

SAN ANTONIO MILITARY HEALTH SYSTEM (SAMHS) AND UNIVERSITIES RESEARCH FORUM

TABLE OF CONTENTS

- SURF HISTORY 1
 - AGENDA 2
- INVITED GUEST SPEAKERS 4
 - LEADERSHIP REMARKS 5
 - PODIUM PRESENTATIONS 8
 - EXHIBITORS 11
 - **POSTERS/COMPETITION** 13
 - ACKNOWLEDGEMENTS 25

SURF HISTORY

The University of Texas at San Antonio, San Antonio Military Health System (SAMHS) and UT Health San Antonio collaborated to begin the SAMHS and Universities Research Forum (SURF) in 2015. While still a strongly regional event highlighting the latest research and discoveries of trainees, faculty, staff and students working to improve health outcomes and readiness, SURF has grown to include presenters from across the nation.

With attendees from the military, government, education and industry, **SURF** is one of San Antonio's largest professional development forums focused on health care research. The forum provides attendees the opportunity to present and share innovations in research practice and policy, connect with scholars and practitioners for future education, develop research, policy, and practice collaborations, and earn continuing education credits. In addition to connecting military and civilian researchers, **SURF** provides members of the military with the opportunity to earn CME and CEU credits.

This year, we have 18 podium and 86 poster presentations that will be presented online, as SURF is held virtually for the second year.



SURF PLANNING COMMITTEE

Sharon M. Carr, MSN/MHA, BSN, RN NURSE EDUCATOR/CONSULTANT

Brooke Army Medical Center/JBSA

Lola Casby, RN, DNP, EdD Wilford Hall Ambulatory Center

Carlotta Y. Davis, MSN, RN

NURSE EDUCATOR Competency Assessment Program Coordinator Department of Hospital Education & Training Brooke Army Medical Center

Eloisa Escobar, MEd

CLINICAL RESEARCH COORDINATOR 59th MDW/ST Chief Scientist's Office

Christina Guerra, MPA

PROGRAM MANAGER The Research, Economic Development, and Knowledge Enterprise University of Texas San Antonio

Ana P. Laredo RESEARCH PROGRAM MANAGER The Research, Economic Development, and Knowledge Enterprise University of Texas San Antonio

Lisa Lott Chief Scientist's Office, 59MDW

Michael J. Morris, MD

ASSISTANT DEAN OF RESEARCH San Antonio Uniformed Services Health Education Consortium

Jeremy Nelson, PhD

DEPUTY DIRECTOR Military Health Institute Chair Holder, Maj. Gen. (USA Ret.) Joe and Patty Robles Endowment in Military Health Research University of Texas Health San Antonio

Daniel Riechers, PhD

DIRECTOR FOR FACULTY AND GRANT DEVELOPMENT The Research, Economic Development, and Knowledge Enterprise University of Texas San Antonio

Brittanii Rogers RESEARCH PROGRAM COORDINATOR The Research, Economic Development, and Knowledge Enterprise University of Texas San Antonio

David Stamper, MA, EdD

EDUCATIONAL CONSULTANT Army MEDCOM BAMC

Victor Sylvia, PhD, CTR SENIOR RESEARCH SCIENTIST

59 MDW/ST Chief Scientist's Office SAN ANTONIO MILITARY HEALTH SYSTEM (SAMHS) AND UNIVERSITIES RESEARCH FORUM

DECICTDATION AND LEADEDCUID DEMADIC

AGENDA Thursday, June 10, 2021

7.00 7.45



7.00-7.3	Alvi			
8:05-9:00	AM	INVITED GUEST SPEAKERS		
8:05	AM	Larry S. Schlesinger, M.D.	President and CEO, Texas Biomedical Research Institut	e
8:25	AM	Heather Hanson	President, BioMedSA	
8:45	AM	Mark Kortepeter, M.D., M.P.H.	Vice President for Research, Uniformed Services Univer	rsity of the Health Sciences
9:00-9:15	AM	BREAK		
9:15-10:45	AM	PODIUM PRESENTATIONS:	Human Performance/Trauma Care	
9:15	AM	SESSION A	HUMAN PERFORMANCE & INJURY PREVENTION	
9:30-10:15	AM	SESSIONS B-E	TRAUMA CARE	
10:30	AM	SESSION F	HUMAN PERFORMANCE & INJURY PREVENTION	
10:45-11:00	AM	BREAK		
11:00-12:15	AM	PODIUM PRESENTATIONS:	Mental Health/Infectious Disease	
11:00-11:45	AM	SESSIONS A-D	MENTAL HEALTH	
12:00	PM	SESSION E	INFECTIOUS DISEASE	POSTER COMPETITION PARTICIPANTS
12:15	PM	SESSION F	MENTAL HEALTH	#1: Forhad Akhter
12:30-1:45	PM	LUNCH		#2: G. Jilani Chaudry
1:45-3:15	PM	PODIUM PRESENTATIONS:	Infectious Disease/Trauma Care/Pain/Mental Health	#3: Leslie Rivera-Lopez #4: Gilbert Pratt
1:45-2:00	PM	SESSION A AND B	INFECTIOUS DISEASE	#5: Holly Chapapas
2:15	PM	SESSION C	TRAUMA CARE	#6: Bailey Preikschat
2:30-2:45	PM	SESSION D AND E	PAIN	#7: Caroline Zhu
3:00	PM	SESSION F	MENTAL HEALTH	#8: Patrick McCarthy
3:15-3:30	PM	BREAK		77 more posters available in ExpoPass
2.20 5.00	-	Destar Cassiana anon et 2.20	and will win to EiOO n m. Dron in an acceleration	v ordor

3:30-5:00 PM **Poster Sessions open at 3:30 and will run to 5:00 p.m**—Drop in on sessions in any order

5:00 PM ANNOUNCEMENT OF POSTER COMPETITION WINNERS

AGENDA AND PRESENTATION DETAILS

LEADERSHIP REMARKS: 7:00AM-7:45AM and on demand in ExpoPass

Bernard Arulanandam, Ph.D., M.B.A. *Vice President for Research, Economic Development, and Knowledge Enterprise, UTSA* **Byron C. Hepburn, M.D.** Associate Vice President and Director, Military Health Institute at UTHSCSA

Brigadier General Jeannine M. Ryder Commander, 59th Medical Wing

Colonel Michael D. Wirt, M.D., Ph.D. Acting Commander, Brooke Army Medical Center

Debra M. Niemeyer, Ph.D. Chief Scientist, 59th Medical Wing

9:00AM-11:00AM 11:00AM-12:30PM HUMAN PERFORMANCE/ MENTAL HEALTH/ TRAUMA CARE INFECTIOUS DISEASE

SESSION A: Amy B. Lynn, Training and Health Outcomes of Women Diagnosed with Iron Deficiency Anemia During Basic Military Training

SESSION B: Jessica Stukel Shah,

Evaluating Thera-101 as a Low Volume Resuscitative Fluid Following Traumatic Brain Injury and Hemorrhage

SESSION C: Jessica Mendez, Development of the Defense Registry for Emergency Airway Management (DREAM)

SESSION D: Jenny A. Mendez, Recombinant Factor XIIIa is Not Suitable as an Adjunct During Prolonged Hypotensive Resuscitation in Swine (Sus scrofa domesticus)

SESSION E: Robert Laverty, Outcomes of Arterial Grafts for the Reconstruction of Military Lower Extremity Arterial Injuries

SESSION F: Michelle Lee, The Pregnant Service Member: How a Single Pregnancy Impacts Physical Fitness Scores in Active Duty Women **SESSION A: Karen L. Weis,** Associations of Physiological Biomarkers to Psychosocial Measures of Pregnancy-Specific Anxiety and Depression with the M-O-M-S Intervention

SESSION B: Elisa Borah, Evaluation of Group Peer Support for Veteran Spouses: The Veteran Spouse Resiliency Group Program

SESSION C: Gabrielle M. Earley, Reintegration Partially Mediates the Relationship Between Problematic Sleep and PTSD Symptom Severity in Post-9/11 Veterans

SESSION D: Genvieve M. Livingston, Improving Virtual Health Psychology Services During COVID-19: Cognitive Behavioral Therapy for Insomnia

SESSION E: Marc A. Patience, Evaluating the Impact of COVID-19 Based Restrictions on the Sleep and Sleep Behaviors of Airmen During Technical Training

SESSION F: Chelsea J. McMahon, Psychological Risk and Resiliency in Female Military Medical Personnel Across the Deployment Cycle

1:45PM-3:00PM INFECTIOUS DISEASE/ TRAUMA CARE/ PAIN/ MENTAL HEALTH

SESSION A: Krystal Goyins, Immunological Assessment of COVID-19 Convalescent Plasma: Correlation of IgG Isotypes with Neutralization Activity

SESSION B: Theodore J. Picou, Characterization of a Biofabricated Human Colonic Model System to Investigate Shiga Toxin Translocation Across the Intestinal Barrier

SESSION C: Jacob Kersey, Evaluation of Chemical Solutions Used for High-Level Disinfection of Surgical Instruments in the Austere Environment: A Benchtop Laboratory Experiment

SESSION D: JOSE E. Velasquez, Back Pain Treatment Behaviors of the U.S. Military Aged Population: Considerations for H2F

SESSION E: Corinne M. Heffernan, Neuroscience Education for Acute Upper Extremity Pain in Active Duty Service Members: A Mixed Methods Study

SESSION F: Kristin M. Verkamp, *Predictors* of Service Member and Veteran Quality of Life: A Secondary Data Analysis

POSTER SESSIONS POSTER COMPETITION PARTICIPANTS

3:15рм-5:00рм

POSTER #1 Forhad Akhter Characterization of Porcine Pancreas Tissue Thermal and Optical Properties for Plasmonic Photothermal Therapy

POSTER #2 G. Jilani Chaudry Analysis of 27 SNPs in a Military Community Cohort of Type 2 Diabetes Mellitus

POSTER #3 Leslie Rivera-Lopez Real-Time Electrical Impedance Based Technique to Evaluate Cytotoxicity of 1400W and GW274150 Inductive Nitric Oxide Synthase Inhibitors on Primary Human Umbilical Vein Endothelial Cells

POSTER **#4 Gilbert Pratt** Evaluation of Physiologic and Coagulation Safety with XSTAT®: No Adverse Reactions to Indwelling Applications 48-Hours Post-Administration in a Swine Uncontrolled Hemorrhage Model

POSTER #5 Holly Chapapas Magnetic Resonance Imaging and Biomarker Model for Directed Energy Exposure Medical Evaluation in Swine (Sus scrofa domestica)

POSTER #6 Bailey Preikschat Comfort with Uncertainty in Family Medicine Residents: an RRNeT Study

POSTER #7 Caroline Zhu Emergency Transfusion in Women of Childbearing Age: Outcomes Support Prehospital O+ Whole Blood Transfusion Program

POSTER #8 Patrick McCarthy *Experience* of a Novel Beta-coronavirus Multiplex Microsphere Immunoassay in a Deployed Military Field Hospital

POSTER #9 Wen Chen Optimized Peptide Extraction Method for LC-MS in the Analysis of the Stability of Antimicrobial Peptides Kn2-7 and dKn2-7 Against Proteases in Human Serum

77 more posters available in ExpoPass

INVITED GUEST SPEAKERS

Larry S. Schlesinger, M.D. President and CEO, Texas Biomedical Research Institute

Larry S. Schlesinger, MD is an internationally recognized authority in infectious diseases. He became Professor, President and CEO of Texas Biomedical Research Institute in San Antonio, TX, in 2017 and is leading a transformational process focused on scientific growth and cultural change, a new campus master plan and new research and education programs. Since his arrival, Texas Biomed has added 13 new faculty members and raised more than \$30 million through philanthropic efforts for recruitment of scientists, new programs and infrastructure needs. He has also overseen the restructuring of leadership and business practices, doubling the grants and contracts at Texas Biomed between 2019 and 2020. Dr. Schlesinger is a leading physician scientist whose research program focuses on how the lung environment shapes alveolar macrophage biology in the context of the pathogenesis of tuberculosis and diseases caused by other intracellular pathogens that subvert lung immune mechanisms. He is a prolific scholar, having authored more than 200 peer-reviewed articles and reviews, served as editor of two books and has written several chapters in leading textbooks (H index 69). He has been continually funded by the NIH and other federal agencies as well as private foundations such as the Bill & Melinda Gates Foundation for more than 30 years. He has trained approximately 170 individuals and led NIH-funded training programs. He is a recent NIH NIAID Council member and Fellow of the American Association for the Advancement of Science, the Infectious Diseases Society of America, the Association of American Physicians and the American Academy of Microbiology.





Heather Hanson President, BioMedSA

Heather Hanson is a proven, successful senior-level executive, known for improving organizational performance and shareholder value through planning, analysis, problem-solving, program development and servant leadership. She leverages her extensive experience in multiple aspects of the biomedical industry to serve the members of BioMedSA and the San Antonio biomedical industry at large. The healthcare and bioscience industry is responsible for 20% of the economy in San Antonio, which translates to \$40 billion each year. BioMedSA seeks to increase the impact through collaboration, advocacy and programming. Ms. Hanson has worked at the ground level and managed others to accomplish all aspects of medical device development, including research, design, quality, regulatory, manufacturing, field service, clinical trials and supply chain. As an engineer, she has designed products and equipment resulting in 24 U.S. patents for a variety of medical technologies. As an executive, she has led companies to improve their operational performance, establish efficient processes and raise capital, while motivating peers and employees to achieve positive results. Ms. Hanson has also founded a successful consulting company, Corvax Solutions, to assist companies and entrepreneurs in the development of medical devices. Additionally, she has worked directly for Southwest Research Institute, Motorola and Seno Medical, and consulted with a multitude of medical device companies and research institutions. Ms. Hanson holds a BSE in Mechanical Engineering from Arizona State University and an M.S. in Mechanical Engineering from North Carolina State University. She and her family have called San Antonio home for over 20 years. Ms. Hanson enjoys playing soccer in her free time.

Mark Kortepeter, M.D., M.P.H. Vice President for Research, Uniformed Services University of the Health Sciences

Mark G. Kortepeter, M.D., M.P.H. (Colonel, US Army-retired), is a physician, scientist, soldier and author. Dr. Kortepeter's career has spanned the hospital, research lab, the lecture hall and the battlefield. He is currently the Vice President for Research at the Uniformed Services University of the Health Sciences (USU). Prior to this role, Dr. Kortepeter served as Professor of Epidemiology at the University of Nebraska Medical Center and Director of the Special Pathogens Research Network. During his 27-year Army career, Dr. Kortepeter held numerous senior positions in biodefense and research, including Associate Dean for Research and Director of the Infectious Disease Clinical Research Program at USU, Deputy Commander of the US Army Medical Research Institute of Infectious Diseases (USAMRIID – aka, the "hot zone"), Biodefense Consultant for the Army Surgeon General and co-chair of NATO's Biomedical Advisory Panel. He has worked with multiple organizations, including the Defense Threat Reduction Agency, the CDC and the National Academy of Medicine.

Dr. Kortepeter's specific research and operational interests have included pathophysiology of viral hemorrhagic fevers, laboratory and clinical containment of highly hazardous infectious diseases and biological weapons defense. Dr. Kortepeter has done some recent field work as the lead for Infection Prevention and Control against Ebola virus for the World Health Organization in Burundi in 2018-2019 and as a consultant to the Pan American Health Organization in 2020 helping hospitals prepare for COVID-19 in the Caribbean. He has published over 80 journal articles and book chapters and a medical thriller memoir of his experience managing infectious disease crises titled *Inside the Hot Zone: a Soldier on the Front Lines of Biological Warfare,* a finalist for the 2021 Colby Award. He also is also a contributor to Forbes' "COVID-19 Frontlines Series."



Bernard Arulanandam, Ph.D., M.B.A.

Vice President for Research, Economic Development, and Knowledge Enterprise, UTSA

Since 2016, Dr. Arulanandam has aggressively grown the research enterprise at UTSA by promoting and supporting research and economic development on campus. His leadership has brought UTSA to its highest annual research expenditure of \$134M in 2020. He fostered the creation of UTSA's National Security Collaboration Center (NSCC) in 2018 and, more recently, led the effort to secure and establish the \$111M Cybersecurity Manufacturing Innovation Institute (CyManII), a US Department of Energy sponsored Manufacturing Innovation Institute (MII). He is an established immunologist and directs a research program focused on elucidating host-microbial interactions and the cellular and molecular mechanisms involved in the induction of immune responses against infectious diseases. Work from his laboratory has provided new insights into the development of vaccines against *Chlamydia trachomatis* and the creation of a potential live attenuated vaccine against multidrug-resistant *Acinetobacter baumannii*. His research has also advanced several animal models for vaccine development against *Francisella tularensis*. His interdisciplinary research accomplishments are demonstrated by his funding from the National Institutes of Health, the Department of Defense and the Department of Homeland Security and by his extensive list of research publications and issued patents.

Dr. Arulanandam was named a fellow of the American Association for the Advancement of Science in 2015, received the Fulbright International Education Administrators award in 2016, was elected a fellow of the American Academy of Microbiology in 2017 and was inducted as a fellow to the National Academy of Inventors in 2019. Dr. Bernard Arulanandam obtained a Ph.D. in Microbiology and Immunology from the Medical College of Ohio, a postdoctoral fellowship from the Albany Medical College and an executive M.B.A. from UTSA.

Byron C. Hepburn, M.D.

Associate Vice President and Director, Military Health Institute at UTHSCSA

Dr. Byron C. Hepburn, Maj. Gen., USAF Ret., is Associate Vice President and the inaugural Director of the Military Health Institute at the University of Texas Health Science Center at San Antonio. In this role, he strengthens the University's DoD and VA collaborations with the goal of improving the health and well-being of military personnel, veterans and their families through innovative medical research, health education and clinical care. He holds the titles of Professor of Family and Community Medicine, Assistant Dean for Military Health in the School of Medicine and the USAA Patty and Joe Robles, Jr. Distinguished Chair for Military Health. Dr. Hepburn has a distinguished military career spanning 38 years. He served as the inaugural Director of the San Antonio Military Health System (SAMHS). In addition, he was Commander of the 59th Medical Wing, Wilford Hall Ambulatory Surgical Center and Joint Base San Antonio-Lackland, the Air Force's largest medical wing composed of 6,000 military, civilian, contract employees, residents and students. Previously, he served as Deputy Surgeon General of the Air Force, where he directed all operations of the Air Force Medical Service, a \$5.1 billion, 43,000-person integrated health care delivery system serving 2.4 million beneficiaries at 75 military treatment facilities worldwide.

Dr. Hepburn is a distinguished graduate of the U.S Air Force Academy and earned a Master of Arts degree in European Studies for his work at the University of Geneva, Switzerland. He also graduated from the Uniformed Services University of Health Sciences School of Medicine and completed a residency in family practice. He was one of only 15 Air Force pilot-physicians and was a command pilot with more than 3,000 flight hours on the T-37, T-38, C-9A and C-17A aircraft. Dr. Hepburn is an honored recipient of the Mackay Trophy for his participation in the USS Cole medical evacuation mission and was deployed to Afghanistan in 2001 in support of Operation Enduring Freedom.

Brigadier General Jeannine M. Ryder

Commander, 59th Medical Wing

Brigadier General Jeannine M. Ryder is the Commander, 59th Medical Wing; Market Director, San Antonio Military Health System, Joint Base San Antonio-Lackland; and Chief, Air Force Nurse Corps. She commands the Air Force Medical Service's largest healthcare, medical-education and readiness platform comprised of six groups with a staff of 8,400 personnel executing a \$317 million budget. The wing provides 900,000 clinic visits, 18,000 surgical procedures and greater than 300 worldwide deployments annually. The 59th MDW staff at Brooke Army Medical Center supports 1.4 million patient visits and 25,000 admissions per year. As the Director for the San Antonio Military Health System, Brig. Gen. Ryder directs and manages the overall operations and resources of an integrated, joint-service health system with a collective operating budget of \$1.2 billion to provide high-quality, safe and reliable health care to more than 255,000 local beneficiaries.

As Chief Nurse of the Air Force, General Ryder creates and evaluates policies and programs for 19,000 active duty Guard and Reserve nursing personnel. She interacts with Air Staff, Joint Staff, Department of Defense, Department of Veterans Affairs and civilian healthcare organizations to ensure the highest caliber of nursing care and personnel.

General Ryder is a 1991 graduate of Boston College where she earned a Bachelor of Science degree in Nursing. She has commanded at the flight, squadron and group level in both deployed and in-garrison environments. Prior to her current assignment, General Ryder was the Commander, 711th Human Performance Wing.

Colonel Michael D. Wirt, M.D., Ph.D.

Acting Commander, Brooke Army Medical Center

Colonel Michael D. Wirt was commissioned as a Second Lieutenant in the Chemical Corps in 1986, after graduating from U.S. Army Officer Candidate School in Fort Benning, Georgia. Following graduation, he served on active duty with the 1-70th Armor Battalion, 5th Infantry Division and in multiple subsequent assignments as a Chemical Officer in the Army Reserve until 1994. During this period, Col. Wirt completed a Master's Degree and Doctorate in Bioinorganic Chemistry at Georgetown University, followed by a Post-Doctoral Fellowship in magnetic resonance at Albert Einstein College of Medicine. Col. Wirt is also a 1998 graduate of Albert Einstein College of Medical Center in Honolulu, Hawaii, in 2004. Col. Wirt completed Fellowship training in Neuroradiology at the University of California San Francisco from 2004-2006 and was subsequently assigned as the Chief of Radiology at William Beaumont Army Medical Center from 2006-2009. In 2009, Col. Wirt was selected to serve as the Brigade Surgeon for the 502nd Infantry Regiment, 101st Airborne Division (Air Assault). He deployed to Kandahar Province, Afghanistan, in 2010 as the Combined Task Force Strike Surgeon, Regional Command South, International Security Assistance Force, where the Task Force earned the Presidential Unit Citation. Upon redeployment in 2011, he was assigned as the Deputy Commander for Clinical Services at Blanchfield Army Community Hospital, Fort Campbell, Kentucky, home to the 101st Airborne Division (Air Assault). Col. Wirt deployed again in 2013 as the Officer-in-Charge of the United States Contingent at the United Kingdom's Bastion Role 3 Hospital in Helmand Province, Afghanistan before assuming command of the U.S. Army Institute of Surgical Research in San Antonio, Texas from July 2014 to July 2016. Col. Wirt served as the Eighth Army Command Surgeon in the Republic of Korea from August 2016 to August 2018 and as the Deputy Commanding Officer Brooke Army Medical Center from August 2018 to April 2021.

Col. Wirt is Board Certified in both Diagnostic and Neuroradiology and recently completed service as the Radiology Consultant to the Army Surgeon General from 2012-2016. He holds an appointment as an Assistant Professor of Radiology at the Uniformed Services University of the Health Sciences and is a Senior Member of the American Society of Neuroradiology. He is a distinguished graduate of the U.S. Army War College and a graduate of the Army Command and General Staff College, the Army Flight Surgeon course, and the Army Airborne and Air Assault schools. His awards and decorations include the Legion of Merit, the Bronze Star Medal (1 OLC), the Meritorious Service Medal (5 OLCs), the Army Commendation Medal (3 OLCs), and the Army Achievement Medal (1 OLC). He is a recipient of the Combat Medical Badge, Flight Surgeon Badge, Parachutist Badge and the Air Assault Badge. He holds the Army Surgeon General's "A" Proficiency Designator, the German Armed Forces Badge for Military Proficiency (Gold), and is a member of the Order of Military Medical Merit.

Debra M. Niemeyer, Ph.D.

Chief Scientist, 59th Medical Wing

Dr. Debra ("Deb") Niemeyer is the 59th Medical Wing Chief Scientist and Human Research Protection Program Assistant Institutional Official, Joint Base San Antonio, and serves as technical authoritative liaison to federal committees/governance bodies. The 59th Medical Wing is the Air Force's largest medical wing comprised of six groups with a staff of 6,653 personnel providing care across the San Antonio metropolitan area and supporting many worldwide deployments annually. The Wing provides worldwide contingency health care support, comprehensive home station health care services, clinical research, graduate medical education and enlisted technical training. The organization is part of the San Antonio Military Health System (SAMHS), an integrated, joint-service health system with a collective operating budget of \$1.2 billion to provide high-quality, safe and reliable health care to 254,000 beneficiaries. Dr. Niemeyer is responsible for high-level collaborations working at senior executive levels as scientific advisor to the Wing Commander and the Chief Executive Officer at SAMHS to advance modernization efforts, research education and training, and oversee a diverse, multidisciplinary research portfolio supporting 70+ enterprise sites; the largest Air Force Clinical Investigations Program and Medical Technology Transfer Program; one of four Air Force Centers of Clinical Inquiry; and other unique clinical research centers. She also leads the first nationally accredited Human Research Protection Program in the Department of Defense. She directs resources and advises on research integration into SAMHS, Major Commands, Service and Joint medical programs, strategic plans and investment strategies to address warfighter and beneficiary needs, providing specialty consultation to the Air Force and Defense Health Agency Research & Development (J-9) offices and coordinates synergistic research with other agencies, laboratories, medical treatment facilities, academia and industry. Dr. Niemeyer was commissioned through A

PODIUM PRESENTERS

Training and Health Outcomes of Women Diagnosed With Iron Deficiency Anemia During Basic Military Training

Amy Lynn, MSN, APRN, WHNP-BC — School of Nursing, UT Austin • Col. Candy Wilson, PhD—Graduate School of Nursing, Uniformed Services University • Jisuk Park, PhD—Science & Technology, 59th Medical Wing • Maj. Michael P. Allen, DNP—Graduate School of Nursing, Uniformed Services University • Lt. Col. Cubby Gardner, DNP—Defense Health Agency • Evan Myers, MD, MPH—Duke University

Evaluating Thera-101 as a Low Volume Resuscitative Fluid Adjunct Following Traumatic Brain Injury and Hemorrhage

Jessica Stukel Shah, PhD • Joseph Macaitis • Bridney Lundquist—Naval Medical Research Unit-San Antonio, Cellular and Immune Based Adjuncts for Casualty Care, Fort Sam Houston • Brian Johnstone • Michael Coleman—Theratome Bio, Inc. • Alexander J. Burdette • Heuy-Ching Wang, PhD—Naval Medical Research Unit-San Antonio, Cellular and Immune Based Adjuncts for Casualty Care, Fort Sam Houston

Development of the Defense Registry for Emergency Airway Management (DREAM)

Jessica Mendez, BS • Mireya Escandon, BS • Ashley D. Tapia, BS—U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston • Capt. William T. Davis, MD— Brooke Army Medical Center, JBSA Fort Sam Houston; Uniformed Services University; 59th Medical Wing, JBSA Lackland • Maj. Michael D. April, MD, DPhil, MSc— Uniformed Services University; 2nd Stryker Brigade Combat Team, 1st Infantry Division • Lt. Col. Joseph K. Maddry, MD—U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston; Brooke Army Medical Center, JBSA Fort Sam Houston; Uniformed Services University; 59th Medical Wing, JBSA Lackland • Capt. Kyle Couperus, MD— Uniformed Services University; Madigan Army Medical Center, Joint Base Lewis-McChord • Maj. Jerry S. Hu, D.O., PharmD—Madigan Army Medical Center, Joint Base Lewis-McChord • Lt. Col. Eric Chin, MD, MBA—Brooke Army Medical Center, JBSA Fort Sam Houston; Uniformed Services University • Maj. Steven G. Schauer, DO, MSCR—U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston; Brooke Army Medical Center, JBSA Fort Sam Houston; Brooke Army Medical Center, JBSA Fort Sam Houston; Brooke Army Medical Center, JBSA Fort Sam Houston; Uniformed Services University • Maj. Steven G. Schauer, DO,

Recombinant Factor XIIIa is Not Suitable as an Adjunct During Prolonged Hypotensive Resuscitation in Swine (Sus scrofa domesticus) Jenny A. Mendez, MS • Vanessa D. Chaplin, PhD • Gerardo Rodriguez, BS • Gilbert A. Pratt III, MS • Jacob J. Glaser, MD • Neal McNeal, PhD—Naval Medical Research Unit-San Antonio, JBSA, Fort Sam Houston

Outcomes of Arterial Grafts for the Reconstruction of Military Lower Extremity Arterial Injuries

Robert Laverty, MD—Department of Surgery, Brooke Army Medical Center, JBSA Fort Sam Houston • Samantha G. Brock, MD—Department of Surgery, Wright State University • Thomas J. Walters, PhD—U.S. Army Institute of Surgical Research, JBSA Fort Sam Houston • David S. Kauvar, MD, MPH—Vascular Surgery Service, Brooke Army Medical Center, JBSA Fort Sam Houston; Department of Surgery, Uniformed Services University

The Pregnant Service Member: How a Single Pregnancy Impacts Physical Fitness Scores in Active Duty Women Michelle Lee, MD—Department of Endocrinology, San Antonio Military Medical Center, Fort Sam Houston • Whitney Forbes, PhD • Darrick Beckman, MD— Diabetes Center of Excellence, Wilford Hall Ambulatory Surgical Center

Associations of Physiological Biomarkers to Psychosocial Measures of Pregnancy-Specific Anxiety and Depression With the M-O-M-S Intervention **Karen L. Weis, PhD, RNC-OB, FAAN, Col. (Ret.) • Katherine C. Walker, MSN, RN**—School of Nursing, University of the Incarnate Word • **Tony T. Yuan, PhD**— 59th Medical Wing, Science and Technology • **Thomas F. Gibbons, PhD**—59th Medical Wing, Clinical Investigations & Research Support • **Wenyaw Chan, PhD, MS**— School of Public Health, Department of Biostatistics & Data Science, UT Health Houston

Evaluation of Group Peer Support for Veteran Spouses: The Veteran Spouse Resiliency Group Program

Elisa Borah, PhD, Research Associate Professor, Director—Institute for Military and Veteran Family Wellness, UT Austin • Jean Paul Hare, LCSW, BCD, Maj. US Army, PhD Student—Steve Hicks School of Social Work, UT Austin • Hannah O'Brien, MSSW—Steve Hicks School of Social Work, Program Manager, Institute for Military and Veteran Family Wellness, UT Austin

Reintegration Partially Mediates the Relationship Between Problematic Sleep and PTSD Symptom Severity in Post-9/11 Veterans Gabrielle M. Earley, UG - Elizabeth M. Sanford, MS, PhD Student - Alicia A. Swan, PhD, Assistant Professor—Psychology, College for Health, Community and Policy, UT San Antonio - Mary Jo Pugh, PhD, Professor—Internal Medicine, Division of Epidemiology, University of Utah Health

Improving Virtual Health Psychology Services During COVID-19: Cognitive Behavioral Therapy for Insomnia Genvieve M. Livingston, PsyD—Clinical Health Psychology, Brooke Army Medical Center, Fort Sam Houston

Evaluating the Impact of COVID-19 Based Restrictions on the Sleep and Sleep Behaviors of Airmen During Technical Training Marc A. Patience, Maj., BSc, PhD. • Jordan M. Ellis, PhD • Melissa E. Woods, MEd • Daniel G. Cassidy, PhD • John A. Blue Star, PhD • Rosemary Estevez Burns, PhD • Ann S. Hryshko-Mullen, PhD—Department of Behavioral Medicine, Wilford Hall Ambulatory Surgical Center, JBSA Lackland • Gerald W. Talcott, PhD— Public Health Sciences Department, University of Virginia

Psychological Risk and Resiliency in Female Military Medical Personnel Across the Deployment Cycle

Chelsea J. McMahon, MS—Department of Psychology, UT San Antonio; Department of Psychiatry and Behavioral Sciences, UT Health San Antonio • Casey L. Straud, PsyD
• Sarah E. Zwetzig, PhD—Department of Psychiatry and Behavioral Sciences, UT Health San Antonio • Monty T. Baker, PhD—Wilford Hall Ambulatory Surgical Center, JBSA
• Alyssa Ojeda, MS—Nova Southeastern University • Willie J. Hale, PhD—Department of Psychology, College of Education and Human Development, UT San Antonio
• Stacey Young-McCaughan, PhD—Department of Psychiatry and Behavioral Sciences, UT Health San Antonio • Brian A. Moore, PhD—Department of Psychology, Kennesaw State University • Cynthia L. Lancaster, PhD—Department of Psychology, University of Nevada • Richard J. McNally, PhD—Department of Psychology, Harvard University • William C. Isler, PhD—Wilford Hall Ambulatory Surgical Center, JBSA • Brett T. Litz, PhD—Massachusetts Veterans Epidemiological Research and Information Center, VA Boston Healthcare System • Jim Mintz, PhD • Alan L. Peterson, PhD—Department of Psychiatry and Behavioral Sciences, UT Health San Antonio

Immunological Assessment of COVID-19 Convalescent Plasma: Correlation of IgG Isotypes With Neutralization Activity Krystal Goyins, BS - Sara Papp, BS - Jieh-Juen Yu, PhD - James Chambers, PhD - Bernard Arulanandam, PhD—Department of Biology, College of Sciences, UT San Antonio

Characterization of a Biofabricated Human Colonic Model System to Investigate Shiga Toxin Translocation Across the Intestinal Barrier **Theodore J. Picou, PhD - Rebecca A. Bova, PhD**—4D Bio³ Center, Uniformed Services University • **Angela Melton-Celsa, PhD**—Microbiology and Immunology, Uniformed Services University • **Vincent B. Ho, MD, MBA**—Radiology, 4D Bio³ Center, Uniformed Services University

Evaluation of Chemical Solutions Used for High-Level Disinfection of Surgical Instruments in the Austere Environment: A Benchtop Laboratory Experiment Jacob Kersey, Capt., SP, USA, EMPA Fellow—Emergency Medicine, Brooke Army Medical Center

Back Pain Treatment Behaviors of the U.S. Military-Aged Population: Considerations for H2F Jose E. Velasquez Jr., MBA, LCSW, BCD, Capt., Ph.D. Student—Steve Hicks School of Social Work, UT Austin

Neuroscience Education for Acute Upper Extremity Pain in Active Duty Service Members: A Mixed Methods Study

Capt. Corinne M. Heffernan, MOT, OTR/L—Doctorate of Science in Occupational Therapy Fellow, U.S. Army-Baylor University • Lyddia A. Petrofsky, MSOT, OTR/L—Doctorate of Science in Occupational Therapy Fellow, U.S. Army-Baylor University • Brian T. Gregg, PhD, OTR/L, CHT • Enrique V. Smith-Forbes, PhD, OTR/L, CHT—Doctorate of Science in Occupational Therapy program, U.S. Army-Baylor University

Predictors of Service Member and Veteran Quality of Life: A Secondary Data Analysis

Kirsten M. Verkamp, MSN, RN, Nursing PhD-Graduate School of Biomedical Sciences, UT Health San Antonio

EXHIBITORS



For more information, visit **bihlhausarts.org**

Bihl Haus Arts

The Mission of community-based Bihl Haus Arts—Creating Community through the Arts—is founded on the belief that each person, when given a chance, will achieve significant personal, social, and cultural growth through the arts. To support our mission, Bihl Haus Arts:

- · Nurtures and promotes the work of diverse visual and cultural artists in San Antonio
- Fosters artistic excellence and intergenerational and multicultural understanding and awareness
- Creates community between seniors enrolled in the GO! Arts program, area established and emerging artists, members of surrounding neighborhoods, and the global art culture
- Builds collaborations with other cultural and social service organizations to maximize access to collective resources.



For more information, visit utcidd.org



For more information, visit genevausa.org



For more information, visit hjf.org

The Center for Innovative Drug Discovery (CIDD)

The Center for Innovative Drug Discovery (CIDD), a joint venture between The University of Texas at San Antonio and UT Health San Antonio, is composed of two facilities: a High-Throughput Screening (HTS) Facility located at UT Health San Antonio and a Medicinal Chemistry and Synthesis Core Facility at UTSA. The ultimate intent of the CIDD is to provide a diverse array of core facilities and expertise to facilitate the translation of basic scientific discoveries into tangible pre-clinical candidate drugs that can be further developed into clinical therapies for human disease.

The Geneva Foundation

Dedicated to U.S. Service Members and Veterans, their Families, and the Global Public

Geneva is proud to have over 25 years of experience in delivering full-spectrum scientific, technical and program management expertise in the areas of federal contracts, federal grants and industry-sponsored clinical trials. The FY2014 National Defense Authorization Act amended Congressional language to authorize certain non-profit foundations, such as Geneva, to facilitate partnerships between military researchers and public or private organizations. Today, Geneva supports over 320 research programs at over 50 military treatment facilities and federal laboratories worldwide.

The Henry M. Jackson Foundation

The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. (HJF) is a global nonprofit that administers more than \$500 million in medical research funds annually. HJF has partnered with researchers and clinicians in the San Antonio area at Brooke Army Medical Center, the 59th Medical Wing, and Naval Medical Research Unit-San Antonio. From cancer to COVID-19, HJF's research partnerships have led to more than 200 patented biotechnologies that have applications that go beyond the battlefield.



MHS Military Health Sys

For more information, visit pdhealth.mil/resources/intransition



For more information, visit **metisfoundationusa.org**



For more information, visit utsa.edu/bhc

inTransition/ Psychological Health Center of Excellence

The DoD *inTransition* program is a free, 24/7, voluntary and confidential program that can connect any service member, veteran, National Guard or reserve member to behavioral health care. An *inTransition* coach can help bridge potential gaps during a service member or veteran's transition to a new provider or for someone seeking care for the first time. Key components:

- Available to ALL service members and veterans regardless of discharge status, time in service or time since separation
- Available globally via telephone 24 hours a day, 7 days a week, 365 days a year
- No limit on the number of times inTransition can be used
- A designated inTransition Coach, trained in military culture, works with you every step of the way to help get you connected to care
- We help connect you to resources in your local area

The Metis Foundation

The Metis Foundation is a 501c(3) specifically organized to advance clinically relevant scientific research to the medical community, especially within the US Department of Defense. We provide scientific, educational, financial, and project management support in the conduct of federally and privately sponsored research, clinical trials, and education.

The Brain Health Consortium at UTSA

We are a collaborative team using transdisciplinary approaches to advance our basic understanding of the brain to prevent and treat the most debilitating brain disorders. We integrate researchers with expertise in stem cells/precision medicine, neuroscience, biomedical engineering, psychology and behavior to answer fundamental questions about brain health. We also educate and train the next generation of scientists, propelling them into a career of novel scientific and human therapeutic discovery.



For more information, visit <u>hcap.utsa.edu/</u> <u>center-for-community-based-and-</u> <u>applied-health-research</u>

Center for Community Based and Applied Health Research

The Center for Community Based and Applied Health Research aims to promote collaborative, interdisciplinary, applied health research that engages, empowers, and mobilizes communities. Combining expertise of research faculty and community stakeholders, the Center is dedicated to identifying sustainable approaches for behavioral medicine applications to community health problems. Community partners include, but are not limited to, Head Start and early childhood centers, schools, clinics, and churches. The Center advances and complements community based research lines that address issues related to obesity, diabetes, HIV, and other chronic conditions.



For more information, visit ihdr.utsa.edu



For more information, visit utsa-irm.org



For more information, visit research.utsa.edu/texasuniversity-research/utsaresearch-core-facilities



For more information, visit velocitytx.org

Institute for Health Disparities Research

The Institute for Health Disparities Research (IHDR) advocates for the integration of biomedical and socio-behavioral science research in addressing health disparities in South Texas and the nation. The IHDR partners with local academic (UTHSCSA, SAISD, etc.) and non-academic agencies (SAMHD, UHS, etc.) to address the unequal distribution and prevalence of adverse health conditions in the region, state, and country. Furthermore, IHDR partners with individuals and organizations outside the United States to address similar problems. Since its founding in 2010, the IHDR has received over \$5.5 million in state and federal funding.

UTSA Institute of Regenerative Medicine

The IRM is a joint initiative emanating from the UTSA Colleges of Engineering and Sciences in conjunction with multiple entities throughout the San Antonio community to establish multidisciplinary teams combining academic, clinical, military, and biotechnological expertise to address grand challenges in Regenerative Medicine. We seek ground-breaking advances in basic and clinical research while educating students and young investigators in the multifaceted disciplines that make up the field of Regenerative Medicine.

UTSA Research Core Facilities

UTSA Research Core Facilities is responsible for providing access to services and shared resources such as instruments, technologies, testing/processing, and scientific services—delivered by experts to meet the needs of our research community and fulfill our research mission. The goal of our core facilities is to make our state-of-the-art technology and expertise available to all members of our research community.

We serve our core facilities by supporting the coordination of core facility directors, users, and central administration. We also establish and maintain a Business Plan and support core facilities in a manner that ensures compliance with federal regulations, fiscal sustainability, and alignment with institutional priorities. If you are interested in learning more about how UTSA Cores can support your research, please contact <u>ORIS@utsa.edu</u>

VelocityTX Innovation Center

Established in 2017, VelocityTX Innovation Center, a subsidiary of the Texas Research & Technology Foundation, helps early-stage bioscience companies accelerate the process of commercialization. VelocityTX leverages its resources – capital, mentors, industry experts and network – to launch innovative breakthroughs that can significantly change and save lives at a global level. VelocityTX is a nonprofit located in San Antonio, TX.

POSTERS BY TOPIC - TRAUMA CARE

Real-Time Electrical Impedance Based Technique to Evaluate Cytotoxicity of 1400W and GW274150 Inductive Nitric Oxide Synthase Inhibitors on Primary Human Umbilical Vein Endothelial Cells • Leslie L. Rivera-Lopez, MS • Vanessa D. Chaplin, PhD • Gilbert A. Pratt III, MS • Neal D. McNeal, PhD, LT, MSC, USN—Naval Medical Research Unit San Antonio, JBSA, Fort Sam Houston

Evaluation of Physiologic and Coagulation Safety With XSTAT[®]: No Adverse Reactions to Indwelling Applications 48-Hours Post-Administration in a Swine Uncontrolled Hemorrhage Model • Gilbert A. Pratt III, MS • Gerardo J. Rodriguez, BS • Leslie L. Rivera-Lopez, MS • Capt. Michael M. Tiller, MD, FACS, MC, USN • Jacob J. Glaser, MD, FACS, CDR, MC, USN • Neal D. McNeal PhD, LT, MSC, USN—Naval Medical Research Unit, JBSA, Fort Sam Houston

Emergency Transfusion in Women of Child-bearing Age: Outcomes Support Prehospital O+ Whole Blood Transfusion Program • Caroline S. Zhu—School of Medicine, UT Health San Antonio • Ashley C. McGinity, MD—Department of Surgery, UT Health San Antonio • Leslie Greebon, MD—Department of Pathology, UT Health San Antonio • Elly Xenakis, MD—Department of Obstetrics & Gynecology, UT Health San Antonio • Eric Epley, NREMT-P, CEM—Southwest Texas Regional Advisory Council • Rachelle B. Jonas, RN—Department of Surgery, UT Health San Antonio • Susannah E. Nicholson, MD—Department of Surgery, UT Health San Antonio • Brian J. Eastridge, MD—Department of Surgery, UT Health San Antonio • Ronald M. Stewart, MD—Department of Surgery, UT Health San Antonio

• Donald H. Jenkins, MD-Department of Surgery, UT Health San Antonio

Optimized Peptide Extraction Method for LC-MS in the Analysis of the Stability of Antimicrobial Peptides Kn2-7 and dKn2-7 Against Proteases in Human Serum • Wen Chen, PhD—Environmental Surveillance Department, Naval Medical Research Unit San Antonio, JBSA, Fort Sam Houston • Dickson Kirui, PhD • Nancy J. Millenbaugh, PhD— Maxillofacial Injury and Disease Department, Naval Medical Research Unit San Antonio, JBSA, Fort Sam Houston

Extracellular Vesicles Derived From Cardiosphere-Derived Cells (CDC-EVS) as a Potential Anti-Shock Therapeutic • Tiffani Chance, PhD • Xiaowu Wu, PhD • Jeffrey
Keesee, BS • Josue Garcia-Marcano • Christi Salgado, MS • Bin Liu, BS—United States Army Institute of Surgical Research, Blood and Coagulation • Jennifer Mosely,
PhD • Kiel Peck, MS • Luis Rodriguez-Borlado, PhD Nadia Atai, PhD—Capricor Therapeutics Institute • Stephen Gould, PhD—Johns Hopkins University, Biological
Chemistry • Linda Marban, PhD—Capricor Therapeutics Institute • Andrew Cap, MD, PhD—United States Army Institute of Surgical Research, Blood and Coagulation
• Christopher Rathbone, PhD—Biomedical Engineering, College of Engineering, UT San Antonio • James Bynum, PhD—United States Army Institute of Surgical Research, Blood and Coagulation

Forward Surgical Team Outcomes in Afghanistan, 2006-2015 • Jennifer Trevino, MBA-The Geneva Foundation, U.S. Army Institute of Surgical Research

An Analysis of Outcomes for Pediatric Trauma Warm Fresh Whole Blood Recipients in Iraq and Afghanistan • Ryann S. Lauby—Biology, College of Arts and Sciences, Baylor University; US Army Institute of Surgical Research, JBSA, Fort Sam Houston • Camaren M. Cuenca, BS—Army Institute of Surgical Research, JBSA, Fort Sam Houston • Matthew A. Borgman, MD—Brooke Army Medical Center, JBSA, Fort Sam Houston; Uniformed Services University • Andrew D. Fisher, MD, LP—Department of Surgery, School of Medicine, University of New Mexico; Medical Command, Texas Army National Guard • Vikhyat S. Bebarta, MD—Center for COMBAT Research, Department of Emergency Medicine, University of Colorado • Earnest E. Moore, MD—Center for COMBAT Research, Department of Emergency Medicine, University of Colorado Anschutz Medical Campus • Philip C. Spinella, MD, FCCM—Department of Pediatrics, Division of Critical Care, Washington University in St. Louis • James Bynum, PhD—US Army Institute of Surgical Research, JBSA, Fort Sam Houston • Steven G. Schauer, DO, MS—US Army Institute of Surgical Research, JBSA, Fort Sam Houston; Brooke Army Medical Center, JBSA, Fort Sam Houston; Uniformed Services University; Department of Surgery, School of Medicine, University of New Mexico

Inexpensive Simulation Models for Teaching Musculoskeletal Ultrasound and Femoral Regional Anesthesia to Emergency Medicine Physicians • Skylar DeHaan, MD— Department of Emergency Medicine, Brooke Army Medical Center; San Antonio Military Medical Center • Cody Newell, DO, MHSA • Vance Rothmeyer, MD • Jared Cohen, MD • Melissa Myers, MD—Department of Emergency Medicine, San Antonio Military Medical Center

Characterizing Perfusion Parameters Within an Innovative Tissue Preservation Device • Daniel J. Portillo • Stephen Rivas • Gabriela Pineda—Department of Mechanical Engineering, UT San Antonio • Sukhwinder Kaur—Department of Biomedical Engineering, College of Engineering, UT San Antonio • Leonid Bunegin—Department of Anesthesiology, UT Health • R. Lyle Hood, PhD— Department of Mechanical Engineering, UT San Antonio & Department of Biomedical Engineering, UT San Antonio & Joint Graduate School of Biomedical Sciences, The UT San Antonio and UT Health An Analysis of Conflicts Across Role 1 Guidelines • Sarah Johnson—US Army Institute of Surgical Research, JBSA, Fort Sam Houston • Ryann Lauby—US Army Institute of Surgical Research, JBSA, Fort Sam Houston • Ryann Lauby—US Army Institute of Medicine, University of New Mexico • Lt. Col. Jason F. Naylor, DSc PA-C—Madigan Army Medical Center, Joint Base, Lewis-McChord • Maj. Michael D. April, MD, DPhil, MSc USA—Stryker Brigade Combat Team, Fort Carson • Maj. Brit Long, MD, FACEP USA—Brooke Army Medical Center, JBSA, Fort Sam Houston • Maj. Steven G Schauer, DO, MS USA—US Army Institute of Surgical Research, JBSA, Fort Sam Houston; Brooke Army Medical Center, JBSA, Fort Sam Houston; 59th Medical Wing, JBSA, Lackland

A Descriptive Analysis of Battlefield First Responder and Combat Lifesaver Interventions During the Role 1 Phase of Care • Capt. Matthew W. Paulson, BA, USA • John D. Hesling, BS—University of Colorado School of Medicine; CU Anschutz Center for COMBAT Research, Department of Emergency Medicine, School of Medicine, University of Colorado • Maj. (Ret) Jerome T. McKay, PhD, USA—CU Anschutz Center for COMBAT Research, Department of Emergency Medicine, School of Medicine, University of Colorado • Col. Vikhyat S. Bebarta, MD, USAF—CU Anschutz Center for COMBAT Research, Department of Emergency Medicine, School of Medicine, University of Colorado • Col. Vikhyat S. Bebarta, MD, USAF—CU Anschutz Center for COMBAT Research, Department of Emergency Medicine, School of Medicine, University of Colorado; 59th Medical Wing, JBSA, Lackland • Brig. Gen. Kathleen Flarity, DNP, PhD, USAF—CU Anschutz Center for COMBAT Research, Department of Emergency Medicine, School of Medicine, University of Colorado; Headquarters Air Mobility Command, Command Surgeon, Scott Air Force Base • Col. (Ret.) Sean Keenan, MD, USA— CU Anschutz Center for COMBAT Research, Department of Emergency Medicine, School of Medicine, University of Colorado; Joint Trauma System, Defense Health Agency, JBSA, Fort Sam Houston; Uniformed Services University • Lt. Col. Jason F. Naylor, USA—Madigan Army Medical Center, Joint Base, Lewis-McChord • Maj. Andrew D. Fisher, MD, LP, USA—Medical Command, Texas Army National Guard; Department of Surgery, School of Medicine, University of New Mexico • Maj. Michael D. April, MD, USA— 2nd Stryker Brigade Combat Team, 4th Infantry Division, Fort Carson • James Bynum, PhD—United States Army Institute of Surgical Research, JBSA, Fort Sam Houston; United States Army Institute of Surgical Research, JBSA, Fort Sam Houston; United States Army Institute of Surgical Research, JBSA, Fort Sam Houston; United States Army Institute of Surgical Research, JBSA, Fort Sam Houston; United States Army Institute of Surgical Research, JBSA, F Injury Characteristics, Procedures, and Outcomes of Patients With Burns Presenting to Role 2 Medical Treatment Facilities During Combat Operations in Afghanistan • Mithun R. Suresh, MD • Amanda M. Staudt, PhD, MPH • Jennifer D. Trevino, MBA • Krystal K. Valdez-Delgado, BSN, RN • Christopher A. VanFosson, PhD, MHA, RN • Julie A. Rizzo, MD—United States Army Institute of Surgical Research

Incidence of Aspiration Pneumonia After Undergoing Airway Device Placement • Thomas Damrow, MS, OMSIII • Silver Martin, OMSII—School of Osteopathic Medicine, University of the Incarnate Word • Maj. Steven Schauer, DO, MSCR, RDMS—US Army Institute of Surgical Research, Brooke Army Medical Center, Uniformed Services University

Comprehensive Decision Support for Prehospital Combat Casualty Care - The Airway Clearance Model • Katherine Raczek, MD—Department of Emergency Medicine, UT Health San Antonio • David Restrepo, PhD—Department of Mechanical Engineering, UT San Antonio • R. Lyle Hood, PhD—Department of Emergency Medicine, UT Health San Antonio; Department of Mechanical Engineering; Department of Biomedical Engineering, College of Engineering, UT San Antonio • Robert A. De Lorenzo, MD, FACEP— Department of Emergency Medicine, UT Health San Antonio; Department of Mechanical Engineering & Department of Biomedical Engineering, UT San Antonio

Military Standard Testing of Commercially Available Supraglottic Airway Devices • Danielius Zilevicius, BS • Carlos Bedolla, BS • Grant Copeland, MS
 • Marisa Guerra • Sophia Salazar—Department of Mechanical Engineering, UT San Antonio • Robert De Lorenzo, MD, FACEP—Department of Emergency Medicine, UT Health San Antonio • Maj. Steven G. Schauer, DO, MS—US Army Institute of Surgical Research • R. Lyle Hood, PhD—Department of Biomedical Engineering; Department of Mechanical Engineering, UT San Antonio; Department of Emergency Medicine, UT Health San Antonio

Blood Stewardship in a Ground-Based EMS System: An Analysis of Prehospital Blood Transfusion Rates in a Major Metropolitan System • Lt. William Bullock, BS, LP, EMT-P—San Antonio Fire Department • Randall Schaefer, DNP, RN—Southwest Texas Regional Advisory Council • Michael Stringfellow, BS, LP—San Antonio Fire Department • CJ Winckler, MD—UT Health San Antonio

An Analysis of the Incidence of Hypocalcemia in Wartime Trauma Casualties • Mireya A Escandon, BS • Ashley Tapia, BS—US Army Institute of Surgical Research, JBSA, Fort Sam Houston • Andrew D. Fisher, MD, PA-C—Texas Army National Guard; University of New Mexico Hospital • Stacy Shackelford, MD—Joint Trauma System, JBSA, Fort Sam Houston • Vikhyat Bebarta, MD—Anschutz Medical Campus, University of Colorado • 59th Medical Wing, JBSA, Lackland • Franklin Wright, MD—Anschutz Medical Campus, University of Colorado • Susannah Nicholson, MD—University Hospital, UT Health San Antonio • Ronnie Hill, MS • James Bynum, PhD—US Army Institute of Surgical Research, JBSA, Fort Sam Houston • Steven G Schauer, DO, MSCR—US Army Institute of Surgical Research, JBSA, Fort Sam Houston; Brooke Army Medical Center, JBSA, Fort Sam Houston; Uniformed Services University

A Unique Portable Suction Device for Prolonged Field Care During Combat and Civilian Emergencies • Saketh R. Peri—Department of Biomedical Engineering, College of Engineering, UT San Antonio • Zach Fallon • Alex M. Moreno • Andrea Smith • Alejandro Medina • Emmanuel Olanga • Forhad Akhter • Christopher Carroll—Department of Mechanical Engineering, College of Engineering, UT San Antonio • Robert De Lorenzo, MD—Department of Biomedical Engineering, Department of Mechanical Engineering, UT San Antonio; Department of Emergency Medicine, UT Health San Antonio • R. Lyle Hood, PhD—Department of Biomedical Engineering, Department of Mechanical Engineering, College of Engineering, College of Engineering, UT San Antonio; Department of Emergency Medicine, UT Health San Antonio • R. Lyle Hood, PhD—Department of Biomedical Engineering, Department of Mechanical Engineering, College of Engineering, UT San Antonio; Department of Emergency Medicine, UT Health San Antonio • R. Lyle Hood, PhD—Department of Biomedical Engineering, Department of Emergency Medicine, UT San Antonio; Department of Emergency Medicine, UT Health San Antonio • R. Lyle Hood, PhD—Department of Biomedical Engineering, Department of Emergency Medicine, UT San Antonio; Department of Emergency Medicine, UT Health San Antonio

An Orthopedic Emergency: Acute Compartment Syndrome • 1st Lt. Maudria Willis, RN • 1st Lt. Kalvin Krieser, RN—4 West Orthopedic Trauma, Brooke Army Medical Center • Maria Barajas, RN • Alma Guerrero, LVN—4 West, Brooke Army Medical Center • A1C Samantha Burkett, Medical Technician—4 West Orthopedic Trauma, Brooke Army Medical Center • Ann Marie Lazarus, MSN, RN, AGCNS-BC, CNS • SPC Kimberly Lamb, LVN • SPC Bria Jones, LVN—4 West, Brooke Army Medical Center

The First 500: Initial Experience of a Ground Ambulance Whole Blood Transfusion Program • David Wampler, PhD, LP • Julian Mapp, MD—Department of Emergency Health Sciences, UT Health San Antonio • William Joseph Bullock—San Antonio Fire Department, Emergency Medical Services • Mark Dieterle, MBA • CJ Winckler, MD— Department of Emergency Health Sciences, UT Health San Antonio

POSTERS BY TOPIC - BRAIN HEALTH

Correlations Between the Neurobehavioral Symptom Inventory and Common Standard of Care Measures for Persistent Post-Concussive Symptoms • Caitlyn A. Nix, BA— The Henry M. Jackson Foundation for the Advancement of Military Medicine; Department of Rehabilitation, Brooke Army Medical Center, JBSA • Elizabeth Barry, MBA • Peter Hoover, BS—National Intrepid Center of Excellence (NICoE) • Lisa H. Lu, PhD—Traumatic Brain Injury Center of Excellence, JBSA; General Dynamics Information Technology • Amy O. Bowles, MD—Department of Rehabilitation, Brooke Army Medical Center, JBSA • Jesus J. Caban, PhD—National Intrepid Center of Excellence (NICoE)

Prion-Like Transmissibility of Neurodegenerative Proteinopathies: A Systematic Literature Review • Jonathan Wade, MSc, PA-S—Interservice Physician Assistant Program, U.S. Army Medical Center of Excellence

Modulation of Neural Activity Via On-Demand Magnetothermal Drug Release • Rohini Thevi Guntnur V, Madison Morales, Gabriela Romero—Department of Biomedical Engineering and Chemical Engineering, College of Engineering, UT San Antonio

Effect of Telehealth Training on Caregiver Fidelity of A-Dance Implementation and Child Outcomes • Katherine Cantrell, MEd, BCBA, LBA, Special Research Associate, Suzanne Danial, RBT, Master's Student • Yazmin Chavez-Barrow, RBT, Master's Student • Leslie Neely, PhD, BCBA-D, LBA, Associate Professor—Department of Educational Psychology, College of Education and Human Development, UT San Antonio

Effect of Telehealth Training on Caregiver Fidelity of A-Dance Implementation and Indices of Happiness • Hannah Griffin, Master's Student • Leslie Neely, PhD, BCBA-D, LBA, Associate Professor • Katherine Cantrell, MEd, BCBA, LBA, Special Research Associate—Department of Educational Psychology, College of Education and Human Development, UT San Antonio

Functional Communication Training for Caregiver on Young Children At-Risk for Autism • Trey Ximenez, Master's Student • Leslie Neely, Ph.D., BCBA-D, LBA, Associate Professor • Katherine Cantrell, M.Ed., BCBA, LBA, Special Research Associate—Educational Psychology, College of Education and Human Development, UT San Antonio The Use of Stimulus-Stimulus Pairing Procedures to Increase Pro-Social Behavior in Young Children at Risk for Autism • Kelsi Heath, RBT, Master's Student • Leslie Neely, PhD, BCBA-D, LBA, Associate Professor • Katherine Cantrell, MEd, BCBA, LBA, Special Research Associate—Department of Educational Psychology, College of Education and Human Development, UT San Antonio

Patterned Magnetic Hydrogels With Potential Applications in Peripheral Nerve Regeneration • Nicolas Muzzio, PhD—Department of Biomedical Engineering and Chemical Engineering, College of Engineering, UT San Antonio • Gabriela Romero Uribe, PhD—Department of Biomedical Engineering & Chemical Engineering, College of Engineering, UT San Antonio; BME Joint Graduate Program UT San Antonio & UT Health San Antonio, Brain Health Consortium, UT San Antonio

Unique Influence of Visual Symptoms on Functional Burden in Veterans With Mild Traumatic Brain Injury • Eden Crowsey, BS • Amber Lyle, AA—Psychology Department, College of Health, Community, and Policy, UT San Antonio • Alicia A. Swan, PhD—Psychology Department, College of Health, Community, and Policy, UT San Antonio; Polytrauma Rehabilitation Center, South Texas Veteran Health Care System

Ultrasound Detection of Intracranial Cavitation in a Human Head Model During Blunt Impact • Eric J. Galindo— New Mexico Institute of Mining and Technology, Materials Engineering, New Mexico Tech • Kiri L. Welsh—Materials Engineering, New Mexico Tech • Ricardo Mejia-Alvarez, PhD—Department of Mechanical Engineering, Michigan State University • Adam Willis MD, PhD—Department of Neurology, San Antonio Military Medical Center • Michaelann S. Tartis, PhD—Chemical Engineering, New Mexico Tech

POSTERS BY TOPIC - MENTAL HEALTH

Targeted DNA Methylation Analysis to Study Genes Correlates in Post-Traumatic Stress Disorder • **Aarti Gautam, PhD**—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research • **Ruoting Yang, PhD** • **Seid Muhie, PhD** • **Nabarun Chakraborty, MS**—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research; The Geneva Foundation, Walter Reed Army Institute of Research • **Stacy Miller, BA**—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research, PhD—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research • **Marti Jett, PhD**—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research • **Marti Jett, PhD**—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience Research, Walter Reed Army Institute of Research

Associations of Combat Exposure and Alcohol Use in Soldiers; Does Age Matter? • Jean Paul Hare, LCSW, BCD, Maj. US Army, PhD Student—Steve Hicks School of Social Work, UT Austin • Elisa Borah, PhD, Research Associate Professor; Director—Institute for Military and Veteran Family Wellness

Perceived Appreciation for Family Caregiving Associates With Higher Quality Care Day-to-Day • Kylie Meyer, PhD, MSC—Caring for the Caregiver, School of Nursing, UT Health San Antonio • Arielle Chinea—School of Nursing, UT Health San Antonio • Sara Masoud, BA, MPH—Caring for the Caregiver, School of Nursing, UT Health San Antonio • Kevin Hamilton, SPT—Department of Physical Therapy, School of Health Professions, UT Health San Antonio • Ashlie Glassner, BSN, RN—School of Nursing, UT Health San Antonio • Jing Wang, PhD, RN—Smart and Connected Technology Center, School of Nursing, UT Health San Antonio • Carole White, PhD, RN—Caring for the Caregiver, School of Nursing, UT Health San Antonio

Implementing an Evidence-Based Army Resilience Program • Jenna Lewis, PsyD, Behavioral Health Officer—First Cavalry Division, Fort Hood • Daniel Goldberg, PhD • Brittany Ridge, PhD • Joseph Mansfield, MD—Brooke Army Medical Center, Department of Behavioral Health

FedMH - A Privacy Preserving Federated Learning Approach to Encourage Open Dialog in Mental Health Discussions • Paras Bhatt • Yuanxiong Guo, PhD—Department of Information Systems and Cyber Security, College of Business, UT San Antonio • Yanmin Gong, PhD—Electrical and Computer Engineering, College of Sciences, UT San Antonio

The Effect of Heart Rate Variability Biofeedback on Uniformed Personnel and Post-Traumatic Stress Disorder: A Systematic Review • Jamie Bell, DScOT, MSOT, MS— Medical Center of Excellence, Joint Base San Antonio; Army Baylor Doctor of Science in Occupational Therapy Fellow • James Contessa, MS • Brian Gregg, PhD • Enrique Smith-Forbes, PhD—Army Baylor Doctor of Science in Occupational Therapy Fellow

Scalable-Distributed, Al-Assisted Behavior Analytics Platforms Leveraging Multiple Microsoft Kinect Cameras and Apple Watches on the Edge • Herbert Guzman, BSME, MSEE, Research Fellow—Department of Electrical and Computer Engineering, College of Engineering, UT San Antonio • Reenam Joshi, Master's Student, Department of Computer Science, UT San Antonio • Victor Guzman, Student—Samuel V. Champion High-School • Paul Rad, PhD—Department of Information Systems and Cyber Security, College of Business; Department of Computer Science, College of Science, UT San Antonio • Leslie Neely, PhD, BCBA-D, LBA, Associate Professor • Katherine Cantrell, MEd, BCBA, LBA, Special Research Associate—Department of Educational Psychology, College of Education and Human Development, UT San Antonio

Deployment Risk and Resilience Inventory-2 Post-Deployment Social Support: Examination of the Factor Structure and Correlates Among a Post-9/11 Veteran Cohort • Avery Horton—Department of Psychology, College of Education and Human Development, UT San Antonio • Alicia A. Swan, PhD—Department of Psychology, College of Education and Human Development, UT San Antonio; Polytrauma Rehabilitation Center, South Texas Veterans Health Care System • Willie Hale, PhD—Department of Psychology, College of Education and Human Development, UT San Antonio • Mary Jo Pugh, PhD—Department of Internal Medicine Division of Epidemiology, University of Utah Health

Continuum of Palliative Care Services Upon Hospital Admission • 1Lt. Talya Winton, BSN, RN • 1Lt. Nicholas Medellin, RN • 1 Lt. Sarah Doyle, RN • Spc. Marco Barraza, LVN • Cathryn Cook, RN • Contina Parker, LVN • Ann Marie Lazarus, CNS—Brooke Army Medical Center • Kristin Callaghan, FNP—Palliative Care Team, Brooke Army Medical Center

POSTERS BY TOPIC - HEALTH SERVICES RESEARCH

Characterization of Porcine Pancreas Tissue Thermal and Optical Properties for Plasmonic Photothermal Therapy • Forhad Akhter, MS • Santiago Manrique-Bedoya— Department of Mechanical Engineering, UT San Antonio • Chris Moreau—Gastroenterology & Transplant, UT Health San Antonio • Andrea Lynn Smith—Department of Mechanical Engineering, UT San Antonio • Kathryn Mayer—Department of Physics & Astronomy, UT San Antonio • Yusheng Feng—Department of Mechanical Engineering, UT San Antonio • R. Lyle Hood—Department of Mechanical Engineering, UT San Antonio; Graduate School of Biomedical Sciences, UT Health San Antonio

Analysis of 27 SNPs in a Military Community Cohort of Type 2 Diabetes Mellitus • G. Jilani Chaudry • Q. Xia • J.L. Myers • M.Y. Caballero—Center for Advanced Molecular Detection, Science & Technology, 59th Medical Wing, Defense Health Agency, JBSA, Lackland

Comfort With Uncertainty in Family Medicine Residents: An RRNeT Study • **Bailey Preikschat, MPH, CPH**—Institute for Integration of Medicine & Science, School of Medicine, UT Health San Antonio • **Inez Cruz, PhD, LMSW** • **Nehman Andry, MD**—Department of Family & Community Medicine, School of Medicine, UT Health San Antonio

Overlapping and Distinct Molecular Signatures Between Recent and Chronic Combat PTSD: Clinical and Multi-Omics Integration • Seid Muhie, PhD—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research; The Geneva Foundation, Walter Reed Army Institute of Research • Aarti Gautam—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research • Ruoting Yang—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research; The Geneva Foundation, Walter Reed Army Institute of Research; PTSD Systems Biology Consortium • Rasha Hammamieh • Marti Jett—Medical Readiness Systems Biology Branch, Center for Military Psychiatry and Neuroscience, Walter Reed Army Institute of Research

Real World Outcomes of the Management of Thiazide and Loop Diuretics Upon Initiation of an SGLT-2i in a Military Medical Center • Julian E. Rodriguez, PharmD, CPT— Department of Pharmacy and Graduate Medical Education, Brooke Army Medical Center • Paige F. Parsons, PharmD, BCACP, BCGP • Thirsa Martinez, PharmD, MPA • Jacqueline I. Moya, PharmD, BCPS • Qian Ya L. Zeng, PharmD, BCACP—Department of Pharmacy, Brooke Army Medical Center • James K. Aden, PhD— Department of Graduate Medical Education, Brooke Army Medical Center

Testing the Sterility of Expired Healing Abutments to Determine Post-Expiration Date Clinical Safety • Marcela Land, DDS—Department of Periodontics, Air Force Post-Graduate Dental School, JBSA, Lackland • Kyle A. Land, DDS—Department of Oral & Maxillofacial Surgery, Wilford Hall Ambulatory Surgical Center, JBSA, Lackland • Matthew T. Raper, DDS, MS—Department of Periodontics, Air Force Post-Graduate Dental School, JBSA, Lackland • Carl A. Labella, III, DDS—Department of Oral & Maxillofacial Surgery, Wilford Hall Ambulatory Surgical Center, JBSA, Lackland • Kraig S. Vandewalle, DDS, MS—Department of Dental Research, Benjamin W. Dunn Dental Clinic, JBSA, Lackland • Lori E. Henrichs, MS, MT—Department of Clinical Investigations and Research Support, JBSA, Lackland

Relationship Between Nutrition and Adverse Outcomes in Orthopedic Trauma Patients • Katherine J. Jensen, MChE, MPH • Mason Poffenbarger, BS—Long School of Medicine, UT Health San Antonio • Boris Zelle, MD—Department of Orthopedic Surgery, UT Health San Antonio • Melissa Valerio, PhD, MPH—School of Public Health, UT Health San Antonio Assessing Challenges With Access to Care for Patients Presenting to the Emergency Department for Non-Emergent Complaints • Ashley D. Tapia, BS • Camaren M. Cuenca • Sarah A. Johnson • Ryan S. Lauby—U.S. Army Institute of Surgical Research, JBSA, Fort Sam Houston • William Fernandez, MD—UT Health San Antonio • Adrianna Long, MD • Brit Long, MD—Brooke Army Medical Center, JBSA, Fort Sam Houston • Joseph K. Maddry, MD—U.S. Army Institute of Surgical Research, JBSA, Fort Sam Houston; UT Health San Antonio; Brooke Army Medical Center, JBSA, Fort Sam Houston; Uniformed Services University • Michael D. April, MD, DPHil, MSc— Uniformed Services University • Eric J. Chin, MD, MBA—Brooke Army Medical Center, JBSA, Fort Sam Houston • Uniformed Services University • James Bynum, PhD— U.S. Army Institute of Surgical Research, JBSA, Fort Sam Houston • Steven G. Schauer, DO, MSCR—U.S. Army Institute of Surgical Research, JBSA, Fort Sam Houston; Brooke Army Medical Center, JBSA, Fort Sam Houston; Uniformed Services University

Long-Term Health Consequences of Preeclamptic Pregnancies in the United States Armed Forces: A Case-Control Study in Progress • Amelia Duran-Stanton, PhD, DSc, MPAS, PA-C—Chief, Ready & Resilient Integration Branch & Deputy Surgeon, U.S. Army Installation Management Command; Brooke Army Medical Center, JBSA, Fort Sam Houston • Andrea Loewendorf, PhD—ImmunoVation • Emily A. Stone, PhD • Lee Ann Zarzabal—Defense Health Agency • Thornton S. Mu, MD—Brooke Army Medical Center, JBSA, Fort Sam Houston

Assessing the Influence of Chin-Throat Length on Perceived Profile Attractiveness • Maj. Raquel C. Brentson, DDS, MS • Erin M. Speier, DMD—Tri-Service Orthodontic Residency Program, Air Force Post Graduate Dental School, JBSA, Lackland

Meta-Analysis of Odds Ratios From Heterogeneous Clinical Studies • David Han, PhD-Department of Management Science & Statistics, UT San Antonio

Retrospective Real World Cohort Study to Assess Effects of Mass Switching Patients With IBD to Renflexis From Remicade • Kyle P. Smith, Maj., USAF, BSc, PharmD
David Nowinski, PharmD—PGY1 Pharmacy Practice Resident & Preceptor, Brooke Army Medical Center • Anish A. Patel, DO—Division of Gastroenterology & Hepatology, Brooke Army Medical Center • Qian Ya Lensa Zeng, PharmD—PGY1 Pharmacy Practice Resident & Preceptor, Brooke Army Medical Center • Christie L. Morrison, CRNP
Cody R. Ashcroft, MD—Division of Gastroenterology & Hepatology, Brooke Army Medical Center • Rania El-DeSoky, PharmD—Academic Fellows, College of Pharmacy, University of Houston • Jackoline Constantino, PharmD—PGY1 Pharmacy Practice Resident & Preceptor, Brooke Army Medical Center

Explainable Artificial Intelligence Reveals Novel Insights on Breast Cancer Prognosis • Debaditya Chakraborty, PhD—Department of Construction Science, UT San Antonio
• Cristina Ivan—Department of Experimental Therapeutics, UT MD Anderson Cancer Center; Center for RNA Interference and Non-Coding RNA, UT MD Anderson Cancer
Center • Paola Amero—Department of Experimental Therapeutics, UT MD Anderson Cancer Center • Maliha Khan—Department of Lymphoma and Myeloma, UT MD
Anderson Cancer Center • Cristian Rodriguez-Aguayo—Department of Experimental Therapeutics, UT MD Anderson Cancer Center; Center for RNA Interference and
Non-Coding RNA, UT MD Anderson Cancer Center • Hakan Başağaoğlu—Evolution Online LLC • Gabriel Lopez-Berestein—Department of Experimental Therapeutics,
UT MD Anderson Cancer Center; Center for RNA Interference and Non-Coding RNA, UT MD Anderson Cancer Center;

Preference for Social Stimuli: A Comparison of Stimulus Modes Used in Preference Assessments • Ileana Carvajal, RBT—Department of Educational Psychology, UT San Antonio • Shannon Wilson, BCaBA—Department of Family & Child Studies, University of South Florida • Hannah MacNaul, PhD, BCBA-D, LBA, LSSP— Department of Educational Psychology, UT San Antonio • Catia Cividini-Motta, PhD, BCBA-D—Department of Family & Child Studies, University of South Florida Reducing Bariatric Readmissions • Gerald Ross, MSN, RN, CCRN, CNS • 1 Lt. Molly Paskewitz, BSN, SPC • Jon Barrios, CPT • Andrea Hurst, BSN • 1 Lt. Benjamin Hussing, BSN, SSG • Michael Castillo & Aaron Shaw, BSN • Maria Tijerina, BSN • Courtney Gerber, BSN • Regina Lorensey & Marisa Jaroch, BSN • Joseph Gonzalez, BSN • 1 Lt. Joshua Hagen, BSN • 2 Lt. William Eberhart, BSN • 2 Lt. Caitlin Keenan, BSN • 2 Lt. Gabrielle Payne, BSN • 2 Lt. Justin Sinlao, BSN • A1C Destinee Weaver • Maj. Ed Halford, MSN, CNS-BC • Ltc. Gerald Ross, MSN, CNS-7T Surgical-Trauma Unit, Brooke Army Medical Center

Empire: Emergency Medicine Principal Investigator Research Education - An Innovative Civilian-Military Educational Collaboration • William Fernandez, MD, MPH— Department of Emergency Medicine, UT Health San Antonio

Diabetes Center of Excellence (DCOE) DSMES Repository 2018-2020: Diabetes Self-Management Education and Diabetes Distress • Inez I. Cruz, PhD, LMSW—59th Medical Wing, Diabetes Center of Excellence, Wilford Hall Ambulatory Surgical Center, JBSA, Lackland • Craig Martinez • Danielle Lester • Maj. (P) Darrick Beckman, MD, MC—Diabetes Center of Excellence, Wilford Hall Ambulatory Surgical Center, JBSA, Lackland

Testing an Innovative E-Cigarette Cessation Program in a Real-World Dental Practice Setting • Marissa J. Mexquitic, MS—Institute for Integration of Medicine & Science, UT Health San Antonio • Gabrielle Oniya, BS—Public Health, UT San Antonio • Rahma Mungia, BDS, MSc, DDPHRCS—Periodontics, UT Health San Antonio
 • Kathleen Case, MPH, DrPH—Center for Research to Advance Community Health, UT Health San Antonio • Maria Atique, DDS—Atique Orthodontics
 • Betsy Jones, MPA—San Antonio Council on Alcohol and Drug Awareness

Intelligent Real-Time HRV Monitoring With PPG Sensor • Yuntong Zhang—Department of Computer Science, UT San Antonio • Jingye Xu—Department of Electrical & Computer Engineering, UT San Antonio • Wei Wang • Mimi Xie—Department of Computer Science, UT San Antonio • Keying Ye—Department of Management Science & Statistics, UT San Antonio • Jeff Prevost—Department of Electrical & Computer Engineering, UT San Antonio • Dakai Zhu—Department of Computer Science, UT San Antonio • Jangement Science, UT San Antonio • Jangement Science, UT San Antonio • Jangement of Electrical & Computer Engineering, UT San Antonio • Jangement of Electrical & Computer Engineering, UT San Antonio • Dakai Zhu—Department of Computer Science, UT San Antonio

Development of Unsupervised Control Model for Self-Monitoring and Management of Type 2 Diabetes Mellitus • Carolina Ramirez-Tamayo • Syed Hasib Akhter Faruqui • Stanford Martinez • Adel Alaeddini—Department of Mechanical Engineering, UT San Antonio • Jing Wang—School of Nursing, UT Health San Antonio

Gender Bias in the Extraction of Chemicals From Text • Anthony Rios, PhD • Xingmeng Zhao—Department of Information Systems & Cyber Security, College of Business, UT San Antonio

COVID-19 Biobehavioral-Focused Front Line Healthcare Workers Self-Care Initiative • Lance McGinnis, BSN • Rebecca Heyne, PhD, DNP, MBA, RN, CPNP-PC, EBP-C—59th Medical Wing, Science & Technology, Center for Clinical Inquiry, U.S. Air Force

Systematic Review & Meta-Analysis of Association Between Several Gene Polymorphisms and Alcohol Dependence Macy Belle • Mina Song, David Han, PhD— UT San Antonio

POSTERS BY TOPIC - PAIN

Can Virtual Reality Reduce Patient's Pain, Improve Patient's Experience, and Reduce Procedure Related Anxiety with Venipuncture? A Randomized Control Trial • Matthew J. Perdue, MPAS, DSc, PA-C—Emergency Department, U.S. Army, Carl R. Darnall Army Medical Center; Doctorate of Science in Physician Assistant Studies-Emergency Medicine Program, U.S. Army-Baylor University • Mohamad A. Umar, MPAS, DSc • Jerimiah D. Walker, MPAS, DSc—Doctorate of Science in Physician Assistant Studies-Emergency Medicine Program, U.S. Army-Baylor University

Exploring the Secretome's Biomarker and Analgesic Potential • Natasha M. Sosanya, PhD • Roger Chavez • Alberto Mares, MS—U.S. Army Institute of Surgical Research, JBSA, Fort Sam Houston • Aarti Gautam, PhD—Medical Readiness Systems Biology Branch, Center for Military Psychiatry & Neuroscience Research • George Dimitrov, MS
• Ruoting Yang, PhD • Ross Campbell, MS—The Geneva Foundation, Walter Reed Army Institute of Research • Alex V. Trevino—U.S. Army Institute of Surgical Research, JBSA, Fort Sam Houston • Rasha Hammamieh, PhD—Medical Readiness Systems Biology Branch, Center for Military Psychiatry & Neuroscience Research • Candelaria
Daniels, PhD • John Clifford, PhD—U.S. Army Institute of Surgical Research, JBSA, Fort Sam Houston

Comparing Outcomes Among Outpatients Treated for Pyelonephritis With Oral Cephalosporins Versus First-Line Fluoroquinolones and Trimethoprim-Sulfamethoxazole • Peter Fosse, Maj., USAF, PharmD, BSc, BCPS • Stephanie Giancola, PharmD, BCPS, BCIDP • Caroline Conner, PharmD, BCCCP—Department of Pharmacy, Brooke Army Medical Center • Kevin Brinkman • Hannah Brink— Brooke Army Medical Center, Uniformed Services University

Effectiveness of Transcutaneous Electrical Nerve Stimulation for Postoperative Pain Control in Adult Surgical Patients: An Umbrella Review • Robert Lehtonen, Capt., BSN, RN, SRNA • Matthew Veith, Maj., BSN, RN, SRNA • Logan Beiswanger, Capt., BSN, RN, SRNA • Raymundo Orozco, Capt., BSN, RN, SRNA • Sheena Jackson, Capt., BSN, RN, SRNA • Brian Benham, Maj. (Ret), DNP, MSN, CRNA—U.S. Army Graduate Program in Anesthesia Nursing, Baylor University

POSTERS BY TOPIC - HUMAN PERFORMANCE AND INJURY PREVENTION

Magnetic Resonance Imaging and Biomarker Model for Directed Energy Exposure Medical Evaluation in Swine (Sus scrofa domestica) • Holly Chapapas, MS • Paul M. Sherman, MD—711th Human Performance Wing, U.S. Air Force School of Aerospace Medicine, FES, JBSA, Lackland • Bianca Cerqueira, PhD • John Sladky, MD—KBR Aerospace, Brooks City Base • Noel D. Montgomery, PhD • Jennie M. Burns, PhD—711th Human Performance Wing, RHDR, JBSA, Fort Sam Houston • Benjamin T. Kalinosky, PhD—General Dynamics Information Technology, JBSA, Fort Sam Houston

An in Vitro Assessment of Wear Rate of Various Bite Turbo Materials • Jameson Everett Hoffman, DMD, CPT • Wendy Lobre, DDS—Tri-Service Orthodontic Residency Program, Air Force Postgraduate Dental School, Uniformed Services University

End-of-Shift Evaluations: Experiences Over a Quarter-Century • Aaron G. Matlock, MD, MBA—San Antonio Uniformed Services Health Education Consortium, Emergency Medicine Residency, Brooke Army Medical Center, JBSA, Fort Sam Houston • Robert A. De Lorenzo, MD, MSM, MSCI—Department of Emergency Medicine, UT Health San Antonio

Vitamin E: A Review of Clinical Applicability for Burn and Smoke Inhalation Injury • Kevin P. McGovern, MD—Department of General Surgery, San Antonio Military Medical Center • Thomas A. Mitchell, MD—U.S. Army Institute of Surgical Research • Linda E. Sousse, PhD—Burn & Soft Tissue Research Department, U.S. Army Institute of Surgical Research

Analysis of Human Performance Biomechanical Data Using Statistical Parametric Analysis Methods • Travis Eliason, BS • Ty Templin • Kase Saylor
 Lance Frazer, PhD—Southwest Research Institute • Juste Tchandja, PhD—Special Warfare Training Wing, U.S. Air Force • Doug Isaacks—Guardian Premier Solutions
 Lt. Col. Ben Hando PT, DSc—Special Warfare Training Wing, U.S. Air Force • Dan Nicolella, PhD—Southwest Research Institute

Sleep and Military Leaders: Examining the Values, Beliefs, and Quality of Sleep and the Impact on Occupational Performance • Lyddia A. Petrofsky, MSOT, OTR/L, CPT
 Corinne Heffernan, MOT, OTR/L—Doctorate of Science in Occupational Therapy Fellow, U.S. Army-Baylor University • Brian Gregg, PhD, OTR/L, CHT
 Enrique Smith-Forbes, PhD, OTR/L, CHT—Doctor of Science in Occupational Therapy Program, U.S. Army-Baylor University

Hearing Loss and Tinnitus Service-Connected Disability Claims and Hearing Testing Trends Among US Military Personnel • Morgan G. Demaree, BA—Department of Psychology, UT San Antonio • Jeremy T. Nelson, PhD—Military Health Institute, School of Medicine, UT Health San Antonio • Alicia A. Swan, PhD—Department of Psychology, UT San Antonio; South Texas Veterans Health Care System

Understanding Medication Labels When My Pharmacist Is Away, The Effects of Graphic Medication Label on Drug Misuse • Naessiamba Eab-Aggrey—Department of Communication, College of Liberal & Fine Arts, UT San Antonio

POSTERS BY TOPIC - INFECTIOUS DISEASE

Experience of a Novel Betacoronavirus Multiplex Microsphere Immunoassay in a Deployed Military Field Hospital • Capt. Patrick McCarthy, MD • Capt. Alexandra Adams, MD, MPH—Department of Surgery, Brooke Army Medical Center • Florian Krammer, PhD—Department of Microbiology, Icahn School of Medicine at Mt. Sinai • Eric Laing, PhD • Christopher Broder, PhD—Department of Microbiology & Immunology, Uniformed Services University • Daniel Stadlbauer, PhD—Department of Microbiology, Icahn School of Medicine at Mt. Sinai • Capt. Timothy Burgess, MD—Infectious Disease Clinical Research Program, Department of Preventive Medicine & Biostatistics, Uniformed Services University • Col. Kevin Chung, MD—Department of Medicine, Uniformed Services University • Ltc. Guy Clifton, MD—Department of Surgery, Brooke Army Medical Center

Whole-Genome Sequencing of SARS-CoV-2 Identifies Mutations of Interest at JBSA/Lackland • Ashley Nazario-Toole, PhD • Thomas F. Gibbons, PhD • Hui Xia— Clinical Investigations & Research Support, 59th Medical Wing, JBSA, Lackland

Joint Trauma System COVID-19 Pre-Test Survey Data Outcomes • Lyndsey Hassmann, MPH • Caryn A. Stern, DrPH, MPH • Stacy Shackelford, MD—Joint Trauma System, Combat Support Agency, Defense Health Agency

Joint Trauma System COVID-19 Registry Data Outcomes • Caryn A. Stern, DrPH, MPH • Lyndsey Hassmann, MPH • Stacy Shackelford, MD—Joint Trauma System, Combat Support Agency, Defense Health Agency

Association Between Home County COVID-19 Incidence Rates and Positive COVID-19 Tests During Basic Military Training at Lackland Air Force Base • John W. Kieffer, MD, MPH, Capt., USAF, MC—559th Medical Group, THLS Trainee Health, JBSA, Lackland • Ernest Ebert, MD, CCFP—PGY-3 General Preventive Medicine Resident, Uniformed Services University • Dianne Frankel, DO, MPH, MTM&H, CTropMed, Maj., USAF, MC—559th Medical Group, THLS Trainee Health, JBSA, Lackland

Changes in Secreted Protein Expression by Black-Legged Ticks Exposed to Lyme Disease Bacteria • Olivia Shi, BSc • Taylor MacMackin • Rachel Chen, PhD • Janakiram Seshu, PhD • Robert Renthal, PhD—Department of Biology, College of Sciences, UT San Antonio

Tracheostomy Placement in Patients With Acute Respiratory Distress Syndrome Requiring Extracorporeal Membrane Oxygenation: Did COVID-19 Change Our Practice?
Capt. Alexandra Adams, MD, MPH, CPT • Capt. Robert Laverty, MD • Capt. Patrick McCarthy, MD—Department of Surgery, Brooke Army Medical Center
Capt. Joseph Marcus, MD • Capt. Joshua Boster, MD • Capt. Lauren Sattler, MD • Maj. Michal Sobieszczyk, MD—Department of Medicine, Brooke Army Medical Center
Medical Center • Col. Phillip Mason, MD • Lt. Col. Valerie Sams, MD—Department of Surgery, Brooke Army Medical Center

Can an 8 Point Lung Ultrasound Protocol be Used as a Risk Stratification Tool in COVID Patients? • Ryan Joseph, DO, DTM&H • Craig Sisson, MD • Christopher Gelabert, MD • Jessica Solis-McCarthy, MD • Mark Foster, MD • Abhishek Roka, MD • Zachary Kendrick, MD • Samuel Nesemann, DO—Department of Emergency Medicine, UT Health San Antonio

Are Adhesion Energies Conserved Among Strains of the Foodborne Listeria monocytogenes Pathogen? An Atomic Force Microscopy Study • Edward Jake Rodgers, BS • Bong-Jae Park • Nehal I. Abu-Lail—Department of Biomedical Engineering & Chemical Engineering, UT San Antonio

Ozone Treatment and Bacterial Contamination of Dental Unit Water • Christopher Pesut, DMD-Periodontics, Air Force Post-Graduate Dental School

COVID-19-Related Cognitive Impairment: A Case Study • Jared S. Link, PsyD—Department of Behavioral Health, Neuropsychology Clinic, Brooke Army Medical Center, JBSA, Fort Sam Houston; Biomedical Sciences Corps, U.S. Air Force • Janyna Mercado, PhD • Chelsea Stephens, MS • Robert A. Seegmiller, PhD, ABPP—Department of Behavioral Health, Neuropsychology Clinic, Brooke Army Medical Center, JBSA, Fort Sam Houston

Genetic Manipulation of the Psychrophilic Antarctic Bacterium Marinomonas primoryensis by Tn7 Mutagenesis • Ricardo R. Tijerina, BS • Cameron J. Lloyd, BS—South Texas Center for Emerging Infectious Diseases, UT San Antonio • Shuaiqi Guo, PhD • Peter L. Davies, PhD—Queens University • Karl E. Klose, PhD—South Texas Center for Emerging Infectious Diseases, UT San Antonio

Stochastic SIR-based Examination of the Policy Effects on the COVID-19 Spread Mina Song • Macy K. Belle, Aaron Mendlovitz, David Han, PhD-UT San Antonio

The SURF Planning Committee would like to thank San Antonio Military Health System (SAMHS), the University of Texas Health Science Center at San Antonio, and the University of Texas at San Antonio leadership for their support of this forum that fosters the interchange of ideas between researchers from the region and across the nation. We thank the University of Texas System's Defense and Veterans Health Collaborative (DVHC) for being a sponsor of SURF. Thank you also to the legislature of the State of Texas for supporting this conference in part using funds appropriated under the San Antonio Life Sciences Institute. Finally, thank you to Adrianna San Roman, graphic designer at UTSA, for producing the SURF logo and Fiesta Medal and to Christina Guerra, program manager at UTSA, for her tireless work to coordinate, organize and manage the 2021 SURF.



