick, MD, USA
3 Thermal Mountain Medicine Division, U.S. Army Research Institute of Environmental Medicine Division, U.S. Army Research Institute of Environmental Medicine, Natick, MA, USA

MHSRS-392 Poster Session: 1 - Poster #5
Utility of the Microbiome in Chemical Exposure Assessment.
Young S. Lee, John A. Lewis, Jeffrey R. Kugelman, Mariano Sanchez-Lockhart, Gustavo F. Palacios, Jonathan D. Stallings
1 ORISE Postdoctoral Fellow, US Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010
2 U.S. Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010
3 U.S. Army Medical Institute of Infectious Diseases, Fort Detrick, MD 21702-5010
MHSRS-397  Poster Session: 1 - Poster # 6
Neurotoxic Effects of Repeated Exposure to Low-Dose Chlorpyrifos in Rats.
Young S. Lee¹, John A. Lewis², Naissan Hussainzada¹, Pamela J. Lein³, David A. Jackson², Jonathan D. Stallings ²
¹ ORISE Postdoctoral Fellow, US Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010
² U.S. Army Center for Environmental Health Research, Fort Detrick, MD 21702-5010
³ University of California, Davis, CA 95616

MHSRS-437  Poster Session: 1 - Poster # 7
Dehydration associated with a simulated foot patrol in the heat impairs tolerance to a hemorrhagic insult
Craig Crandall, PhD¹, Zachary Schlader, PhD¹, Eric Rivas, MS¹, Daniel Gagnon, PhD¹, Victor Convertino, PhD²
¹ Institute for Exercise and Environmental Medicine, Texas Health Presbyterian Hospital Dallas and University of Texas Southwestern Medical Center
² U.S. Army Institute of Surgical Research, San Antonio, TX

MHSRS-473  Poster Session: 1 - Poster # 8
Rewarming Among Special Forces Warfighters Following Cold-Water Immersion
Douglas M. Jones¹, James A. Hodgdon¹, Michael Villarroel², Jay H. Heaney¹
¹ Naval Health Research Center, San Diego, CA
² Naval Medical Center San Diego, San Diego, CA

MHSRS-493  Poster Session: 1 - Poster # 9
Alterations in Tissue Small RNA after Heat Stress in the Conscious Rat
Matthew G. Permenter¹, Young S. Lee², Christine E. Baer¹, Danielle L. Ippolito², John A. Lewis³, Jonathan D. Stallings³
¹ EXCET, Fort Detrick, Maryland, 21702-5010
² ORISE, Fort Detrick, Maryland 21702-5010
³ Environmental Health Program, U.S. Army Center for Environmental Health Research, Fort Detrick, Maryland

MHSRS-496  Poster Session: 1 - Poster # 10
In vitro and in vivo toxicogenomic evaluation of chromium exposure in the liver
Michael S. Madejczyk¹, Matthew G. Permenter², Christine E. Baer², William E. Dennis³, John A. Lewis³, Jonathan D. Stallings³
¹ ORISE Postdoctoral Fellow, Fort Detrick, MD
² Excet Inc., Fort Detrick, MD
³ U.S. Army Center for Environmental Health Research, Fort Detrick, MD 21702

MHSRS-551  Poster Session: 1 - Poster # 11
Reported environmental exposures of deployed military members after return from Iraq
Col Sean Collins

MHSRS-600  Poster Session: 1 - Poster # 12
Baseline Respiratory Function and Symptoms of Soldiers Prior to Deployment
Michael J Morris, COL (R) USA, SAUSHEC
MHSRS-614  Poster Session: 1 - Poster #13
Does increased physical activity influence the incidence of acute mountain sickness at altitudes ranging from 2500 to 4300 m?
Ellen L. Glickman¹, Beth A. Beidleman², Charles S. Fulco², Janet E. Staab², Robert W. Kenefick², Sean P. Andrew², Katelyn I. Guerriere², Allen Cymerman², Ingrid Sils², Stephen R. Muza²
¹Kent State University & Thermal and Mountain Medicine Division, U.S. Army Research Institute of Environmental Medicine
²Thermal and Mountain Medicine Division, U.S. Army Research Institute of Environmental Medicine

MHSRS-652  Poster Session: 1 - Poster #14
Hyperoxia and Hypercapnic Acidosis Increase Free Radical Production in Rat Caudal Solitary Complex Neurons
Geoffrey Ciarlone, MS and Jay B. Dean, PhD
Department of Molecular Pharmacology & Physiology, Morsani College of Medicine, University of South Florida, Tampa, FL

MHSRS-663  Poster Session: 1 - Poster #15
What is the most beneficial overall two-day staging strategy to reduce the incidence of acute mountain sickness at 4300 m?
Janet Staab, MS¹, Beth Beidleman, ScD¹, Charles Fulco, PhD¹, Ellen Glickman, PhD², Robert Kenefick, PhD¹, Sean Andrew, BS¹, Katelyn Guerriere, MS¹, Allen Cymerman, PhD¹, Stephen Muza, PhD¹
¹Thermal and Mountain Medicine Division, U.S. Army Research Institute of Environmental Medicine, Natick, MA 01760
²Exercise Physiology Department, Kent State University, Kent, OH 44242

MHSRS-762  Poster Session: 1 - Poster #16
Does increased physical activity while staging for two days influence the incidence of acute mountain sickness during subsequent exposure to high altitude?
Charles S. Fulco, Beth A Beidleman, Ellen L Glickman, Janet E Staab, Robert W Kenefick, Bruce S Cadarette, Sean P Andrew, Katelyn I Guerriere, Allen Cymerman, Ingrid Sils, Stephen R Muza
Thermal and Mountain Medicine Division, USARIEM, Natick MA 01760-5007
*Presenter

MHSRS-774  Poster Session: 1 - Poster #17
Determination of Individual Hydration Status by a Non-Invasive Hydration Status Monitor (HSM)
Jake Fox¹, MAJ Jonathan D. Stallings², Sarka Southern, PhD³
¹Medical Support Systems Project Management Office, U.S. Army Medical Materiel Development Activity, Ft Detrick, MD
²U.S. Army Center for Environmental Health Research
³Gaia Medical Institute

MHSRS-879  Poster Session: 1 - Poster #18
Pathological Diagnoses of Deployed Military Personnel with Pulmonary Disease
Cristian A. Madar, MD¹, Michael J. Morris, MD¹, Russell A. Harley, MD², Teri J. Franks, MD², Michael Lewin-Smith, MD²
¹San Antonio Military Medical Center, Fort Sam Houston, TX
²The Joint Pathology Center, Silver Spring, MD
MHSRS-1069  Poster Session: 1 - Poster # 19
Changes in Barometric Pressure Alter Susceptibility to Central Nervous System Oxygen Toxicity
Heather E. Held, PhD¹, Raffaele Pilla, PhD¹, Csilla Ari, PhD¹, Tina Fiorelli, PhD², Carol S. Landon¹, Jay B. Dean¹
¹ Department of Molecular Pharmacology & Physiology, Hyperbaric Biomedical Research Laboratory, Morsani College of Medicine, University of South Florida, Tampa, FL, USA
² Molecular Medicine, Byrd Alzheimer’s Institute, University of South Florida, Tampa, FL, USA

MHSRS-1122  Poster Session: 1 - Poster # 20
Trends in care for respiratory conditions in OEF/OIF/OND Veterans FY02-FY11: A VA cohort study
Michael J. Morris, MD², Marcos Restrepo MD¹, Kar Wei Leung¹, Eric Mortensen³
¹ South Texas Veterans Healthcare System/University of Texas Health Science Center San Antonio
² Pulmonary/Critical Care PD, SAUSHEC Internal Medicine, Brooke Army Medical Center
³ North Texas Veterans Healthcare System/University of Texas Southwestern Medical Center

MHSRS-1188  Poster Session: 1 - Poster # 21
Efficacy and Tolerability of Therapeutic Ketosis for Resilience against Central Nervous System Oxygen Toxicity (CNS-OT): Acute and Chronic Studies
Raffaele Pilla¹, Heather Held¹, Csilla Ari¹, Patrick Arnold², Jay B. Dean¹
¹ University of South Florida; Morsani College of Medicine
² Savind Inc.

HUMAN PERFORMANCE AND OCCUPATIONAL HEALTH - HUMAN PERFORMANCE RESEARCH

MHSRS-62  Poster Session: 1 - Poster # 22
Assessment of Sleep Disruption and Sleep Quality in Naval Special Warfare Operators
LT Erica Harris, PhD¹, Sean Drummond, PhD²,³,⁴, Gerald Larson, PhD¹, Rachel Markwald, PhD⁵, CDR Eric Potterat, PhD⁶, Kirk Parsley, MD⁶, Marc Taylor, PhD⁷
¹ Behavioral Sciences and Epidemiology Department, Naval Health Research Center (NHRC), San Diego, CA
² University of California, San Diego, CA
³ VA San Diego Healthcare System (VASHDS), San Diego, CA
⁴ VASHDS Center of Excellence for Stress and Mental Health, San Diego, CA
⁵ Warfighter Performance Department, NHRC, San Diego, CA
⁶ Naval Special Warfare Command, Coronado, CA

MHSRS-66  Poster Session: 1 - Poster # 23
The Effect of Blood Flow Restriction During Aerobic Exercise on Insulin-Like Growth Factor-1
Laura Palombo, MS, Andrew Jenson, MS, Brenda Neiderberger, MA, Stefania Marzano, MS, Karen Kelly, PhD
Naval Health Research Center

MHSRS-70  Poster Session: 1 - Poster # 24
User Evaluation Trial of Lower Limb Prosthetic Devices
Capt Pauline Godsell, BScPT¹, Capt Jose Peralta-Huertas, MD², LCol Marcus Besemann, MD¹, Mike Spivock, PhD³
¹ Canadian Forces Health Services Group Headquarters (CF H Svcs Gp HQ)
² Canadian Forces Environmental Medicine Establishment (CFEME)
³ Directorate of Fitness, Canadian Forces
MHSRS-150  Poster Session: 1 - Poster # 26  
Long-term Retention of Task-specific Training in a Noninjured Population Using the Computer Assisted Rehabilitation Environment (CAREN)  
Amanda E. Markham, MPH, John-David Collins, MA, Kathrine A. Service, BS, LCDR Jose A. Dominguez, PT, LT Seth A. Reini, PhD, Pinata H. Sessoms, PhD  
Naval Health Research Center

MHSRS-227  Poster Session: 1 - Poster # 27  
Functional Movement Changes With Deployment: The Combat Readiness Evaluation (CORE)  
Sarah de la Motte¹, Peter Lisman², Anthony Beutler¹, Steven Blivin³, Francis O’Connor¹, Patricia Deuster¹  
¹ Consortium for Health and Military Performance, Uniformed Services University, Bethesda, MD  
² Towson University, Towson, MD  
³ Naval Hospital Camp Lejeune, NC

MHSRS-327  Poster Session: 1 - Poster # 28  
Telehealth Coaching to Promote Nutrition and Bone Health in Deployed Soldiers  
Sabrina Ramme¹, Lori A. Loan²  
¹ Center for Nursing Science & Clinical Inquiry, Madigan Army Medical Center, Tacoma, WA  
² JPC-1 Medical Training & Health Information Science Research Program, MRMC, Ft. Detrick, MD

MHSRS-391  Poster Session: 1 - Poster # 29  
U-2 Pilot Post-Mission Discomfort Questionnaire  
Jennifer Serres, PhD¹; Molly Wade, MS², Bruce Wright, PhD¹, William Dodson III, MD¹  
¹ United States Air Force School of Aerospace Medicine, Wright-Patterson Air Force Base, Ohio  
² Peerless Technologies, Inc., Fairborn, Ohio

MHSRS-408  Poster Session: 1 - Poster # 30  
Disruptions in Calcium Homeostasis During Exercise Under Different Thermal Conditions  
Wendy Kohrt, PhD, Vanessa Sherk, PhD, Karen Shea, MD  
University of Colorado - Anschutz Medical Campus

MHSRS-526  Poster Session: 1 - Poster # 31  
Marksmanship: A precision tool for assessing operationally important, visually-precise performance  
David, L. Still, OD, PhD, Leonard A. Temme, PhD  
Visual Protection and Performance Division, U.S. Army Aeromedical Research Laboratory, 6901 Andrews Ave, Fort Rucker, AL 36330

MHSRS-611  Poster Session: 1 - Poster # 32  
Assessing the interacting challenges of sleep restriction and shift work on physical and mental performance  
Matthew P Butler¹,²,³, David A Barr²,³, Melanie Rueger²,³, Frank AJL Scheer²,³, Steven A Shea¹,²,³  
¹ Oregon Institute of Occupational Health Sciences, Oregon Health & Science University, Portland, OR  
² Division of Sleep and Circadian Disorders, Brigham and Women's Hospital, Boston, MA  
³ Division of Sleep Medicine, Harvard University, Boston, MA
MHSRS-628  Poster Session: 1 - Poster # 33
Effects of Sensory Afferent Signaling on the Development of Exertional Fatigue
Ryan Sheppard, PhD, Aaron Hall, PhD
Naval Medical Research Center

MHSRS-680  Poster Session: 1 - Poster # 34
Human Performance Capabilities Are Reduced More After Repeated 100% Oxygen Dives Than After Air Dives
John Florian, PhD, Erin Simmons, MS, Taylor Thurston, BS, Jay Haran, PhD, Barbara Shykoff, PhD
Navy Experimental Diving Unit, Panama City, FL

MHSRS-832  Poster Session: 1 - Poster # 35
Genetic Variants in Serotonin and Corticosteroid Systems Modulate Neuroendocrine and Cardiovascular Responses to Intense Stress
Marcus Taylor, PhD¹, Gerald Larson, PhD¹, Melissa Hiller Lauby, PhD²
¹ Naval Health Research Center, San Diego, CA
² Naval Special Warfare Center, San Diego, CA

MHSRS-840  Poster Session: 1 - Poster # 36
Spontaneous and Deliberate Dissociative States in Military Personnel: Relationships to Objective Performance Under Stress
Marcus Taylor, PhD¹, Charles Morgan III, MD²
¹ Naval Health Research Center, San Diego, CA
² Yale University School of Medicine, New Haven, CT

MHSRS-857  Poster Session: 1 - Poster # 37
Salivary Nerve Growth Factor Response to Intense Stress: Effect of Sex and Body Mass Index
Marcus Taylor, PhD¹, Heidemarie Laurent, PhD², Gerald Larson, PhD¹, Mitchell Rauh, PhD¹, Melissa Hiller Lauby, PhD³, Douglas Granger, PhD⁴
¹ Naval Health Research Center, San Diego, CA
² University of Oregon, Eugene, OR
³ Naval Special Warfare Center, San Diego, CA
⁴ Arizona State University, Tempe, AZ

MHSRS-964  Poster Session: 1 - Poster # 38
Longitudinal Performance Change Related to Repeated Low-Level Blast Exposure
Charmaine Tate², Stephanie E Eonta¹, James Stone³, Shruti Dosi¹, Heather Dark¹, Gary H Kamimori¹
¹ Behavioral Biology Branch, Center for Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring, MD 20910
² New Zealand Defence Force, Auckland, New Zealand
³ Department of Radiology, University of Virginia, Charlottesville, VA  22908

MHSRS-986  Poster Session: 1 - Poster # 39
Air Force Medical Service Patient-Centered Precision Care (PC2) Clinical Utility Study
Lt Col David G. Watson, PhD¹, Maj Ruth Brenner, MD¹, Ronald A. Miller, PhD¹, Michael F. Christman, PhD²
¹ Air Force Medical Support Agency, Falls Church, VA
² The Coriell Institute for Medical Research, Camden, NJ
Impact of caffeine on neurocognitive performance during sleep deprivation using the Defense Automated Neurobehavioral Assessment (DANA).

Stephanie E Eonta¹, Gemma M Paech², Siobhan Banks³, Kayla Johnson³, Chris Della Vedova², Gary H Kamimori¹
¹ Behavioral Biology Branch, Center for Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring, MD 20910
² Centre for Sleep Research, University of South Australia, Adelaide, Australia
³ Defence Science and Technology Organisation, Land Division, Edinburgh, Australia

HUMAN PERFORMANCE AND OCCUPATIONAL HEALTH - INJURY PREVENTION (SENSORY AND MUSCULOSKELETAL INJURIES)

Lumbar Spine Postures in Marines During Simulated Operational Conditions

David Berry², Karen Kelly, PhD¹, Ana Rodrigues-Soto², Sara Gombatto, PhD², Rebecca Jaworski, PhD¹, Sam Ward, PT, PhD²
¹ Department of Warfighter Performance, Naval Health Research Center, San Diego, CA
² Departments of Radiology, Orthopaedic Surgery, and Bioengineering, University of California, San Diego, La Jolla, CA
³ San Diego State University, San Diego, CA


Brenda Niederberger, MA², Rebecca L. Jaworski, PhD¹, Andrew Jensen, MS², Karen R. Kelly, PhD²
¹ Marine Corps Systems Command, Quantico, VA
² Naval Health Research Center, San Diego, CA

Evaluation of Infantry Combat Equipment Torso Personal Protective Equipment (PPE) Prototype for the U.S. Marine Corps

Brenda Niederberger, MA¹, Marcus Gobrecht, MS², John-David Collins, MA¹, Pinata Sessoms, PhD¹, Rebecca Jaworski, PhD², Karen Kelly, PhD¹,²
¹ Warfighter Performance Department, Naval Health Research Center, San Diego, CA
² School of Exercise and Nutritional Sciences, San Diego State University, San Diego, CA
³ Marine Corps Systems Command, United States Marine Corps, Camp Pendleton, CA

T cell expressed CD40L is required for PTH to induce bone anabolism

Jerid W. Robinson¹, Jau-Yi Li¹, Lindsey D. Walker¹, Abdul Malik Tyagi¹, Michael Reott¹, Mingcan Yu¹, Jonathan Adams¹, M. Neale Weitzmann¹,², Roberto Pacifici¹,³
¹ Division of Endocrinology, Metabolism and Lipids, Department of Medicine, Emory University, Atlanta, GA
² Atlanta VA Medical Center, Decatur, GA 30033
³ Immunology and Molecular Pathogenesis Program, Emory University, Atlanta, GA
MHSRS-252  Poster Session: 1 - Poster # 46
Imaging Analysis System for Identifying Hill-Sachs and Bankart Bone Lesions and Evaluating Joint Range-of-Motion for Confirming Need for Shoulder Bone Defect Repair Prior to Soldier Return to Active Duty
Dr. Josh Polster, MD
Cleveland Clinic, Diagnostic Radiology, Cleveland, OH

MHSRS-393  Poster Session: 1 - Poster # 47
Analysis of Noise-Induced Hearing Loss in U.S. Air Force (USAF) Aviation-related Special Duty Personnel
Anthony Tvaryanas, Col, USAF, MC, SFS, Genny Maupin, MPH, Paul C. Genovesi, MSBA
711th Human Performance Wing, Wright-Patterson AFB, Dayton, OH

MHSRS-468  Poster Session: 1 - Poster # 48
Comprehensive investigation of the association between exertional rhabdomyolysis and malignant hyperthermia susceptibility in a North American population
C. Antonio Solla, MD¹, Jason Longwell, MD¹, Malgorzata Kasperska DO¹, Nyamkhishig Sambuughin PhD²
Sheila Muldoon MD², John Capacchione MD¹,²
¹ Department of Anesthesiology, Walter Reed National Military Medical Center, Bethesda MD
² Department of Anesthesiology, Uniformed Services University of the Health Sciences, Bethesda MD

MHSRS-515  Poster Session: 1 - Poster # 49
BLUNT IMPACTS TO THE BACK: BIOMECHANIC AND INJURY RESPONSE FOR MODEL DEVELOPMENT
Jason Forman, PhD¹, John Paul Donlon¹, Brandon Perry¹, Kyvory Henderson¹, David Lessley, PhD¹,
Rob Salzar, PhD¹, Tim Walilko, PhD²
¹ University of Virginia Center for Applied Biomechanics
² Applied Research Associates

MHSRS-659  Poster Session: 1 - Poster # 50
Risk of Motor Vehicle Crash Hospitalizations in Iraq and Afghanistan War Veterans with Traumatic Brain Injury
Kathleen F. Carlson, MS, PhD¹,², Maya E. O’Neil, PhD³, Christopher W. Forsberg, MS¹, Lisa McAndrew, PhD⁴,⁵,
Daniel Storzbach, PhD⁶,⁷, David X. Cifu, MD⁸-¹⁰, Nina A. Sayer, PhD¹¹,¹²
¹ Center to Improve Veteran Involvement in Care, Portland VA Medical Center (R&D 66), 3710 SW U.S. Veterans Hospital Road, Portland, OR 97239
² Department of Public Health and Preventive Medicine, Oregon Health and Science University, Portland, OR
³ Department of Psychiatry, Oregon Health and Science University, Portland, OR
⁴ University at Albany, State University of New York, 1400 Washington Avenue, Albany, NY 12222
⁵ War Related Illness and Injury Study Center, VA New Jersey Health Care System, East Orange, NJ
⁶ Department of Neuropsychiatry, Portland VA Medical Center, Portland, OR
⁷ Department of Psychology, Oregon Health and Science University, Portland, OR
⁸ Physical Medicine and Rehabilitation Services, Veterans Health Administration
⁹ Physical Medicine and Rehabilitation Service, Hunter Holmes McGuire VA Medical Center, 1201 Broad Rock Boulevard, Richmond, VA 23249
¹⁰ Department of Physical Medicine and Rehabilitation, Virginia Commonwealth University, P.O. Box 980677, Richmond, VA 23298
¹¹ Center for Chronic Disease Outcomes Research, Minneapolis VA Healthcare System (152/2E), One Veterans Drive, Minneapolis, MN 55417
¹² Departments of Medicine and Psychiatry, University of Minnesota Medical School, MMC 194, 420 Delaware Street S.E., Minneapolis, MN 55455
MHSRS-683  Poster Session: 1 - Poster # 51
Deadly choices in deadly environments: results from a prolonged investigation of multiple military diver fatalities in cold water
Dr. John Clarke

MHSRS-967  Poster Session: 1 - Poster # 52
Intravenously Administration PEG-NELL-1 Promotes Bone Formation and Density
Greg Asatrian1, Jin Hee Kwak, DDS,MS1, Yulong Zhang, PhD2, Juyoung Park, DDS,MS1, Chirag Chawan, DDS1, Aaron W James, MD1, Jia Shen, PhD2, Kambiz Khalilinejad, DDS1, Omar Velasco, MD2, Mahsa Dousti, DDS1, Xinli Zhang, MD,PhD1, Kang Ting, DMD,DMEDSCI1, Chia Soo, MD2
1 Dental and Craniofacial Research Institute and Section of Orthodontics, School of Dentistry, University of California, Los Angeles, CA
2 UCLA Division of Plastic Surgery and Department of Orthopaedic Surgery and the Orthopaedic Hospital Research Center, University of California, Los Angeles, CA

MHSRS-1014  Poster Session: 1 - Poster # 54
Assessment of damage along the optic nerve after low-level repeated blast exposure
Jae Hyek Choi, PhD1, Joseph Novak, DVM2, Teresa A. Burke, BS1, Brian J. Lund, PhD1, Anthony J. Johnson, MD1, Jeffery M. Cleland,OD, MBA1, Heuy-Ching H. Wang, PhD1
1 Ocular Trauma Task Area, U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX 78234-631
2 Department of Pathology, U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX 78234-631

MHSRS-1132  Poster Session: 1 - Poster # 55
Non-Invasive Identification of Laser Eye Injury in the Vitreous Humor
Melissa I. Naiman, PhD1, Rachida A. Bouhenni, PhD2, Jeffrey J. Dunmire, MS2, Deepak P. Edward, MD3, Rafat R. Ansari, PhD4
1 University of Illinois at Chicago
2 Summa Health System
3 Johns Hopkins University
4 NASA Glenn Research Center

MHSRS-1166  Poster Session: 1 - Poster # 56
Development of a cell self-assembled 3-dimensional in vitro skeletal muscle tissue model
Jason Forte1, Alyssa M Fidanza1, Alexandra Grella2, Denis Kole, PhD1, Christopher Malcuit, PhD3, Raymond Page, PhD1
1 Biomedical Engineering Department, Worcester Polytechnic Institute
2 Biology & Biotechnology Department, Worcester Polytechnic Institute
3 Biology Department, Kent State University

INFECTIOUS DISEASE AND COMPLICATIONS - INFECTIOUS DISEASE RESEARCH AND DIAGNOSTICS

MHSRS-50  Poster Session: 1 - Poster # 57
SagS contributes to the extraordinary resistance of biofilm cells to antimicrobial agents.
Dr., Kajal Gupta, Dr., Olga E. Petrova, Dr.
Binghamton University
MHSRS-82  Poster Session: 1 - Poster # 58
Modifying Vaccination Schedules Reduce Incidence of Respiratory Disease and Result in Transient Immune Changes
Anthony Hawksworth, LCDR Rachel Lee, MC, USN, Christian Hansen, Chris Myers, PhD, CDR
Gary Brice, MSC, USN, CDR Dennis Faix, MC, USN
Department of Operational Infectious Disease, Naval Health Research Center

MHSRS-97  Poster Session: 1 - Poster # 59
What Effect Does Evidenced-based Design (EBD) Have on Contamination and Infections in DoD's Premier EBD Hospital - Ft Belvoir Community Hospital?
Eve Hosford, BS1, Robert Clifford, PhD1, Uzo Chukwuma, PhD2, Nicole Dzialowy, PhD3, Michael Julius, BS1, Yoon Kwak, MS1, Ana Ong, BS1, Sue Fraser, MD2, Phil Carling, MD4, Paige Waterman, MD1, Patrick McGann, PhD1, Emil Lesho, DO1
1 Walter Reed Army Institute of Research, Silver Spring, MD
2 Navy and Marine Corps Public Health, EpiData Center, Portsmouth, VA
3 Fort Belvoir Community Hospital, Fort Belvoir, VA
4 Boston Medical Center, Boston, MA

MHSRS-159  Poster Session: 1 - Poster # 60
Effect of Carbapenems on Biofilms of a Multi-drug Resistant Clinical Isolate of Klebsiella pneumoniae
Tricia A. Van Laar, PhD1, Tsute Chen, PhD2, Kai P. Leung, PhD1
1 U.S. Army Institute of Surgical Research, Dental and Trauma Research Detachment
2 The Forsyth Institute

MHSRS-172  Poster Session: 1 - Poster # 61
Rapid detection of multidrug-resistant microorganisms in human serum by surface enhanced raman spectroscopy
Dr. Christian Kotanen

MHSRS-212  Poster Session: 1 - Poster # 62
A Cluster of Fatal Infections Due to a Rare Clone of Extensively Drug-resistant Acinetobacter baumannii with Enhanced Virulence: Combining Surveillance and Basic Science Research to Improve Care
Crystal Jones, PhD1, Megan Clancy, MD2, Shweta Singh, BS1, Cary Honold, DVM1, Erik Snesrud, BS1, Patrick McGann, PhD1, Fatma Onmus-Leone, MS1, Ana Ong, BS1, Yoon Kwak, MS1, Paige Waterman, MD1, Daniel Zurawski, PhD1, Robert Clifford PhD1, Emil Lesho, DO1
1 Walter Reed Army Institute of Research, Silver Spring, MD
2 Providence Alaska Medical Center, Anchorage, AK

MHSRS-233  Poster Session: 1 - Poster # 63
A Heterologous Booster Vaccine Comprising Live Attenuated Listeria monocytogenes Expressing Mycobacterium tuberculosis Antigen 85B Enhances BCG-primed Cellular and Protective Immunity Against Tuberculosis
Qingmei Jia, Barbara Jane Dillon, Jacob Sahakian, Marcus A. Horwitz
Department of Medicine, University of California–Los Angeles, Los Angeles, CA 90095-1688

MHSRS-377  Poster Session: 1 - Poster # 64
DEVELOPMENT AND EVALUATION OF AN OZONE-BASED PORTABLE “POINT-OF-CARE” FIELD STERILIZER SYSTEM
Luis A. Martinez, PhD, Alexander J. Burdette, PhD, Roy E. Dory, MS, Rene Alvarez, PhD
Naval Medical Research Unit San Antonio, San Antonio, TX
MHSRS-476  Poster Session: 1 - Poster # 66
Which Commercial Automated Identification and Susceptibility Platform is Optimal for Multidrug-resistant Organisms: The Vitek-2, Phoenix, or Microscan?
Lindsey Nielsen, Robert Clifford, Yoon Kwak, Calvina Glover, Caroline Argyros, Paige Waterman, Emil Lesho
Multidrug-resistance Organism Repository and Surveillance Network (MRSN), WRAIR

MHSRS-554  Poster Session: 1 - Poster # 67
Multicenter clinical evaluation of four dengue diagnostic devices
Subhamoy Pal1, Allison L. Dauner1, Andrea Valks2, Tadeusz J. Kochel1, Eric S. Halsey3, Guillermo Comach4, Chadwick Yasuda6, Mike Loeffelholz4, Brett M. Forshey3, Amy C. Morrison3,7, Richard G. Jarman8, Stefan Fernandez8, Lou E. Jasper9, Shuenn-Jue L. Wu1 *
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3 LARDIDEV/BIOMED-UC, Venezuela
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5 University of Texas Medical Branch (UTMB), Galveston, TX 77555-0740, USA
6 University of California, Davis, CA, 95616, USA
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8 U.S. Army Medical Materiel Development Activity, Frederick, Maryland
*Presenter

MHSRS-576  Poster Session: 1 - Poster # 68
X-ray Crystal Structure Determination of F. tularensis IspD for Discovery and Development of Novel Antibacterials Targeting the MEP Pathway
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2 MolBox, Silver Spring, MD
3 Department of Chemistry and Biochemistry, George Mason University, 4400 University Dr. Fairfax, VA

MHSRS-644  Poster Session: 1 - Poster # 69
Histopathologic techniques for identifying fungal elements in tissue of combat casualties
Sarah Heaton1, Amy Weintrob1,2, Faraz Shaikh2, Deepak Aggarwal2, Bradley Lloyd3, Tyler Warkentien1, Clinton Murray4, David Tribble2 *, Justin Wells1
1 Walter Reed National Military Medical Center, Bethesda, MD
2 USU Infectious Disease Clinical Research Program, Bethesda, MD
3 Landstuhl Regional Medical Center, Landstuhl, Germany
4 San Antonio Military Medical Center, San Antonio, TX
* Presenter

MHSRS-665  Poster Session: 1 - Poster # 70
Novel Bio-Polymer Treatment used for Pseudomonas aeruginosa, Methicillin Resistant Staphylococcus aureus and Acinetobacter baumannii Colonized Wounds
Stephen Davis
MHSRS-668  Poster Session: 1 - Poster # 71
ARE MOLECULAR METHODS MORE SENSITIVE THAN CONVENTIONAL CULTURE FOR IDENTIFYING INVASIVE MOLDS?
Anuradha Ganesan¹, Brian Wickes², Aaron Farmer³, Dana Blyth ³, Clinton Murray³
¹ Walter Reed National Military Medical Center, Bethesda, Maryland, USUHS, Infectious Disease Clinical Research Program
² The University of Texas Health Science Center, San Antonio, TX
³ San Antonio Military Medical Center, Infectious Disease Clinical Research Program, San Antonio, TX

MHSRS-687  Poster Session: 1 - Poster # 72
Efficacy of Intravenous Kinocidin gamma-RP-1 versus Multi-Drug-Resistant Acinetobacter baumannii Pneumonia in a Neutropenic Murine Model
Dr. Micahel Yeaman

MHSRS-764  Poster Session: 1 - Poster # 73
Risk assessment associated with prior dengue exposure in DoD members and beneficiaries
Theron Gilliland, Jr.¹, Allison Dauner¹, Subhamoy Pal¹, Susana Widjaja¹, Tahaniyat Lalani²³, Karla Block¹, Kanakatte Raviprakash¹, Shuenn-Jue Wu¹, Janine R Danko¹, Maya Williams¹, Jamie Fraser³, Dave Tribble³, Mark D. Johnson⁴, Tim Burgess³, Jason D. Maguire²
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² Naval Medical Center, Portsmouth, VA
³ Infectious Disease Clinical Research Program
⁴ Naval Medical Center, San Diego, CA

MHSRS-787  Poster Session: 1 - Poster # 74
Development of lyophilized loop-mediated isothermal amplification reagents for the detection of Leptospira
Giulia Weissenberger,¹², Wei-Mei Ching, Dr¹²
¹ Naval Medical Research Center, Silver Spring, MD
² Uniformed Services University of the Health Sciences, Bethesda, MD

MHSRS-906  Poster Session: 1 - Poster # 76
Rapid Identification of Enteric Pathogens in a Deployed Situation
Elia T. Villazana, Clarise R. Starr
USAFSAM/FHT, Wright-Patterson AFB, OH 45433

MHSRS-951  Poster Session: 1 - Poster # 77
Seroincidence of Dengue Virus Infection among Active Duty Military Members Deployed to Southeast Asia on a Humanitarian Mission
Nimfa Teneza-Mora MD¹, Ryan Maves MD², Janine Danko MD¹, Kanakatte Raviprakash PhD¹, Allison Dauner PhD¹, Monika Simmons MS¹, Mark Simons PhD², Tadeusz Kochel PhD¹
¹ Naval Medical Research Center
² Naval Medical Center San Diego, CA
MHSRS-959  Poster Session: 1 - Poster # 78
Shigella IpaB/C/D Invasion Plasmid Sequence Conservation in a Wide Range of Clinical Isolates
Tony Pierson, MAJ, Dilara Islam, PhD, Elizabeth Odundo, BS, Robert W. Kaminski, PhD, Jun Hang, PhD, Nattaya Ruamsap, MSc, Pimmada Sakpaisal, MSc, Sasikorn Silapong, BS, Wilawan Oransathid, PhD, Paphavee Lertsritakarn, PhD, Ryan Maves, Brook Danboise, CPT, Richard Jarman, MAJ(P), Carl J. Mason, MD, MPH, Geneviève Renaud-Mongénie, PhD, Edwin V. Oaks, PhD
1 Walter Reed Army Institute of Research, Silver Springs, MD
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3 Microbiology Hub Kericho, US Army Medical Research Unit - Kenya (USAMRU-K)
4 U.S. Naval Medical Research Unit No. 6, Callao, Peru
5 Sanofi-Pasteur, Marcy l’Etoile, France

MHSRS-1008  Poster Session: 1 - Poster # 79
Prediction of Multiple Infections After Severe Burn Trauma
Yan, Shuangchun, PhD, Amy Tsurumi, PhD, Yok-Ai Que, MD, PhD, Colleen M Ryan, MD, Arunava Bandyopadhyaya, PhD, Alexander A Morgan, PhD, Patrick J Flaherty, PhD, Ronald G Tompkins, MD, ScD, Laurence G Rahme, MS, PhD
1 Department of Surgery, Massachusetts General Hospital, Harvard Medical School, Boston, MA
2 Department of Microbiology and Immunobiology, Harvard Medical School, Boston, MA
3 Shriners Hospitals for Children Boston, Boston, MA
4 Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland
5 Department of Biochemistry and Stanford Genome Technology Center, Stanford University School of Medicine, Palo Alto, CA
6 Department of Biomedical Engineering, Worcester Polytechnic Institute, Worcester, MA
7 Program in Bioinformatics and Computational Biology, Worcester Polytechnic Institute, Worcester, MA.

MHSRS-1018  Poster Session: 1 - Poster # 80
Sterilizer Testing and Evaluation to Support Field Modernization Effort
Daniel Kennedy, COL Kimberly Smith, MAJ Sheila Webb, Lamar Reese
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2 212th Combat Support Hospital, Miesau, Germany
3 Kimbrough Ambulatory Care Center, Fort Meade, MD

MHSRS-1045  Poster Session: 1 - Poster # 81
Evaluation Of Innate Immune Biomarkers In Saliva For Diagnostic Potential Of Bacterial And Viral Respiratory Infections
Alexander J. Burdette, PhD and Rene Alvarez, PhD
Naval Medical Research Unit San Antonio, Joint Base San Antonio, Ft. Sam Houston, TX 78234

MHSRS-1093  Poster Session: 1 - Poster # 82
Rapid Antimicrobial Susceptibility Testing of Pseudomonas aeruginosa and Acinetobacter baumannii Directly from Positive Blood Cultures by Automated Microscopy
Ivor S. Douglas, MD FRCP, Katie Overdier, Alena Shamsheyeva, Dulini Gamage, Natalia Duarte, Carlos Gutierrez, Jessica Wilhalme, Steven Metzger, Ben Turng, PhD, David Howson, Connie S. Price
1 Denver Health Medical Center, U. of Colorado School of Medicine
2 Accelerate Diagnostics
PAIN MANAGEMENT - ACUTE AND CHRONIC PAIN MANAGEMENT

MHSRS-161  Poster Session: 1 - Poster # 84
Identifying a novel cascade that modulates IL-17 driven arthritis
Dr. Shiva Shahrara

MHSRS-174  Poster Session: 1 - Poster # 85
Prehospital and en route analgesic use in traumatically injured patients in the combat setting
LTC Lawrence Petz

MHSRS-299  Poster Session: 1 - Poster # 86
Prior Stress Exposure Increases Pain Behaviors in a Rat Model of Full Thickness Thermal Injury
Jennifer E. Nyland, PhD¹, Samuel McLean, MD², John Clifford, PhD¹, Marcie Fowler, PhD¹,
LTC Lawrence Petz, PhD¹, Dayna Averitt, PhD³
¹ U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX
² University of North Carolina at Chapel Hill, NC
³ Texas Women’s University, Dallas, TX

MHSRS-509  Poster Session: 1 - Poster # 87
Gender-Specific Analgesic Response to Sublingual Sufentanil Microtablets for Acute Pain
Neil Singla, MD¹, Derek Muse, MD², Pamela Palmer, MD, PhD³
¹ Lotus Clinical Research, Pasadena, CA
² Jean Brown Research, Salt Lake City, UT
³ AcelRx Pharmaceuticals, Redwood City, CA

MHSRS-522  Poster Session: 1 - Poster # 88
A 3-year analysis and comparison of opioid prescribing practices by emergency department providers in the military community for chronic pain
Victoria J. Ganem, RN, BSN¹, Alejandra G. Mora, BS¹, Shawn M. Varney, MD², Vikhyat S. Bebarta, Lt Col, MC¹,²
¹ Air Force En Route Care Research Center
² San Antonio Military Medical Center, San Antonio, TX
³ University of Texas Health Science Center at San Antonio, San Antonio, TX

MHSRS-662  Poster Session: 1 - Poster # 89
A Randomized, Double-Blind, Placebo-Controlled Trial of StellateGanglion Block in the Treatment of POST
TRAUMATIC STRESS DISORDER
Steve Hanling MD, Robert McLay MD, Anita Hickey MD, Ivan Lesnik MD, Carol Anne Drastal RN, Jeremy Hackworth MD

MHSRS-870  Poster Session: 1 - Poster # 90
Point-of-Injury Analgesia in the Modern Combat Setting
LTC Robert Mabry
MHSRS-997  Poster Session: 1 - Poster # 91
Does Functional Restoration for Chronic Pain Patients Work in a Military Population? Early results from the BAMC Functional Restoration Program (FRP)
Lewis Sussman, PsyD, Rebekah Nilson, PT, MSPT, Jamie Clapp, PT, DPT Lynette Pujol, PhD, Benjamin Keizer, PhD, LtCol Howard Gill, MD, Justin Boge, DO, LtCol Tristan Lai, MD, Rob Overbaugh, MD, Morgan Webb, LTC Brandon Goff, DO
SAMMC/BAMC Department of Pain Management IPMC (Interdisciplinary Pain Management Center), San Antonio, TX

MHSRS-1094  Poster Session: 1 - Poster # 93
USAISR BURN CLINIC PAIN MEDICATION USAGE PATTERNS FOR SEVERELY BURNED MILITARY SERVICE MEMBERS
Col. Robert V. Gibbons, MD, Margaux M. Salas, PhD, John Jones, BS, Marcie Fowler, PhD, LTC Lawrence Petz, PhD, Maj Jacob Hansen, MD, Terry Slater, BS, Jeana Orman ScD, John L Clifford, PhD
U.S. Army Institute of Surgical Research, San Antonio, TX

MHSRS-1145  Poster Session: 1 - Poster # 95
Novel long duration ultrasound therapy for pain management and biological regeneration
Matthew D Langer, PhD, Rebecca Taggart, George K Lewis Jr., PhD
ZetrOZ Inc., 56 Quarry Rd, Trumbull, CT 06611

MHSRS-1192  Poster Session: 1 - Poster # 96
Continuous local wound infiltration versus epidural after open liver resection: a randomised controlled trial
Stephen McNally PhD, Natalie Peel MBChB, Ben Stutchfield MBChB, Ewen Harrison PhD, Stephen Wigmore MD
International (non US)

MHSRS-1036  Poster Session: 1 - Poster # 170
Curcumin Attenuates Thermal Hyperalgesia in a Rat Full Thickness Thermal Injury Model by Influencing Inflammation Signaling
Dr. Margaux Salas

TRAINING AND SKILLS SUSTAINMENT - COMBAT CASUALTY SIMULATION AND TRAINING

MHSRS-49  Poster Session: 1 - Poster # 97
Highly Realistic Training for Navy Corpsmen: Preliminary Findings and Future Directions
Stephanie Booth-Kewley PhD, Stephanie McWhorter, MA, Karl Van Orden, PhD
Naval Health Research Center San Diego, San Diego, CA

MHSRS-495  Poster Session: 1 - Poster # 98
Fine Motion Tracking to Quantitatively Assess Combat Casualty Training
Brian Goldiez, PhD1*, Amanda Romeu1 Christine Allen, PhD2*
1 University of Central Florida/Institute for Simulation and Training
2 Army Research Laboratory Human Research and Engineering Directorate Simulation and Training Technology Center
*Presenters
MHSRS-559  Poster Session: 1 - Poster # 99
Handheld Simulation Procedure Training For Intravenous Catheterization: An In-a-Box Solution, An Out-of-the-Box Approach, A Health Care Paradigm Shift
Debra Weiner, MD, PhD¹, Mark Ottensmeyer, PhD²
¹ Emergency Medicine, Boston Children’s Hospital/Harvard Medical School
² Simulation Group, Mass General Hospital/CIMIT/Harvard Medical School

MHSRS-810  Poster Session: 1 - Poster # 100
Tourniquet Master Training for Junctional and Inguinal Hemorrhage Control (TMT)
Peter W. Weyhrauch, PhD¹, James Niehaus, PhD¹, Max Metzger, BS¹, Shlomi Laufer, PhD²,³, Calvin Kwan, BS², Carla Pugh, MD, PhD²
¹ Charles River Analytics, Inc.
² Department of Surgery, University of Wisconsin-Madison
³ Department of Electrical Engineering, University of Wisconsin-Madison

MHSRS-1057  Poster Session: 1 - Poster # 101
A Bioprosthetic Simulation Wound Packing Trainer Equipped for Learner Biofeedback to Enhance Perishable Skills and Assess Procedure Competency
James E. Johnson, PhD¹, Robert Huebner², Anne L. McKeague, PhD²
¹ Center for Applied Learning, Wake Forest Innovation / Wake Forest University School of Medicine, Medical Center Blvd, Winston-Salem, NC
² Z-Medica LLC, Wallingford, CT

MHSRS-1129  Poster Session: 1 - Poster # 102
Development of an ED Thoracotomy Trainer
Dr. Marc DeMoya
Neurotrauma - Traumatic Brain Injury

MHSRS-507  Poster Session: 1 - Poster # 25
High medication burden in the Afghanistan/Iraq Veteran: CNS polypharmacy with TBI, PTSD, and depression
Mr. Garen Collett

TRAINING AND SKILLS SUSTAINMENT - MILITARY MEDICAL SKILLS ACQUISITION AND SUSTAINMENT

MHSRS-119  Poster Session: 1 - Poster # 103
Adaptive Virtual Reality Training to Optimize Military Medical Skills Acquisition and Retention
Ka-Chun Siu, PhD¹, Bradley J. Best, PhD², Jong Wook Kim, PhD³, Marsha Morien, MSBA¹,
Dmitry Oleynikov, MD¹, Frank E. Ritter, PhD⁴
¹ University of Nebraska Medical Center
² Adaptive Cognitive Systems, LLC
³ University of Central Florida
⁴ Penn State University
MHSRS-242  Poster Session: 1 - Poster #104
Effect Of Training Of Medical Cbrn Defense On The Level Of Skills Of Turkish Health Staff
Mesut Ortatutli, MD, PhD, Levent Kenar, MD, PhD, Sermet Sezigen, MD, PhD, Ilker Kunak, MD, PhD, Koray Eyyison, MD
Department of Medical CBRN Defense, Gulhane Military Medical Academy, Ankara, Turkey

MHSRS-432  Poster Session: 1 - Poster #105
Medical Training Evaluation and Report (MeTER) System Return On Investment Study
Emily Burns Anton BS1, John Anton MS1, Nadine Baez BS1, Erin Honold BS1, Christine Allen PhD2
1 Information Visualization & Innovative Research (IVIR) Inc., Sarasota, FL
2 US Army Research Laboratory Human Research & Engineering Directorate Simulation & Training Center (ARL HRED STTC)

MHSRS-465  Poster Session: 1 - Poster #106
An Evidence Based Burn Precepting Program Improves Transition to Specialty Practice
MAJ Johnnie Robbins

MHSRS-596  Poster Session: 1 - Poster #107
Ocular and craniofacial trauma treatment training simulator: hardware advances and user feedback
Gianluca De Novi1,2, Gregory J. Loan1, Marcello Gallerani1,3, Federico Pifferi1,3, Mark P. Ottensmeyer1,2
1 Simulation Group, Dept. of Radiology, Massachusetts General Hospital
2 Harvard Medical School
3 University of Modena

MHSRS-673  Poster Session: 1 - Poster #109
Mobile Platform to Evaluate Individual Surgeon Technical Skills
Colin Mackenzie MD1, Mark Fitzgerald MD2, Kon Mouzakis MS3, Joost Funke Kupper MS3,
George Hagegeorge1, Peter Hu PhD1, Evan Garofalo PhD1, Mary Njoku MD4, Mark Bowyer MD5,
Sharon Henry MD1, Stacy Shackelford MD6
1 University of Maryland STAR Research Center
2 The Alfred Hospital, Melbourne, Australia
3 Swinburne University, Melbourne, Australia
4 University of Maryland, Department of Anesthesiology
5 Uniformed Services University of Health Sciences, Bethesda, MD
6 C-STARS, Baltimore, MD

MHSRS-973  Poster Session: 1 - Poster #110
Physical Anatomical Trainer Instrumented for Education and Non-subjective Testing (PATIENT)
Anna M Galea, PhD, Minh Duong, MS, Eric Klem, MS, Eric Louis
Vivonics, Inc., Waltham, MA

MHSRS-977  Poster Session: 1 - Poster #111
Use of TeamSTEPPs as a Foundation to Prepare Army Forward Surgical Teams for Combat Teamwork
LTC Paul Mittelsteadt
TRAUMA CARE - EXTREMITY TRAUMA AND LIMB REGENERATIVE RESEARCH

MHSRS-37 Poster Session: 1 - Poster # 112
Double stranded RNA and TLR3 initiates hair follicle neogenesis after wounding
Amanda Nelson, PhD1,2, Adiya Katseff, BS1, Tabetha Ratliff, BS1, Sydney Resnik, BS1, Alex Whittam, BS1, Lloyd Miller, MD-PhD1, Luis Garza, MD-PhD1
1 Johns Hopkins School of Medicine, Baltimore, MD
2 Pennsylvania State School of Medicine, Hershey PA

MHSRS-59 Poster Session: 1 - Poster # 113
Predictors of Flap and Limb Salvage Failure
Jennifer Sabino, MD1, Donald J. Lucas, MD1, Raja Mohan, MD2, Patrick Basile, MD1, Robert Howard, MD1, Thomas Chung, DO1, Kerry Latham, MD1, Devinder P. Singh, MD2, Eduardo D. Rodriguez, MD2, Rachel Bluebond-Langner, MD2; Barry Martin, MD1; Ian Valerio, MD1
1 Walter Reed National Military Medical Center
2 University of Maryland Medical Center

MHSRS-60 Poster Session: 1 - Poster # 114
Patients and Outcomes Comparisons Between Civilian and Military Trauma Undergoing Limb Salvage
Jennifer Sabino, MD1, Raja Mohan, MD2, Donald J. Lucas, MD1, Patrick Basile, MD1, Robert Howard, MD1, Thomas Chung, DO1, Kerry Latham, MD1, Devinder P. Singh, MD2, Eduardo D. Rodriguez, MD2, Rachel Bluebond-Langner, MD2; Barry Martin, MD1; Ian Valerio, MD1
1 Walter Reed National Military Medical Center
2 University of Maryland Medical Center

MHSRS-130 Poster Session: 1 - Poster # 115
Effect of a Locally Injected Mesenchymal Stem Cells in a Murine Model of S. aureus Osteomyelitis
Dr. Nicole Ehrhart

MHSRS-165 Poster Session: 1 - Poster # 116
A Regenerative and Infection Resisting Xenograft for Wartime Wounds
David Cheung, PhD, Albert Grobe, PhD, Amy Rizzo, DVM, Timothy Descamps
International Heart Institute of Montana Foundation (Non-Profit Research Center)

MHSRS-317 Poster Session: 1 - Poster # 117
Bioartificial Dermal Substitutes in the Severely Traumatized Wounded Warrior – Updates and New Applications
CDR(s) Ian L. Valerio, MD, MC, USN1, LT Jonathon Seavey, MD, MC, USN2, 2LT Zachary Masters, MD, MC3
1 Plastic and Reconstructive Surgery Service, Walter Reed National Military Medical Center
2 Department of Orthopaedics, Walter Reed National Military Medical Center
3 Uniformed Services University of the Health Services, Bethesda, MD
Fibromodulin reprogrammed progenitor cells for skeletal muscle regeneration
Zhong Zheng, PhD1, Omar Velasco, MD2, Pu Yang, MD1,3, Elizabeth L Lord, MD2, Kambiz Khalilinejad, DDS1, Maxwell Murphy, BS1, Olivia Yue, BS1, Soyon Kim, BS1, Min Lee, MD1, Xinli Zhang, PhD, MD1, Kang Ting, DMD, DMSc1, Chia Soo, MD2
1 Dental and Craniofacial Research Institute and Section of Orthodontics, School of Dentistry, University of California, Los Angeles, Los Angeles, CA
2 UCLA Division of Plastic Surgery and Department of Orthopaedic Surgery and the Orthopaedic Hospital Research Center, University of California, Los Angeles, Los Angeles, CA
3 State Key Laboratory of Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu 610041, P. R. China

Physical Rehabilitation Improves Skeletal Muscle Function following Volumetric Muscle Loss Injury in Rats
Thomas J. Walters, Amit Aurora, Koyal Garg, Benjamin T. Corona
U.S. Army Institute of Surgical Research Extremity Trauma and Regenerative Medicine Joint Base San Antonio-Fort Sam Houston, TX

Female Combat Amputees have Higher Rates of PTSD Disability
MAJ Jessica Rivera

Development of a Cell Delivery Scaffold for Tissue Regeneration
Catherine L. Ward, PhD1, Ruijing Guo, MS2, Scott A. Guelcher, PhD2, Joseph C. Wenke, PhD2
1 United States Army Institute of Surgical Research, Extremity Trauma and Regenerative Medicine, Fort Sam Houston, TX
2 Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, TN

Surveying Femoral and Sciatic Nerve Damage using Raman Spectroscopy
Eric A. Elster, MD1; Jonathan A. Forsberg, MD2; Nicole J. Crane, PhD2
1 Uniformed Services University of Health Sciences
2 Naval Medical Research Center

Development of Novel Statin Formulations to Treat Reperfusion Injury
Gianny Rossini
Southwest Research Institute

Characterizations and Outcomes of Upper Extremity Amputees
David Tennent, MD1, Joshua Wenke, PhD2, Jessica Rivera, MD2, Chad Krueger, MD1
1 San Antonio Military Medical Center, San Antonio, TX
2 Institute of Surgical Research, San Antonio, TX
Dr. Karim Sarhane

Effect of a novel anti-inflammatory drug (dexamethasone liposome) on long-term recovery of ischemia/reperfusion-injured mouse skeletal muscle
Yu-Long Li1, Dong Wang2, Dongze Zhang1, Fang Yuan2, Huiyin Tu1, Jinxu Liu1, Robert Muelleman1
1 Department of Emergency Medicine, University of Nebraska Medical Center, Omaha, NE, USA
2 Department of Pharmaceutical Science, University of Nebraska Medical Center, Omaha, NE, USA

Comparison of Bone Marrow Aspiration Sites in the Spanish Boer Goat - Part of Development of a Tibial Defect Model
Ms. Cynthia Boehm

Risk Factors for Late Amputation in Combat-Related Pilon Fractures
CPT Husain Bharmal, MD, MC, USA, LT Louis Lewandowski, MD, MC, USN, LT Benjamin Chi, MD, MC, USN
Department of Orthopaedics, Walter Reed National Military Medical Center

MHC Class I Antigen Sharing Between Donors and Recipients Influences the Skin Tolerance of Vascularized Composite Allografts
Kumaran Shanmugarajah MD, Harrison Powell, David A. Leonard MD, Alex Albritton, Christopher Mallard, Mark A. Randolph MAS, David H. Sachs MD, Josef M. Kurtz PhD, Curtis L. Cetrulo MD, FACS
Transplantation Biology Research Center, Massachusetts General Hospital and Harvard Medical School, Building 149, 13th Street, Charlestown, Boston, MA 02129

Interim Analysis of Long Gap Median Nerve Regeneration Through Novel TissueEngineered Nerve Guides in a Non-Human Primate Model
Jacqueline M. Bliley1, Wesley N. Sivak1, Danielle M. Minteer1, Meghan M. McLaughlin1, Rich Liberatore1, Ryan N. Schroth1, Han Tsung Liao1, Trent Gause1, Tyler Simpson2, Jim Hokanson2, Casey Tompkins-Rhoades2, Greg Williamson1, Kia M. Washington1, Alex M. Spiess1, Douglas Weber2, Donald J. Crammond3,4, Kacey G. Marra KG1,2,3
1 Division of Plastic Surgery, University of Pittsburgh, Pittsburgh, PA
2 Department Bioengineering, University of Pittsburgh, Pittsburgh, PA
3 McGowan Institute for Regenerative Medicine
4 Department of Neurological Surgery
Injectable Keratin-based gel for rhBMP-2 delivery in a critical size defect model
Stefanie M Shiels, PhD1, Seth Tomblyn, PhD2, Lindsey Pattison, PhD2, Luke Burnett, PhD2, Joseph C Wenke, PhD1
1 U.S. Army Institute of Surgical Research, San Antonio, TX
2 KeraNetics, LLC

Use of microvascular fragments for improving regeneration in musculoskeletal defects
Jennifer McDaniel, PhD1, Marcello Pilia, PhD1, John Walker, MD2, Benjamin Corona, PhD1,
Christopher Rathbone, PhD1
1 Extremity Trauma and Regenerative Medicine, US Army Institute of Surgical Research, Fort Sam Houston, TX
2 University of Texas Health Science Center at San Antonio, San Antonio, TX

Microvascular fragments improve vessel density of allograft bone in vivo
Marcello Pilia, PhD1, Jennifer McDaniel, PhD1, Christopher Rathbone, PhD1
1 Extremity Trauma and Regenerative Medicine, US Army Institute of Surgical Research, Fort Sam Houston, TX

Volumetric muscle loss leads to permanent disability following extremity trauma
Benjamin T. Corona, PhD1, Jessica C. Rivera, MD1, Johnny G. Owens, MPT2, Joseph C. Wenke, PhD1,
Christopher R. Rathbone, PhD1
1 Extremity Trauma and Regenerative Medicine, US Army Institute of Surgical Research, Fort Sam Houston, TX
2 Physical Therapy Department, Center for the Intrepid, San Antonio Military Medical Center, San Antonio, TX

Tribological Effects of IL-1 Stimulation on Cartilage Explants: Impact of Recombinant Human Lubricin (rhPRG4)
Katherine Larson1, Khaled Elsaid, PhD2, Tannin Schmidt3, Braden Fleming1, Gregory Jay, MD1
1 Brown University, Providence, RI
2 MCPHS University
3 University of Calgary

Development of an Orthotopic Upper-Extremity Vascularized Allotransplant Model in Non-Human Primates
David A Leonard, MBChB1,2, Christopher Mallard, BS1, Kumaran Shanmugarajah, MBBS1,2,
Melissa Mastroianni, MD1,2, Alexander Albritton, BS1, Harisson Powell, BS1, Josef M Kurtz, PhD1,3,
Curtis L Cetrulo, Jr, MD, FACS,1,2
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2 Division of Plastic & Reconstructive Surgery, Massachusetts General Hospital/Harvard Medical School,
Boston, MA
3 Department of Biology, Emmanuel College, Boston, MA

Extremity injuries predominate in ten years of Royal Navy and Royal Marine casualties sustained in combat in Iraq and Afghanistan
LCDR Jowan Penn-Barwell
MHSRS-1061 Poster Session: 1 - Poster #138
Development of a Swine Model of Bi-Lateral Hind Limb Ischemia Reperfusion and Acute Organ Injury Achieved by Terminal Aortic Balloon Occlusion
Kira N. Long, MD1,2, Capt Thomas A. Heafner, MD3, CPT Clayton J. Lewis, MD3, Maj Brandon W. Propper, MD3,
Jerry R. Spencer, RVT1, James D. Ross, PhD1
1 59th Medical Wing, San Antonio, Texas, USA
2 Tulane University Department of Surgery, New Orleans, LA
3 San Antonio Military Medical Center, San Antonio, TX

MHSRS-1073 Poster Session: 1 - Poster #139
Expanded Autologous Minced Muscle Grafts Promote De Novo Regeneration after Volumetric Muscle Loss
Catherine L. Ward, Koyal Garg, Benjamin T. Corona
Extremity Trauma and Regenerative Medicine United States Army Institute of Surgical Research
3698 Chambers Pass, Bldg 3611 Fort Sam Houston, TX 78234

MHSRS-1131 Poster Session: 1 - Poster #140
Keratin Hydrogels as a Delivery System for Muscle Regeneration
Juliana Passipieri1, Hannah Baker1, Trevor Ham2, Caroline Stewart3, Seth Tomblyn4, Justin Saul2, George Christ1
1 Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC
2 Miami University, Department of Chemical, Paper, and Biomedical Engineering, Oxford, OH
3 University of Virginia, Charlottesville, VA
4 KeraNetics, LLC, Winston-Salem, NC

MHSRS-1154 Poster Session: 1 - Poster #141
Treatment of Extremity Compartment Syndrome Using Autologous Bone Marrow Mononuclear Cells in Swine
Hua Xie, MD1,2, Cynthia Gregory, PhD1,3, Michael Rutten, PhD1,2, Bo Zheng, MD1,2, Rose Merten, BS1,2,
Jeff Teach, BSN2, Ping-Cheng Wu, MS2, Bryan Laraway, BS1,2, Annabeth Rose, BS1,2, Teresa Malarkey, CVT1,2,
James Hunt, BS1,2 Rebecca Sarao, BS4 Kenton Gregory, MD1,2,3
1 Center for Regenerative Medicine, Oregon Health & Science University
2 Oregon Medical Laser Center, Providence St Vincent Medical Center
3 Oregon Biomedical Engineering Institute

MHSRS-1185 Poster Session: 1 - Poster #142
Early detection of Heterotopic Ossification using Raman imaging
Dr. Zachary Taylor

TRAUMA CARE - HEMORRHAGE CONTROL AND RESUSCITATION

MHSRS-39 Poster Session: 1 - Poster #143
C1 inhibitor improves survival, reduces resuscitation fluid requirement and tissue damage in swine model of traumatic hemorrhage
Jurandir J. Dalle Lucca1*, Jessica Slack2, Milomir Simovic2, Kevin Waldrep3, Jill Sondeen2, Michael Dubick2
1 Inflammation Modulation of Trauma Program 59 Medical Wing, Office of the Chief Scientist, Wilford Hall Ambulatory Surgical Center JBSA Lackland, TX 78236
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MHSRS-57  Poster Session: 1 - Poster # 144
A Randomized Trial of Intravenous Hydroxocobalamin Compared to Whole Blood for Hemorrhagic Shock
Vikhyat Bebarta, MD¹, Normalynn Garrett, PhD², Susan Boudreau, BSN², Maria Castaneda, MS³,
Lee Ann Zarzabal, MS³
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MHSRS-92  Poster Session: 1 - Poster # 145
The Effects Of A C1 Inhibitor On Inflammatory Responses In Brain From Swine Subjected To Traumatic Hemorrhage
Michael A Dubick, Yansong Li, Dana L Grubbs, Johnny L Barr, Jurandir J Dalle Lucca
U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston, TX 78234

MHSRS-102  Poster Session: 1 - Poster # 146
Centhaquin an effective resuscitative agent for hypovolemic shock
Anil Gulati

MHSRS-141  Poster Session: 1 - Poster # 147
A Micellar Colloid is Superior to Albumin for Resuscitation
Cuthbert Simpkins, MD
Vivacelle Bio, Inc.

MHSRS-149  Poster Session: 1 - Poster # 148
Comparisons of Normal Saline and Lactated Ringer’s in Normal and Hypotensive Resuscitation after Hemorrhagic Shock in Pigs
Wenjun Martini, Kevin Chung*, Michael Dubick
U.S. Army Institute of Surgical Research, JBSA, Ft Sam Houston, TX 78234
* Presenter

MHSRS-219  Poster Session: 1 - Poster # 149
A Comparison of Fibrinogen and Prothrombin Complex Concentrates to Correct the Coagulopathy of Trauma in a Rabbit Model of Hemorrhagic Shock
CDR Matthew Hannon, MD¹ LT Jacob Quail, MD¹ Capt Cara Pugliese, DVM² Kejian Chen, MD, PhD²
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MHSRS-222  Poster Session: 1 - Poster # 150
Validation of an ovine model of Acute Traumatic Coagulopathy
Michael C. Reade, MBBS DPhil¹,³, Natasha van Zyl, BVSc²,³, Elissa M. Milford, MBBS¹,²,³, Kiran Shekar ,MBBS²,
John Paul Tung, PhD², Kimble R. Dunster², Sara Diab², John F Fraser MBChB PhD²,³
¹ Royal Australian Army Medical Corps, Brisbane, Australia
² Critical Care Research Group, Prince Charles Hospital, Brisbane, Australia
³ University of Queensland, Brisbane, Australia
When randomized trauma trials and bias collide: The trouble with subgrouping on surrogates for severity
Deborah del Junco, PhD¹, Eileen Bulger, MD², Erin Fox, PhD¹, John Holcomb, MD¹, Karen Brasel, MD, MPH³, David Hoyt, MD⁴, James Grady, DrPH⁵, Sarah Duran, MS¹, Patricia Klotz, RN², Michael Dubick, PhD⁶, Charles Wade, PhD¹
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⁶ U.S. Army Institute of Surgical Research, San Antonio, TX

Evaluation of rapid wound sealing for control of junctional hemorrhage
Alex St. John, MD, Xu Wang, MD, Esther Lim, BS, Susan Stern, MD, Nathan White, MD
Division of Emergency Medicine, University of Washington, Seattle, WA, USA

Splenectomy Appears Necessary for Creating a Lethal Uncontrolled Hemorrhage Model with Limited Resuscitation in Swine
Bijan S. Kheirabadi, Irasema B. Terrazas, Nahir Miranda, Mary D. Gonzales, Jill L Sondeen, Michael A. Dubick
U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234

Test and Evaluation of Compression Bandages Using a Human Tissue Equivalent Mannequin Model
Bridget Endler, MS, Duane Cox
Naval Medical Research Unit San Antonio, San Antonio, TX

In trauma, standard ROTEM and TEG results are not similar
Sandro Rizoli, MD, PhD¹, Adic Perez Sanchez, MD¹, Pang Shek, PhD², Richard Grodecki, MD², Henry Peng, PhD²
¹ St Michael's Hospital, University of Toronto, Toronto, Ontario, Canada
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The Use of the Abdominal Aortic and Junctional Tourniquet (AAJT) Versus Combat Gauze (CG) in a Porcine Hemicorporectomy Model
Bradford Reynolds¹, Steven Shiver¹, Steven Holsten¹, John E. Lowry², Charles Moore¹, Troy Akers¹, James Black¹, Stefan Kazacos¹, Matthew Lyon¹
¹ Georgia Regents University
² Dwight David Eisenhower Army Medical Center

The Natural History and Effect of Resuscitation Ratio On Coagulation After Trauma
Lucy Z. Kornblith MD, Matthew E. Kutcher MD, Benjamin M. Howard MD MPH, Eric M. Campion, MD
Ryan F. Vilardi MS, Britney J. Redick BA, Mary F. Nelson RN MPA, Mitchell Jay Cohen MD
University of California San Francisco, San Francisco General Hospital, San Francisco, CA
MHSRS-720  Poster Session: 1 - Poster # 158
Optimization of microvascular perfusion recovery from hemorrhage with active plasma expanders resuscitation – in vivo studies in the hamster
Amy G. Tsai1, Fantao Meng2, Judith Martin3, Pedro Cabrales1, Seetharama A. Acharya2, Marcos Intaglietta1
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3 Department of Anesthesia and Intensive Care Medicine, Medical University of Innsbruck, Austria

MHSRS-741  Poster Session: 1 - Poster # 159
Beneficial effects of ‘pre-hospital’ vs immediate ‘in-hospital’ blood products during resuscitation in two models of severe military injury
Dr. Emrys Kirkman

MHSRS-800  Poster Session: 1 - Poster # 160
Is The Use Of Hydroxyethyl Starch Solutions Safe In Trauma Patients?
Dr. Casey Allen

MHSRS-815  Poster Session: 1 - Poster # 161
Micro-thromboelastography: validation of technology for portable and robust diagnostics in transfusion therapy
J.K. Fisher¹, R. Judith², R.M. Taylor¹, R. Superfine¹, M. Falvo²
¹ Rheomics Inc.
² Physics and Astronomy, University of North Carolina at Chapel Hill

MHSRS-827  Poster Session: 1 - Poster # 162
Modulation of acute inflammation using bio-inspired glycocalyx analogs
Dr. Nathan Shapiro

MHSRS-833  Poster Session: 1 - Poster # 163
Does Pfc Improve Resuscitation Outcome In Hemorrhagic Shock? Evaluating Hemodynamic, Acid-Base, And Inflammatory Markers In A Rabbit Model
Penny S Reynolds, PhD, Bruce D Spiess MD
Department of Anesthesiology, Virginia Commonwealth University Medical Center

MHSRS-889  Poster Session: 1 - Poster # 164
Isolated primary blast injury is not associated with acute coagulopathy of trauma in pigs
Nicolas PRAT¹,² Robbie MONTGOMERY¹ Andrew CAP¹ Jean-Claude SARRON² Casimir DESTOMBE² Philippe MAY² Pascal MAGNAN³
¹ U.S. Army Institute of Surgical Research, San Antonio, TX
² French Military Forces Institute of Biomedical Research (IRBA)
³ French-German Research Institute of Saint-Louis

MHSRS-915  Poster Session: 1 - Poster # 165
POLYTRAUMA, WITHOUT RESUSCITATION, LEADS TO ACUTE LUNG INJURY IN RATS
Xiaowu Wu, Martin Schwacha, Andrew Cap, Daniel Darlington
U.S. Army Institute of Surgical Research, Fort Sam Houston, TX 78234
TRANEXAMIC ACID MAY HAVE UNDESIRABLE ACTIONS IN SOME TRAUMA PATIENTS
Dr. Evan Valle

Detection of Coagulation Abnormalities Using a Handheld Thromboelastograph
Dr. Matthew Pearce

Effects of resuscitation fluids on endothelial glycocalyx (EG) and microvascular permeability studied by intravital microscopy: Integration of systemic and local parameters in vivo
Ivo, Torres Filho, MD PhD, Luciana, Torres, PhD, Christi, Salgado, BS, Celina, Valdez, BS, Jill, Sondeen, PhD, Michael, Dubick, PhD
U.S. Army Institute of Surgical Research, San Antonio, TX

In Vivo Microvascular Effects Associated With Prehospital 0.9% Saline (Ns) And 3% Hypertonic Saline (Hts) Resuscitation Regimen In A Hemorrhagic Shock (Hs) Model In Rats
Christi Salgado, Celina Valdez, Jill Sondeen, PhD, Michael Dubick, PhD, Ivo Torres Filho, MD, PhD
Damage Control Resuscitation, U.S. Army Institute of Surgical Research, San Antonio, TX

Hydrophobically-Modified Chitosan Foam: Description and Efficacy
Matthew B. Dowling, PhD¹, William Smith², Peter Balogh², Michael J. Duggan, DVM², Ian C. MacIntire³,
Erica Harris¹, Srinivasa R. Raghavan, PhD³, LTC David R. King, MD²
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³ Department of Chemical & Biomolecular Engineering, University of Maryland, College Park, MD 20742

Analysis of effectiveness of Terlipressin and Ephedrine in a Hemorrhagic Shock Model
MAJ Murat Durusu

The THOR Tourniquet
Mr. Anton Hunt

TRAUMA CARE - PREHOSPITAL AND TACTICAL COMBAT CASUALTY CARE
Development of a novel large animal model of acute traumatic ventral spinal cord injury: initial experience
CPT Rory Petteys

Test and Evaluation of the Saros™ Battlefield Portable Oxygen Concentrator at Ambient Pressure Extremes
David Fothergill, PhD, Allison Loiselle, BSc
Naval Submarine Medical Research Laboratory, Box 900, Groton, CT
**MHSRS-90**  Poster Session: 1 - Poster # 175

**Effectiveness of the Combat Pelvic Protection System in the Prevention of External Genital Injuries: An Observational Study**

John S. Oh MD¹, Nhan V. Do MD², Mary Clouser PhD, MPH³, Jennifer Phillips, MPH³, Adrian Katschke⁴, Jon Clasper MBA DPhil DM FRCSEd⁴, Eric J. Kuncir, MD, MS, FACS⁵

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⁴ Imperial College London, South Kensington Campus, United Kingdom
⁵ Naval Medical Center, South Kensington Campus, United Kingdom

**MHSRS-192**  Poster Session: 1 - Poster # 176

**Performance of life-saving interventions in trauma patients is associated with data quality in the prehospital and clinical environments**

Nehemiah T. Liu MS¹, John B. Holcomb MD², Charles E. Wade PhD², Mark I. Darrah PhD³, Jose Salinas PhD¹

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**MHSRS-238**  Poster Session: 1 - Poster # 177

**IV access in the prehospital settings, what can be learned from point of injury experience**

Lt Col Elon Glassberg, Israeli Defense Force

**MHSRS-239**  Poster Session: 1 - Poster # 178

**Eye injury in the Israeli Defense Force: “An ounce of prevention is worth a pound of cure”**

Lt Col Elon Glassberg, Israeli Defense Force

**MHSRS-254**  Poster Session: 1 - Poster # 179

**Profile of Early Immune and Coagulation Response to Trauma at a Level 1 Trauma Center in San Antonio Texas**

Jurandir J. Dalle Lucca¹*, Anthony Pusateri², Manoj Valiyaveettil³, Jessica Slack³, Janet Mccarthy⁴, Martin Schwacha⁴, Andrew Cap⁵, David Baer³, Michael Dubick³

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**MHSRS-267**  Poster Session: 1 - Poster # 180

**Respiratory Pump Contributes to Increased Physiological Reserve for Compensation during Simulated Hemorrhage**

Gary W. Muniz¹, Paula Y. S. Poh, MA², Robert Carter III, PhD¹, Carmen Hinojosa-Laborde, PhD¹, Victor A. Convertino, PhD¹

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² University of Illinois at Urbana-Champaign
MHSRS-270  Poster Session: 1 - Poster # 181  
Variability in mechanisms associated with tolerance to progressive reductions in central blood volume: role for the compensatory reserve index  
Victor A. Convertino, PhD, Carmen Hinojosa-Laborde, PhD, Robert Carter III, PhD  
U.S. Army Institute of Surgical Research, Ft Sam Houston, TX

MHSRS-272  Poster Session: 1 - Poster # 182  
Gender Differences in Muscle Sympathetic nerve activity (MSNA) and Arterial Pressure Oscillations During Progressive Central Hypovolemia  
Robert Carter III, PhD, Carmen Hinojosa-Laborde, PhD, Victor A. Convertino, PhD  
U.S. Army Institute of Surgical Research, Ft Sam Houston, TX

MHSRS-361  Poster Session: 1 - Poster # 183  
The Vitamin B12 Analog Cobinamide is an Effective Hydrogen Sulfide Antidote in a Lethal Rabbit Model  
Sarah Azer¹, Sebastian BENAVIDES MD¹, Sari MAHON PhD¹, Jangwoen LEE PHD¹, David YOON MS¹, David MUKAI BS¹, Marius VISEROI MD¹, Adriano CHAN BS³, Jingjing JIANG PhD³, Navneet NARULA MD⁴, Charlotte ALEXANDER MS¹, Gerry BOSS MD³, Matthew BRENNER MD¹,²  
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⁴ Department of Pathology and Laboratory Medicine, Weill Cornell Medical College, New York, NY, USA

MHSRS-455  Poster Session: 1 - Poster # 184  
Intelligent ultrasound methods for automated abdominal blood pool detection  
Balasundar Raju¹, Shiwei Zhou¹, Shougang Wang¹, Amjad Soomro¹, Jingping Xu¹, Zachary Forbes¹, Mckee Poland², David Houston², Tony Gades²  
¹ Philips Research  
² Philips Healthcare

MHSRS-498  Poster Session: 1 - Poster # 185  
Characterization and Comparison of Combat-Related Injuries in Women During OIF and OEF  
Judy L. Dye, MS; Susan L. Eskridge, PhD; Mary C. Clouser, PhD; Michael R. Galarneau, MS  
Naval Health Research Center

MHSRS-504  Poster Session: 1 - Poster # 186  
Prehospital use of Hemostatic Bandages and Tourniquets; Translation from Military Experience to Implementation in Civilian Trauma Care  
John Zietlow BA¹, Scott Zietlow MD², David Morris MD², Kathleen Berns RN³, Donald Jenkins MD²  
¹ Creighton University, Omaha, NE  
² Division of Trauma, Critical Care and General Surgery, Mayo Clinic, Rochester, MN  
³ Medical Director, Mayo Clinic Medical Transport, Rochester, MN  
⁴ Mayo Clinic Medical Transport, Rochester, MN
Brain tissue oxygenation following traumatic brain injury in rodent model using phosphorescence quenching method
Saad Habib-E-Rasul Mullah, MD, PhD1, Anke Scultetus, MD1,2, Biswajit Saha, MD1
Richard McCarron, PhD1,2, Charles Auker, MD, PhD1,2, Paula Moon-Massat,DVM1
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Needle Thoracostomy for Tension Pneumothorax: The Israeli Defense Force experience
Nadler R1, Dagan S1,2, Tien H1,2,3, Cap AP1, Glassberg E1
1 Trauma & Combat Medicine Branch, Surgeon General’s Headquarters, Medical Corps, Israel Defense Forces, Ramat Gan, Israel
2 Department of emergency medicine, Ben Gurion University of the Negev, Beer Sheva, Israel
3 U.S. Army Institute of Surgical Research, Fort Sam Houston, Texas, USA

STATfusion: Ultra-Portable, Easy-to-Use Intravenous (IV) Fluid Delivery Device
Dr. Anup Salgia

Quantitative Anatomy of the Greater Trochanter and the Common Femoral Artery as to Guide Pelvic Binder and Junctional Tourniquet Placement
LTC John Ritter, MD1, COL (Ret) John F. Kragh, Jr., MD2, COL Kirby Gross, MD2
1 San Antonio Military Medical Center, San Antonio, TX
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The Utility of Routine Chest X-rays During the Initial Stabilization of Trauma Patients
Steven, Schauer, MD1, Peter Cuenca, MD2, Michael, Cheung, MD2
1 Baynes-Jones Army Community Hospital
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Evaluation of Adenosine Lidocaine Magnesium (ALM) as a resuscitation adjunct in models of military trauma
Sarah Watts, Callie Wilson, Alun Carter, Emrys Kirkman
Biomedical Sciences, DSTL Porton Down, Salisbury, Wiltshire, SP4 0JQ, UK

Department of Defense Programmatic Overview of Chest Seal Evaluation
Greggory J. Housler, MS1, Kevin Curry, MS1, Michael Husband, MS1, Richard McCaron, PhD2
David Baer, PhD3, COL Robert Gerhardt, MD3, Daniel O. Kennedy, MS1, Francois Arnaud, PhD3
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3 U.S. Army Institute for Surgical Research (USAIISR), Fort Sam Houston, TX
MHSRS-860  Poster Session: 1 - Poster # 195
Military Human Factors Testing and Development of a Rugged Foam Delivery System for Treatment of Noncompressible Abdominal Hemorrhage
David R King¹, Upma Sharma², Adam Rago², Greg Zugates², Rany Busold², Marc Helmick², John Beagle¹, John Marini³, Mike Duggan¹
¹ Massachusetts General Hospital
² Arsenal Medical

MHSRS-958  Poster Session: 1 - Poster # 196
Oxygen Flow Rate Requirements in Critically Injured Adults
Jason McMullan, MD¹, Kimberly Ward Hart, MS¹, Chris Barczak, RN¹, Christopher J Lindsell, PhD¹, Richard Branson, MSc, RRT ², Jay Johannigman, MD²
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² University of Cincinnati, Department of Surgery

MHSRS-992  Poster Session: 1 - Poster # 198
Evaluation of Prehospital Pelvic Binder Usage in US Military Casualties with Pelvic Fractures
Col Chetan U. Kharod MD, MPH, 1LTC Creighton C. Tubb, MD² COL Kirby Gross, MD³, COL (ret) John F. Kragh, Jr, MD⁴
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MHSRS-993  Poster Session: 1 - Poster # 199
Delivering Oxygen in High Altitude Helicopter MEDEVAC Missions
Charles Paschal, Christine Wasner CTR, Nicolle Perez CTR, William Sovitsky, Brian Dacanay CTR, Henry Kobrinski PA-C
U.S. Army Medical Materiel Agency, Ft. Detrick, MD

MHSRS-1146  Poster Session: 1 - Poster # 200
Just-in-time Remotely Mentored Tele-ultrasound Guidance of Junctional Hemorrhage Control
Major Andrew W Kirkpatrick,CD MD MHSC FRCSC FACS¹,²,³, Jessica McKee,BA,MSc⁴, Colonel (RET) Anthony J LaPorta, MD, FACS⁵
¹ Canadian Forces Medical Services;
² Department of Surgery Foothills Medical Centre, Calgary, Alberta
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⁴ Regional Trauma Services Foothills Medical Centre, Calgary, Alberta
⁵ Innovative Trauma Care, Edmonton, Alberta
⁶ Professor of Surgery and Military Medicine, Rocky Vista School of Medicine, Parker, Colorado
Inter-observer reliability of reporting of Injury Severity Scoring following combat trauma; different perspectives, different values?
Iain M Smith MB BChir MSc MRCSEd¹²³, David N Naumann MB BChir MRCS¹, Paul Guyver FRCS⁴, Jonathan Bishop PhD³, Jonathan B Lundy MD⁵, Douglas M Bowley MBBS FRCS¹
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2014 MHSRS POSTER PRESENTATIONS - POSTER SESSION 2

BIOINFORMATICS - SUPPORTING WARRIOR CARE

MHSRS-74 Poster Session: 2- Poster # 2
An Advanced Virtual Environment Support Space for Injured Service members
Mrs. Ashley Fisher

MHSRS-336 Poster Session: 2 - Poster # 3
Results of a Retrospective Electronic AKIN Alert Analysis
Ian, Stewart, Maj¹, David, Luellen², Jonothan Sosnov, Maj¹, Maria, Serio-Melvin, MS², Kevin, Chung, LTC², Jose, Salinas, PhD²
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² U.S. Army Institute of Surgical Research, San Antonio, TX

MHSRS-550 Poster Session: 2 - Poster # 4
Information standards to improve emergency care : the HL7 Data Elements for Emergency Department Systems (DEEDS)
Laura Heerman Langford, PhD, RN¹, Peter J. Park, MD²
¹ Homer Warner Center for Informatics Research, Intermountain Healthcare, UT
² Department of Emergency Medicine, Naval Medical Center San Diego, San Diego CA

MHSRS-848 Poster Session: 2 - Poster # 5
Bioinformatics and Computer Modeling to Facilitate Management of Swallowing Disorders in Wounded Warriors
Nancy Solomon, PhD¹, Angela Dietsch, PhD¹, Katie Dietrich-Burns, MS¹,², William Pearson, PhD³, Edda Styrmisdottir⁴,Chris Armao, PhD⁴, Laura Cord, MS¹, WJB Lewis, MS¹, Gerald Grant, CAPT, DMD¹, Sid Fels, PhD⁵
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⁵ University of British Columbia

MHSRS-1175 Poster Session: 2 - Poster # 6
Web-Based Clinical Scenario Repository (CSR) to Improve Patient Safety
Diego Alanso, Jeff Plourde, Julian Goldman MD
MD PnP Program, Massachusetts General Hospital, Boston, MA

MHSRS-1181 Poster Session: 2 - Poster # 7
OpenICE: An Open, Interoperable Medical Device Integration Platform for Clinical, Engineering, and Technology Research, and App Deployment
Jeff Plourde, Dave Arney, Julian Goldman, MD
MD PnP Program, Massachusetts General Hospital, Boston, MA
INFECTIOUS DISEASE AND COMPLICATIONS - WOUNDS/SKIN/SOFT TISSUE INFECTIONS

MHSRS-104  Poster Session: 2 - Poster # 8
Proteolytic Regulation of the Intestinal Epithelial Barrier: Mechanisms and Interventions
Marguerite S. Buzza¹, Gregory D. Conway¹, Erik W. Martin¹, Terez Shea-Donohue², Toni M. Antalis¹
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MHSRS-175  Poster Session: 2 - Poster # 9
Antifungal Wound Penetration of Amphotericin B and Voriconazole in Two Blast-Injured Combat Casualties
Kevin S. Akers MD¹,², Krista L. Niece¹, Katrin Mende PhD³, Kevin K. Chung MD¹, Clinton K. Murray²
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³ Infectious Disease Clinical Research Program, Bethesda MD 20814

MHSRS-215  Poster Session: 2 - Poster # 10
Antimicrobial blue light for control of combat-related wound infections
Dr. Tianhong Dai

MHSRS-250  Poster Session: 2 - Poster # 12
Small molecule approaches to eradicate bacterial biofilms and improve wound healing
Crystal L. Jones, PhD¹, Mitchell G. Thompson¹, Yonas Alamneh¹, Shweta Singh¹, Rania Abu-Taleb¹, Yuanzheng Si¹, Leila Casella¹, Tyler L. Harris², Roberta J. Melander, PhD², Christian Melander, PhD², Vu Truong, PhD³, Jeff Anderl, PhD³, Eric Patzer, PhD³, LTC Eric J. Wagar, PhD³, Daniel V. Zurawski, PhD¹
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MHSRS-278  Poster Session: 2 - Poster # 13
Topical Nanoemulsion Treatment Reduces Bacterial Counts and Inflammation in Methicillin-Resistant Staphylococcus Aureus Infected Wounds
Suhe Wang, Ph.D¹, Zhengyi Cao¹, John Lipuma, MD¹, Yongyi Fan¹, Susan Ciotti, Ph.D², James Baker Jr., MD¹
¹ University of Michigan, Ann Arbor, MI, 48109
² Nanobio, Ann Arbor, MI, 48105

MHSRS-292  Poster Session: 2 - Poster # 14
The Potential Use of Predatory Bacteria to Control Wound Infections
Davra Viralkumar¹, Somdatta Mukherjee¹, Hanan Gancz², Daniel V Zurawski², Daniel E Kadouri¹
¹ Department of Oral Biology, Rutgers School of Dental Medicine, Newark, NJ 07101
² Department of Wound Infections, Walter Reed Army Institute of Research, Silver Spring, MD 20910

MHSRS-307  Poster Session: 2 - Poster # 15
Enhancing Fielded Products: DHP Budget Activity 6.7- Supported Research
Joan Cmarik, PhD, James B. Phillips, PhD, Patricia A. Reilly, PhD
Office of the Principal Assistant for Acquisition, U.S. Army Medical Research and Materiel Command, Ft. Detrick, MD 21702
**Sideromycins, Novel Antibiotics and Delivery Systems That Specifically Target Infections in Wounded Soldiers**

Marvin Miller, PhD¹, Yun-Ming Lin, PhD¹, Manuka Ghosh, PhD¹, Patricia Miller¹, Ute Möllmann, PhD¹, Luke Burnett, PhD², Seth Tomlyn, PhD², Robert Christy, PhD³

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²KeraNetics, LLC, 200 East First Street, Suite 102, Box #4, Winston Salem, NC 27101
³Extremity Trauma Research and Regenerative Medicine, US Army Institute of Surgical Research, 3698 Chambers Pass, BHT-1, Fort Sam Houston, TX 78234

**Conjunctival Goblet Cells Protect the Ocular Surface from Infection by Responding to Toxigenic Compared to Commensal Bacteria**

Darlene Dartt¹,², Dayu Li¹,³, Robin Hodges¹,³, Michael Gilmore², Meredith Gregory-Ksander¹,³

¹Schepens Boston, MA Eye Research Institute/Massachusetts Eye and Ear, Boston MA
²Massachusetts Eye and Ear, Boston MA
³Department of Ophthalmology, Harvard Medical School, Boston MA

**Therapeutic Activities of Antimicrobial Peptides KS-30 and KR-20 Against Multidrug-Resistant Acinetobacter baumannii Wound Infections**

Dr. Xiaorong Feng

**Delivery of broad-spectrum antibiotic with bio-responsive polymer wound dressing**

Alexei Kazantsev, PhD¹, Joel Gil², Jose Valdes², Stephen Davis², Peter Mariner, PhD¹

¹Mosaic Biosciences, Boulder, CO, USA
²University of Miami Miller School of Medicine Department of Dermatology & Cutaneous Surgery, Miami, FL, USA

**Comparative Evaluation of Commonly Used Antimicrobial Wound Dressings and Nitric Oxide Treatment of Infected and Non-Infected Full-Thickness Wounds on Swine (Sus scrofa)**

MAJ Robert D. Brodnick, PhD¹, MAJ Jason C. Barnhill, PhD¹, Lisa M. Pierce, PhD¹, Karen W. Matsumoto, BS¹, Michael Lustik, MS¹, MAJ Sandra VanHorn, MD¹, COL Christina M. Belnap, MD², Nathan A. Stasko, PhD³

¹Tripler Army Medical Center Department of Clinical Investigation
²Tripler Army Medical Center Department of Pathology and Laboratory Services
³Novan Therapeutics Inc.

**Antimicrobial Efficacy of a Nitric Oxide-Releasing Drug Candidate in vitro and in vivo Utilizing an Infected Porcine Partial Thickness Burn Wound Model**

Kimberly Coggan, PhD¹, Joel Gil², Jose Valdes², Ryan True², Michael Solis², Stephen Davis², Nathan Stasko, PhD²

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²Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, Miami, FL
MHSRS-894  Poster Session: 2 - Poster # 22
The Good, the Bad, the Ugly: the expedited development of an Invasive Fungal Infection (IFI) Clinical Practice Guideline (CPG)
Jigar Patel, Carlos Rodriguez, Debra Malone
Walter Reed National Military Medical Center, Bethesda, MD

MHSRS-895  Poster Session: 2 - Poster # 23
Infectious Complications associated with combat related Periarticular Tibia fractures
CDR(s) Ian L. Valerio, MD, MC, USN1, CPT Husain Bharmal, MD, MC, USN2
1 Plastic and Reconstructive Surgery Service, Walter Reed National Military Medical Center
2 Department of Orthopaedics, Walter Reed National Military Medical Center

MHSRS-938  Poster Session: 2 - Poster # 24
Antibiotic-loaded Keratin Hydrogels Inhibit Infection in a Full-thickness Porcine Excision Wound
Daniel Roy, PhD1,2, Seth Tomblyn, PhD2, Mary Ellenburg2, Luke Burnett, PhD2, Justin Saul, PhD3, Robert Christy, PhD1
1 U.S. Army Institute of Surgical Research, Fort Sam Houston, TX
2 KeraNetics, LLC, Winston-Salem, NC
3 Miami University, Oxford, OH

MHSRS-940 Poster Session: 2 - Poster # 25
Prevalence of Panton Valentine Leukocidin positive and Methicillin Resistant Staphylococcus aureus isolated in the British Field Hospital Laboratory in Afghanistan since 2011
Emma Hutley1, Penelope Johnstone1, Jason Biswas1, Katie Hardy2
1 Centre Defence Pathology, Royal Centre Defence Medicine, Birmingham, UK
2 Institute of Microbiology and Infection, University of Birmingham, Birmingham, UK

MHSRS-1067 Poster Session: 2 - Poster # 26
Pilot clinical evaluation of surgical site infections with a novel handheld fluorescence imaging device
Jo Hoeflok1, Liis Teene2, Emilie Chamma2, Dr. Ralph S. DaCosta2
1 Division of General Surgery and Gastroenterology, Specialized Complex Care, St. Michael’s Hospital, Toronto, Ontario, Canada
2 Princess Margaret Cancer Centre and Techna Institute, University Health Network, Toronto, Ontario, Canada

MHSRS-1174 Poster Session: 2 - Poster # 27
An informatics approach to identify A. baumannii resistance island signatures
Agnes Chan, Jessica Depew, Yongwook Choi, Derrick E. Fouts
J. Craig Venter Institute, Rockville, MD

Christine Mac Donald, PhD, Ann Johnson, Linda Wierzechowski RN, Elizabeth Kassner, RN, Tess Stewart, RN, Elliot Nelson, MD, Nicole Werner, PhD, Octavian Adam, MD, Dennis Rivet, MD, John Oh, MD, Stephen Flaherty, MD, David Zonies, MD, Raymond Fang, MD, David Brody, MD PhD

1 Washington University, Saint Louis, MO
2 Landstuhl Regional Medical Center, Landstuhl, Germany
3 Naval Medical Center Portsmouth, Portsmouth, VA

Investigation of the concussion mechanism: An end-to-end model that translates external measures to internal neurologic injury for head impact

Melissa Gibbons, PhD, Pi Phohomsiri, PhD, Vladislav Volman, PhD, Jianxia Cui, PhD, Darrell Swenson, PhD, David Shelley, PhD, Jessica Wong, MS, Kiran Mathews, MS, James Stuhmiller, PhD

L-3/ATI

Repeated Low Level Blast Exposure: Human Subjects Studies

Walter Carr, PhD, Matthew LoPresti, PhD, Gary Kamimori, PhD, James Stone, MD PHD, Charmaine Tate, MD, Elena Polejaeva, BS, Lee Ann Young, MA, Angela Yarnell, PHD, Tim Wiliiko, PHD, Uade da Silva, PHD, Eric Wassermann, MD, Richard McCarron, PHD

1 Walter Reed Army Institute of Research
2 University of Virginia
3 New Zealand Defence Force
4 National Institute of Neurological Disorders & Stroke
5 Naval Medical Research Center
6 Applied Research Associates

Role Of Transcranial Doppler Ultrasound In The Management Of Wartime Traumatic Brain Injury

Alexander Razumovsky, Teodoro A. Tigno, Efim Kouperberg, Randy S. Bell, Meryl A. Severson, Francis L. McVeigh, Rocco A. Artmonda

1 Sentient NeuroCare Services, Inc.
2 Walter Reed National Military Medical Center
3 Telemedicine & Advanced Technology Research Center
4 Georgetown University Medical Center

Perfluorocarbons (Oxycyte) improves neuronal survival and neurobehavioral recovery after traumatic spinal cord injury.

Adly Yacoub, Seda Bourikian, Kristina Fernandez, Mary-Grace Hajec, Harold Young, Bruce Mathern

1 VCU Health System, Department of Neurosurgery
2 VCU School of Medicine
MHSRS-266  Poster Session: 2 - Poster # 34  
The Defense and Veterans Brain Injury Center ‘15-Year Studies’: Update, Progress, and Preliminary Analyses  
Louis M. French¹,²,³, Rael T. Lange¹,²,⁵, Tracey A. Brickell¹,²,³  
¹ Defense and Veterans Brain Injury Center, Bethesda, MD, USA  
² Walter Reed National Military Medical Center, Bethesda, MD, USA  
³ Uniformed Services University of the Health Sciences, Bethesda, MD, USA  
⁴ Center for Neuroscience and Regenerative Medicine, Bethesda, MD, USA  
⁵ University of British Columbia, Vancouver, BC, Canada

MHSRS-343  Poster Session: 2 - Poster # 35  
A Natural History Approach to Uncomplicated Mounted IED Blast mild Traumatic Brain Injuries  
Jacob Norris¹, Jay Haran², Daniel Houlihan³, Alexis Gage¹, Ashraful Haque¹  
¹ Neurotrauma Department, Navy Medical Research Center  
² Navy Experimental Diving Unit  
³ Tufts University, Department of Occupational

MHSRS-379  Poster Session: 2 - Poster # 36  
Attitudes Toward Symptom Reporting for Potential Mild Traumatic Brain Injury Among Deployed Navy Personnel  
Emily Schmied¹, Susan Hilton², Genieleah Padilla¹, Jennifer McAnany², Marcus Taylor, PhD¹  
¹ Naval Health Research Center, Warfighter Performance Department  
² Naval Health Research Center, Deployment Health Department

MHSRS-389  Poster Session: 2 - Poster # 37  
A Comparative Evaluation of UCH-L1 as a Blood Biomarker for Concussed and Non-Concussed Cohorts in a Combat Zone  
Walter Carr, PhD¹, Denise Milhorn, PhD¹, Jonathan Elliot, MD¹, Nicholas Rogers ¹, Robert Brodnick, PhD¹,  
Misha Harrell, DO², Brett Bechtel, MD², Carl Freeman, MD², Bradford Whitcomb, MD³, Michael Russell, PhD⁴,  
Kara Schmid, PhD⁵, Frank Tortella, PhD⁵, Dallas Hack, MD⁶  
¹ 1st Marine Logistics Group Forward  
² 651st Expeditionary Aeromedical Evacuation Squadron  
³ Joint Combat Casualty Research Team  
⁴ Army Rehabilitation & Reintegration Division  
⁵ Walter Reed Army Institute of Research  
⁶ U.S. Army Medical Research and Materiel Command, Ft Detrick, MD

MHSRS-401  Poster Session: 2 - Poster # 38  
Global metabolomics profiling reveals metabolic dysregulation, oxidative stress and neurotransmission alteration in rats subjected to mild concussive head injury  
Ying Deng-Bryant, PhD, Lai Yee Leung, PhD, Ryan Readnower, PhD, Weihong Yang, MD, Deborah Shear, PhD,  
Frank Tortella, PhD  
Walter Reed Army Institute of Research

MHSRS-425  Poster Session: 2 - Poster # 39  
Reduced Anti-correlations Between Cingulo-opercular and Default Mode Networks in Individuals with Chronic Traumatic Brain Injury Following Strategy-based Reasoning Training  
Kihwan Han, PhD¹, Sandra B. Chapman, PhD¹, Daniel C. Krawczyk, PhD¹,²  
¹ Center for BrainHealth, The University of Texas at Dallas, Dallas, TX, USA  
² Department of Psychiatry, The University of Texas Southwestern Medical Center at Dallas, Dallas, TX, USA
MHSRS-429  Poster Session: 2 - Poster # 40
Confounders of mild traumatic brain injury (mTBI) visual tracking assessment
Umesh Rajashekar, PhD1, Jun Maruta, PhD1, Nick Seara1, Peter Modera1, Vincent Dodson1, Jennifer Nauheim1, Jianliang Tong, PhD1, Lisa A. Spielman, PhD1, Jamshid Ghajar, M.D., PhD1,2
1 Brain Trauma Foundation
2 Stanford University School of Medicine

MHSRS-452  Poster Session: 2 - Poster # 41
Neurosensory assessments of concussion with cortical metrics
Mark Tommerdahl, Oleg Favorov, Jameson Holden, Eric Francisco, Richard Nguyen
University of North Carolina

MHSRS-460  Poster Session: 2 - Poster # 42
Assessment of Secure Mobile Messaging Usability for Traumatic Brain Injury
Holly Pavliscsak, MHSA1,2
1 MRMC TATRC Mobile Health Innovation Center, Ft Gordon, GA
2 The Geneva Foundation

MHSRS-545  Poster Session: 2 - Poster # 44
The Defense Automated Neurocognitive Assessment (DANA) tool is sensitive to concussive injury in theater
Corinna Lathan1, Emma Roach1, Jack Tsao2, James Spira3, Aimee Alphonso4, Monica Tung4
1 AnthroTronix Inc.
2 United States Navy Bureau of Medicine and Surgery
3 U.S. Department of Veterans Affairs, National Center for PTSD
4 Walter Reed National Military Medical Center

MHSRS-579  Poster Session: 2 - Poster # 45
Military Helmets May Provide Little Protection Against Traumatic Brain Injury
John Lloyd, PhD, Joseph Gutmann, MD
James A. Haley Veterans Hospital, Tampa, FL

MHSRS-601  Poster Session: 2 - Poster # 46
Visual dysfunction in warfighters during different stages following blast and non-blast mTBI
LTC José E. Capó-Aponte, OD, PhD1,2, Kendra Jorgensen-Wagers, PhD3, SPC Josue Sosa1, MAJ David V. Walsh, OD, PhD1, Gregory Goodrich, PhD4, Leonard A. Temme, PhD1
1 Visual Protection and Performance Division, U.S. Army Aeromedical Research Laboratory, 6901 Andrews Ave, Fort Rucker, AL 36330
2 Optometry Department, Womack Army Medical Center, 2817 Reilly Rd; Stop A, Fort Bragg, NC 28310
3 Traumatic Brain Injury Clinic, Landstuhl Regional Medical Center, Germany, APO AE 09180
4 Psychology Service & Western Blind Rehabilitation Center, Veterans Affairs Palo Alto Health Care System, 795 Willow Road Bldg. T-365, Menlo Park, CA
MHSRS-604  Poster Session: 2 - Poster # 47
Functional MRI investigation of compromised neural circuitry associated with emotional threat in Soldier with postconcussion syndrome
MAJ Michael Dretsch¹,², Gopi Deshpande³, Tom Denney¹, Jeff Katz³
¹ National Intrepid Center of Excellence, Bethesda, MD
² U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL
³ Auburn University, AL

MHSRS-612  Poster Session: 2 - Poster # 48
Combined hypoxemia and hemorrhagic shock worsen motor but not cognitive functions following penetrating ballistic-like brain injury (PBBI) in rats
Lai Yee Leung, Ying Deng-Bryant, Jesse Flerlage, Megan Winter, Francis Bustos, Deborah Shear, Frank Tortella
Brain Trauma Neuroprotection and Neurorestoration, Center for Military Psychiatry & Neuroscience, Walter Reed Army Institute of Research

MHSRS-619  Poster Session: 2 - Poster # 49
Endothelial Glycocalyx Degradation After Repeated Low Intensity Blast Exposure is Implicated in Blast-induced Behavioral Deficits
Aaron Hall, Mirian Mendoza, Michael Shaughness, Eric Maudlin-Jeronimo, Richard McCarron, Stephen Ahlers
Neurotrauma Department, Naval Medical Research Center

MHSRS-624  Poster Session: 2 - Poster # 50
Intravenously Administered Nanoparticles Improve Behavioral And Physiological Outcomes Following Blast Trauma
Pamela VandeVord, PhD¹,², William Hubbard¹, Margaret Lashof-Sullivan², Sujith Sajja¹, Kristyn Atkins², Christina Hall¹, Erin Shoffstall², Erin Lavik, ScD²
¹ School of Biomedical Engineering and Sciences, Virginia Tech University, Virginia, USA.
² Department of Bio medical Engineering, Case Western Reserve University, Cleveland, OH USA
³ Research Services, Salem VAMC, Salem, VA USA

MHSRS-650  Poster Session: 2 - Poster # 51
Longitudinal profile of sensorimotor deficits following single and repeated projectile concussive injury (PCI)
Chanyang Rho¹, Jesse Flerlage¹, Weihong Yang¹, Casandra Cartagena, PhD¹, Angela Yarnell, CPT², Sean Marcisic, CPT², Victor Zottig, CPT³, Kara Schmid, MAJ¹, Paul Bliese, COL¹, Frank Tortella, PhDST¹, Deborah A. Shear, PhD¹
¹ Brain Trauma Neuroprotection and Neurorestoration Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring MD
² Behavioral Biology Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research, Silver Spring MD
³ Division of Experimental Therapeutics, Walter Reed Army Institute of Research, Silver Spring, MD

MHSRS-681  Poster Session: 2 - Poster # 52
Delayed consciousness, sensory-motor deficits, and GFAP levels in repeated concussive impact.
Angela M. Boutte¹, Andrea Mountney¹, David W. Johnson¹, Angela Yarnell², Frank C. Tortella¹, Jitendra R. Dave¹, Deborah A. Shear¹, Kara E. Schmid¹
¹ Brain Trauma Neuroprotection and Neurorestoration Branch, Walter Reed Army Institute of Research, Silver Spring, MD
² Behavioral Biology Branch, Walter Reed Army Institute of Research, Silver Spring, MD
MHSRS-692 Poster Session: 2 - Poster # 53
Electrical Impedance Spectroscopy Discriminates Acute Brain Injury from Healthy Subjects: Proof-of-Principle as a Portable EKG for the Brain
Dr. Eric Rosenthal

MHSRS-697 Poster Session: 2 - Poster # 54
L-selectin as a therapeutic target for spinal cord injury
Noble, Linda, PhD1,2, Christopher Sontag, PhD2, Sang Mi Lee, PhD1, Steven D Rosen, PhD3
1 Department of Neurological Surgery, University of California at San Francisco
2 Department of Physical Therapy and Rehabilitation Science, University of California at San Francisco
3 Department of Anatomy, University of California at San Francisco

MHSRS-739 Poster Session: 2 - Poster # 55
Assault as A Red Flag for Adverse Self-Reported Outcomes after Traumatic Brain Injury
Zhangjie Su, MD, PhD1,2, David J Davies, MD1,2, Haren E Wijesinghe1; David Hacker, MD3,
Murugan Sitaraman, MD4, Ann Logan, PhD1,2, Antonio Belli, MD1,2
1 NIHR Surgical Reconstruction and Microbiology Research Centre, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK
2 College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK
3 Department of Neuropsychology, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK
4 Department of Neurosurgery, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK

MHSRS-744 Poster Session: 2 - Poster # 56
Successful Outcomes following Neurorehabilitation in Military Traumatic Brain Injury Patients in the UK
Shreshth Dharm-Datta, MRCS, Michael Gough, MRCP, Patrick Porter, BSc, Emer McGilloway, MRCP,
John Etherington, FRCP
Defence Medical Rehabilitation Centre, Headley Court, Epsom, Surrey, KT18 6JW, United Kingdom

MHSRS-766 Poster Session: 2 - Poster # 57
Intracranial Pressure Increase Following Exposure to Blast is Ameliorated by N-Acetylcysteine Amide Administration.
Usmah Kawoos, Ming Gu, Jason Lankasky, Richard McCarron, Mikulas Chavko
Naval Medical Research Center, Silver Spring, MD

MHSRS-785 Poster Session: 2 - Poster # 58
Imaging Cerebral Microhemorrhages in Military Service Members with Traumatic Brain Injury with Susceptibility Weighted Imaging and Quantitative Susceptibility Mapping
Karl Soderlund, MD1, Wei Liu DSc2,3, Justin S Senseney, MS2,3, David Joy BS2,4, Ping-Hong Yeh PhD2,3,
John Graner PhD2,3, John Ollinger PhD2,3, Tian Liu PhD5, Yi Wang PhD5, Terrence R. Oakes PhD2,3,
Gerard Riedy MD, PhD2,3
1 Walter Reed National Military Medical Center, Bethesda, MD
2 National Capital Neuroimaging Consortium (NCNC), Bethesda, MD
3 National Intrepid Center of Excellence (NICoE), Bethesda, MD
4 The Henry M. Jackson Foundation for the Advancement of Military Medicine, Bethesda, MD
5 Biomedical Engineering Department, Cornell University, NY
MHSRS-793  Poster Session: 2 - Poster # 60
Cognitive Function and DTI Tractography in OIF/OEF Combat Veterans With Blast-Related Mild Traumatic Brain Injury
Corey Fernandez, BA¹, Erin Hazlett, PhD¹,²,³, Edmund Wong, MS¹, Dara L. Dickstein, PhD⁵,
Sam Gandy, MD, PhD¹,²,⁶,⁷, Gregory A. Elder, MD²,⁶,⁷, Cheuk Y. Tang, PhD⁴, & Effie M. Mitsis, PhD²,⁷
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   Bronx, NY 10468
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⁵ Department of Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY 10029
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MHSRS-822  Poster Session: 2 - Poster # 61
Improving Imaging of Diffuse Axonal Injury in Traumatic Brain Injury
Zora Kikinis¹, Caryn L. Porter², Ofer Pasternak¹,³, Marc Muehlmann¹,⁴, Yogesh Rathi¹, Inga Koerte¹,⁴,
Sharon Peled⁵, Craig Ferris⁶, Bruce S. Kristal²*, Martha E. Shenton¹,³,⁶*
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² Department of Neurosurgery, Brigham and Women's Hospital, and Harvard Medical School, Boston, MA
³ Department of Radiology, Brigham and Women's Hospital, and Harvard Medical School, Boston, MA
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* Equal last authorship

MHSRS-824  Poster Session: 2 - Poster # 62
Mild traumatic brain injury is reliably detected with a test battery of oculomotor, vestibular, and reaction
  time measures
Dr. Alexander Kiderman, PhD¹, Dr. Sam Akhavan, MD², Dr. Matt Quigley, MD², Dr. Edward Snell, MD²,
Dr. Robert Sclabassi, MD, PhD¹, Dr. Robert Sclabassi, MD, PhD¹, Dr. Robert Sclabassi, MD, PhD¹,
Liza P. Oakes¹, J. Howison Schroeder¹, Dr. Kevin M. Kelly, MD, PhD²
¹ Neuro Kinetics, Inc.
² Allegheny Health Network- Allegheny General Hospital
³ Computational Diagnostics, Inc.

MHSRS-839  Poster Session: 2 - Poster # 63
Evaluation of Dispersive Ultrasound for Diagnosis of Traumatic Brain Injury
Catherine Tenn, PhD, Pang Shek, PhD, Norleen Caddy, Michelle Garrett, Yimin Shei
INTERNATIONAL (NON U.S.)

MHSRS-850  Poster Session: 2 - Poster # 65
Biosmart – A Fast, Sensitive, and Automated Protein Biomarker Analysis System for Real Time TBI Diagnosis
Qian Sun¹, Bradley Ledden¹, Champak Das¹, Kevin Wang², Linda Papa³, Sai Kumar¹
¹ SFC Fluidics Corp
² University of Florida
³ Orlando Regional Medical Center
MHSRS-852  Poster Session: 2 - Poster # 66
Immuno-Chain Reaction: A Novel Ultrasensitive Assay for Rapid Triaging of Brain Injury
Bradley Ledden, Sai Kumar
SFC Fluidics, 534 W Research Center Blvd, Ste 260, Fayetteville, AR 72701

MHSRS-923  Poster Session: 2 - Poster # 67
DIAGNOSIS AND TREATMENT OF TRAUMATIC BRAIN INJURY
Dr. Casey Allen

MHSRS-924  Poster Session: 2 - Poster # 68
TEAM TBI: Relevance of Sleep Assessment and Mobile Health Interventions for Chronic mTBI
Anne Germain, PhD, Robin Richardson, LCS, Bambang Parmanto, PhD, Wayan Pulantara, MS,
Walt Schneider, PhD, Ron Poropatich, M.D., Anthony Kontos, PhD, Michael Collins, PhD,
David Okonkwo, MD, PhD
University of Pittsburgh, Pittsburgh, PA

MHSRS-925  Poster Session: 2 - Poster # 69
Noninvasive Intracranial Pressure Assessment and Screening System
Anna M Galea, PhD, Shannon O’Toole, MS, Eric Louis
Vivonics, Inc., Waltham, MA

MHSRS-976  Poster Session: 2 - Poster # 70
Progress of the Brain Injury and Mechanisms of Action of Hyperbaric Oxygen (HBO2) for Persistent Post-Concussive Symptoms after Mild Traumatic Brain Injury (BIMA) Study
Lindell Weaver, PhD1,2, Austin Chhoeu1, Anne Lindblad, PhD3, Susan Churchill1, Steffanie H Wilson, PhD4
1 Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital;
2 University of Utah School of Medicine, Salt Lake City
3 US Army Medical Materiel Development Activity (USAMMDA), Hyperbaric Oxygen Research Program
Management Office (HBO2 PMO), Fort Detrick, MD
4 The EMMES Corporation, Rockville, MD

MHSRS-1010  Poster Session: 2 - Poster # 71
Neurological Evaluations within the Brain Injury and Mechanisms of Action of Hyperbaric Oxygen (HBO2) for Persistent Post-Concussive Symptoms after Mild Traumatic Brain Injury (mTBI) Study (BIMA)
Chris Williams MD1, Lindell Weaver PhD2, Anne Lindblad PhD2, Michael R Wierzbicki, PhD3, Douglas Langford4
1 Department of Veterans Affairs, Eastern Colorado Health,Colorado Springs, CO
2 Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital, Salt
Lake City UT; Department of Medicine, University of Utah School of Medicine, Salt Lake UT
3 The EMMES Corporation, Rockville, MD
4 Neurology, Evans Army Community Hospital, Ft. Carson, CO

MHSRS-1038  Poster Session: 2 - Poster # 72
Tamara Espinoza, MD2, Michelle LaPlaca, PhD3, Russell Gore, MD2, Brian Liu, MBA1, Stephen Smith1,
Courtney Crooks PhD1, John Brumsfield3, Nick Ciaravella3, David Wright, MD2, Shean Phelps MD, MPH1
1 Emory University School of Medicine
2 Georgia Institute of Technology
3 Georgia Tech Research Institute
MHSRS-1077 Poster Session: 2 - Poster # 73
Adaptation, Heart-Rate Variability And Autonomic Nervous System Function In Soldiers With Sequelae Of Mild Traumatic Brain Injury
Susan Mirow, PhD MD¹, Steffanie H Wilson, PhD², Wayne C Spelius, Major USAF ret³, Lindell W Weaver, MD⁴, Susan K Churchill, APRN-NP CHRNC⁴
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²The EMMES Corporation, Rockville, MD
³United States Air Force
⁴Hyperbaric Medicine Department, Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital, Salt Lake City, UT

MHSRS-1086 Poster Session: 2 - Poster # 74
Blast Gauge Threshold Settings for Detecting Risk of Blast-induced Neurotrauma
Lee Ann Young¹, Jeffery Rogers, PhD², Geoffrey Ling, MD³, Timothy Walilko, PhD⁴
²Google, Inc.
³Defense Advanced Research Projects Agency

MHSRS-1113 Poster Session: 2 - Poster # 75
Transient Delivery of Adenosine as a Novel Therapy to Prevent Epileptogenesis
Theresa Lusardi, PhD¹, David Kaplan, PhD², Detlev Boison, PhD¹
¹Robert Stone Dow Neurobiology Laboratories, Legacy Research Institute, Portland, OR
²Department of Biomedical Engineering, Tufts University, Medford, MA

MHSRS-1149 Poster Session: 2 - Poster # 76
Neuroimaging of apoptosis and caspase-3 activity in experimental traumatic brain injury (TBI) using positron emission tomography (PET) imaging ligands
James R. Stone, MD, PhD¹,², Jiang He, PhD¹, Tao Huang, PhD¹, Miles Lankford¹, Lori Nelson¹, Stuart Berr, PhD¹, Stephen T. Ahlers, PhD³
¹Department of Radiology and Medical Imaging, University of Virginia Health System
²Department of Neurological Surgery, University of Virginia Health System
³Operational & Undersea Medicine, Naval Medical Research Center

MHSRS-1176 Poster Session: 2 - Poster # 77
Trancranial Doppler measure of persistent cerebral vasomotor reactivity abnormality in service members with chronic mTBI
Donna Neuges¹, Alex Razumovsky, Ph.D.², Thomas DeGraba, M.D.¹
¹National Intrepid Center of Excellence at Walter Reed National Military Medical Center, Bethesda, MD
²Sentient NeuroCare Services and Sentient Medical Systems, Inc., Cockeysville, MD

PHYSIOLOGICAL MONITORING

MHSRS-189 Poster Session: 2 - Poster # 78
Duy Dao, Jo Woon Chong, PhD, Seyed Mohamad Amin Salehizadeh, MS, Yitzhak Mendelson; PhD, Ki Chon, PhD
Worcester Polytechnic Institute
Comparison of noninvasive pH, blood lactate and base excess to assess adequacy of restricted volume resuscitation of swine hemorrhage

Babs Soller, PhD¹, Fengmei Zou, PhD¹, Jill Sondeen, PhD²
¹ Reflectance Medical Inc., Westborough, MA
² U.S. Army Institute of Surgical Research, San Antonio, TX

Comparison of Compensatory Reserve Index During Lower Body Negative Pressure And Hemorrhage In Baboons

Carmen Hinojosa-Laborde, PhD¹, Jane Mulligan, PhD², Greg Z. Grudic, PhD², Victor A. Convertino, PhD¹
¹ U.S. Army Institute of Surgical Research, Fort Sam Houston, TX
² Flashback Technologies, Inc., Boulder, CO

Rapid-drying SMART Wound Dressing for Quantitative and Dynamic Transcutaneous Oxygen Mapping

Zongxi Li, PhD¹, Emmanuel Roussakis, PhD¹, Pieter G. L. Koolen, MD², Ahmed M. S. Ibrahim, MD²,
Kuylihee Kim, MD³, Lloyd F. Rose³, Jesse Wu³, Alexander J. Nichols¹,⁴,⁵, Yunjung Baek¹,⁶,
Reginald Birngruber, MD PhD⁷, Gabriela Apiou-Sbirlea, PhD¹, Robina Matyal, MD⁸, Thomas Huang⁶,
Rodney Chan, MD³, Samuel J. Lin, MD³, Conor L. Evans PhD¹,⁴
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² Division of Plastic Surgery, Harvard Medical School, Beth Israel Deaconess Medical Center, 110 Francis Street Suite 5A, Boston, Massachusetts 02215, USA
³ Dental and Trauma Research Department, U.S. Army Institute of Surgical Research, 3650 Chambers Pass, Suite B, JBSA –Fort Sam Houston, Texas 78234-7767, USA
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⁷ University of Lübeck, Institute of Biomedical Optics, Lübeck, Peter Monnik Weg 4, 23562 Lübeck, Germany
⁸ Department of Anesthesia, Critical Care and Pain Medicine, Harvard Medical School, Beth Israel Deaconess Medical Center, 330 Brookline Avenue, Boston, Massachusetts 02215, USA

Correlation of Transcutaneous to Arterial Carbon Dioxide Levels in Shock: A Prospective Observational Study

Lt Col Leslie Wood

Do Multiple Prehospital Measurements of Vital Signs Enhance Prediction of Emergency Transfusion in Trauma Patients?

Peter F. Hu, PhD¹, Rukmini Ramakrishnan, MS¹, Shiming Yang, PhD¹, Eric Hu¹, Amechi Anazodo, MD MPH¹,
Cristina Imle, MS¹, Lauren Hartsy, MS¹, Catriona Miller, PhD², Stacy Shackelford, MD²,
Samuel M. Galvagno, MD PhD¹, Colin F. Mackenzie, MD¹
¹ Department of Anesthesiology and Program in Trauma, University of Maryland School of Medicine
² U.S. Air Force Center for the Sustainment of Trauma and Readiness Skills
Respiratory Volume Monitoring Provides a Better Assessment of Respiratory Rate than Capnography-Based Respiratory Rate Monitoring in an Experimental Setting
Dr. Gary Mullen

Optical Continuous Lactate Monitor for Combat Casualty Care
Weidling, John1, De Alonso, Emilia1, White, Sean, PhD1, Botvinick, Elliot, PhD1,2
1 Beckman Laser Institute 1002 Health Sciences Rd.Irvine CA, 92617
2 University of California Irvine, Edwards Lifesciences Center for Advanced Cardiovascular Technology, Irvine 92617, CA, USA

Monitoring Brain Function With A Real-Time Microscale Smart Sensor
Chunyan Li, Raj K. Narayan
Feinstein Institute for Medical Research

A neuroprosthesis for maintaining seated balance after spinal cord injury
Musa L. Audu, Ph.D.1,2, Len Marinis, BS1, Ronald J. Triolo, Ph.D.1,2,3
1 Department of Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio, USA
2 Motion Study Laboratory, Louis Stokes Cleveland Department of Veterans Affairs Medical Center, Cleveland, Ohio, USA
3 Department of Orthopaedics, Case Western Reserve University, Cleveland, Ohio, USA

Rehabilitation of Multiple-Limb Combat Amputees: Injuries and Functional Outcomes
Ted Melcer, PhD1, Jay Pyo, DO2, Jay Walker, BA1, Kimberly Quinn, RN MSN1, Kameran Neises, BA1,
Martin Lebedda, RN2, Michael R. Galarneau, MS NREMT1, Peggy Han MPH1
1 Naval Health Research Center San Diego
2 Naval Medical Center San Diego, San Diego, CA

Pudendal Nerve Stimulation and Block by a Wireless-Controlled Implantable Stimulator in Cats
Changfeng Tai, PhD1,2, Guangning Yang, MS1, Jicheng Wang, PhD1, Bing Shen, PhD1, James Roppolo PhD2, William de Groat, PhD2
1 Department of Urology, University of Pittsburgh
2 Department of Pharmacology and Chemical Biology, University of Pittsburgh
MHSRS-366  Poster Session: 2 - Poster # 91
Four-year Health Outcomes of Combat Amputee and Limb Salvage Patients
Ted Melcer, PhD1, Jay Walker, BA1, Vibha Bhatnagar, MD MPH2, Erin Richard, MPH2; CDR V. Franklin Sechriest II, MD3, Michael R. Galarneau, MS NREMT1, Peggy Han MPH1
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2 San Diego Veterans Administration Healthcare System and the University of California San Diego, San Diego, CA
3 Naval Medical Center San Diego, San Diego, CA

MHSRS-367  Poster Session: 2 - Poster # 92
Decision Factors and Outcomes Related to Late-Occurring Amputations Following Combat Injuries
Ted Melcer PhD1, CDR Katerina Gallus MD2, CDR Trent Douglas MD2, Jay Walker, BA1, LT Nicholas Rocco2, Kameran Neises BA1, Michael R. Galarneau, MS, NR EMT1, Peggy Han MPH1
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MHSRS-503  Poster Session: 2 - Poster # 93
TRICARE Direct Care Hospitalization Costs and Hospital Use for Lower Extremity Combat Amputee and Limb Salvage Patients
Peggy Han, MPH1, Ted Melcer, PhD1, CDR V. Franklin Sechriest, MD2, Michael Galarneau, MS, NREMT1
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2 Naval Medical Center San Diego, San Diego CA

MHSRS-593  Poster Session: 2 - Poster # 94
Anabolic action of pulsatile parathyroid hormone delivery from an implantable device in vivo
Ming Dang1, Amy J. Koh2, Laurie K. McCauley, DDS, MS, PhD2, Peter Ma, PhD1,3,4,5
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MHSRS-717  Poster Session: 2 - Poster # 95
Heat and Perspiration Management System for Prosthetics
Matthew Jorgensen, Josh Charest, Michael Leddy, Andrew Frazier
Johns Hopkins University

MHSRS-928  Poster Session: 2 - Poster # 96
Assessing the safety and efficacy of Schwann cell transplantation in an experimental, cervical contusion spinal cord injury paradigm
Jiaqiong Wang MD PhD, Claudia Saborit, Jameson Wiener, Everett Wilson, Gabriela De La Cruz, Ronald Zambrano, Ramon German, Miguel Martinez, Eva Juarez, Denise Koivisto, Alex Basagoitia, Paulo Diaz, Alexander Marcillo, MD, Damien Pearse, PhD
The Miami Project to Cure Paralysis, University of Miami, Miller School of Medicine, Miami, Florida, United States of America
MHSRS-1084  Poster Session: 2 - Poster # 97
Reactivation of Dormant Motor Descending Control After Severe Incomplete, and Complete Paralysis Utilizing Epidural and Non-Invasive Spinal Cord Stimulation
V. Reggie Edgerton, PhD 1,2, Yury Gerasimenko, PhD 1,3, Daniel C. Lu, MD2, Roland Roy, PhD1,2
1 University of California Los Angeles; Depts. of Integrated Biology & Physiology
2 University of California Los Angeles, Dept. of Neurosurgery, Neurobiology
3 Pavlov Institute of Physiology, St. Petersburg, Russian

MHSRS-1142  Poster Session: 2 - Poster # 98
Multi-Terrain Evaluation of a Wearable Tactile Feedback System for Prosthetic Gait and Balance Rehabilitation
Zach B. McKinney, MS1, Trevor Kingsbury, MS2, Marilyn P. Wyatt, MA2, Eric A. Johnson3, Martin O. Culjat, PhD3, Warren S. Grundfest, MD1
1 UCLA Center for Advanced Surgical and Interventional Technology
2 Naval Medical Center San Diego
3 Farus LLC

PSYCHOLOGICAL HEALTH AND REHABILITATION AND RECOVERY – PTSD IN PRIMARY CARE SETTINGS

MHSRS-137  Poster Session: 2 - Poster # 99
Pre-, Peri-, and Post-deployment Trajectories of Health over Four Years of Follow-up in a Reserve Population: Focus on Barriers to Treatment and Mental Health Utilization
Laura Sampson2, Gregory H. Cohen2, Philip K. Chan1, David S. Fink2, Marijo Tamburrino3, Israel Liberzon4, Sandro Galea2
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2 Columbia University, Department of Epidemiology, New York, NY
3 Department of Psychiatry, University of Toledo, Toledo, OH
4 Department of Psychiatry, University of Michigan, Ann Arbor, MI

MHSRS-176  Poster Session: 2 - Poster # 100
Leadership Satisfaction Protects Against PTSD during Experiences of Intense Horror
Shiloh Beckerley, PhD
Naval Health Research Center

MHSRS-274  Poster Session: 2 - Poster # 101
Prescriptive Exercise Therapy Program to Reduce Hyperarousal in a Residential Treatment Program for Active-duty Service Members Diagnosed with Posttraumatic Stress Disorder: An Observational Pilot Study
Stefania Marzano, MA1, Robert Congalton, MS1, Justin Campbell, LCDR, PhD2, Karen Kelly, PhD1
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2 Space and Naval Warfare Systems Command, San Diego, CA
MHSRS-277    Poster Session: 2 - Poster # 102
Non-contact monitoring of sweat pores: a surrogate for autonomic nervous system arousal
Alan Krzywicki, MS¹, Kristin Gregor, PhD²,³, Michael Suvak, PhD⁴, Thomas Dodson, BA², Bobby Lowery, Jr., BS⁴, Lein Ma, MS⁶, Ann Rasmusson, MD²,³ & Jide Familoni, PhD¹
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⁴ Suffolk University, Department of Psychology
⁵ EOIR Technologies
⁶ Kinex, Inc.

MHSRS-280    Poster Session: 2 - Poster # 103
Behind the sample: dropouts, research noncompliance, and the real relationship
Ann M. Hummel, Ph.D.¹, Charles J. Gelso, Ph.D.², and Dennis Kivlighan, Ph.D.², Eric B. Spiegel, Ph.D.³,
Johnna Busa-Knepp, Ph.D.⁴, Emilie Ma, Ph.D.⁵, Rayna Markin, Ph.D.⁶, Stacie Ain, Ph.D.²
¹ Naval Medical Center San Diego
² University of Maryland
³ Philadelphia, PA
⁴ James Madison University
⁵ ReAnKos Center
⁶ Villanova

MHSRS-365    Poster Session: 2 - Poster # 104
Development of an Objective, Functional Biomarker of Invisible Wounds of War for Use by Providers
James Spira, PhD¹, Laurel King, PhD², Cori Lathan, PhD³, CAPT Jack Tsao, MD⁴
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³ Anthrotronix, Inc. Silver Spring, MD
⁴ Navy Bureau of Medicine and Surgery, Arlington VA

MHSRS-564    Poster Session: 2 - Poster # 105
DoD IRB delays: Do they really matter? And if so, why and for whom?
Michael Freed, PhD, EMT-B¹, Laura Novak¹, William Killgore, PhD³,⁴,⁵, Tracey Koehlmoos, PhD⁶,
JP Ginsberg, Ph.D.⁷,⁸, Gina Adam, PhD, MBA, LTC, MS⁹,¹⁰, Janice Krupnick, PhD¹¹, Sheila Rauch, PhD¹²,¹³,
Albert Rizzo, PhD¹⁴, Charles Engel, MD, MPH¹⁵
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¹² University of Michigan Medical School, Ann Arbor, MI, USA
¹³ VA Ann Arbor Healthcare System, Ann Arbor, MI, USA
¹⁴ University of Southern California Institute for Creative Technologies, Playa Vista, CA, USA
¹⁵ RAND Corporation, Washington, DC, USA
**Sex Differences in Cardiovascular and Subjective Stress Reactions: Prospective Evidence in a Realistic Military Setting**

Marcus Taylor, PhD¹, Gerald Larson, PhD¹, Melissa Hiller Lauby, PhD², Genieleah Padilla, BA¹, Ingrid Wilson, MS¹, Emily Schmied, MPH¹, Robyn Highfill-McRoy, MPH¹, Charles Morgan III, MD³

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**Evaluation of an integrative PTSC treatment program for active duty service members**

Salvatore Libretto, PhD, Sandra Gordon, BA, CPC, Lara Hilton, MPH, Courtney Boyd, MA, Weimin Zhang, PhD, Kimberly McConnell, EdD, Meredith Sprengel, MS

Samueli Institute, Alexandria, VA

**Is Combat Exposure Predictive of Higher Preoperative Stress in Military Members?**

Eric Bopp, LCDR, NC, USN, CRNA¹; Margaret Ryan, MD, MPH¹; Dennis Spence, CDR, NC, USN, PhD, CRNA²; Daniel Wright, PhD³; Joseph Burkard, DNSc, CRNA³

¹ Naval Hospital Camp Pendleton
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**Determining the relationships between resilience, life events, support, and mental health outcomes in Soldiers with a recent deployment history**

Linda H. Yoder, PhD, MBA, RN, AOCN, FAAN

University of Texas at Austin, Austin, TX

**Correlates of Criminal Propensity in Army Populations with and without a History of Deployment to a Combat Zone**

Stephanie Traynham, PhD, Bethany Ranes, PhD

U.S. Army Aeromedical Research Laboratory

**The Role of Resilience and Social Support in Predicting Post-deployment Adjustment in Otherwise Healthy Navy Personnel**

Bryan Weber, PhD¹, Beverly Roberts, PhD¹, Tracy Hejmanowski, PhD², Wayne Griffin, PhD³, Barbara Lutz, PhD¹

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³ Counseling and Wellness Center, University of Florida
MHSRS-187  Poster Session: 2 - Poster # 114
Care Provider Support Program (CPSP) as a mediator of resiliency and coping among Military Healthcare Personnel
LTC Christopher Weidlich

MHSRS-207  Poster Session: 2 - Poster # 115
Are New Information and Communication Technologies (ICTs) a Threat to Well-Being?
Laura Miller, PhD, Laurie Martin, PhD, Douglas Yeung, PhD, Matthew Trujillo, PhD, Martha Timmer, MS, Joshua Breslau, PhD
RAND Corporation

MHSRS-357  Poster Session: 2 - Poster # 116
Piloting performance enhancement skills and updates to Resilience Training for Basic Combat Training: Program evaluation evidence to support implementation of revised training
Dr. Melissa Waitsman

MHSRS-381  Poster Session: 2 - Poster # 118
Correlates of Self-Reported Aggression in Expeditionary Sailors
Emily Schmied¹, Stephanie Booth-Kewley, PhD²
¹ Naval Health Research Center, Warfighter Performance Department
² Naval Health Research Center, Deployment Health Department

MHSRS-537  Poster Session: 2 - Poster # 119
Assessment of Mobile Messaging Support of Reintegration
Holly Pavliscak, MHSA, Jeanette Little, MS
TATRC

MHSRS-773  Poster Session: 2 - Poster # 120
The Psychological Sequalae of UK Forces Personnel Ensuing Combat Related Genital Trauma
Sgt Pride Gaka-Chisoro, Mental Health Nurse, Wg Cdr Davendra Sharma, MD
Ministry of Defence UK - Defence Medical Services

MHSRS-794  Poster Session: 2 - Poster # 121
Evaluation of Self-Regulation Skills Training for EMT-Paramedic Students
Meredith Sprengel, Jonathan Gooch, Salvatore Libretto, Dawn Wallerstedt, Meghan O'Connell
Samueli Institute

MHSRS-808  Poster Session: 2 - Poster # 122
Assessing Family Resilience among Veterans of Iraq and Afghanistan: The Family Resilience Scale - Veterans (FRS-V)
Erin P. Finley, PhD MPH¹, Mary Jo V. Pugh, PhD RN², Raymond F. Palmer, PhD³
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² South Texas Veterans Health Care System, San Antonio, Texas, and Department of Epidemiology and Biostatistics, University of Texas Health Science Center at San Antonio, San Antonio, TX
³ Department of Family and Community Medicine, University of Texas Health Science Center at San Antonio, San Antonio, TX
Prevalence and Mental Health Correlates of Sleep Disruption Among Military Members Serving in a Combat Zone
Marcus Taylor, PhD, Susan Hilton, MS, Justin Campbell, PhD, Shiloh Beckerley, PhD, Katharine Shobe, PhD, Sean Drummond, PhD
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3 Office of Naval Research, Arlington, VA
4 Veterans Affairs San Diego Healthcare System, CA

Individual and Unit-Level Analysis of Military Workplace Violence
Pamela K Lattimore, PhD, James V Trudeau, PhD, Richard Van Dorn, PhD, Mike Anastario, PhD, Kelle Barrick, PhD, Joel K Cartwright, BA
RTI International

Military Couples and Soldier Resilience
Adrian Blow, PhD, Angela Huebner, PhD, Mara Hirschfeld, MS, Lisa Gorman, PhD, Danielle Guty, Michelle Kees, PhD
1 Michigan State University
2 Virginia Tech
3 Michigan Public Health Institute
4 University of Michigan

Development of an in vitro model of proliferative vitreoretinopathy using retinal pigment epithelium derived from induced pluripotent stem cells
Whitney Greene, PhD, Alberto Muniz PhD, COL Anthony Johnson MD, Heuy-Ching Wang PhD
1 National Research Council
2 Ocular Trauma, U.S. Army Institute of Surgical Research

Visual Outcomes of 654 Casualties with Eye Injuries at Walter Reed Army Medical Center between 2001-2011
Marcus Colyer, MD, Patrick Barker, MD
1 Walter Reed National Medical Center
2 Uniformed Services University of the Health Sciences

Acute Effects Of A 6-Hour Dive On Vestibular Components Of Postural Control
Stephen M. Glass, Matthew W. Wittstein, Christopher K. Rhea, Scott E. Ross, F. Jay Haran, Barbara E. Shykoff, John P. Florian
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2 Navy Experimental Diving Unit, Panama City, FL
MHSRS-440  Poster Session: 2 - Poster # 130
A Comprehensive Blast-Related Auditory Injury Database (BRAID) of Combat-Injured
US Military Personnel
Antony R. Joseph, AuD PhD1, Jaime L. Horton, MPH2, Mary C. Clouser, PhD2, Andrew J. MacGregor, PhD2,
Michelle L. Louie2, and Michael R. Galarneau, MS NREMT2
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MHSRS-501  Poster Session: 2 - Poster # 131
Magnetic Nanoparticle Based Approach for Externally Controlled Corneal Endothelial Repair
Lauren Cornell1, Mauris Desilva2, Hetty Wang1, Anthony Johnson1, David Zamora1
1 U.S. Army Institute of Surgical Research, San Antonio, TX
2 Naval Medicine Research Unit San Antonio, San Antonio, TX

MHSRS-590  Poster Session: 2 - Poster # 132
Cellulose Hydrogel Contact Lenses for Use as a Corneal Bandage
M. Patchan1, J. Chae2, J.D. Lee3, J.P. Maranchi1, R. McCally1,4, O. Schein4, J.H. Elisseef5, M.M. Trexler1
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2 Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD
3 Department of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, MD
4 Wilmer Eye Institute, Johns Hopkins Medical Institutions, Baltimore, MD

MHSRS-758  Poster Session: 2 - Poster # 133
The Horus Eye Restoration Project
Patricia A. Reilly, PhD, J.B. Phillips, PhD, Jonathan Miller, PhD, Tony Gover, PhD, Robert C. Read,
Ronald Marchessault, John F. Glenn, PhD, Kenneth A. Bertram, MD, PhD
U.S. Army Medical Research & Materiel Command, Fort Detrick, MD 21702

MHSRS-829  Poster Session: 2 - Poster # 134
Stem Cell-Derived Inner Ear Organoids for High-Content Drug Screening
Karl Koehler, PhD1, Xiao-Ping Liu, PhD2, Andrew Mikosz, BA1, Jeffrey Holt, PhD2, Eri Hashino, PhD1
1 Indiana University School of Medicine
2 Harvard Medical School

MHSRS-1138  Poster Session: 2 - Poster # 135
Eye Injuries in Theatre: Review of a Large Case Series
Stephen R. O’Connell, MD (CAPT, MC, USN)1, R. Joel Welch, MD2, Quan D. Nguyen, MD2
1 Department of Ophthalmology, Naval Hospital Camp Pendleton, Camp Pendleton, California, USA
2 Truhlsen Eye Institute, University of Nebraska Medical Center, Omaha, Nebraska, USA
PSYCHOLOGICAL HEALTH AND REHABILITATION AND RECOVERY - SUICIDE

MHSRS-702 Poster Session: 2 - Poster # 136
Prevalence and predictors of suicidal ideation in a sample of treatment seeking Veterans with Post-Traumatic Stress Disorder
Mayra Gomez BA1, Pia Heppner PhD1, Maxwell Rainforth PhD3, John Salerno PhD2, Paul Mills PhD2, Robert Schneider MD3, Carolyn Gaylord-King PhD3, Sandorf Nidich EdD3, Thomas Rutledge PhD1,2
1 Veteran Affairs- VHASDC
2 University of California, San Diego
3 Maharishi Institute of Management Research

MHSRS-811 Poster Session: 2 - Poster # 137
Risk of Suicide Following OEF/OIF Deployment and Separation from the Military
Mark A. Reger, PhD1, Derek J. Smolenski, MPH, PhD1, Nancy A. Skopp, PhD1, Melinda J. Metzger-Abamukang, BS1, Han K. Kang, Dr.PH2, Tim A. Bullman, MA3, Sondra Perdue, Dr.PH4, Gregory G. Gahm, PhD1
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3 Department of Veterans Affairs (VA) Office of Public Health Post-Deployment HealthStrategic Healthcare Group, Washington, DC
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MHSRS-1161 Poster Session: 2 - Poster # 138
Longitudinal evaluation using the recently developed Defense Automated Neurobehavioral Assessment (DANA) tool of the cognitive impact of Electroconvulsive Therapy (ECT) in the treatment of Major Depressive Disorder (MDD)
Steven Woods, MD MEd1, Ryoko Susukida, PhD3, Alison Riehm, BS1, Henry Askew1, Kristen Rahn, PhD1,2, Corinna Lathan, PhD3, Adam Kaplin, MD PhD1,2
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TRAUMA CARE - BLOOD/BLOOD PRODUCTS

MHSRS-128 Poster Session: 2 - Poster # 140
Effect of Perfluorocarbon on Platelet Number and Function after Intravenous Infusion in Sheep
Jiepei Zhu, PhD1, J. Travis Parsons, PhD2, Jacquelyn R. McCarter, BS2, Christopher R. Sweeney, BS1, Jackson M. Hylton, BS1, Erika J Martin, MS3, Donald Brophy, Pharm D, and Bruce D. Spiess, MD1
1 Department of Anesthesiology
2 Department of Neurosurgery
3 Department of Pharmacotherapy & Outcomes Science

MHSRS-201 Poster Session: 2 - Poster # 141
Large Animal Evaluation Of The Safety And Efficacy Of The Mirasol® System For Fresh Whole Blood Transfusion In A Diffuse, Non-Surgical Bleeding Model
Obi T. Okoye, MD1, Heather Reddy, PhD2, Monica D. Wong, MS1, Suzann Doane, BS3, Shelby Resnick, MD1, Efthathios Karamanos, MD1, Dimitra Skiada, MD3, Raymond Goodrich, PhD2, Kenji Inaba, MD1
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2 Terumo BCT Biotechnologies, LLC, Lakewood, CO
Robustness Testing of White Blood Cell Inactivation with the Mirasol System for Whole Blood

Susan Yonemura, PhD; Susanne Marschner, PhD; Raymond Goodrich, PhD
Terumo BCT Biotechnologies, Lakewood, CO, USA

Recursive Partitioning Identifies Greater Than 4 Units of PRBC’s Per Hour as an Improved Massive Transfusion Definition

Dr. Alexis Moren

Transfusion Of Human Platelets Treated With Mirasol Pathogen Reduction Technology Does Not Induce Acute Lung Injury in Mice

Axelle Caudrillier, PhD,1 Benat Mallavia, PhD,1 Lindsay Rouse, BA,2 Susanne Marschner, PhD,2 Raymond P. Goodrich, PhD,2 Mark R. Looney, MD1
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Clearly Defining Pediatric Massive Transfusion: Cutting Through the Fog and Friction With Combat Data

Jeremy W. Cannon1,2, Lucas P. Neff3, Jonathan J. Morrison4, Mary J. Edwards2, Philip C. Spinella5, Matthew A. Borgman6
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3 Department of Surgery, David Grant Medical Center, Travis Air Force Base, CA
4 The Academic Department of Military Surgery and Trauma, Royal Centre for Defence Medicine, Birmingham, United Kingdom
5 Department of Pediatrics, Washington University School of Medicine, St. Louis, Missouri
6 Department of Pediatrics, San Antonio Military Medical Center, Fort Sam Houston, TX

The Response of Refrigerated Platelets to Physiologic Inhibitors

Kristin Reddoch, BS1, Armando Rodriguez, BS2, Robbie Montgomery2, Heather Pidcoke, MD, PhD2, Anand Ramasubramanian, PhD1, and Andre Cap, MD, PhD2
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The evaluation of apoptosis-related events in refrigerated platelets for transfusion

Kristin Reddoch, BS1, Robbie Montgomery, MS2, Heather Pidcoke, MD, PhD2, Anand Ramasubramanian, PhD1, Andrew Cap, MD, PhD2
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Human Amnion-derived Multi-potent Progenitor Cells Improve Survival and Clinical Features in a Murine Model of Acute Graft Versus Host Disease
Dr. Anthony Foster¹, Yelena Lazdun¹, Eric A. Elster, MD², Thomas A Davis, PhD¹
¹ Navy Medical Research Center
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Computational Modeling of Thrombin Generation in Trauma
Mitchell Jay Cohen MD¹, Benjamin M. Howard MD MPH¹, Lucy Z. Kornblith MD¹, Brittney J. Redick BA¹,
Kenneth Mann PhD², Thomas Orfeo PhD², Ryan F. Vilardi MS¹, Mary F. Nelson RN MPA¹,
Kathleen Brummel-Ziedins PhD²
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² Department of Biochemistry, University of Vermont

Selectively Activated Platelets in Wound Healing Applications
Dr. Bridget Ford

Coagulation Function After Cold (4°C) Storage Of Whole Rat Blood
Jacob Chen, Xiaowu Wu, Jeffery Keesee, Daniel Darlington, Andrew Cap
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Platelet Function After Cold (4°C) Storage Of Whole Rat Blood
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Selectively Activated Platelets in Wound Healing Applications
Dr. Bridget Ford

Treating non-compressible hemorrhage with functionalized nanoparticles
Damien Kudela¹, Stephanie A. Smith², Ju Hun Yeon², Anna May-Masnou¹,³, Gary B. Braun¹,⁵, Alessia Pallaoro¹,
Tracy Chuong¹, James R. Baylis³, Christian J. Kastrup³, James H. Morrissey³, Galen D. Stucky¹
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⁵ Sandford-Burnham Medical Research
MHSRS-1135  Poster Session: 2 - Poster # 156
Clinical Outcomes in 9/11 Frozen Blood
Nicole Gordon, MD, Martin Schreiber, MD
Oregon Health & Science University, Department of Surgery

MHSRS-1136  Poster Session: 2 - Poster # 157
Cryo-printing for Ectoine-Assisted Preservation of Red Blood Cells
Rami El Assal1,2, Sinan Guven1,2, Umut Atakan Gurkan2,3, Irep Gozen2, Hadi Shafiee2, Sedef Dalbeyber2, Noor Abdalla2, Gawain Thomas3, Wendy Fuld4, Ben M.W. Illigens5, Jessica Estanislau6, Joseph Khoory7, Richard Kaufman8, Claudia Zylberberg9, Neal Lindeman9, Qi Wen4, Ionita Ghiran7, Utkan Demirci1,2
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9 Akron Biotechnology, LLC, Boca Raton, FL 33487, USA

MHSRS-1162  Poster Session: 2 - Poster # 158
ECLS DEVICE SHEAR STRESSES INDUCE PROTHROMBOTIC MICROPARTICLE FORMATION
Andrew D.J. Meyer MD, MS1, Robin Kamucheka1, Prajeeda Nair2, Kristin M. Reddoch MS(2,3), Robbie K. Montgomery MS3, Bijaya K. Parida PhD3, Andrew P. Cap MD, PhD3, Nigel Mackman PhD4, Anand K. Ramasubramanian, PhD2
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TRAUMA CARE - BURN AND INTENSIVE CARE

MHSRS-788  Poster Session: 2 - Poster # 59
Fenretinide prevents spinal trauma induced lipid distortion and improves recovery from spinal cord injury
Danuta Radzioch, PhD1, Juan De Sanctis, PhD2, Gabriella Wojewodka, PhD2, Laura Curran1, Stéphane Parent, PhD, MD3, Mohan Radhakrishna, MD1, Jean Ouellet, MD1, Ioli Makriyianni, MSc1, Samuel David, PhD1
1 McGill University Health Centre, Montreal, Canada
2 Central University of Venezuela, Dept. of Immunology, Caracas, Venezuela
3 Sacré Coeur Hospital, Montreal, Canada
Blood pressure and heart rate can reliably estimate cardiac output in a conscious sheep model using computer machine learning approaches
Nehemiah T. Liu MS¹, George C. Kramer PhD², Muzna N. Khan MS RRT³, Michael P. Kinsky MD², José Salinas PhD¹
¹ U.S. Army Institute of Surgical Research, Fort Sam Houston, TX
² Resuscitation Research Laboratory, Department of Anesthesiology, University of Texas Medical Branch, Galveston, TX

Card Sorts Help “Unpack” Clinician Perspectives on Patient Condition and Treatment Priorities
Jeremy Pamplin, MD¹, Sarah Murray, MSN¹, Kevin Chung, MD¹, Todd Huzar, MD², Steven Wolfe, MD¹,
Elizabeth Mann-Salinas, PhD¹, Christopher Nemeth, PhD⁴
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³ University of Texas Southwestern Medical Center, Dallas, TX
⁴ Applied Research Associates, Chicago

Effects of recirculation of dialysate on carbon dioxide removal capabilities of a membrane lung
Andriy I. Batchinsky MD¹, Vittorio Scaravilli MD², Stefan Kreyer MD³, Katharina Linden MD³,
Bryan Jordan, MS, RN¹, Antonio Pesenti MD², Leopoldo C. Cancio MD¹
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³ University of Bonn, Germany

Surgeon General’s Casualty Nutrition Study (UK): Urinary Nitrogen Excretion and Change in Muscle Thickness of Injured UK service personnel
Conor Bentley¹, Lt. Col Mark Foster¹,², Surg. Capt. Markwinter¹,²
¹ National Institute of Health Research Surgical Reconstruction and Microbiological Research Centre, Birmingham, UK
² Royal Centre of Defence Medicine, Birmingham, UK

Immunopathological Response to Severe Trauma and Burn: Changes in Platelet Activity in Acutely Burned Patients
Rachel S. Morris, MD², Beverly S, Schaffer, PhD¹, John B. Lundy, MD¹, Heather F. Pidcocke, MD, PhD¹,
Andrew P. Cap MD, PhD¹,², Martin G. Schwacha, PhD¹,²
¹ U.S. Army Institute of Surgical Research
² Department of Surgery, The University of Texas Health Science Center at San Antonio, San Antonio, TX

10 Year Comparison of Military Outcomes to the National Burn Repository (NBR)
Bonnie Jackson,MSN RN, Booker King,MD, John Jones,BS, Sandra Escolas PhD, Michael Shiels,BS RN,
Evan Renz,MD, Kevin Chung,MD, Leopoldo Cancio,MD
U.S. Army Institute of Surgical Research, Fort Sam Houston, San Antonio, TX
MHSRS-398  Poster Session: 2 - Poster # 165
An Electronic Wound Mapping System
Craig Fenrich, BS, Sarah Shingleton, MS, RN, CCRN, CCNS, Maria Serio-Melvin, MSN, Jose Salinas PhD
U.S. Army Institute of Surgical Research, Fort Sam Houston, San Antonio, TX

MHSRS-447  Poster Session: 2 - Poster # 166
Bridging the Gap: Hybrid Cardiac Echo in the Critically Ill
Jacob Glaser, MD, Thomas Scalea, MD, Sarah Murthi, MD
University of Maryland R Adams Cowley Shock Trauma Center, Baltimore, MD

MHSRS-508  Poster Session: 2 - Poster # 167
Closed-loop FiO2 smart oxygenation system to detect pulmonary injury
Nehemiah T. Liu MS1, Richard D Branson MS RRT2, P Enkhee betaar MD3, N Patel MD3, Michael G. Salter RRT3, George C. Kramer PhD3, José Salinas PhD1, Michael P. Kinsky MD3
1 U.S. Army Institute of Surgical Research, Fort Sam Houston, TX
2 Critical Care Research, Department of Surgery, University of Cincinnati, Cincinnati, OH
3 Resuscitation Research Laboratory, Department of Anesthesiology, University of Texas Medical Branch, Galveston, TX

MHSRS-569  Poster Session: 2 - Poster # 168
Admission Thromboelastography Does Not Predict Venous Thromboembolic Events In U.S. Combat Casualties
Lt Col Gerald Fortuna

MHSRS-688  Poster Session: 2 - Poster # 169
Developing Cognitive Aides according to the Phases of Illness Paradigm for use in the Burn ICU
Sarah J. Murray, MSN1, Jeremy Pamplin, MD2, Kevin Chung, MD, FCCM2, Elizabeth Mann-Salinas, PhD2, Maria Serio-Melvin, MSN2, Todd Huzar, MD3, Steven Wolf, MD4, Christopher Nemeth, PhD3
1 The Geneva Foundation;
2 U.S. Army Institute of Surgical Research, Fort Sam Houston, TX
3 Memorial Hermann Hospital Texas Medical Center, Houston, TX
4 Parkland Health and Hospital System, Dallas, TX

MHSRS-691  Poster Session: 2 - Poster # 170
Isolation of Volatile Organic Compounds as Noninvasive Early Markers of Pulmonary Oxygen Toxicity
William Cronin, Angela Senese, Michael Bodo, David Regis, Richard Mahon, Aaron Hall
Undersea Medicine Department, Naval Medical Research Center

MHSRS-902  Poster Session: 2 - Poster # 171
TISSUE DAMAGE VOLUME SCORE: A NOVEL INDEX THAT PREDICTS SYSTEMIC INFLAMMATION AND ORGAN DYSFUNCTION IN MULTIPLY INJURED PATIENTS
Travis Frantz MS1, Scott Steenburg MD2, Greg Gaski MD2, R. Lawrence Reed MD2, Timothy Pohlman MD2, Tyler McCarroll MS1,2
1 Indiana University School of Medicine
2 Indiana University Health Methodist
MHSRS-1030  Poster Session: 2 - Poster # 172
Deployment of a Mobile Decision Support System in a Burn ICU: A Case Series
Ms. Maria Serio-Melvin

MHSRS-1095  Poster Session: 2 - Poster # 173
Decision Support for TEG Analysis
Saul Vega, BS¹, Nicolas Prat, MD¹,², Jose Salinas, PhD¹, Michael Dubick, PhD¹, Andrew Cap, MD¹,
Lorne Blackbourne, MD¹,³
¹ U.S. Army Institute of Surgical Research, Fort Sam Houston, TX
² French Armed Forces Biomedical Research Institute
³ Brooke Army Medical Center, Fort Sam Houston, TX

MHSRS-1120  Poster Session: 2 - Poster # 174
Non-contact Assessment of Wound Severity and Extent with Modulated Imaging
Amaan Mazhar, PhD¹, Steve Saggese, PhD², Alonda Pollins², Nancy Cardwell², Lillian Nanney, PhD²,
David J. Cuccia, PhD¹
¹ Modulated Imaging Inc. Photonic Incubator Office; Beckman Laser Institute; 1002 Health Sciences Road. Irvine,
   CA 92617
² Department of Plastic Surgery; Vanderbilt University. Nashville, TN 37232

MHSRS-1173  Poster Session: 2 - Poster # 175
Tissue Engineering for a 3D World: Incorporating Topographic Cues into Skin Substitutes
Amanda L. Clement, George D. Pins, PhD
Worcester Polytechnic Institute, Department of Biomedical

TRAUMA CARE - CRANIOFACIAL TRAUMA AND FACE REGENERATIVE RESEARCH

MHSRS-194  Poster Session: 2 - Poster # 176
Segmental Mandibular Defects in Sinclair Miniature Pigs Mimic Human Mandibular Reconstruction Cases
Patricia Carlisle PhD¹, Douglas Owens DVM¹, David Tucker DDS¹, Robert Hale, DDS¹,
Pamela Brown Baer ME, DDS¹
¹ U.S Army Institute of Surgical Research, Fort Sam Houston, TX

MHSRS-283  Poster Session: 2 - Poster # 177
The Severity of Dental-Disease Non-battle Injuries in Deployed US Army Personnel – May 2009-December 2012
John Simecek¹, Barbara Wojcik², Rebecca Humphrey², Alica Guerrero², Adam Fedorowicz²,
Wioletta Szszel-Fedorowicz², Paul Colthirst³, Philip DeNicolo⁴
¹ Naval Medical Research Unit San Antonio, San Antonio, TX
² Center for AMEDD Strategic Studies
³ Tri-Service Center for Oral Health Studies
⁴ U.S. Army Dental and Trauma Research Detachment

MHSRS-334  Poster Session: 2 - Poster # 178
Three-dimensional (3-D) Integrated Organ Printing for Ear Reconstruction
Sang Jin Lee, PhD, Hyun-Wook Kang, PhD, James J. Yoo, MD, PhD, Anthony Atala, MD
Wake Forest Institute for Regenerative Medicine, Wake Forest School of Medicine
**MHSRS-414  Poster Session: 2 - Poster #179**  
The Future of Auricular Repair: Using Electromechanical Reshaping to Develop a Minimally Invasive Technique to Rebuild a Human Ear  
Jessica R. Gandy, Cyrus Manuel, Tony D. Nguyen, Allen Foulad, MD, Jason Chen, Natalia Molinatti, Brian J. Wong, MD, PhD  
1 School of Medicine, University of California-Irvine, 1001 Health Sciences Road, Irvine, CA 92612  
2 Beckman Laser Institute and Medical Clinic, University of California Irvine, 1002 Health Sciences Road East, Irvine, CA 92612  
3 Department of Otolaryngology, Head and Neck Surgery, University of California Irvine, 101 The City Drive, Orange, CA 92668

**MHSRS-512  Poster Session: 2 - Poster #180**  
Characteristics of Maxillofacial Injuries and Safety of In-Theater Facial Fracture Repair in Severe Combat Trauma  
Matthew Keller, MD, Peggy Han, MPH, Michael Galarneau, MS, NREMT, Gurtis Gaball, MD  
1 Naval Medical Center, San Diego, CA  
2 Naval Health Research Center, San Diego, CA

**MHSRS-585  Poster Session: 2 - Poster #181**  
Airway Recovery after Face Transplantation  
Sebastian Fischer, MD, Joseph S Wallins, MD, Ericka M Bueno, PhD, Maximilian Kueckelhaus, MD, J Rodrigo Diaz-Siso, MD, Donald Annino, MD, Edward J Caterson, MD, PhD, Bohdan Pomahac, MD  
1 Department of Surgery, Division of Plastic Surgery, Brigham and Women's Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA  
2 Department of Surgery, Division of Otolaryngology, Brigham and Women’s Hospital, Harvard Medical School, 45 Francis St, 02115 Boston, MA

**MHSRS-684  Poster Session: 2 - Poster #182**  
The impact of full thickness burn on skin graft contraction and skin quality  
Rodney K. Chan, MD, FACS, Lloyd F. Rose, PhD, David I. Tucker, DDS, Robert G. Hale, DDS, Kai P. Leung, PhD  
1 U.S. Army Institute of Surgical Research, 3650 Chambers Pass, JBSA Fort Sam Houston, TX 78234  
2 Dental and Trauma Research Detachment, US Army Institute of Surgical Research, 3650 Chambers Pass, JBSA Fort Sam Houston, TX 78234

**MHSRS-778  Poster Session: 2 - Poster #183**  
Spatial and Temporal Control of Tissue Growth Using DNA Aptamers  
Vladimir Gilman, Thieu Truong, Minh Duong, Gordon Hirschman, Kelly Burke, Bruce Panilaitis, David Kaplan  
1 Vivonics, Inc. Waltham MA  
2 Tufts University, Medford, MA

**MHSRS-803  Poster Session: 2 - Poster #184**  
Characterization of the role of hypodermis on contraction and fibrosis  
Lloyd F Rose, PhD, Jesse C Wu, MS, David I Tucker, DDS, Rodney K Chan, MD  
U.S. Army Institute of Surgical Research, Dental and Trauma Research Detachment, U.S. Army Institute of Surgical Research, 3650 Chambers Pass, JBSA Fort Sam Houston, TX 78234
MHSRS-854  Poster Session: 2 - Poster # 185
Steroid free immunosuppression in vascularized composite allotransplantation
J Rodrigo Diaz-Siso, MD¹, Sebastian Fischer, MD¹, Geoffroy Sisk, MD¹, Ericka M Bueno, PhD¹,
Maximilian Kueckelhaus, MD¹, Simon Talbot, MD¹, Matthew J Carty, MD¹, Nathaniel Treister, NS²,
Francisco Marty, MD³, Bohdan Pomahac, MD¹ and Stefan Tullius, MD, PhD⁴
¹ Department of Surgery, Division of Plastic Surgery, Brigham and Women’s Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA
² Department of Surgery, Division of Dentistry and Oral Surgery, Brigham and Women’s Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA
³ Department of Medicine, Division of Infectious Diseases, Brigham and Women’s Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA
⁴ Department of Surgery, Division of Transplant Surgery, Brigham and Women’s Hospital, Harvard Medical School, 75 Francis St, 02115 Boston, MA

MHSRS-911  Poster Session: 2 - Poster # 186
Autologous Regeneration of Anatomically-Shaped, Vascularized Craniofacial Bone
Dr. Warren Grayson

MHSRS-154  Poster Session: 2 - Poster # 187
Effects of Silver Nanoparticles on the Growth and Attachment of Staphylococcus aureus and Methicillin-Resistant Staphylococcus aureus (MRSA)
Tony T. Yuan, Amber M. Nagy, Natalie A. Forbes, Mauris N DeSilva
Naval Medical Research Unit San Antonio, San Antonio, TX

TRAUMA CARE - ENROUTE CARE

MHSRS-1156  Poster Session: 2 - Poster # 139
Performance of Chemical Oxygen Generators at Altitude and Temperature Extremes
Dario Rodriguez Jr, MS², Thomas Blakeman, MS¹, Tyler Britton², Travis Gerlach, MD², Richard Branson, MS¹
¹ University of Cincinnati Department of Surgery
² United States Air Force, CSTARS Cincinnati

MHSRS-186  Poster Session: 2 - Poster # 188
Air Force En Route Patient Safety: A Mixed-Methods Study
Susan Connor, PhD, RN¹, Margaret McNeill, PhD, RN², Susan Dukes, Lt Col, USAF, NC, PhD, CCNS¹
Penny Pierce, PhD, RN³
¹ Department of Aerospace Medicine, USAF School of Aerospace Medicine
² Department of Professional & Clinical Development, Frederick Regional Health System
³ Graduate School of Nursing PhD Program in Nursing Science, USUHS
MHSRS-197  Poster Session: 2 - Poster # 189
Assessment of Pain: A Safety Consideration within Aeromedical Evacuation
Elizabeth Bridges, Col, AFRC, NC, PhD¹, Susan Dukes, Lt Col, USAF, NC, PhD, CCNS², Genny Maupin, MPH²
¹ University of Washington
² 711th Human Performance Wing, USAFSAM/FH, Wright-Patterson AFB, Dayton, OH

MHSRS-198  Poster Session: 2 - Poster # 190
Quantification of Ergonomic Risks Associated with Aeromedical Evacuation Tasks
Brittany Fouts, MS¹*, Jennifer Serres, PhD²*, Susan Dukes, Lt Col, USAF, NC, PhD, CCNS², Genny Maupin, MHP², Molly Wade, MS³, Mandy Cowgill, MS⁴
¹ Oak Ridge Institute for Science and Education, Wright-Patterson AFB, Dayton, OH
² 711th Human Performance Wing, USAFSAM/FH, Wright-Patterson AFB, Dayton, OH
³ Peerless Technologies Corp., Wright-Patterson AFB, Dayton, OH
⁴ Azimuth Corp., Wright-Patterson, AFB, Dayton, OH
* Presenters

MHSRS-525  Poster Session: 2 - Poster # 191
Evaluation of oxygen pulse dose timing during mechanical ventilation in a porcine model
Dario Rodriquez Jr., MS¹ Richard Branson, MS² Thomas Blakeman, MS² Peter Jernigan, MD²
Jay Johannigman, MD²
¹ CSTARS Cincinnati/USAFSAM
² University of Cincinnati Department of Surgery

MHSRS-558  Poster Session: 2 - Poster # 192
Prehospital and En Route Cricothyrotomy Performed in the Combat Setting: a Prospective, Multicenter, Observational Study
Ed Barnard¹,², Alicia Ervin¹, Robert Mabry³, Vikhyat Bebarta¹,³
¹ Air Force En route Care Research Center, US Army Institute of Surgical Research/59th MDW
² Institute of Naval Medicine, Gosport, UK
³ Joint Trauma System, Center of Excellence, U.S. Army Institute of Surgical Research, San Antonio, TX

MHSRS-607  Poster Session: 2 - Poster # 193
A model to predict duration of ventilation and 30-day mortality in patients with traumatic injuries in a combat setting using pre-flight clinical parameters
Ed Barnard¹,², Alejandra Mora¹, Vikhyat Bebarta¹
¹ Air Force En route Care Research Center, U.S. Army Institute of Surgical Research, San Antonio, TX
² Institute of Naval Medicine, Gosport, UK

MHSRS-632  Poster Session: 2 - Poster # 194
Advanced en-route care: a case-control analysis of the Acute Lung Rescue Team
Zonies, David, MD MPH¹, Tuman, Caroline RN¹, Fejdelem, Kendra, RN¹, Elterman, Joel, MD¹, Fang, Raymond, MD²
¹ Landstuhl Regional Medical Center
² C-STARS Baltimore
MHSRS-657  Poster Session: 2 - Poster # 195

Hyperoxic versus Normoxic Resuscitation in a Rat Polytrauma Model of TBI plus Hemorrhagic Shock
Dominique Scutella¹, Yan Pan¹, Julie Proctor¹, Gary Fiskum¹
¹ University of Maryland, School of Medicine

MHSRS-875  Poster Session: 2 - Poster # 196

Blood administration during Critical Care Air Transport Team (CCATT) evacuation out of theater is associated with adverse hemodynamic events regardless of pre-flight hemoglobin levels
Vikhyat Bebarta, Lt Col, MC¹,², Alejandra Mora, BS¹, Alicia Ervin, RN BSN¹, Victoria Ganem, RN BSN¹,
Nina Nnamani, MS¹, Toni Vargas, PA-C¹
¹ Air Force En Route Care Research Center
² San Antonio Military Medical Center, San Antonio, TX

MHSRS-945  Poster Session: 2 - Poster # 197

En Route Blood Transfusion from Point of Injury in a Theater of Operations Positively Impacts Shock Index
Kirby Gross, COL, MC, USA¹, Stacy Shackelford, Col, USAF², Nicole Powell-Dunford, LTC, MC, USA³,
Jean Orman, ScD, MPH⁴, Jeffrey Howard, PhD⁴, Jose Quesada, LTC, USA⁵, Jeff Bailey, Col, MC, USAF¹
¹ Joint Trauma System, U.S. Army Institute of Surgical Research, Joint Base San Antonio, San Antonio, TX
² U.S. Air Force Center for Sustainment of Trauma and Readiness Skills, Baltimore MD
³ 25th Combat Aviation Brigade, Wheeler Army Air Field, Schofield Barracks HI
⁴ US Army Institute of Surgical Research, Joint Base San Antonio, San Antonio, TX
⁵ 440th Blood Support Detachment, Joint Base San Antonio, San Antonio, TX

MHSRS-984  Poster Session: 2 - Poster # 198

Characterization of Patient Immobilization and Vibration Mitigation Systems during Simulated Transport
Rachel Kinsler, MS¹,², Amy Eslinger³, Khalid Barazanji, PhD¹
¹ U.S. Army Aeromedical Research Laboratory
² The Geneva Foundation
³ North Tide Group, LLC

MHSRS-1031  Poster Session: 2 - Poster # 199

Muzna Khan MS, RRT¹, Nicole Marques, MD¹, Richard Voigt, MSE¹, Hao Ying, PhD², Michael Kinsky, MD¹,
Perenle Enkhbaatar, MD, PhD¹, and George Kramer, PhD¹
¹ Resuscitation Research Laboratory, Dept. of Anesthesiology, UTMB, Galveston, TX
² Department of Electrical & Computer Engineering, Wayne State University, Detroit, MI

MHSRS-1091  Poster Session: 2 - Poster # 200

A descriptive analysis of trauma patients evacuated by Critical Care Air Transport Team (CCATT) out of the combat theater (2007-2013): a preliminary report
Vikhyat Bebarta, Lt Col, MC¹,², Alicia Ervin, RN BSN¹, Alejandra Mora, BS¹, Victoria Ganem, RN BSN¹,
Nina Nnamani, MS¹, Toni Vargas, PA-C¹
¹ Air Force En Route Care Research Center
² San Antonio Military Medical Center
Performance of Oxygen Concentrators at Altitude and Temperature Extremes

Thomas Blakeman, MS¹, Dario Rodriquez, MS², Tyler Britton ², Travis Gerlach, MD², Richard Branson, MS¹
¹ University of Cincinnati Department of Surgery
² United States Air Force, CSTARS Cincinnati

THE FOLLOWING POSTERS WILL BE PRESENTED AT THE LUNCHTIME BREAKOUT SESSION: HYPERBARIC OXYGEN THERAPY FOR MILD TRAUMATIC BRAIN INJURY ON TUESDAY, 19 AUG

MHSRS-976 Poster Session: 2 - Poster # 70 & HBO2
Progress of the Brain Injury and Mechanisms of Action of Hyperbaric Oxygen (HBO2) for Persistent Post-Concussive Symptoms after Mild Traumatic Brain Injury (BIMA) Study
Lindell Weaver, PhD¹, ², Austin Chhoeu³, Anne Lindblad, PhD⁴, Susan Churchill¹, Steffanie H Wilson, PhD⁴
¹ Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital;
² University of Utah School of Medicine, Salt Lake City
³ US Army Medical Materiel Development Activity (USAMMDA), Hyperbaric Oxygen Research Program Management Office (HBO2 PMO), Fort Detrick, MD
⁴ The EMMES Corporation, Rockville, MD

MHSRS-1077 Poster Session: 2 - Poster # 73 & HBO2
Adaptation, Heart-Rate Variability And Autonomic Nervous System Function In Soldiers With Sequelae Of Mild Traumatic Brain Injury
Susan Mirow, PhD MD¹, Steffanie H Wilson, PhD², Wayne C Spelius, Major USAF ret³, Lindell W Weaver, MD⁴,⁵, Susan K Churchill, APRN-NP CHRNC⁴
¹ Department of Psychiatry, University of Utah School of Medicine, Salt Lake City, UT
² The EMMES Corporation, Rockville, MD
³ United States Air Force
⁴ Hyperbaric Medicine Department, Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital, Salt Lake City, UT
⁵ University of Utah School of Medicine, Salt Lake City, UT

MHSRS-813 Poster Session: HBO2
Thermoneutral water immersion and hyperbaric oxygen do not alter cortisol regulation
Betsy Conaty

MHSRS-1072 Poster Session: HBO2
Characterization Of Baseline Eeg Abnormalities In The Brain Injury And Mechanisms Of Action Of Hyperbaric Oxygen (HBO2) For Persistent Post-Concussive Symptoms After Mild Traumatic Brain Injury
Dr. John Foley
MHSRS-1106  Poster Session: HBO2
Characterization Of Baseline Heart Rate Variability (Hrv) Within The “Brain Injury And Mechanisms Of Action Of Hyperbaric Oxygen (Hbo2) For Persistent Post-Concussive Symptoms After Mild Traumatic
Steffanie H Wilson, PhD1, Susan Mirowski, MD, PhD2, Lindell K Weaver, MD3,4, Susan Churchill, NP3
1 The EMMES BRAIN INJURY (MTBI)" STUDY (BIMA) Corporation, Rockville, MD
2 Department of Psychiatry, University of Utah School of Medicine, Salt Lake City, UT
3 Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT and Intermountain LDS Hospital
4 Department of Medicine, University of Utah School of Medicine, Salt Lake City, UT

MHSRS-418  Poster Session: HBO2
Two Consecutive Days Of 6-Hour Dives Influences Balance Control
Matthew W. Wittstein1, Stephen M. Glass1, Christopher K. Rhea1, Scott E. Ross1, F. Jay Haran2, Barbara E. Shykoff3, John P. Florian2
1 University of North Carolina at Greensboro, Greensboro, NC
2 Navy Experimental Diving Unit, Panama City, FL

MHSRS-985  Poster Session: HBO2
A Composite Outcome Measure For Mild Traumatic Brain Injury In A Hyperbaric Oxygen Clinical Trial
Susan Churchill, NP1,2, R. Scott Miller, MD3, Kayla Deru1,2, Lindell Weaver, MD1,2,4
1 Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT
2 Intermountain LDS Hospital, Salt Lake City UT
3 U.S. Army Medical Materiel Development Activity, Ft. Detrick, MD
4 Department of Medicine, University of Utah School of Medicine, Salt Lake UT

MHSRS-990  Poster Session: HBO2
Simple And Procedural Reaction Time (Anam) For Mild Traumatic Brain Injury In A Hyperbaric Oxygen Clinical Trial
Susan Churchill, NP1, R. Scott Miller MD3, Kayla Deru1,2, Steffanie Wilson, PhD4, Lindell Weaver, MD1,2,5
1 Division of Hyperbaric Medicine Intermountain Medical Center, Murray, UT
2 Intermountain LDS Hospital, Salt Lake City UT
3 U.S. Army Medical Materiel Development Activity, Ft. Detrick, MD
4 The Emmes Corporation, Rockville, MD
5 Department of Medicine, University of Utah School of Medicine, Salt Lake UT
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Monday, 18 August: 1000–2100 (includes the Assistant Secretary of Defense for Health Affairs Reception from 1900 to 2100)
Tuesday, 19 August: 1000–2000
Wednesday, 20 August: 1000–1600

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<td>[79] <a href="http://www.fau.edu">www.fau.edu</a></td>
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</tr>
<tr>
<td><strong>GE GLOBAL RESEARCH</strong></td>
<td>GE Global Research is one of the world’s largest and most diversified industrial research organization. Headquartered in Niskayuna, New York, the center is made up of 10 laboratories organized by scientific disciplines, all focused on leveraging our advancements across all of GE’s businesses. GE Global Research has many programs that support the DOD mission for combat casualty care, including low cost MR, TBI diagnosis and ubiquitous sensors.</td>
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<tr>
<td><strong>GE HEALTHCARE</strong></td>
<td>GE will feature our new Vscan with Dual Probe Handheld Ultrasound System. A handheld, pocket-sized visualization tool, Vscan with Dual Probe supports efficient workflow across your health system to help enable time and cost savings. Combining a linear-array transducer and a phased-array transducer to deliver both deep and shallow views, the first of its kind, 2-in-1 probe is always connected and ready to scan. Acquire clinical information right on the spot without swapping probes mid-exam.</td>
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<tr>
<td><strong>H&amp;H MEDICAL CORPORATION</strong></td>
<td>H&amp;H Medical Corporation is one of the leading providers of emergency tactical trauma products to the U.S. military. Our products are in every first aid kit in field today. From the Bolin Chest Seal to the H-Bandage and PriMed Compressed Gauze, H&amp;H medical leads the way in providing proven life-saving solutions.</td>
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<td>[41] <a href="http://www.gohandh.com">www.gohandh.com</a></td>
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<td><strong>HEMCON MEDICAL TECHNOLOGIES, INC.</strong></td>
<td>HemCon, founded in 2001, develops, manufactures, and markets innovative technologies for hemostatic devices for the control of bleeding resulting from trauma or surgery. HemCon products are designed for use by military and civilian first responders as well as medical professionals in hospital and clinical settings where control of bleeding are of critical importance.</td>
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<tr>
<td>[71] <a href="http://www.hemcon.com">www.hemcon.com</a></td>
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<tr>
<td>Company</td>
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<td>Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc.</td>
<td><a href="http://www.hjf.org">www.hjf.org</a></td>
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<td>Impact Instrumentation, Inc.</td>
<td><a href="http://www.impactii.com">www.impactii.com</a></td>
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<td>Infrascanner, Inc.</td>
<td><a href="http://www.infrascanner.com">www.infrascanner.com</a></td>
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<tr>
<td>Innovative Trauma Care</td>
<td>iTraumaCare.com</td>
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<tr>
<td>Johns Hopkins Military &amp; Veterans Health Institute</td>
<td><a href="http://www.jhmvi.jhu.edu">www.jhmvi.jhu.edu</a></td>
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<tr>
<td>Journal of Special Operations Medicine</td>
<td><a href="http://www.jsomonline.org">www.jsomonline.org</a></td>
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<tr>
<td>KCI</td>
<td><a href="http://www.kci1.com">www.kci1.com</a></td>
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Kerecis Limited
Kerecis has developed the unique, patent-pending Kerecis™ Omega3 fish-skin acellular dermal matrix transplantation technology, where complete acellular fish skin is used for tissue regeneration by transplantation. The Kerecis Omega3 transplantation technology is used to reconstruct the skin in wounds, for hernia repair, breast reconstruction, dura restoration and tissue regeneration following trauma. Other tissue-transplant products are based on tissues of human and porcine origin.

KForce Government Solutions - TraumaFX
Kforce Government Solutions, Inc. (KGS) TraumaFX © produces powerfully realistic, all terrain patient simulators, such as the award-winning Multiple Amputation Trauma Trainer (MATT) ©, HEMO, and AirwayPlus. TraumaFX © products employ state-of-the-art special effects, movement, and instant validation to provide Military, Medics, 68Ws, 18Ds, and First Responders with the most comprehensive, effective Tactical Combat Casualty Care and Continuum of Care training experience.

LabAnswer Government, LLC
Pharma’s top 10, biotechs, CRO’s, Army Navy, AF, NIH, CDC, FDA and others utilize LabAnswer to help define their informatics strategy, rationalize their application portfolios, and execute on those strategies for clinical trials, vaccine R&D, bio-banking pre-clinical research, etc. LabAnswer focuses on clinical research and Laboratory Informatics and brings expertise that spans all major lab and research S/W applications. LabAnswer has the ability to deliver on everything across the entire SDLC.

Laerdal Medical
Laerdal Medical is a worldwide leading provider of training, educational and therapy products for lifesaving and emergency medical care. Laerdal offers various products and services for simulation, AHA/ECC medical education, basic and advanced life support and self-directed learning products supporting EMS, hospital and military healthcare providers.

Leidos Health
Leidos Health Solutions Group includes more than 3,000 talented employees providing services and solutions in life sciences, information technology (IT), and public health, to commercial and government customers. We contribute to healthcare projects of national and international importance, drawing upon our extensive knowledge of bio-medical research and development. The Life Sciences Operation has supported USAMRMC and its laboratories for more than 30 years.

Marketing Assessment, Inc.
Preserving the ATACC/MHSRS mission of introducing new and innovative technology, MAI is proud to introduce through Abbott Labs the I-Stat/ Piccolo deployable system and the first commercially available carbon nanotube ballistic material for a broad range of applications. Additional products are the REEL Splint; the ChillBuster Hypothermia Blanket; and MicrobeCare XLP Anti-microbial to effectively control bacteria, fungi, algae and yeast on a wide variety of treated materials and substrates.

Masimo
Masimo is a global medical technology company responsible for the invention of award-winning noninvasive technologies, medical devices, and sensors that are revolutionizing patient monitoring, including Masimo SET®, Masimo rainbow® Pulse CO-Oximetry™, noninvasive and continuous hemoglobin (SpHb®), acoustic respiration rate (RRa™), Masimo Patient SafetyNet™, SedLine® (EEG-based) Brain Function Monitors, and Phasein™ respiratory monitors.
EpiFix® is a human amniotic allograft tissue uniquely processed through the Company’s proprietary PURION® Process. EpiFix® dehydrated human amnion/chorion membrane (dHACM) can reduce inflammation and reduce scar tissue formation for enhanced healing. With a variety of sizes available, EpiFix® minimizes graft waste. The Company’s PURION® Process combines cleaning, dehydration and sterilization, making EpiFix® a safe, sterilized tissue that may be stored at ambient conditions for up to 5 years.

MolecuLight has developed a handheld optical imaging device, to instantly detect, visualize, and analyze the presence and distribution of bacteria. The first application of this technology will be in the global wound care market, where there is an urgent unmet medical need where MolecuLight can significantly improve outcomes by providing real-time bacterial information. This innovative and easy to use device allows for real-time bacteria imaging and procedural guidance at the point of care.

For 30 years, NeuroKinetics, Inc. (NKI) has supplied innovative and comprehensive neuro-otologic diagnostic tools to medical professionals. I-Portal® is at NKI’s technologic core, delivering precise, real-time measurements of the eye’s horizontal, vertical, torsional, conjugate and pupil reflexes. The I-Portal® NOTC is a TRL 9 device with installations in 36 DOD and VA hospitals. I-Portal devices are in ongoing DOD clinical trials for mTBI assessment modeling and validation.

NeuroWave develops, manufactures, and markets products using advanced signal processing of brain waves for Anesthesia, Critical Care and Military Medicine applications, to improve patient outcome and quality of life. The AutoTIVA™ is being developed for the Army as an autopilot for anesthesia and sedation to help bring the benefits of Total Intravenous Anesthesia to injured warfighters. The SeizTBI™ is a disposable and compact brain monitor for rapid TBI screening at the Point Of Injury.

North American Rescue, a premier developer and manufacturer of innovative medical/rescue solutions, is dedicated to decreasing preventable death in the hostile and/or austere conditions of combat and the tactical environment. Using real-time data from today’s battlefield, our product line addresses the full spectrum of tactical medicine ranging from massive hemorrhage control, airway/respiration management and circulation to hypothermia prevention, patient evacuation and training.

NuMask, Inc designs and produces next generation mask ventilation products. Including its patented IntraOral Mask (IOM®) and OPA. The mask’s unique intraoral placement enables 100% seals and allows single providers to ventilate with ease. This device is 1/10 the size of common masks and more durable. Facial trauma, facial features and hair are no longer problematic. Our Oropharyngeal Airway (OPA) is the only sizable/trimmable device in the market. NuMask also produces cutting edge CPR masks.

The Office of Naval Research coordinates, executes and promotes science and technology programs for the U.S. Navy and Marine Corps.
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<thead>
<tr>
<th>Company Name</th>
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<tbody>
<tr>
<td>Operative Experience Inc</td>
<td><a href="http://www.operativeexperience.com">www.operativeexperience.com</a></td>
<td>Operative Experience Inc is on a mission to revolutionize surgical and pre-hospital training. Using medical simulators with unprecedented anatomical and surgical fidelity within a rigorous experiential instructional paradigm, OEI will reduce training costs while increasing training effectiveness and retention. OEI is dedicated to applying this technology to reduce combat and civilian surgical mortality, and to provide humanitarian support to third world countries with limited medical resources.</td>
</tr>
<tr>
<td>OtoSim Inc.</td>
<td><a href="http://www.OtoSim.com">www.OtoSim.com</a></td>
<td>OtoSim Inc. offers Otoscopy and Ophthalmoscopy training &amp; simulation systems. Through hands-on simulation, extensive content, and enhanced interactivity, OtoSim training systems enable trainees to quickly &amp; effectively develop confidence in their practical otoscopy and ophthalmoscopy skills to excel in the clinical environment. OtoSim helps bridge the gap between textbook learning and the clinic.</td>
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<tr>
<td>Pacific Consolidated Industries</td>
<td>pic-intl.com</td>
<td>PCI manufactures ruggedized on-site liquid and gaseous oxygen and nitrogen generators for a variety of markets; including Military &amp; Commercial marketplace supporting Aviation and Medical markets. Visit our website at <a href="http://www.pcigases.com">www.pcigases.com</a>.</td>
</tr>
<tr>
<td>PerSys Medical</td>
<td><a href="http://www.ps-med.com">www.ps-med.com</a></td>
<td>PerSys Medical specializes in providing the highest quality innovative technologies and products to meet medical challenges for military, law enforcement, homeland security, EMS, wilderness medicine agencies and governments worldwide by responding to the growing demand for life-saving products for wound care, hypothermia prevention and care, resuscitation, airway management, hemorrhage control, and more.</td>
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<tr>
<td>Philips Healthcare</td>
<td><a href="http://www.usa.philips.com/healthcare">www.usa.philips.com/healthcare</a></td>
<td>Philips Healthcare is dedicated to providing solutions designed around the needs of clinical care teams and patients by combining our unique clinical expertise with human insights. For the military, we provide a breadth and depth of products for each echelon of care from battlefield to bedside, along with comprehensive training and integrated service solutions.</td>
</tr>
<tr>
<td>PositiveID Corporation</td>
<td><a href="http://www.positiveidcorp.com">www.positiveidcorp.com</a></td>
<td>PositiveID Corporation develops molecular diagnostic systems for bio-threat detection and rapid medical testing. Its M-BAND (Microfluidic Bio-agent Autonomous Networked Detector) system, developed under contract with the U.S. DHS Science &amp; Technology directorate, autonomously analyzes air samples to detect biological airborne threats in the form of bacteria, viruses, and toxins. PositiveID’s Firefly Dx is handheld system that delivers results in minutes at the point of need using TaqMan(R) PCR.</td>
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<td><strong>QUICKCLOT COMBAT GAUZE</strong></td>
<td><a href="http://www.z-medica.com">www.z-medica.com</a></td>
<td>Z-Medica is the innovator and manufacturer of QuikClot® products for hemostasis. QuikClot® hemostatic dressings, indicated for topical use, are impregnated with kaolin, a naturally occurring mineral, which is a proven initiator of the body’s natural coagulation cascade fostering active hemostasis. This technology has been tested by both the US Army’s Institute for Surgical Research &amp; the Naval Medical Research Center. As a result, QuikClot® was selected as the number one choice hemostatic agents.</td>
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<tr>
<td><strong>RDT</strong></td>
<td><a href="http://www.rdtltd.com">www.rdtltd.com</a></td>
<td>RDT specialise in the design and manufacture of medical devices, including pre-hospital care vital signs monitors. Specialist technologies include compact and highly integrated vital signs monitors for both medical professional and non-medically trained users, as well as intermittent users. The award-winning Tempus system provides innovative, easy to use and reliable medical device solutions to help manage medical incidents for the military, civilian pre-hospital market and remote locations.</td>
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<tr>
<td><strong>REX EMS, LLC</strong></td>
<td><a href="http://www.rexems.com">www.rexems.com</a></td>
<td>The Rex Rapid Extraction Stretcher is the fastest and most efficient device on the market for the rapid extraction of patients, from point of injury to safety, regardless of distance. The device is a towable, collapsible, wheeled stretcher that can be operated by one person to safely and quickly evacuate an injured or incapacitated person weighing up to 400 lbs. Made entirely in the U.S.A.</td>
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<tr>
<td><strong>SHORELAND, INC.</strong></td>
<td><a href="http://www.shoreland.com">www.shoreland.com</a></td>
<td>Shoreland Travax, an online database of preventive and travel health information, keeps medical professionals up to date on current events and best practices in global and operational medicine. The site provides concise, constantly updated, location-specific, expert-vetted summaries of health and safety concerns and necessary preventive measures (including MILVAX requirements) for 237 countries and territories. Information is drawn from a wide variety of medical, public health, foreign service.</td>
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<tr>
<td><strong>SIERRA NEVADA CORPORATION</strong></td>
<td><a href="http://www.sncorp.com">www.sncorp.com</a></td>
<td>Sierra Nevada Corporation (SNC) is a world-class prime systems integrator and electronic systems provider known for its rapid, innovative, and agile technology solutions. Fast-growing and widely diversified, SNC is a high-tech electronics, engineering, and manufacturing corporation that continues to expand our impressive portfolio of capabilities, programs, products and services.</td>
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<tr>
<td><strong>SMITH &amp; NEPHEW</strong></td>
<td><a href="http://www.smith-nephew.com">www.smith-nephew.com</a></td>
<td>Smith &amp; Nephew’s Advanced Wound Management business offers a range of products from initial wound bed preparation through to full wound closure. There are also products for the treatment of wounds such as burns and from invasive surgery, as well as pressure sores, diabetic foot ulcers and venous leg ulcers. With our wide portfolio of wound care solutions we focus on addressing the human and economic cost of wounds to deliver better outcomes for patients and budgets alike.</td>
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</tbody>
</table>
Sync Think is currently integrating its intellectual property, technology platform, and algorithm development process to create robust, portable devices intended to be deployed in military and athletic environments. Sync Think’s technology is supported by more than a decade of research and clinical studies. There is strong scientific evidence that Sync Think eye movement tests are an accurate metric of the functional integrity of brain systems involved in attention focus.

Combat & Casualty Care focuses on the latest technology, techniques and training in tactical combat casualty care (T3C). Essential for both field medics and EMS personnel, readers of C&CC; learn the latest on aiding trauma victims in the ‘Golden Hour’ and beyond.

T.A.L.O.N.™ (Tactically Advanced Lifesaving Intraosseous Needle) One Needle, 7 Site Tactical Advantage

ROTEM® delta, a whole blood Hemostasis Analyzer has 5 pre-packaged assays to look at the viscoelastic properties of the clot in “real-time.” The temograms produced provide clinical information that along with other relevant laboratory data and clinical impression can assist physicians with better blood management decisions for their patients.

The Geneva Foundation is a non-profit organization that supports and advances innovative medical research and excellence in education within the U.S. military. We build enduring partnerships dedicated to the health and well-being of service members, their families, and the global community.

Thornhill is a medical device innovator. Our MOVES® system is the world’s first completely integrated portable intensive care unit (ICU) that eliminates the need for pressurized oxygen tanks with its built-in oxygen concentrator. In addition to oxygen, MOVES® has a ventilator, suction system, and complete patient monitor onboard. MOVES® is over 50% smaller and lighter than current medevac equipment, and can be connected to any patient stretcher for easy transport. MOVES® is rugged and compact and works extreme environments. MOVES® is FDA cleared and CE Marked.

McGowan Institute for Regenerative Medicine serves as a single base of operations for the University’s leading scientists & clinical faculty working to develop tissue engineering, cellular therapies, medical devices & artificial organs. Center for Military Medicine Research’s goal is develop new research themes & promote collaboration among investigators in the Health Sciences & related disciplines that lead to significant scientific & clinical advances that support the interests of the DoD.
### US Army Medical Research and Materiel Command Office of Research and Technology Applications

USAMRMC is the primary developer of biomedical technology, including drugs, vaccines, devices and medical information technology for the promotion and maintenance of the health and well being of military personnel. The USAMRMC Office of Research and Technology Applications (ORTA) otherwise known as the Technology Transfer Office coordinates all intellectual property licensing on behalf of all USAMRMC’s subordinate laboratories from the federal sector to nonfederal parties.

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### Vaccine & Gene Therapy Institute of Florida (VGTI Florida)

The Vaccine & Gene Therapy Institute of Florida (VGTI Florida) is a non-profit, independent biomedical research institute dedicated to the discovery and development of vital therapies to prevent, treat and cure a broad range of debilitating and life-threatening illnesses. VGTI Florida is prioritizing the advancement of translational research in addressing urgent unmet needs in the areas of cancers, infectious disease, cardiovascular disease and neurodegenerative disorders.

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### Virtual Imaging, Inc.

Virtual Imaging, Inc., located in Boca Raton, Florida, is a wholly owned subsidiary of Canon U.S.A., Inc. Combining broad experience, extensive resources, and broad business functions, Virtual Imaging collaborates with hospitals, imaging centers, private physician offices, government organizations, and veterinary practices to help them meet their challenges in delivering quality, affordable patient care. Focused on providing high-quality, productivity-enhancing digital radiography (DR) solutions.

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### Vivonics, Inc.

The charter of Vivonics is to develop innovative technologies that improve or maintain health, or that optimize the effectiveness of humans in complex systems, from the initial concept through to viable products. We have several projects in development, most of which are medical devices. Some of our medical simulation and training products are already available for sale. Vivonics also has patented technology in the development of DNA Aptamer affinity molecules for diagnostics and therapeutics.

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### ZOLL Medical Corporation

ZOLL Medical Corporation, a leader in medical devices and software solutions, helps military professionals manage, treat and save lives while also increasing operational efficiency. ZOLL offers innovative products for defibrillation, circulation, pacing, temperature management, fluid resuscitation and information management that help improve outcomes from the battlefield to the hospital bed.
<table>
<thead>
<tr>
<th>TIME</th>
<th>PRESENTATION TITLE</th>
<th>MEETING ROOM</th>
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<tbody>
<tr>
<td>0700-0800</td>
<td>Breakfast</td>
<td>Oceanview Terrace/3030 Ocean/Grand Ballroom</td>
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<tr>
<td>0800-1000</td>
<td>Plenary Session</td>
<td>Ocean Ballroom</td>
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<tr>
<td>1000-1030</td>
<td>Break</td>
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<tr>
<td>1030-1200</td>
<td>Plenary Session</td>
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<td>1200-1300</td>
<td>Lunch</td>
<td>Oceanview Terrace/3030 Ocean/Grand Ballroom</td>
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<tr>
<td>1300-1500</td>
<td>Breakout Sessions</td>
<td>Ocean Ballrooms 1-4</td>
</tr>
<tr>
<td>1500-1530</td>
<td>Break</td>
<td>Ocean Ballrooms 1-4</td>
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<tr>
<td>1530-1730</td>
<td>Breakout Sessions</td>
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<tr>
<td>1900-2100</td>
<td>Assistant Secretary of Defense (Health Affairs) Reception</td>
<td>Grand Ballroom</td>
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<tr>
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<td>B Level</td>
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