

Uniformed Services University School of Medicine
2025 Annual Report

SCHOOL OF
MEDICINE



Uniformed
Services
University

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DEAN'S MESSAGE



For the USU School of Medicine, 2025 was a very successful year on multiple fronts, including research, service and leadership, and education. For the fifth consecutive year, USU outscored all other surveyed medical schools on the annual Association of American Medical Colleges (AAMC) Graduation Questionnaire (GQ), with **96% of our Class of 2025 students responding AGREE or STRONGLY AGREE** with the statement “Overall, I am satisfied with the quality of my medical education.” The **Enlisted to Medical Degree Preparatory Program** (EMDP2) also had a remarkable year, with 177 applications for just 26 spots.

Not to be outdone, our graduate medical education programs also achieved outstanding results. Most notably, the first-time board pass rate for **National Capital Consortium** (NCC) GME trainees reached an all-time high of 98%. Our graduate education programs had a banner year, with top three finishes in highly competitive public health case competitions, student publications in high-impact journals, prestigious fellowships and awards, and the introduction of a brand-new Health Informatics and Information Science certificate program.

In 2025, USU researchers delivered major advances in medical science with an emphasis on Warfighter health and safety. For example, the **Center for the Study of Traumatic Stress** published research outlining a possible statistical method to identify soldiers at risk for suicide attempt. Results suggest that this statistical approach may be a highly effective way to determine suicide risk. The **Military Cardiovascular Outcomes Research** (MiCOR) program launched **Electrocardiogram Risk Assessment to Prevent Sudden Cardiac Events** (ERASE) to address sudden cardiac death, the most common non-traumatic killer of military recruits. The **Limb**

Optimization and Osseointegration Program (LOOP) program published results of the first US clinical trials for osseointegration, a critical area of research for amputee care. And the **Concussion Assessment, Research and Education** (CARE) program is now the largest concussion and TBI study in history.

As an innovation hub for the MHS, the USU School of Medicine continues to remain ahead of emerging technologies. Our inaugural **Hospital 2.0 Summit** convened dozens of military medical leaders along with industry and technology innovators to advance the vision of a patient-first, innovation-centered military healthcare system. The FDA granted an Investigational Device Exemption (IDE) for **WoundX™**, a clinical decision support tool (CDST) designed to assist surgeons in optimizing the timing of wound closure. We also launched the **Digital Technology Integration Center** (DTIC), in support of MHS's digital transformation goals.

The pace of change in medical technology and emergence of new knowledge is nothing short of breathtaking, and we expect that pace to increase in future years. In 2026 we will implement some organizational changes and realignments to position the School of Medicine for success in the coming years and decades. We are inspired by the possibilities offered by new teaching, learning, and research technologies, but firmly committed to the fundamentals - foundational science, excellence in care, and commitment to the military medical mission. I'm very pleased to share this Annual Report, highlighting the best of a remarkable year.

Eric Elster, MD, FACS, FRCS Eng (Hon.)
CAPT, MC, USN (Ret.)
Dean, School of Medicine
USU Executive Vice President for Medical Affairs
Professor of Surgery
Professor of Molecular and Cell Biology

ACADEMIC HIGHLIGHTS

UNDERGRADUATE MEDICAL EDUCATION

AAMC GQ results. On the annual AAMC Graduation Questionnaire, **96%** of USU Class of 2025 medical students responded **AGREE or STRONGLY AGREE** to the statement “Overall, I am satisfied with the quality of my medical education,” compared to **89%** of all students in US medical schools. This was the fifth consecutive year (2021, 2022, 2023, 2024, 2025) in which USU outscored other surveyed medical schools.

96%

“Overall, I am satisfied with the quality of my medical education”

Military Match Day took place on 10 December at USU and at MTFs around the world, with 88% of Class of 2026 students matching to their first-choice specialties.

88%

The Class of 2026 achieved an 88% match to chosen specialty across all services

Top Specialties

Emergency Medicine



Internal Medicine



Family Medicine



Anesthesia



General Surgery



Radiology



Orthopedic Surgery



Pediatrics



Psychiatry



In 2024, the School of Medicine received re-accreditation from the Liaison Committee for Medical Education (LCME) through the 2031 - 2032 academic year, with just six findings. In 2025, LCME determined that the School of Medicine had successfully resolved all six findings and is in full compliance with all accreditation standards and elements. Our next LCME accreditation visit is scheduled for 2031 - 2032.

Operation Bushmaster, the culminating medical field practicum for fourth-year medical students, was held in October. New this year was a Marine Corps-based scenario with an INDOPACOM focus, along with new operational problem sets reflecting the anticipated challenges of LSCO and AI-driven warfare. MEM Chair **CAPT Sherri Rudinsky** writes, “This year’s military medical practicum was a resounding success, providing crucial, high-



*Class of 2026 Match Day
(photo: Tom Balfour)*

intensity training for our future military medical health professionals. USU is generating a ready medical force to save lives and improve survivability in challenging environments.”

LTC Melissa Myers served as Course Director for Operation Bushmaster, with **MAJ Jamie Correno-Davidson**, serving as Course Director for the first-year practicum MFP 101.

The newly launched **Academic Success Program** offers individualized academic support designed for the unique needs of military medical students. In addition to providing academic support, the program teaches evidence-based techniques to sharpen memory, focus, and decision-making. Assistant Dean for Academic Success and Associate Professor of **Military and Emergency Medicine Dr. Rebekah Cole** developed and manages the Academic Success Program. To further enhance student learning support, faculty members **Dr. Lynnette Parker, Dr. Thomas Flagg, Dr. Rachel Cox, Dr. Andrew Snow, Dr. David Mears,** and **Dr. Angela Melton-Celsa** worked with Associate Dean for Curriculum **Dr. Arnyce Pock** to develop a comprehensive new review session to prepare students for their USMLE Step 1 exams.

With Radiology among the Military Health System’s most in-demand specialties, the **Department of Radiology and Bioengineering** expanded its educational portfolio to address the growing demand for Radiologists. Under the leadership of RAD Vice Chair of Education **CDR John Dryden**, the Department added five new RAD Advanced Clinical Rotation (ACR) sites; and introduced a Gross Anatomy & Radiology (GAR) curriculum. In 2025, the number of military Radiologists participating in small group teaching and hands-on ultrasound (US) labs doubled.



Operation Bushmaster, Fort Indiantown Gap, PA, October 2025 (photo: TSgt Caleb Pavao)

Dual degree programs also saw increased participation, with **over 40 percent** of Class of 2025 students earning Health Professions Education (HPE) certificates. Two Class of 2025 medical students were the first MD / Master in HPE (MHPE) graduates, and 20 other medical students are enrolled in the joint MD / MHPE program.

MEDICAL STUDENT ACCOMPLISHMENTS

Early in 2025, Class of 2025 medical students **2LT Mason Remondelli**, **ENS Maria Satre**, **2LT John-Paolo Torre**, and **ENS Kaitlyn Yeh** successfully completed US Army Airborne School. 2LT Torre was the Honor Graduate for his cohort.



Left: Mason Remondelli and John-Paolo Torre Right: Maria Satre and Kaitlyn Yeh

In July, the Pat Tillman Foundation announced its 2025 Scholars class, including **SFC Joseph Maccarelli** (now Class of 2029 medical student 2LT Joseph Maccarelli). The Pat Tillman Scholarship program recognizes “remarkable military service members, veterans and spouses,” with thousands of applicants competing for 60 annual scholarships. 2025 marks the third consecutive year that a USU medical student was selected.

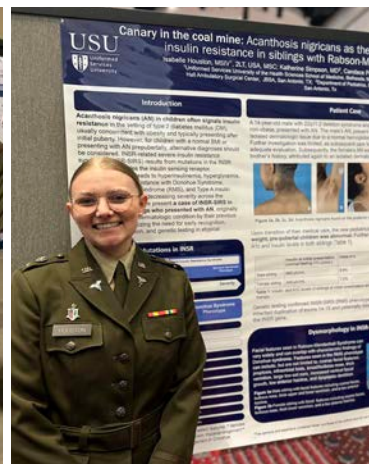
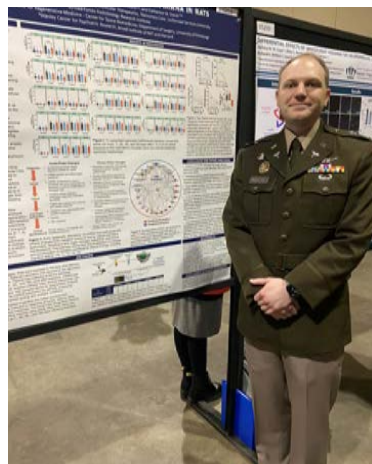


Joseph Maccarelli (photo Tom Balfour)

ENS Elizabeth Sullivan of the Class of 2027 represented USU as a member of the All-Navy squad that won the Armed Forces Cross Country Championship in San Antonio, Texas. ENS Sullivan took third place overall and was one of just ten athletes to qualify for the CISM Military World Championship.

Class of 2026 medical student **2LT Ethan Naylor** received the NASA student grant augmentation award, which provided \$25,000 to support 2LT Naylor’s research on spaceflight-associated miRNAs as useful biomarkers of space radiation-induced cognitive deficits.

Class of 2026 medical student **2LT Belle Houston** was awarded the Val A Hemming prize for student research by the Section on Uniformed Services of the American Academy of Pediatrics at AAP’s 2025 National Conference & Exposition. 2LT Houston’s mentor is **Col Candace Percival**, Associate Professor of Pediatrics and Associate Dean of Education for the **San Antonio Uniformed Services Health Education Consortium**.



Left to right: Elizabeth Sullivan, Ethan Naylor, Belle Houston

2LT Sophia Sandy completed the Marine Corps Historic Half Marathon, finishing 39th overall and 3rd in the women’s division. 2LT Sandy is a 2024 West Point graduate and a member of the Class of 2028. Her performance placed her in the top 1% of all race participants.

In May, **HS1 Jonathan Lownsbery**, EMDP2's first Coast Guard student, was commissioned as an officer, along with 25 other members of EMDP2 Cohort 10. ENS Lownsbery is now a Class of 2029 medical student.

As a Research Assistant for the **Department of Radiology and Bioengineering's MAGNUS** research program, **Jiayu Shao** applied and was accepted to the School of Medicine's highly selective **MD/PhD** program. His research mentor **Col (Dr.) Christopher Vojta** administered the Air Force oath of office to now **2d Lt Shao**, who began his studies at USU in August.



Left to right: Sophia Sandy, Jonathan Lownsbery, Jiayu Shao (portraits: Tom Balfour)

In June, Class of 2026 medical students **2LT Karine Zeidan**, **2d Lt Edgar Villaruel**, **2d Lt Grace Roe**, and **ENS Kamryn McKenzie**, accompanied by Brigade Commander **COL Albert Kinkead** and MEM Assistant Professor **LTC James Schwartz (ret)**, attended EXOSAN military medical exercises in La Valbonne, France. The students trained with French military officers and students, observing differences in tactical combat care standards and sharing best practices.



Left to right: Edgar Villaruel, Karine Zeidan, Grace Roe, Kamryn McKenzie

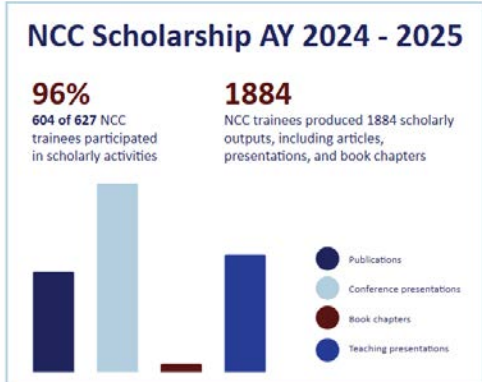
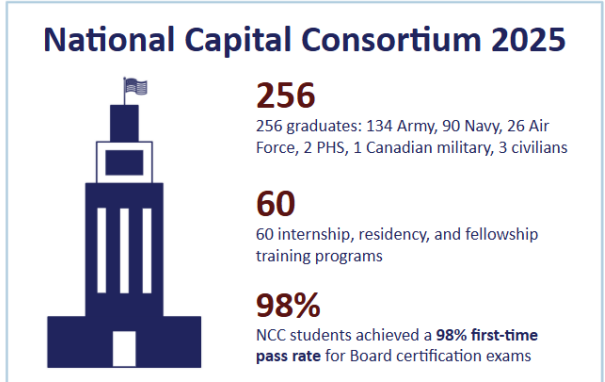


Left to right: Thomas Croft, Annamaria Degeronimo, Katherine Nagel, Megan Monroe

The **USU Family Medicine Interest Group (FMIG)** received the American Academy of Family Physicians (AAFP) FMIG Program of Excellence Award in Innovation. Class of 2027 medical student **ENS Thomas Croft** accepted the award on behalf of the team at the AAFP’s FUTURE conference for students and residents. Additional FMIG officers include **2d Lt Megan Monroe, ENS Katherine Nagel, and ENS Annamaria Digeronimo.**

GRADUATE MEDICAL EDUCATION

The [National Capital Consortium \(NCC\)](#) graduated 256 new military physicians in 2025, and the NCC’s first-time pass rate for Board certification exams reached an all-time high of 98%. Associate Dean for Graduate Medical Education **Dr. Jerri Curtis** attributes the program’s success to “the devotion, creativity, and hard work of our outstanding Program Directors, the faculty, and the trainees themselves for being flexible and committed to excelling at their chosen specialties amid challenging times.”



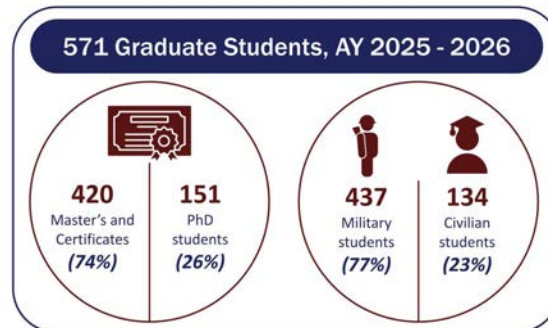


NCC graduation day, June 2025

NCC trainees also produced a significant body of scholarly work in 2025. 604 of 627 NCC trainees - 96% - participated in research and scholarship, producing over 1800 publications and presentations.

GRADUATE EDUCATION

In AY 2024 - 2025, 71 Master's and PhD graduates contributed to over 100 peer-reviewed publications and delivered invited presentations and talks at conferences and symposia around the world. Graduate students also received prestigious awards and grants, including the NIH Fellows Award for Research Excellence (FARE) and many more.



The **Master of Health Administration and Policy (MHAP)** program led by **LCDR Kezia Edmonson** jumped 29 spots in the U.S. News & World Report rankings, from #60 in 2024



AUPHA UPD National Honor Society Induction, December 2025 Photo: Tom Balfour

to #31 among in 2025. Additionally, 11 MHAP students were inducted into the Association of University Programs in Health Administration (AUPHA) Upsilon Phi Delta (UPD) National Honor Society. Inductees include **LT Quadre Nichols, ENS LaSchon Simmons, Maj Edward (Eddie) Bentz, ENS Fabian Camingue, LCDR Nabil Tahan, PhD (faculty), Capt Ja'Ilen Ricks, ENS Apolo Silva, ENS Robbie Baca, Capt Lester De Caires, ENS John Gorey, Maj Kristina Nauck, and Maj Austen Conwell.**

In March, for the third time in four years, a team of USU graduate students finished in the top 3 at the renowned Emory Morningside Global Health Case Competition. USU finished second among 28 universities, including Emory, Yale, Dartmouth, Einstein College of Medicine, University of Pittsburgh, and University of Melbourne. The team included graduate students **MAJ Edward Bentz, CPT Kimberly Boua, Urmi Kumar, Teresa Russell,** and **LT Yana Villanueva**, medical student **ENS Nicole Mahr**, and faculty advisors **Dr. Weyinshet Gossa, Dr. Bolanie Olapeju,** and **Col John Hatfield.**



Left to right: Yana Villanueva, Urmi Kumar, Kimberly Boua, Teresa Russell, Nicole Mahr, Edward Bentz



Left to right: Needhi Sharma, Michael Lindow, Yoland Victor, Rayomand Kapadia, Sabrina Torres with DC Public Health Case Challenge judge

In October, the Global Health Interest Group (GHIG) won the grand prize in the 2025 DC Public Health Case Challenge. The team of **Michael Lindow, ENS Needhi Sharma, Capt Sabrina Torres, ENS Rayomand Kapadia,** and **Yoland Victor** developed a data-driven nutrition security solution called “FreshLink DC” in response to the challenge “Strengthening Health Resilience for Chronic Disease in the District of Columbia through Technology and Data Solutions.”

ADDITIONAL GRADUATE STUDENT ACCOMPLISHMENTS

In March, Medical and Clinical Psychology (MPS) students, led by **COL Patrice Shanahan**, completed the demanding 30km Norwegian Foot March. In addition to COL Shanahan, participants included **2LT Kyra Brettler, 1LT Richard Iwuagwu, 1LT Peter Mikoski, ENS Natasha Dhanraj, Capt Jun Hee Kang, 1LT Elisabeth Mata, 1LT Cheyenne Quilter, 1LT John Roberts, Capt Claire Demming, Mr. Andrew Ton, 2LT Alexander Bonde-Balutowski, CPT Airyn Nash,** and **1LT Ann McConnon.**

MCB grad student **Allison Ruchinskas** (advisor **Dr. Andrew Snow**) received an American Association of Immunologists (AAI) Trainee Abstract Award for her work on CARD11-BCL10-MALT1 complex and its role in human T cells. Ms. Ruchinskas was also invited to present at the AAI Annual Meeting.



LT Shannon Exley received the American Board of Clinical Psychology Doctoral Student Scholarship, which honors an outstanding doctoral student who intends to seek board certification in clinical psychology. 2025 marks the second consecutive year that a USU student received this scholarship.

Megan Parker, PhD, a 2025 USU graduate, received the Obesity Society’s George Bray Doctoral Dissertation Award for “significant contributions that advance the scientific or clinical basis for understanding or treating obesity.” Dr. Parker received a \$2,000 award and presented her research at the Society’s annual conference in November.



Left to right: Allison Ruchinkas, Shannon Exley, Dr. Megan Parker (photos: Tom Balfour)



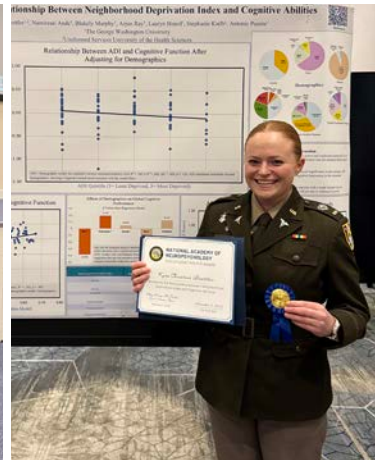
Dr. Bernard Okech with then-SSG Luka Ndungu

In June, **SSG Luka Ndungu** (now **CPT Luka Ndungu, PhD**), became the first enlisted service member to earn a PhD in Environmental Health Sciences at USU. Following graduation, Dr. Ndungu reported to Joint Base San Antonio where he completed the Basic Officer Leaders Course (BOLC) and began his career as an Army entomologist focused on mosquito-borne illnesses. **Dr. Bernard Okech** was CPT Ndungu’s research advisor.

1LT Larry Williams Jr., a first-year Medical and Clinical Psychology (MPS) PhD student, appeared in the movie “Brothers on Three,” a documentary about the 2023 national championship USMA rugby team for which 1LT Williams served as Captain.

In November, MPS PhD student **2LT Kyra Brettler** received the Student Poster Award at the National Academy of Neuropsychology conference for her poster “Assessing the Relationship between NDI and Cognitive Abilities.”

Maj Daniel Thompson received the UK Defence Force Wiseman Medal for “Predicting readiness of delayed primary closure of traumatic extremity wounds using a deep learning-based computer vision model.” This marks the second consecutive year that a USU graduate student received the Wiseman Medal.



Left to right: Daniel Thompson (left), Kyra Brettler, Larry Williams Jr. (then Cadet Larry Williams Jr.)

In December, MPS graduate student **2LT Mackenzie Kieborz** competed in the Devil Dogs Ultra 100K race in Prince William Forest, Virginia, finishing in 15:10:43 for 5th place among the women and 24th overall. Combining training and study, she reports that she often listens to recorded lectures and textbooks during training runs. 2LT Kieborz was supported by a dedicated USU pit crew including **2LT Patrick Marcos**, **2LT Madison Miller**, **2d Lt Quartez Richardson**, **ENS Olivia Durant**, **ENS Christian Bernabe** and EID graduate student **Ben Greene**.



Left: Mackenzie Kieborz. Right: Kyra Brettler with Wreaths Across America volunteers, December 2025



Working with the American Psychological Association's Division 19 (The Society for Military Psychology), MPS graduate student **2LT Kyra Brettler** organized a group of student and staff members to volunteer at Wreaths Across America at Arlington National Cemetery on 13 December. The group of about

25 volunteers (including SOM students and staff, HJF staff, and family members) spent the day assisting visitors with navigating the cemetery and locating their loved ones' grave sites.

FACULTY HIGHLIGHTS

The Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF) selected three School of Medicine national faculty members as 2025 Heroes of Military Medicine for 2025:

- Army - **COL Benjamin Donham**, Associate Professor of Military and Emergency Medicine
- Navy - **CAPT Matthew Tadlock**, Associate Professor of Surgery
- USPHS - **CAPT John Iskander**, Adjunct Professor of Preventive Medicine and Biology



Left to right: COL Donham, CAPT Tadlock, CAPT Iskander

Psychiatry Professor and Center for the Study of Traumatic Stress (CSTS) founder and past Director **Dr. Robert Ursano** received the Military Health System Research Symposium (MHSRS) Lifetime Achievement Award, which was presented at the annual MHSRS conference in Kissimmee, Florida.

APG Professor and NEU Program Director **Dr. Kimberly Byrnes** (a USU graduate) co-founded the brand-new [National Capital Area Neurotrauma Society](#) and chaired its inaugural meeting in February.

In January, MPS Professor and Suicide CPR Initiative Director **Dr. Marjan Holloway** was elected as a Fellow of the American Psychological Association (APA), Division 19 (Society for Military Psychology). Fewer than 5% of APA members achieve the status of Fellow.

Professor of Medicine and Associate Dean for Assessment and Professional Development **Dr. Lisa Moores** was elected President-Designate of the American College of Chest Physicians (CHEST). Dr. Moores, a USU graduate and retired Army Colonel, will assume the role of President of CHEST in 2027.



Photo: Principal Deputy Assistant Secretary of War for Health Affairs Dr. Stephen Ferrara (left) presents the MHSRS Lifetime Achievement award to Dr. Ursano (right)



Left to right: Dr. Byrnes, Dr. Holloway, Dr. Moores



Left to right: Dr. Sharma, Dr. Chesnut, Dr. Gelfand (photos: Tom Balfour)

In April, Professor of Anesthesiology **Dr. Pushpa Sharma** was selected as a Fellow of the International Mitochondrial Physiological Society. Dr. Sharma describes mitochondria as “the powerhouse of cells, responsible for acute and long-term consequences of TBI, as well as inherited metabolic disorders.” Also in Anesthesiology, Associate Professor and Executive Director of the Defense and Veterans Consortium for Integrative Pain Management (DVCIPM) **CAPT Harold Gelfand** was named a Fellow of the American Society of Regional Anesthesia and Pain Medicine.

CDR Gregory Chestnut was appointed Urology Consultant to the Navy Surgeon General, to serve as the principal SG advisor on all matters concerning urology medicine.

Leadership in Family Medicine: In March, Associate Professor of Family Medicine **Lt Col Gigi Rey** became President of the Uniformed Services Association of Family Physicians (USAFP). Dr. Rey was elected to the position by fellow uniformed services family physicians. USAFP also recognized Associate Professor **Dr. Christina Kelly**, who

received a 2025 President’s Award for her outstanding work in medical education and her support of medical students. Dr. Kelly was honored as a DoD civilian and a military spouse. Additionally, Professor of Family Medicine **Dr. Jeff Leggit** was appointed to The American Board of Family Medicine’s Sports Medicine Advisory Committee.



Left to right: Dr. Rey becomes USAFP President. Dr. Christina Kelly with medical student ENS Thomas Croft. Dr. Leggit (photo Tom Balfour)

Excellence in Military and Emergency Medicine: CAPT Sherri Rudinsky, Chair of the Department of Military and Emergency Medicine, received the Government Services Chapter of the American College of Emergency Physicians (GSACEP) Excellence in Teaching Award (Senior Faculty).



Photos: Drs. Rudinsky and Cole, IPMHE 2025; Dr. Gillian Schmitz



Dr. Gillian Schmitz received the GSACEP Excellence in Emergency Medicine award. These are GSACEP’s highest awards, presented to “leaders with long-standing records of significant educational contributions to Government Service, VA, and/or military emergency medicine, resulting in noteworthy impact on the profession.” Additionally, Associate Professor **Dr Rebekah Cole** received the Simulation Academy of the Society for Academic Emergency Medicine (SAEM) Simulation Research Award in recognition of “outstanding contributions to academic emergency medicine through innovative research and scholarly activity in simulation.”



Health Professions Education
In-Residence, July 2025
(photo: Tom Balfour)

Health Professions Education highlights: ScholarGPS, a scholarly ranking index, ranked HPE Professor **Dr. Ronald Cervero** as the #1 researcher in the field of continuing education. Associate Professor **Dr. Tasha Wyatt** was elected President of the Society for Directors of Research in Medical Education, an international organization dedicated to advancing the quality of medical education through research. Assistant Professor **Dr Eulho Jung** was named an associate editor of *JMIR Medical Education*, a journal focused on innovation and technology in medical education. And Associate Professor **Dr. Jerusalem Merkebu** received the Association of American Medical Colleges (AAMC) Research in Medical Education (RIME) Outstanding Research Award for 2025.



Left: Dr. Lutgendorf (photo Tom Balfour), Dr. Berkley (DVIDS photo)

Dr. Monica Lutgendorf (CAPT, USN MC, RET), former Chair of the Department of Gynecologic Surgery and Obstetrics, received the Armed Forces District of the American College of Obstetricians and Gynecologists (ACOG) 2025 Mentor of the Year Award for her contributions

to mentoring early career physicians. Assistant Professor and USU alumna **LCDR Holly Berkley** received the Award for the Advancement of Women Physicians in Military (Navy junior officer category). GSO faculty were also recognized for research accomplishments, with **Lt. Cmdr. Sara Drayer, MD** receiving the Walter Reed National Military Medical Center (WRNMMC) Baily K Ashford Laboratory Award, and **MAJ Zachary Kopelman, DO** receiving the WRNMMC Robert. A Philips Laboratory Award and the 2025 Navy-Wide Research Award.

The National Board of Medical Examiners (NBME) appointed Associate Professor of Psychiatry **Col Kimberly Kumer** as a subject matter expert for the Communication Learning Assessment (CLA) project, a focused initiative designed to help pre-clerkship students



Dr. Kumer, Dr. Capaldi (photos: Tom Balfour)

develop effective patient communication skills through formative assessment. In addition, the American Board of Psychiatry and Neurology (ABPN) has appointed **COL Vincent Capaldi**, Professor and Chair of the Department of Psychiatry, to serve on the ABPN Clinical Psychiatry Certification and Continuing Certification Committee. In this role, COL Capaldi contributes to the development of board certification and continuing certification examinations in psychiatry and neurology, including drafting examination questions used to assess physician competency.



Dr. Burns receiving the VADM Matthew Nathan Young Leader Award

Internal Medicine accolades: In July, Professor of Medicine **Dr. William Kelly** was named a Distinguished CHEST Educator (DCE) by the American College of Chest Physicians. The DCE Designation is a “national-level recognition of excellence in continuing medical education.” At September’s American College of Physicians (ACP) Tri-Service meeting, Assistant Professor of Medicine **LCDR Michael Burns, DO** received the VADM Matthew Nathan Young Leader Award for “significant leadership helping Navy internal medicine execute the mission through innovation, perseverance, creativity, and compassion.” Associate Professor and Associate Dean for Regional Education (San Antonio) **Lt Col David Lindholm, MD** received the Dr. George Crawford Distinguished Medical Educator Award

from the ACP Air Force Chapter. Additionally, Dermatology Assistant Professor **Dr. Helena Pasieka** received the DRESS Syndrome Foundation’s DRESS Hero award, an annual award

for doctors who excel at providing treatment and care for DRESS Syndrome patients. Honorees are nominated by survivors and patients.



Left to right: Dr. Kelly, Dr. Lindholm, Dr. Pasioka (photos: Tom Balfour)

Pediatrics faculty spotlight: In September, PED Chair **Dr. Patrick Hickey** received the AAP Section on Uniformed Services Outstanding Service Award, recognizing “outstanding lifetime services to the military and pediatrics.” Associate Professor and NMCS D Pediatric Residency Director **CDR Eric Pasman** received the Dave Berry Award for academic excellence, service, and leadership. Associate Professor **Col Susan Whiteway** was selected for the Air Force Special Experience Identifier of Academic Grand Master, recognizing “distinctive accomplishments in academic and clinical medicine.” In April, faculty members presented research at the Pediatric Academic Society Meeting in Honolulu, highlighting military pediatrics research at the premier scientific meeting for the academic pediatric community. Associate Professor of Pediatrics **LTC Milissa Jones** was selected to the role of Chair-Elect for the Pediatric Academic Society Workshop.



Left to right: Drs. Hickey and Pasman. Drs. Whiteway and Jones (photos: Tom Balfour)



Left: Dr. Perl, Morton Arboretum. Right: Dr. Stephen Cozza (photo: Tom Balfour)

Professor of Pathology **Dr. Daniel Perl** received the Invisible Wound Foundation’s Award for Scientific Discovery in Defining the Invisible Wound. The award, a memorial tree marked by a plaque honoring Dr. Perl’s research on military TBI, was presented at the Morton Arboretum in Lisle, Illinois.

Dr. Stephen J. Cozza, Professor of Psychiatry and Pediatrics and Director of CSTS, received the 2025 Dr. Mary M. Keller Award for Distinguished Contributions to Science from the Military Child Education Coalition (MCEC), recognizing his dedication to advancing the well-being of military children and families through research and innovation, particularly his studies on military family resilience and bereavement.

MILESTONES

School of Medicine 2025 Anniversaries

IDCRP CELEBRATES 20 YEARS



The Infectious Disease Clinical Research Program (IDCRP) was established in August 2005. For two decades, IDCRP has worked to eliminate the impact of infectious diseases in military populations through collaborative clinical research. During FY 2025, IDCRP

published 39 manuscripts, presented 58 posters/oral presentations, and hosted the 3rd Annual IDCRP Science Symposium, boosting collaboration to combat emerging infectious disease threats. IDCRP also mentored 64 trainees and provided support for dissertations and post-doc research. **CAPT Drake Tilley, MD** is the Director of IDCRP. 2025 IDCRP research highlights:

Traveler’s Diarrhea (TD). PMB Professor Dr. David Tribble, an expert in the topic, describes TD as an “operational killer with major impacts on military readiness,” making TD research a critical military health and readiness imperative. In 2025, IDCRP collaborated with the UK Ministry of Defence on a clinical trial testing an oral supplement made from hyperimmune bovine colostrum (HBC) as a possible preventive treatment. Fort Magsaysay, a key training area for the Armed Forces of the Philippines, was also activated as the fourth performance site for the IDCRP Trial Evaluating Ambulatory Therapy of TD (TrEAT TD) 2.0 clinical trial. Execution of TrEAT TD 2.0 at the annual bilateral Balikatan exercise has paved the way for future prospective studies in forward deployed settings.

Influenza. The Pragmatic Assessment of Influenza Vaccine Effectiveness in the DoD (PAIVED) study published key research to inform future DHA vaccine policy and open new research avenues in vaccine development. Findings were published in “Randomized pragmatic trial of the comparative effectiveness of chicken egg-based inactivated, mammalian cell-culture-based inactivated, and recombinant protein quadrivalent seasonal influenza vaccines in United States Military Health System beneficiaries” (*CID*, 2025 Dec 24, Colombo *et al*).

Impact of PTSD on antiretroviral therapy. In “Posttraumatic stress disorder and its associations with antiretroviral therapy among veterans with HIV” (*AIDS*, 2025 Apr 20, Vyas *et al*), IDCRP researchers found that posttraumatic stress disorder (PTSD) significantly increased the risk of antiretroviral therapy (ART) nonadherence. The study’s findings suggest that screening for PTSD in veterans could help tailor medical treatments and interventions.

Trauma-related healthcare utilization. In “Early Factors Related to Healthcare Utilization by Infection Status among Combat Injured” (*Military Medicine*, 2025 Aug 28, Sercy *et al*), IDCRP investigators assessed healthcare resource utilization during the initial hospitalization period for Warfighters injured in Iraq and Afghanistan (2009-2014). The study found that developing a trauma-related infection with a multidrug-resistant Gram-negative bacillus was associated with a hospital stay of five extra days for every 30 in patients with infections attributed to other pathogens. These infections substantially increase the high healthcare burden already associated with combat casualty care.

Traumatic brain injury (TBI)-associated infection. In “Epidemiology and Outcomes of Battlefield-Related Penetrating and Closed Traumatic Brain Injuries Compared to Non-Head Injuries: A Retrospective Cohort Study” (*Military Medicine*, 2025 Nov 12, Meister *et al*), IDCRP investigators found that Warfighters with penetrating TBIs had more cranial infections compared to other groups and more pneumonia than those with non-head injuries. Patients with any type of TBI (closed or penetrating) had a 3.7 times greater risk of mortality compared to warfighters with non-head injuries.

Norovirus Countermeasures. IDCRP's 2025 Countermeasures to Defeat Norovirus Symposium attracted experts from military and academic public health institutes. Based on a landscape review and gap analysis related to norovirus mitigation strategies, the symposium prioritized prospective treatments and interventions that could reduce the impact of norovirus in military settings.

LTCOS: 20 YEARS OF EDUCATIONAL OUTCOMES RESEARCH



The Long Term Career Outcome Study (LTCOS) was established in 2005 in response to a Liaison Committee on Medical Education (LCME) recommendation to collect institutional outcomes data. The multi-departmental, multi-disciplinary LTCOS team studies links between educational methods and long-term educational outcomes. LTCOS works to translate

research findings into actionable practices and policies to improve educational processes at USU, in residences, and beyond. Its long-term vision is to become a leading provider of programmatic evaluation and health professions education scholarship within the MHS and across the United States. LTCOS is led by Professor of Health Professions Education **Dr. Ting Dong** with Assistant Professors **Dr. Sami Abuhamdeh** and **Dr. Yen Lee**.

"A DECADE OF IMPACT" - 10 YEARS OF CARE



Photo: DVIDS (2024 Army-Navy game)

In a 2025 Defense Visual Information Distribution Service (DVIDS) story, Professor and Chair of the Department of Physical and Medical Rehabilitation (PMR) **Dr. Paul Pasquina** reflects on the ten-year history of the Concussion Assessment, Research and Education (CARE) research program. CARE is now the largest concussion and TBI study in history, with over 60,000 military and NCAA student-athlete participants. In a

separate story, Health Affairs also highlights the Naval School Explosive Ordnance Disposal (NAVSCOLEOD)'s participation in the study, with nearly 2,000 study participants enrolled since 2022. As Dr. Pasquina notes, the CARE study has generated insights that have "transformed how concussions are recognized, diagnosed, and managed."

RESEARCH

National Center for Science and Engineering Statistics Higher Education R&D Survey



Federally financed higher education R&D expenditure - rank among over 900 institutions surveyed

FY22 rank → **82**

FY23 rank ↑ **47**

FY24 rank ↑ **40**

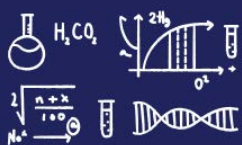
In its survey of federally financed higher education R&D expenditures (for FY24, the most recent available numbers), the National Center for Science and Engineering Statistics ranked USU 40th among 900+ institutions surveyed for federally funded research. This rank, a five-place jump from FY23, places us among the top five percent of institutions.

School of Medicine researchers secured \$415 million in grant funding in 2025, with nine departments receiving funding in excess of \$10 million.

2025 Research Funding

\$415 million

Competitive Funding
\$315m
(combined intramural and extramural)



Federally Directed Funding
\$100m

Surgery	\$94.9m
Medicine	\$72.2m
Medical and Clinical Psychology	\$35.1m
Psychiatry	\$21.0m
Preventive Medicine & Biostatistics	\$19.3m
Pathology	\$18.4m
Anatomy, Physiology, Genetics	\$17.1m
Neurology	\$16.5m
Gynecologic Surgery & Obstetrics	\$10.4m



RESEARCH PARTNERSHIPS

USU collaborates with research scientists throughout the Department of War and at other federal agencies; as well as non-profits, academic institutions and industry labs around the world. Based on data from Elsevier Pure, this map highlights current research partnership locations.

CLINICAL TRIALS

Working with non-profit partners, universities, hospitals, and Military Treatment Facilities, the School of Medicine maintains clinical research sites around the United States, with emphasis on military-focused research in the fields of combat casualty care, TBI, PTSD, rehabilitation, cancer, disaster medicine, and human performance optimization.



LEGEND

- | | | | | |
|---|--|--|--|--|
| <p> Metis</p> <ul style="list-style-type: none"> • University of Rochester | <p> HJF</p> <ul style="list-style-type: none"> • Eglin Air Force Base • Emory University • Fort Chaffee • Fort Moore • Indiana University • Joint Base Elmendorf-Richardson • Kansas University Medical Center • Keester Medical Center • Kimbrough Ambulatory Care Center • Joint Expeditionary Base-Little Creek • Martin Army Community Hospital • Naval Amphibious Base • Naval Medical Center Portsmouth • Northwestern University • Tripler Army Medical Center • United States Air Force School of Aerospace Medicine • University of Alabama • University of Chicago • University of Florida • University of South Florida • UT Southwestern Medical Center • VA Palo Alto • William Beaumont Army Medical Center | <p> Geneva</p> <ul style="list-style-type: none"> • Brigham and Women's Hospital • Eisenhower Army Medical Center • Fort Benning • High Point University • Keller Army Community Hospital • Kessler Foundation • Lincoln Laboratory, MIT • Mayo Clinic • MEDDAC Fort Carson • New Jersey Regenerative Institute • Spaulding Rehabilitation Network • United States Air Force Academy • United States Military Academy • University of Kentucky • University of Miami • University of North Carolina at Chapel Hill • University of Utah • Utah State University • Wellman Center for Photomedicine • Western Michigan University | <p> HJF and Geneva</p> <ul style="list-style-type: none"> • Alexander T. Augusta Military Medical Center • Carl R. Darnall Army Medical Center • Duke University • Fort Belvoir Community Hospital • Fort Bragg • Inova Health System • Johns Hopkins University • Kennell and Associates Inc. • Luminis Health Anne Arundel Medical Center • Naval Medical Center Camp Lejeune • United States Naval Academy • Womack Army Medical Center | <p> HJF, Geneva, and Metis</p> <ul style="list-style-type: none"> • 59th Medical Wing/Lackland AFB • Brooke Army Medical Center • Joint Base San Antonio • Madigan Army Medical Center • National Institutes of Health • Naval Medical Center San Diego • NICOE (National Intrepid Center of Excellence) • Uniformed Services University • University of Texas at San Antonio • Walter Reed National Military Medical Center |
|---|--|--|--|--|

CADETS AND MIDSHIPMEN TO MILITARY MEDICAL OFFICERS

USU and the Service Academies

The School of Medicine's medical student body includes 98 graduates of the three Service Academies (United States Military Academy, United States Naval Academy, United States Air Force Academy) - 14% of our current student population. With their focus on developing future officers and leaders, the Academies are a natural source of military medical accessions, and the School of Medicine maintains strong relationships with the Academies.



COL Holt meets with Cadets at the US Air Force Academy (photo courtesy of Dr. Danielle Holt)

In 2025, the Office of Admissions, led by **COL Danielle Holt, MD**, led multiple outreach efforts at the Academies. Military Medical Ambassador **Col Lauren Wolf** and COL Holt delivered presentations to pre-medical students at USAFA, and groups of USMA and USNA pre-medical students visited the USU and Walter Reed campus during the spring recruiting season



USMA Cadets visit USU and Walter Reed, Spring 2025

COL Holt, Assistant Dean **LTC J. Austin Cox**, and several student Military Medical Ambassadors also visited USMA and USNA to attend celebratory dinners honoring students accepted to medical school.



Accepted medical students dinner, USNA, January 2025. LTC Cox is on the right. Photo courtesy of Dr. J. Austin Cox

USU's partnership with the service academies extends beyond recruitment and admissions to academic and research collaboration. The Center for Biotechnology (4DBio3) hosted **Cadet Daniel Chan (USMA) MIDN Laura Fern Jones (USNA)**, and **Cadet Jaina Swann (USAFA)** as summer interns. The students assisted with the military-critical On-Demand Blood (ODB) program, gaining hands-on experience and practical research skills.

In September, **Dean Eric Elster** was a guest lecturer at Dr. Lee Pennington's "Medicine and War Since 1850" class at USNA. His presentation covered innovations and advances in surgical and medical care during OEF and OIF, many of which were driven by USU graduates and faculty members. In 2026, the Department of Biochemistry will collaborate with science faculty at West Point to develop an organic chemistry distance learning curriculum for pre-medical Cadets.



MIDN Jones, Cadet Swann, Cadet Chan, USU Hall of Flags, July 2025



Photo: Dean Eric Elster with Dr. Mitte Borgschulte (center), with USNA Midshipmen

COL Holt writes, "Cadets and Midshipmen have already made the commitment to military service, and USU is a natural next step for those who wish to serve as medical

officers. Our holistic admissions philosophy takes the whole person - not just academics, but experience and commitment to others - into account. As a result, over 40 percent of our students have prior military experience - including prior enlisted service, prior service as officers; and of course, as students at West Point, Annapolis, and Colorado Springs."

HIGHLIGHTS: PUBLICATIONS, PRESENTATIONS, AND STUDIES

APG publication is a most-cited publication. [“Inflammation in the COVID-19 airway is due to inhibition of CFTR signaling by the SARS-CoV-2 spike protein”](#) (*Scientific Reports*, 2024 July 23, Caohuy et al), published in 2024, has since earned an Altmetric score of 89 (20 is considered “exceptional”). The paper now ranks among the top five percent of all research papers scored by Altmetric.

ANE Malignant Hyperthermia (MH) lab establishes agreement with NIH. USU is the only MH muscle biopsy testing site for DoW and only one of two MH testing sites in the United States. In 2025, the Department of Anesthesiology established an agreement with NIH to lead research efforts on non-invasive testing for patients.

BIO research with broad relevance. [“Drosophila Clu ribonucleoprotein particle dynamics rely on the availability of functional Clu and translating ribosomes”](#) (Hwang, Sheard, Cox, *Journal of Cell Science*, 30 Apr 2025) describes Clu/CLUH subcellular ribonucleoprotein particle dynamics and its connection with mitochondrial function. Mitochondria are critical for cellular

function, making this research broadly relevant to a range of medical research topics.

Dermatology research has important implications for wound healing and repair.

Dermatology researchers in the School of Medicine are developing lab-

grown human skin using an innovative class of therapeutic peptides that significantly improve epidermal thickness while promoting formation of new hair follicles. These studies could enable the creation of next-generation skin substitutes or treatments. Funded by a grant from the DoD Transforming Technology for the Warfighter (TTW) program, this research was published in *Wound Repair and Regeneration* ([“A Matrix-Derived Bioactive Peptide Enhances Epidermal Thickness and Hair Follicle Neogenesis in Grafted Dermal-Epidermal Composites”](#) Xavier et al). **Dr. Thomas Darling** also contributed to [“A Novel](#)

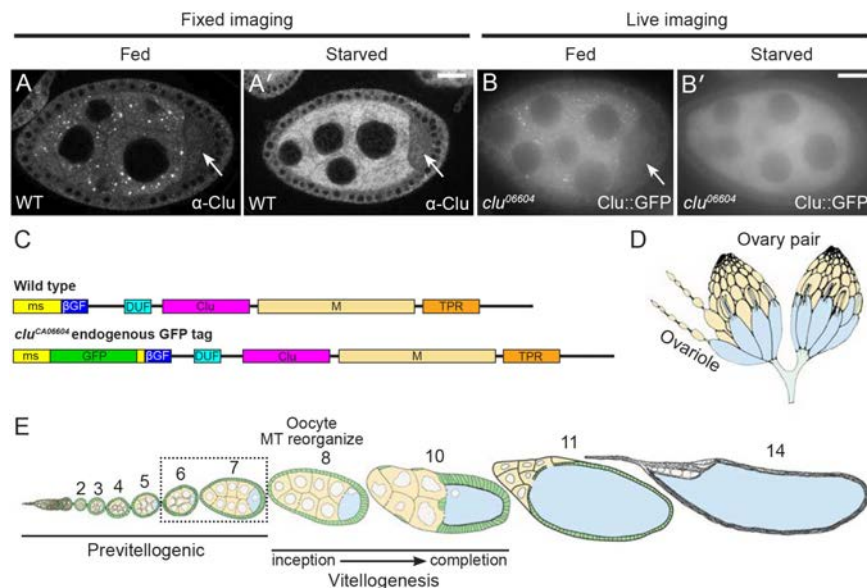
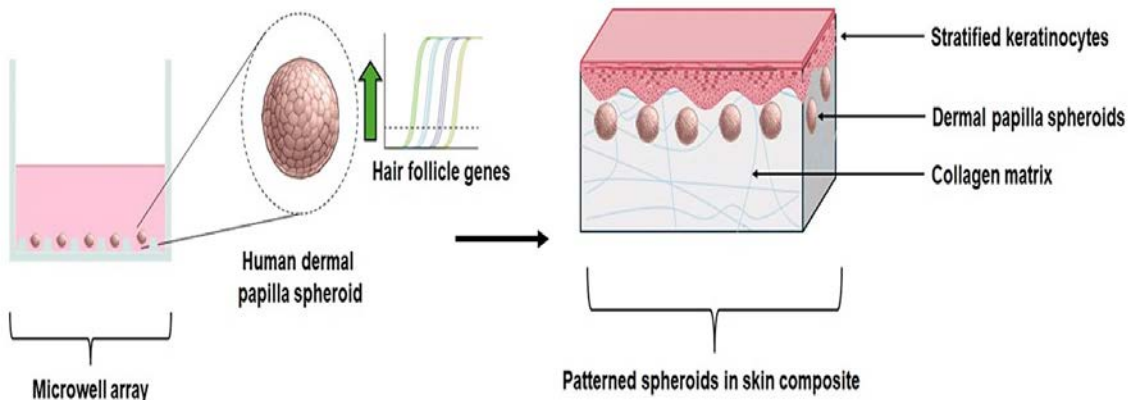


Figure 1: Clu forms abundant cytoplasmic particles in *Drosophila* nurse cells

[Approach to Pattern Dermal Papilla Spheroids in Dermal–Epidermal Composites Using Non-Adherent Microwell Arrays](#)” (*Bioengineering*, 2025 Nov 20, Wisdom et al), which looks at a 3D bioprinting technique that demonstrates promise initiating skin regeneration and hair follicle neogenesis following injury.



Graphical abstract, “A Novel Approach to Pattern Dermal Papilla Spheroids in Dermal–Epidermal Composites Using Non-Adherent Microwell Arrays”

Gynecologic Surgery and Obstetrics (GSO) research with important implications for female service member readiness. In “[Long-Term Survival in Patients With Low-Risk Cervical Cancer After Simple, Modified, or Radical Hysterectomy](#)” (*JAMA Network Open*, 15 May 2025), primary author **LTC Christopher Tarney** notes that the cornerstone treatment for cervical cancer, radical hysterectomy, has significant risk for perioperative morbidity. This study shows that less radical surgery may be possible without compromising oncologic outcomes, allowing women with cervical cancer to recover and return to duty sooner.

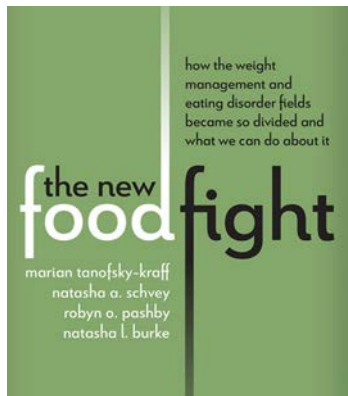
Society for Military Psychology highlights SI research. “[Self-Reported Reasons for Suicidal Ideation in the Military: Common Non-Combat Occupational Stressors as Overlooked Factors](#)” (*Military Medicine*, 21 November, Elliman et al) identifies common reasons for suicidal ideation (SI) via a survey of 15,496 Soldiers across seven Army installations. The article was highlighted by the American Psychological Association’s Division 19 (Society for Military Psychology).

Major ALS research. In “[A plasma proteomics-based candidate biomarker panel predictive of amyotrophic lateral sclerosis](#)” (*Nature Medicine*, 19 August 2025, Chia et al), a group of researchers from NIH, USU, and several international research centers identified a plasma protein biomarker for ALS that may make it possible to diagnose the disease years before symptoms appear. APG Professor and CMPH Director



Dr. Clifton Dalgard (photo: Tom Balfour)

Dr. Clifton Dalgard made major contributions to this study, which garnered considerable media attention.



Scholarly insight on eating disorders. *The New Food Fight: How the Weight Management and Eating Disorder Fields Became So Divided and What We Can Do About It* is a “guide to the complex and increasingly polarized fields of eating disorders and weight management.” Written by MPS Professor and renowned eating disorders expert Dr. Marian Tanofsky-Kraff, Associate Professor **Dr. Natasha Schvey**, with **Dr. Robyn Pashby** and former MPS post-doctoral fellow Dr. Natasha Burke, the book was published in July.

New textbook chapter on trauma-related infections.

The 10th edition of *Principles and Practices in Infectious Diseases*, published in 2025, includes a chapter on trauma-related infections written by Infectious Disease Clinical Research Program Science Director and PMB Professor **Dr. David Tribble** (with CDR Wesley Campbell and CDR Christopher Renninger of WRNMMC). This is the first-ever chapter on trauma-related infections for this classic textbook.

Examining acute respiratory disease in children.

Dr. Cassandra Grizer, a 2025 USU graduate (Emerging Infectious Disease program) and **Dr. Joseph Mattapallil**, Professor in the Department of Microbiology and Immunology, published “[Respiratory infection with Enterovirus D68 induces severe acute lung inflammation in the pediatric ferret model](#)” (Grizer *et al*, *iScience*, 2025 Jul 5) on respiratory pathology in young children. The research identifies acute pathogenesis correlates as valuable markers for development of countermeasures to protect children from infection.



Dr. Cassandra Grizer, USU Commencement, May 2025 (photo: Tom Balfour)

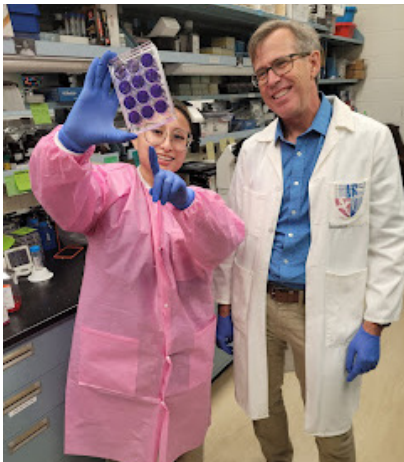
Accelerated brain and behavioral interventions for suicide prevention. **COL Vincent Capaldi**, Professor and Chair of Psychiatry, received funding from the Defense Advanced Research Projects Agency (DARPA) to conduct a multisite clinical trial evaluating novel mental health interventions developed under the DARPA STRENGTHEN program. These interventions combine a one-day brain stimulation approach with brief behavioral therapies to enhance mental health and prevent suicide. Researchers will evaluate outcomes to see if these next-generation approaches can support scalable, rapid mental health care within the Military Health System.

Breakthrough research on deadly Nipah and Hendra viruses

- On 14 Nov, *The Lancet* published “[Safety and immunogenicity of a Nipah virus vaccine \(HeV-sG-V\) in adults: a single-centre, randomised, observer-blind, placebo-controlled, phase 1 study](#)” (Frenck *et al*, 14 Nov 2025), a collaborative publication

on the first human Phase 1 trial of the Nipah vaccine, based on research conducted in the laboratory of MIC Chair **Dr. Christopher Broder**. This is the first Nipah vaccine funded by the global Coalition for Epidemic Preparedness Innovations (CEPI). Mortality rates from Nipah virus infections are as high as 75%, making this vaccine enormously valuable in outbreak response and protecting populations and service members deployed in high-risk areas.

- MIC Professor **Dr. Brian Schaefer** and the Schaefer Lab also developed a new model that will accelerate the preclinical testing of vaccines and therapies for the deadly disease caused by Nipah and Hendra viruses. [“A recombinant Cedar virus preclinical model that recapitulates neurological features of henipavirus disease”](#) (Huaman *et al*, *iScience*, 15 September 2025) outlines an approach that allows critical research to be conducted in widely accessible biosafety level-2 (BSL-2) laboratories, rather than BSL-4 facilities, which are highly restricted and very few in number. As coauthor Dr. Broder explains, Nipah and Hendra viruses are among the most dangerous pathogens known and until now, research required high-containment BSL-4 labs, severely hampering progress in the testing and evaluation of countermeasures. Dr. Broder writes, “This new approach will dramatically shorten the timeline for countermeasure development that will ultimately save lives and protect our nation’s health security.”



Dr. Celeste Huaman (2025 USU graduate) and Dr. Brian Schaefer. Photo: Tom Balfour

Military Medicine Article of the Year. In collaboration with the LIMBIC-CENC DoW-VA, **CDR J. Kent Werner**, MD PhD co-authored [“Persistent MRI Findings Unique to Blast and Repetitive Mild TBI: Analysis of the CENC/LIMBIC Cohort Injury Characteristics”](#), a project led by Dr. David Tate at the University of Utah.

Protection against radiation-induced brain injury.

In [“Structural plasticity of pyramidal cell neurons measured after FLASH and conventional dose-rate irradiation”](#) (*Brain Struct Funct.* 2025 Mar 1;230(2):41. Dickstein *et al.*), Associate Professor of Pathology **Dr. Dara Dickstein** looks at ultra-high dose-rate FLASH-radiotherapy (FLASH-RT) as a tool to reduce adverse consequences of brain irradiation

for tumor treatment. Her results demonstrate that FLASH-RT provides relative protection against damage in the irradiated brain.

Research on human lunar travel. In [“Chemical changes in terrestrial lunar simulants exposed to gamma radiation simulating lunar ionizing radiation environment”](#) (*Planetary and Space Science*, Mitra *et al*), Pathology Professor **Dr. Michael Daly** contributes key radiobiology expertise supporting NASA efforts to ensure safe human space travel.

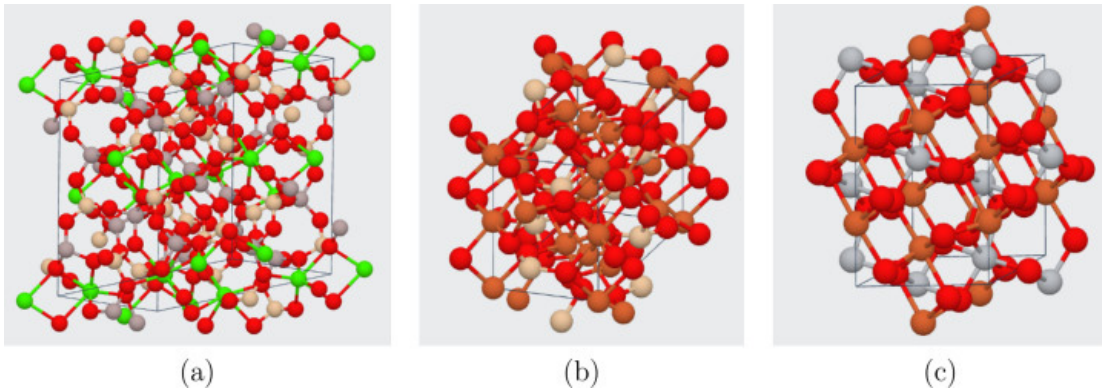


Figure 1, “Chemical changes in terrestrial lunar simulants exposed to gamma radiation simulating lunar ionizing radiation environment”- Crystal structure of commonly available lunar minerals

Pediatric-specific military medical needs. [“Experientia et Progressus: An Experiential Needs Assessment of Military Health Care Providers in Treating Pediatric Combat Trauma”](#)

(*Military Medicine*, Tovar, Lara, Rudinsky, Bibbens) is the first pediatric-specific military medical needs assessment, with findings that will inform development of educational interventions aimed at reducing pediatric morbidity and mortality on the battlefield.

Surgery collaboration with Duke University is a JTACS “Best of” selection. The *Journal of Trauma and Acute Care Surgery (JTACS)* selected [“Exploratory Cluster Analysis of IL2RA and Associated Biomarkers and Complications After Blunt Chest Trauma,”](#) a collaboration between SC2i (**Dr. Eric Elster, Dr. Seth Schobel**) and research scientists at Duke University. This research on immune response and healing following rib fracture and other high energy transfer injuries is directly relevant to care of service members following serious injury.

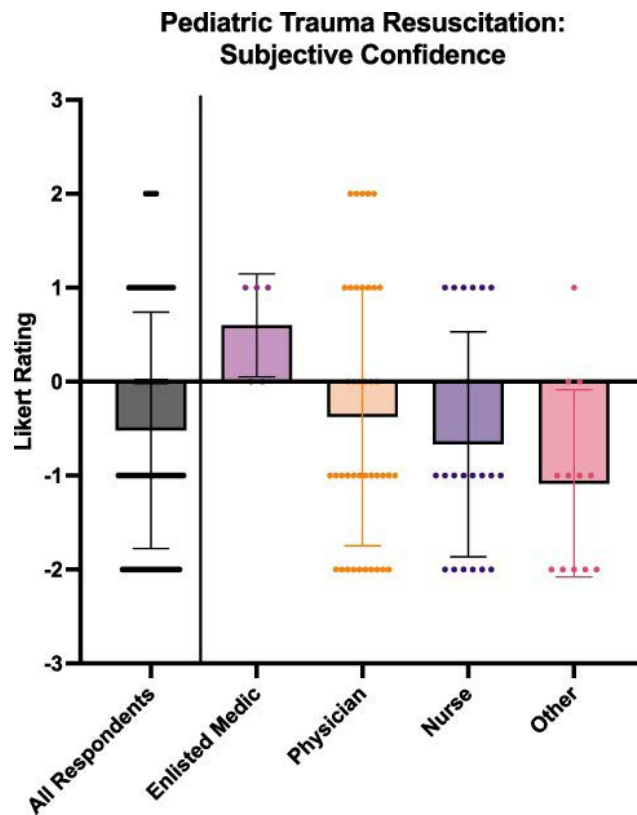
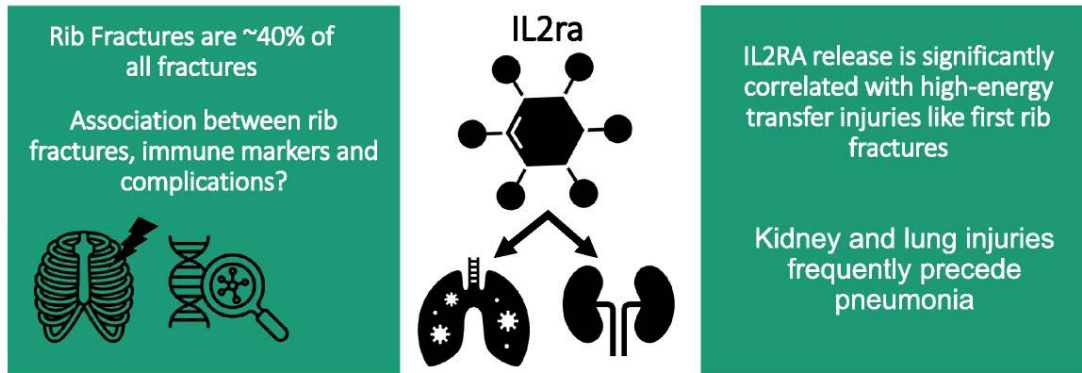


Figure 1, “Experientia et Progressus” - Subjective confidence of pediatric respondents in all respondents (gray), enlisted medics (light purple), physicians (peach), nurses (dark purple), and other health care professionals (pink)

Exploratory Cluster Analysis of IL2RA and Associated Biomarkers and Complications After Blunt Chest Trauma



Graphical abstract, "Exploratory Cluster Analysis of IL2RA and Associated Biomarkers and Complications After Blunt Chest Trauma"

First of its kind osseointegration clinical trial. The Limb Optimization and Osseointegration Program (LOOP) published two major papers in *Clinical Orthopaedics and Related Research*. "[Does Transhumeral Osseointegration After Amputation Improve Patient-reported Outcomes and Prosthesis Use?](#)" (Forsberg *et al*) and "[What functional outcomes can be expected with osseointegrated prostheses in transfemoral amputations?](#)" (Potter *et al*) outline the first osseointegration clinical trials in the United States.

Military-focused cancer research: The Murtha Cancer Center Research Program (MCCRP)

- In 2025, the MCCRP installed an advanced computational infrastructure (CMDZ409-5YR Cisco Storage Cluster) to expand its molecular data analysis capabilities. Added to the Center for Military Precision Health (CMPH)'s existing computing environment, this expansion provides the 20 petabytes of storage required for planned and ongoing research studies, including a five-year study that will require DNA and RNA data analysis for 8,000 cases.
- MCCRP initiated 44 multi-agency federal, academic, and private research protocols that address the myriad service-related exposures to environmental contaminants and toxin hazards. These studies support MCCRP PROMETHEUS (PROject for Military and Toxin History Evaluation in US Service Members) to discover advanced precision oncology technologies; and enable prevention, early detection, and enhanced treatments of cancers arising from military personnel's exposures to environmental contaminants and toxin hazards.
- MCCRP joined the NCI Cancer Screening Research Network (CSRN) and expanded its nationwide Murtha Research Network to nine Military Treatment Facilities, seven VA Medical Centers, and four civilian medical centers. Working with CSRN, MCCRP will participate in multi-center cancer screening trials and studies with large and diverse populations in a variety of health care settings with the goal of reducing cancer incidence and cancer-related morbidity and mortality.



New training tool could improve patient handoff safety. In “[Evaluation of Novel Training and Data Summary Tool During Simulated En Route Care Patient Handoffs](#)” *MilMed*, 2025 Nov 1, Beyrau *et al*), researchers studied end-user evaluations of a novel didactic training and patient data summary prototype utilizing the Illness Severity, Patient Summary, Action List, Situational Awareness, and Synthesis by Receiver (IPASS) structure during simulated Critical Care Air Transport patient handoffs. The study authors conclude that the introduction of electronic medical records into operational medicine could improve handoff safety.

Using statistics to identify soldiers at risk for suicide attempt. “[Predicting suicide attempts among US Army soldiers using information available at the time of periodic health assessments](#)” (Naifeh, *et al*, published in *Nature Mental Health* on 6 January) examines the Army’s current suicidality screening methods (including screening questions in the annual Periodic Health Assessment) vs a simple least absolute shrinkage and selection operator (LASSO) regression model. Results suggest that this statistical approach may be highly effective in identifying individuals at risk for suicide to enable early intervention.

Leadership in TBI research

- In 2025, the Military Traumatic Brain Injury Initiative (MTBI²) expanded its operational research portfolio, with **Dr. Michael Roy’s** new BLAST EMFASIS and BOATS studies. BLAST EMFASIS (Baseline and Longitudinal Assessment Study of EOD Males and Females for Alterations in Symptoms, Intellectual and Sensory Function) is among the first studies to examine the acute effects of blast overpressure exposure in female Explosive Ordnance Disposal (EOD) technicians. The BOATS (Blast Overpressure,

Acceleration and Cognitive Testing in SWCC) study documents the neurological effects of acceleration and blast overpressure exposure in 40–60 Special Warfare Combatant Craft (SWCC)



Photo: Michael Williams (DVIDS)

operators and crewmen. Both new studies were highlighted in a [January 2026 USU News article](#). Dr. Roy also wrapped up the five-year INVICTA (Investigating Training Associated Blast Pathology) study in 2025.

- **Dr. Ross Puffer's** Airborne study quantifies the incidence of mild TBIs in 2,000+ paratroopers undergoing mandatory Airborne training jumps. In this study, each paratrooper wears a sensor-integrated mouthguard for the entirety of the jump training. These sensors monitor head impact forces and alert when a high-magnitude head impact exceeds a threshold, enabling real-time, objective detection.

Aiding research through advanced imaging. Directed by **Dr. Maureen Hood**, the Biomedical Research Imaging Core (BRIC) upgraded the 7 Tesla, small animal MRI scanner in early 2025. It is now a fully state-of-the-art MRI scanner with expanded imaging capabilities including cardiac imaging and multinuclear spectroscopy. The BRIC is supporting 44 research projects across the University, as well as research efforts with other military research labs, including WRAIR and the Army Research Institute.

CONFERENCES



Dr. Sparling (photo: Tom Balfour)

Amputation Prosthetics Case Conference (APCC). Led by **Dr. Tawnee Sparling** of the Department of Physical Medicine and Rehabilitation (PMR), the APCC convenes military limb loss experts across the DHA in a quarterly “Grand Rounds” platform. The conference fosters exchange of specialized rehabilitative care strategy ideas to improve patient outcomes, and sets the stage for research, training, and advanced clinical capabilities for amputation rehabilitation.

Brain, Behavior, and Mind Conference has global reach. The virtual 2025 Brain, Behavior, and Mind Spring Conference (formerly the Amygdala, Stress,

and PTSD Conference) was held on April 22, 2025. Nearly 1,800 people attended, representing 46 states and 69 countries. The event featured five acclaimed expert speakers and two moderated panels discussing precision psychiatry, brain-body circuits, and the implementation challenges of MDMA-Assisted Therapy.



20 years of State of the Science (SoS). In April 2025, the Center for Rehabilitation Sciences Research partnered with the University of Pittsburgh Human Engineering Research Laboratories to host the 20th anniversary SoS symposium, "[Rehabilitation in Resource-Limited Environments](#)." This event focused on addressing challenges faced by service members in recovery, enhancing access to care, and promoting sustainable rehabilitation practices in deployment and post-deployment settings. The event drew an audience of clinicians, researchers, and leaders advancing novel methods to mitigate injury, improve rehabilitation, and support community reintegration of individuals with neuro-musculoskeletal conditions, especially military service members and veterans with war-related injuries.



Community Health Worker Ms. Dakota Davis with Dr. Ian Sorenson (photo: Dr. Binny Chokshi)

Back-to-back military pediatrics conferences. In April (the Month of the Military Child), the Department of Pediatrics hosted the 5th Annual Partnership for the Military Child Health Research Symposium and the inaugural Pediatric Casualty Care Symposium. The Military Child Health Symposium, attended by over 100 people, featured speakers from across academia and the military pediatrics GME program sites on research topics focused on military child health and wellbeing. The Pediatric Casualty Care Symposium convened operational medicine SMEs and leaders, with virtual attendees from the military pediatrics community and operational units spanning the US, Europe, and Asia. Organizers and planners included **Dr. Elizabeth Hisle-Gorman, Dr. Binny Chokshi, LCDR Betsy Madison, MAJ Sara Bibbens, Bethany Banakos, Angela Johansen, Diana Lanahan, Jessica Wilkins.** Pediatrics Chair **Dr. Patrick Hickey** described the events as a demonstration of “commitment to improving the lives of children on the homefront, the battlefield, and around the globe.”

PATENTS

Among the potentially life-saving innovations awarded patents in 2025 is the Automated Cranial Burr Hole Device and Method (US Patent 12,150,655). A collaboration between USU’s **Dr. David Brody** and researchers at the Johns Hopkins University Applied Physics



Lab, this portable device allows physicians to treat brain hemorrhages in austere settings. Additional inventions and discoveries include potential treatments for bone marrow cancer, prostate cancer markers, and proteins that may make it possible to develop vaccines for the deadly Nipah and Hendra viruses. In total, School of Medicine researchers secured a total of 21 patents from the United States, European Union, United Kingdom, Germany, France, Japan, and Australia in 2025.

Country	Patent number(s)	Patent title(s)	Inventors (USU in bold)
USA	12,171,888	Electrospun Dextran Fibers and Devices Formed Therefrom	Gary Bowlin, James Bowman, Stephen Rothwell , David Simpson
	RE50535	Compositions Comprising Pregnancy Specific Glycoproteins and Methods of Use Thereof	Gabriela Dveksler , Harry Malech
	12,364,742	Antigen-Specific T Cells for Inducing Immune Tolerance	Yong Chan Kim, David Scott , Ai-Hong Zhang
	12,150,655	Automated Cranial Burr Hole Device and Method	Max Basescu, David Blodgett, David Brody , Adam Cohen, Michael Fitch, Carissa Rodriguez, Timothy Sleasman, Kevin Wolfe, Jared Wormley
	12,365,917	Immortalization of Splenic and Peripheral Blood Macrophages Using A Multi-Cistronic v-Raf/v-Myc Lentivirus	Chelsi Beauregard, Brian Schaefer
	12,134,601	Compounds for Inhibiting LY6K and Methods of Using Same	Geeta Upadhyay
	12,320,812	Markers for the Diagnosis of Biochemical Recurrence in Prostate Cancer	Viatcheslav Akmaev, Jennifer Cullen, Albert Dobi , Michael Kiebish, Eric Milliman, Niven Narain, Leonardo Rodrigues, Rangaprasad Sarangarajan, Shiv Srivastava, Lixia Zhang

Country	Patent number(s)	Patent title(s)	Inventors (USU in bold)
USA	US20250250718A1	Electrospinning collector for the production of three-dimensional electrospun constructs	Tony T Yuan , Kirstin Jones, Cortes Williams
	12,343,132	Multidimensional MRI Signature for Specific Detection of Traumatic Brain Injury in Vivo	Peter Basser, Dan Benjamini, Diego Iacono
AUS	2018213378	Vaccine Compositions of Herpesvirus Envelope Protein Combinations to Induce Immune Response	James (Xinle) Cui , Clifford Snapper
	2019336212	Compositions and Methods for Preventing and/or Treating Filarial Disease	Sasisekhar Bennuru, Alexander Flynn, Edward Mitre , Christopher Morris, Thomas Nutman
	2018266632	Prostate Cancer Gene Profiles and Methods of Using the Same	Indu Kohaar , Gyorgy Petrovics , Shiv Srivastava
EUR	3381930	Soluble Forms of Hendra and Nipah Virus G Glycoprotein	Katharine Bossart, Christopher Broder
	3801473	Inhibitors for the Treatment of Myeloid Neoplasms	Yang (Dennis) Du , Nhu Nguyen
FRA	3079718	Human Herpesvirus Trimeric Glycoprotein B, Protein Complexes Comprising Trimeric gB and Their Use as Vaccines	James (Xinle) Cui , James Mond , Clifford Snapper
	3801473	Inhibitors for the Treatment of Myeloid Neoplasms	Yang (Dennis) Du , Nhu Nguyen
GER	60 2014 091 788.7	Human Herpesvirus Trimeric Glycoprotein B, Protein Complexes Comprising Trimeric gB and Their Use as Vaccines	James (Xinle) Cui , James Mond , Clifford Snapper
	60 2019 068 162.3	Inhibitors for the Treatment of Myeloid Neoplasms	Yang (Dennis) Du , Nhu Nguyen

Country	Patent number(s)	Patent title(s)	Inventors (USU in bold)
JAP	7649342	Vaccine Compositions of Herpesvirus Envelope Protein Combinations to Induce Immune Response	James (Xinle) Cui, Clifford Snapper
UK		Soluble Forms of Hendra and Nipah Virus G Glycoprotein	Katharine Bossart, Christopher Broder
	3079718	Human Herpesvirus Trimeric Glycoprotein B, Protein Complexes Comprising Trimeric gB and Their Use as Vaccines	James (Xinle) Cui, James Mond, Clifford Snapper
	3801473	Inhibitors for the Treatment of Myeloid Neoplasms	Yang (Dennis) Du, Nhu Nguyen

STUDENT RESEARCH



Hyun Lee (center) with aspiring medical student researchers (photo: Tom Balfour)

USU medical students have many opportunities to participate in research projects and to conduct independent research through the Capstone program. Students write and publish papers, present posters and talks at conferences and symposia, and collaborate with graduate students in research and public health competitions. At the end of their MS1 year, the Class of 2028 got a first-hand look at basic

scientific and translational research in the student-led Introduction to Scientific Research course. **2LT Michael Ainsworth**, an MD/PhD student (EID) led a series of 4 lab rotations with hosts **Dr. Ann Jerse, Dr. Catherine Takacs, Dr. Elizabeth Haynes, Dr. Rob Kortum**, and PhD candidate **Hyun Lee**. Students included **ENS Justin Wei, USCG; ENS Michelle Liggins, USN; 2LT Montanna Macias-Young, USA; 2d Lt Hannah Lee, USAF; and ENS Grace Choi, USN**. Capstone Program Director **Dr. Martin Ottolini** reports that 80% of USU medical students complete Capstone research projects, and this early lab experience is a first step.

Students contribute to new research on LSCO medical care. On 1 September, the Western Journal of Emergency Medicine published “[Large-Scale Combat Operation Education and Training Needs: Implications for Military and Civilian Medical Education](#)” (*WestJEM* 1 Sep 2025, Cole et al), a study of five key competencies needed for military

and civilian physicians providing casualty care during LSCOs. EMDP2 graduates and current medical students **ENS Makinna Farrell** and **ENS Kiia Crawford** are named authors.

EMDP2 grads contribute to research on the officer-NCO relationship in military medical settings. In [“Beyond Command: Exploring the Dynamics of the Military Medical Officer and Non-Commissioned Officer Relationship in Military Medicine”](#) (*J Spec Oper Med* 2025 Mar 18 Crawford et al), a EMDP2 Cohort 9 alumni and Class of 2028 medical students **ENS Kiia Crawford**, **ENS Makinna Farrell**, and **ENS Ariana Daukss Barilla**, with **Dr. Amy Hildreth** and **Dr. Rebekah Cole**, examined NCOs’ insights into how military medical officers (MMOs) and NCOs can foster positive working relationships. As EMDP2 graduates, the authors have invaluable first-hand experience with military medical service as both enlisted members and officers.



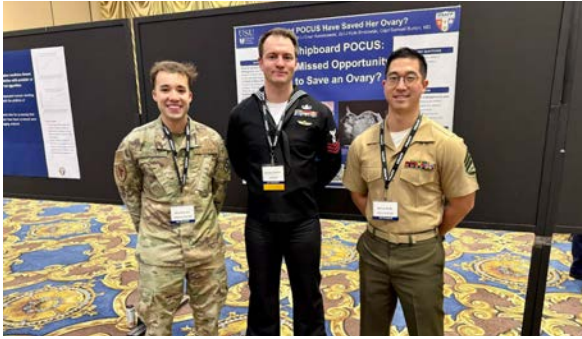
Left to right: Kiia Crawford, Ariana Daukss Barilla, Makinna Farrell (photos: Tom Balfour)



Stephen Scholl (photo: Tom Balfour)

Student-authored combat care research. In [“Guerilla Casualty Care Nodes and Web Networks on the Future Battlefield”](#) (*Military Review*, March 2025, Brown et al), a group of researchers including Class of 2025 medical student **2LT Mason Remondelli** (now CPT Mason Remondelli, MD) and HPSP student **2LT Ryan Leone** outline an idea for a decentralized “nodes” model for combat evacuations and treatment, to “sustain the fighting force, limit warfighter mortality and morbidity, and increase force lethality within a contested, protracted future battlespace.”

MS3 contributes to recent medical education research. In [“Beyond the Grade: Exploring Written Feedback in a Pediatric Clerkship”](#) (*MilMed* 27 Nov 2025), researchers conducted a qualitative review of clerkship feedback during military Pediatrics clerkships. Class of 2027 medical student **ENS Stephen Scholl** was the paper’s primary author.



Left to right: Alex Doxsey, Shelby Decker, Brian Park (photo: Dr. Christina Kelly)

EMDP2 students present original research. Enlisted to Medical Degree Preparatory Program students **EOD1 Shelby Decker, SSgt Alex Doxsey,** and **SSgt Brian Park** presented their scholarly work at the Uniformed Service Association of Family Physicians Annual Conference, supported by Family Medicine Associate Professor **Dr. Christina Kelly**. EOD1 Decker was also invited to present his research at the

American Academy of Pediatrics national conference, with mentors **Dr. Alyssa MacMahon, LCDR Meaghan Wido, MAJ Katherine Jones,** and **LCDR Kristan Madison.**

MS4s publish research in *Military Medicine*. Class of 2025 medical students **2d Lt Zachary Flash** and **2d Lt Alyssa Tamburo**, with Associate Professor **Dr. Rebekah Cole**, published [“The Impact of Integrating International Students into Military Medical Education and Training”](#) (Flash,

Tamburo, Cole) in the September 1 issue of *Military Medicine*, examining international participation in Operation Bushmaster and its importance in preparing students for multilateral military operations.



Now-Cpt Zachary Flash, MD and Cpt Alyssa Tamburo, MD. Photos: Tom Balfour

Navy medical student publishes Pediatrics

research. Class of 2027 medical student **ENS Caitlin McSorley** is the primary author of “Pediatric Insight to Humanitarian and Trauma Crisis Response: Operation Allies Refuge and Operation Allies Welcome at Landstuhl Regional Medical Center” (*MilMed*, McSorley et al), focusing on “the need for pediatric-trained medical providers and pediatric equipment in upholding a high standard of care in military support hospitals during disaster relief operations.”

Air Force medical student contributes to published case report. Class of 2026 medical student **2d Lt Edgar Villaruel** is a named author of [“Extremely Rare Blood Types Resulting in Non-compatibility in the Perioperative Surgical Setting: A Case Report”](#) (*Cureu*, 2025 Feb 20. Russo, Villaruel, et al). This report outlines the case of a 37-year-old patient with an extremely rare blood type delivering via C-section. GSO Professor **Col Trimble Spitzer** was 2d Lt Villaruel’s research advisor.

MD/PhD student publishes research in *JNeurotrauma*. MD/PhD Student **2LT Savannah Kounelis-Wuillaume** is the primary author of “[A spatial gene expression signature of the mouse brain post-injury at the focal point of contusion](#)” (*Journal of Neurotrauma*). 2LT Kounelis-Wuillaume worked with The American Genome Center (TAGC) at USU, and was supported by a nationally competitive extramural Brain Injury Association of America (BIAA) Dissertation Award.



Left to right: Savannah Kounelis-Wuillaume, Caitlin McSorley, Edgar Villaruel (photos: Tom Balfour)

2025 graduates publish *Transfusion* review. “[Deceased donor blood transfusion in emergency resuscitation: A scoping review of historical evidence for military and mass casualty applications](#)” (*Transfusion*, 13 Aug 2025, Wang et al) is a scoping review of research on the military-critical topic of deceased donor blood transfusion. Primary authors **CPT Jonathan Wang, MD**, **CPT Mason Remondelli, MD**, and **CPT Joseph Rhee, MD**, are 2025 School of Medicine graduates.



Left to right: CPT Mason Remondelli, MD, CPT Joseph Rhee, MD, and CPT Jonathan Wang, MD, USU Commencement, May 2025 (photos: Tom Balfour)



Ambar Rodriguez-Martinez with Dr. Sara Young-Baird, Graduate Education Awards 2025

First-year MCB grad student publishes first-author article. In March, first-year MCB grad student **Ambar Rodriguez-Martinez** published [“Polysome profiling is an extensible tool for the analysis of bulk protein synthesis, ribosome biogenesis, and the specific steps in translation”](#) (*Molecular Biology of the Cell*, 2025 5 Mar, Rodriguez-Martinez and Young-Baird). This research is broadly applicable to a range of conditions and diseases impacting warfighters and the military community. **Dr. Sara Young-Baird** is Ms. Rodriguez-Martinez’s mentor and co-author.

New PhD publishes leading vaccine research. **Dr. Amanda Zelkoski** (who received her PhD in Emerging and Infectious Diseases in May) published two important new vaccine studies: [“Ionizable lipid nanoparticles of mRNA vaccines elicit NF-κB and IRF responses through toll-like receptor 4”](#) (Zelkoski et al, *NPJ Vaccines* 17 April 2025) and [“Pre-Vaccination Immune Profiles and Responsiveness to Innate Stimuli Predict Reactogenicity and Antibody Magnitude Following mRNA Vaccination”](#) (*Vaccines*, Zelkoski et al). Dr. Zelkoski’s findings may support future development of vaccines that confer greater immunity with fewer adverse reactions.

Recent PhD graduates publish new research. New research from the Department of Biochemistry, [“Macrophages migrate persistently and directionally upon entering 2D confinement in the presence of extracellular matrix”](#) (*Biology Open*, July 2025, Stinson, Paulson, Carlile, Rotty) addresses macrophage migration, which is believed to have effects on immune and cancer cell behavior; and the research team’s findings could offer insight on the behavior of leukocytes and other cancer cells. Authors **Dr. Matthew Stinson** (‘24) and **Dr. Summer Paulson** (‘25) are both recent USU graduates.



Left to right: Dr. Summer Paulson, Dr. Matthew Stinson, and Dr. Amanda Zelkoski (photos: Tom Balfour)

NES grad student publishes new findings on prion disease. In “[Monitoring Endocytosis of Integral Membrane Proteins Using Western Blot-Based Detection of Biotinylated Antibody Uptake](#)” (Graninger and Krishnan, *BioProtocol Journal*, 20 Nov 2025) BIO Assistant Professor **Dr. Prasanna Krishnan** and NES graduate student **Alex Graninger** showed that a misfolding variant of prion protein traffics to the cell surface, and that treatment with the pharmacological agent BRD4780 prevents misfolded prion proteins from reaching the surface. This is a critical finding because extracellular exposure of misfolded prion proteins is associated with progression of deadly prion diseases.

Grad student publishes review of Chagas disease research. PhD candidate **Joshua Trowell** is the primary author of “[The efficacy and safety of benznidazole in adults with seropositive indeterminate form, *Trypanosoma cruzi* infection: a systematic review and meta-analysis](#)” (*BMC Infectious Diseases*, 23 Dec 2025, Trowell, et al), a systematic review of treatments for Chagas disease. PED Chair **Dr. Patrick Hickey** is Mr. Trowell’s thesis advisor.

Pharmacology research discovers nonhallucinogenic ketamine metabolite that can reduce cancer treatment pain. “(2R,6R)-hydroxynorketamine reverses mechanical and thermal pain hypersensitivity produced by the chemotherapeutic agent oxaliplatin in rats,” (*Journal of Pharmacological Sciences*, 3 Nov, Campanile et al) details a new non-hallucinogenic metabolite of ketamine shown to relieve pain associated with certain chemotherapy treatments. Lead author **Maria Campanile** is a Neuroscience graduate student.

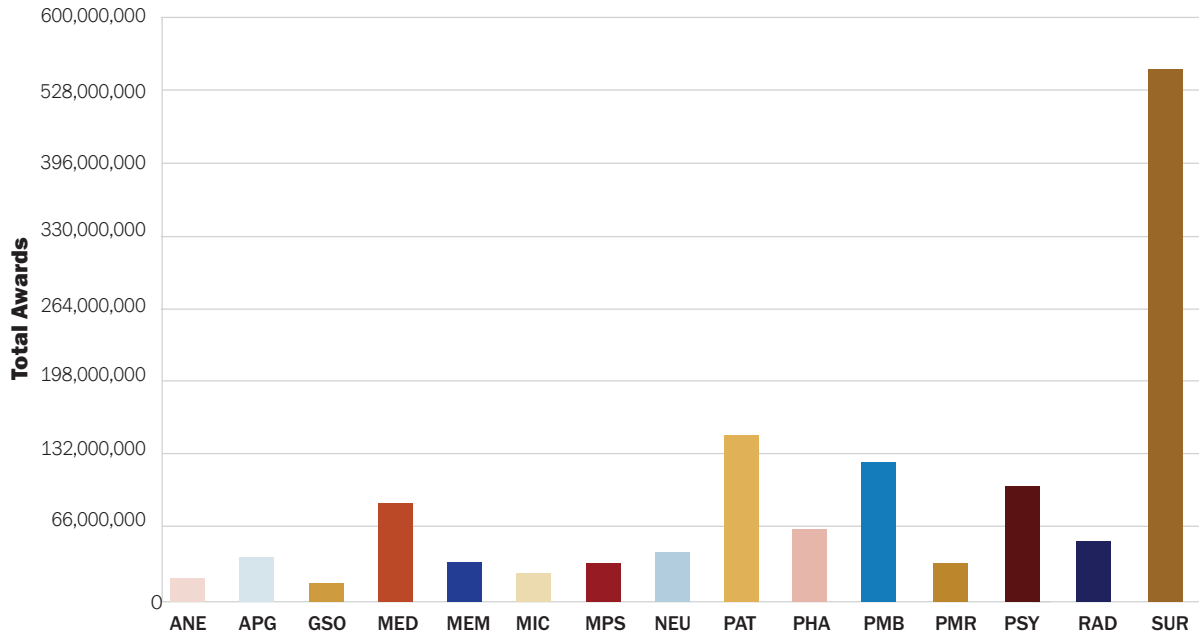


Left to right: Alex Graninger. Joshua Trowell (photos: Tom Balfour). Maria Campanile with Professor Daniel Perl (photo: TSgt Caleb Pavao)

GRANTS

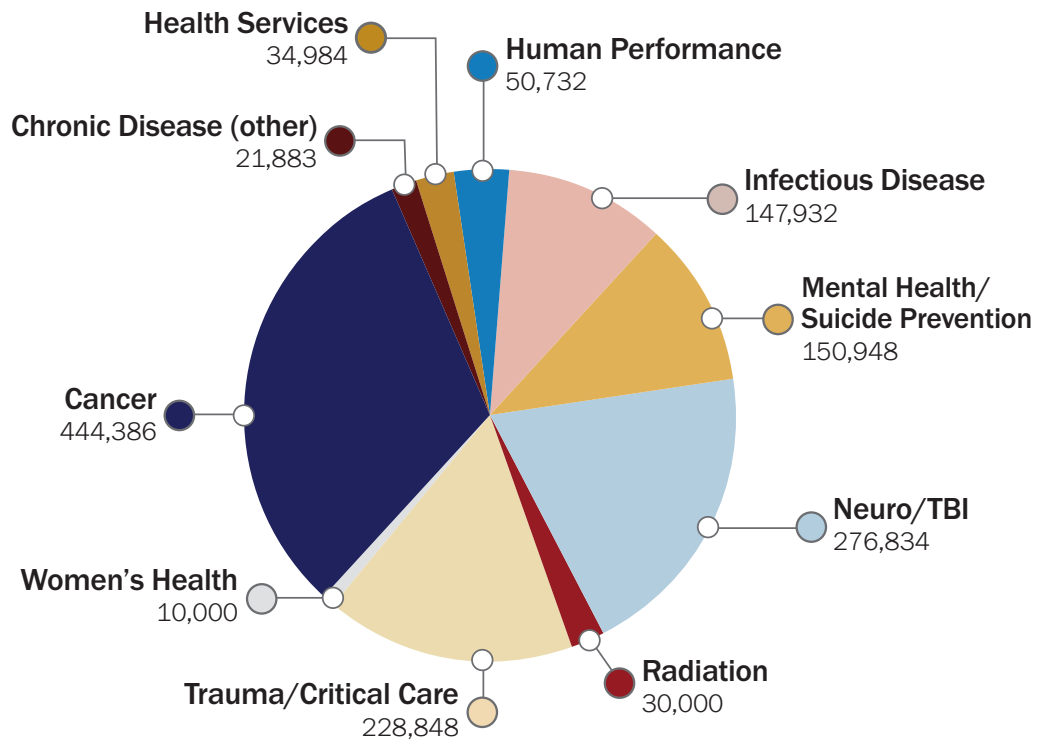
The School of Medicine has hundreds of active research grants, with funding totaling over \$1.4 billion, spanning multiple Departments. 41 of these grants total \$5 million or more, funding discovery and innovation in topics including Trauma and Critical Care, TBI and Neuroscience, Cancer, and many more.

GRANT FUNDING BY DEPARTMENT



MAJOR GRANT (\$5M+) FUNDING BY RESEARCH TOPIC

(in thousands)



NIH MIRA R35 grant. Dr. Sara Young-Baird,

Assistant Professor of Biochemistry and Molecular Biology, received an R35 NIH MIRA grant to study how cells regulate the production of proteins under environmental stress to restore a functional, stable state. Her studies will drive advancements in diagnosis and treatment of cellular stress-related diseases associated with dysregulated protein synthesis, including neuropathologies, diabetes, and multiple cancers.



Dr. Sara Young-Baird (photo: Tom Balfour)

NIH - National Institute of Neurological Disorders and Stroke (NINDS) R01 grant. APG Associate Professor **Dr. Jeremy Smyth** was awarded a **NINDS R01 grant** for his

research project “Astrocyte calcium signaling in chronic pain.” The project’s goal is to identify molecular targets for development of new, non-opioid treatments for chronic pain. Military personnel are at high risk for chronic pain, making this research especially important to military health and readiness.

CDMRP grant to fund chronic pain research. Family Medicine Professors **Dr. Paul Crawford** and **Dr. Jeff Goodie** received a \$5M grant from the DoD Chronic Pain

Management Research Program. Drs. Crawford and Goodie are partnering with a group of military family physicians on a research project titled “Comparing Cognitive Behavioral Therapy and Acupuncture for Managing Chronic Pain (COMBAT-Pain).”

ARPA-H research grant. As part of a team that received a grant from ARPA-H’s Building Resilient Environments for Air and Total Health (BREATHE) program, the School of Medicine is working on a study of indoor air quality monitoring at MTFs. The team will develop and deploy biosensors, respiratory risk assessment software, and automated building controls at Walter Reed, Brooke Army Medical Center, and Madigan Army Medical Center with a goal of developing countermeasures against airborne biodefense threats. Department of Medicine Chair **Dr. Paige Waterman** is the study’s principal investigator.



Photo of SWORD Lab team courtesy of CDR J. Kent Werner

\$25M NIH Center of Excellence. MIC professor

Dr. Ann Jerse is serving as PI and Center Director of the Center for Immunological Interventions against Gonorrhea (CIIG), a new specialized research consortium under the NIH’s National Institute of Allergy and Infectious Diseases (NIAID) Centers of Excellence for Translational Research (CETR) program. The CIIG is designed to address the urgent public health threat of multidrug-resistant *Neisseria gonorrhoeae* by accelerating the development of medical countermeasures, and will run from 2025 to 2030.

\$13M in combined grants funds new SWORD Lab. CDR J. Kent Werner, MD, PhD raised \$13 M in DoW, HHS, non-profit foundation, and industry grants to found the Sleep & Wearables research for Operational Readiness and Defense (SWORD) Laboratory. SWORD is developing novel approaches to measuring and modulating sleep and circadian rhythms for the enhancement of human performance and medical readiness.

USAMRAA TBI research grant. “Neurovascular and Cognitive Recovery from Spectrum of TBIs Through High-Low Therapy,” a new research project led by **Dr Zygmunt Galdzicki (APG)**, and **Drs. Daniel Perl** and **Dara Dickstein (PAT)** and colleagues from the University of Kentucky, received a three-year funding grant from the US Army Medical Research Acquisition Activity (USAMRAA). Since 2000, approximately 500,000 service members have been diagnosed with TBI, with dramatic negative impacts on force readiness. Veterans who have suffered debilitating TBIs may also be at increased risk for neurodegenerative disorders such as Alzheimer disease, vascular dementia, or chronic traumatic encephalopathy. The USAMRAA grant team will study H-L therapy, a minimally invasive intervention that is feasible even in remote medical installations, and that could complement other therapies.



NIH/NIEHS R21 grant. Professor of Pharmacology **Dr. Regina Day** received a \$340,000 NIH/NIEHS R21 grant for “Mechanisms of Radiation-Induced Hemolysis,” a research project that will examine the effects of ionizing radiation on blood.



USSOCOM / USASOC grant. 4DBio3 and the Microstructure Anatomy Gradient for Neuroimaging with Ultrafast Scanning (MAGNUS) program, partnering with the United States Special Operations Command (USSOCOM) and US Army Special Operations Command (USASOC) has initiated the SOCOM Blast Longitudinal Exposure Study (BLES) that will examine long-term effects of blast overpressure on SOF cohorts for next 5 to 7 years. 4DBio3 Associate Director for Research **Dr. Tony Yuan** is the PI.

NIH grants fund RAD brain research. Professor of Radiology and Bioengineering **Dr. Dzung Pham**, in collaboration with Johns Hopkins University, was awarded a 4-year NIH grant to fund development of novel machine learning algorithms to support quantification of brain morphology based on MRI imaging. Machine learning algorithms can perform poorly when analyzing MRI data. Dr. Pham and his team will develop methods to improve these algorithms, enabling them to capture biological variability while simultaneously reducing variations in image appearance. Dr. Pham also received a 5-year NIH grant funding a collaboration with investigators at University of South Carolina and University of Virginia that will study the characterization of brain biomechanics during impact events.

The project’s goal is to greatly improve the predictive capability of injury prevention models, including computational simulations.

Maryland Stem Cell Research Commission Discovery grant. Professor of Medicine **Dr. Kathleen Pratt** received a Discovery grant from the Maryland Stem Cell Research Commission. The Commission funds Maryland-based researchers “driving breakthroughs in regenerative medicine.” Dr. Pratt’s grant will fund research into novel stem cell-based technologies and cures.

CDMRP funding recommendation. Dr. Leigh Ellis, Center for Prostate Disease Research (CPDR) Scientific Director and **Dr. Xiaofeng Allen Su**, CPDR Principal Investigator, were recommended for separate grants of \$1.2M each by the DoD



Office of Congressionally Directed Medical Research Programs (CDMRP) Prostate Cancer Research Program (PCRP) Idea Development Award program. Dr. Ellis was selected for the Established Investigator Award and Dr. Su was selected for the New Investigator Award. Prostate cancer is the second leading cause of cancer-related deaths among men in the US, with notably high incidence among military veterans and active-duty personnel.

CDMRP Suicide Prevention Research Funding. The Center for the Study of Traumatic Stress (CSTS) secured a significant CDMRP Peer-Reviewed Medical Research Program research grant recommendation for a novel suicide prevention intervention. The project, “A Folic Acid Randomized Controlled Trial at the Maximum Safe Upper Limit to Reduce Suicide Risk (FACT-Max)”, led by **Dr. James West**, will test a prescription-strength daily folic acid tablet as a universal intervention for suicide risk prevention.

THE NEXT GENERATION

Recruiting, Admissions, and EMDP2

USU’s commitment to the Military Health System’s mission of maintaining a Ready Medical Force and a Medically Ready Force is reflected in the School of Medicine’s recruitment and admissions strategies. Under the leadership of **COL Danielle Holt, MD**, Recruitment and Admissions has expanded its impact beyond USU to help build the future of military medicine.

A PATHWAY TO MILITARY MEDICINE FOR ENLISTED SERVICE MEMBERS



EMDP2 Cohort 12, July 2025 (photo: Tom Balfour)

In June, the **Enlisted to Medical Degree Preparatory Program** (Director **Dr. Lisa Harris**) welcomed EMDP2 Cohort 12, including 10 Army, 8 Air Force, and 8 Navy students. In addition to medical technicians and hospital corpsmen, the group includes linguists, intelligence specialists, air traffic controllers, cyber analysts, and even a Navy SEAL. 2025 was a remarkable year for the EMDP2 program, which

received 177 applications for 26 openings - an **increase of 84% since 2021**, when the program received 96 applications for 25 slots. Now in its 12th year, EMDP2 is driving notable increases in medical school matriculation from the enlisted ranks. Importantly, a long-term outcomes study shows that the academic performance of EMDP2 learners is comparable to that of their peers. By providing a pathway for highly-qualified, experienced service members, EMDP2 is a value-add for military medical readiness.

EARLY DECISION

The Early Decision Program (EDP) was introduced during the admissions cycle for the Class of 2029. The EDP attracts a highly competitive applicant pool through its binding, accelerated acceptance pathway, granting successful candidates with a cumulative GPA of 3.5 and MCAT of 505 or higher final decisions by October 1. Successful EDP candidates not only meet but significantly exceed our minimum requirements, demonstrating exceptional scholarly potential as well as commitment to the military medical mission.

A HOLISTIC APPROACH

USU is challenging long-held assumptions on student recruitment. In March 2025, Dr. Holt and School of Medicine Dean **Dr. Eric Elster** published “Rethinking Shadowing for Aspiring Physicians” in the *New England Journal of Medicine*. They argue in favor of a holistic admissions process that recognizes both academic achievement and personal accomplishments and qualities. This approach, long successful in producing military medical officers, could also expand the number of well-rounded caregivers, professionals, and leaders in the civilian medical sector.



Dean Elster addresses Open House attendees, May 2025

MILITARY MEDICAL COMMUNITIES

In 2025, Assistant Dean for Recruitment **LTC J. Austin Cox, MD** established the Military Medical Communities (MMC) initiative, expanding and building on the success of the Military Medical Ambassadors (MMA) program. MMC is a paradigm shift for military medical student recruitment, from the competitive “HPSP vs. USU” model to a collaborative approach, using existing resources to streamline military medicine pathways.

BUILDING THE MILITARY MEDICAL COMMUNITY

- **Ambassadors (MMA & SMMA):** Current and former physicians and students serve as volunteer recruiters at their local colleges and universities.
- **Institutional partners:** USU teams with ROTC Cadre, Program Directors, and Tri-Service HPSP recruiters to support students from the undergraduate years through residency.
- **Specialty integration:** Military chapters of national specialty groups (e.g., SOMOS, GSACEP, USAFP) offer early exposure to specialties.
- **Group-based mentorship:** Monthly, specialty-focused “Military Medical Monday” events feature military physician guest speakers with breakout rooms that allow students to connect with one another in small groups.
- **A professional development hub:** Leveraging USU’s faculty and digital infrastructure, the MMC serves as a hub for recruitment content, residency match education, and leadership development for USU and HPSP scholars.
- **Local chapters:** Interested students can now establish local chapters at civilian institutions while remaining connected to the broader MHS network.

IMPACT AND METRICS

- **Registration:** 1,100+ students enrolled in the MMC network.
- **Reach:** 2,500+ individuals have participated in live sessions or accessed recorded content via YouTube.
- **Efficiency:** Virtual delivery and volunteer-led local chapters provide a high-return, low-cost model for national recruitment.

The MMC’s goal is to become the premier platform to identify, inform, and inspire the next generation of military medical leaders.

CONTINUING MEDICAL EDUCATION (CME)

Military ANE expands Maintenance of Certification Sim Course. In 2025, USU increased its Maintenance of Certification in Anesthesiology Simulation course offerings from one to four, expanding military physicians' access to training on current practices in Anesthesiology.

New Pathology certificate program. In July, Professor of Pathology **Dr. Barbara Ritschel** presented the opening plenary session for the Academy of Distinguished Pathology Educators "Foundations in Curriculum" at the Annual Meeting of the Association of Academic Pathology in Denver. Her talk, "Assessment Rocks: Theory, Methods and Relationship to Learning," is the basis of a new 2-year hybrid certificate program offered by the Academy of Distinguished Educators.

Fundamentals of AI in Radiology - new CME course. Associate Dean for Research and Assistant Professor of Radiology and Bioengineering **Lt Col Justin Peacock, MD** and Assistant Professor **CDR Karl Soderlund, MD** created the Fundamentals of AI in Radiology (with Capstone) course, which introduces Radiology residents and faculty to foundational concepts, applications, and responsible use of AI in Radiology. The course is designed to help Radiologists develop the knowledge and skills required to effectively and ethically integrate AI into the Radiology workflow.

MMHAC trains 30 physicians. In June, Pediatrics faculty members taught the Military Medical Humanitarian Assistance Course (MMHAC) to 30 clinicians from across the National Capital Region. This two-day course introduces students to key public health and clinical concepts relevant to care of populations displaced by disasters and conflict.



Students work through a 2010 Haiti Earthquake response tabletop exercise in which they must integrate logistic and public health considerations for supporting a displaced population.

VA Health System accredits course based on HPE culminating project.

CDR James Hawkins of the Postgraduate Dental College and a 2024 MEd-HPE graduate, developed a temporomandibular disorder (TMD) curriculum as his MEd culminating project. In August, the VA accredited Dr. Hawkins' course for use within the VA Health System. The American Academy of Orofacial Pain

has already adopted the curriculum as their official online course.

Top Online Learning Providers. The Center for Deployment Psychology (CDP) was recognized by Newsweek and Statista as one of America's Top Online Learning Providers for 2026. The Newsweek/Statista list was built based on an online survey of more than 10,000 respondents.

RECOVERY AND READINESS

Musculoskeletal Injury Rehabilitation Research for Operational Readiness

MIRROR

The **Musculoskeletal Injury Rehabilitation Research for Operational Readiness (MIRROR)** program supports over 40 musculoskeletal injury (MSKI) studies, emphasizing deployment-limiting MSKIs. The program's research generates evidence-based clinical practice guidelines, as well as educational opportunities for future military and civilian providers. In 2025, MIRROR led discussions and research on a range of MSKI types and their impact on military readiness.

Musculoskeletal Injury (MSKI) Thought Leadership Forum. In February 2025, the Center for Rehabilitation Sciences Research (CRSR) and MIRROR partnered with AMSUS to host a [strategic forum focused on optimizing Warrior Athlete readiness](#). The conference convened strategic leaders, clinicians, and researchers to address the burden of MSKIs across the DOW.

A sports medicine approach to MSKI prevention and treatment. [“The Impact of a Unique Military Treatment Facility-Based Sports Medicine Model on Readiness in the Army: A Prospective Longitudinal Analysis”](#) (*Military Medicine* 2025 Aug 20, Suttles et al) is a longitudinal cohort study that evaluates implementation of a sports medicine-based model within MTFs to improve management of musculoskeletal injuries, reduce recurrence, and strengthen overall force readiness.

Understanding the effects of injury and treatment on military careers. [“Effect of Serious Mental Health and Physical Injuries and Their Treatment on Career Trajectories for Military Service Members”](#) (*Mil Med*, 19 June 2025, Mullinax et al) is a retrospective cohort study of over 83,000 soldiers in the Army Warrior Care and Transition Program, led by **Dr. Elizabeth Hisle-Gorman** and **COL Jay Dintaman** of the Department of Pediatrics. First-named author **ENS Melissa Mullinax** is a Class of 2027 medical student and graduate of the Enlisted to Medical Degree Preparatory Program (EMDP2), Cohort 7.

CTS risk factors and treatment. [“Ultrasonographic Assessment of Median Nerve and Carpal Tunnel Variations”](#) (*Journal of Ultrasound in*



Melissa Mullinax (photo: Tom Balfour)

Medicine, 2025 Oct, Super et al.) demonstrates that ultrasound can detect median nerve and carpal tunnel variations that affect CTS risk and treatment safety, guiding future research on their clinical impact.

Patient-reported outcomes. The *Military Orthopaedics Tracking Injuries and Outcomes Network (MOTION)* is the first tri-service initiative to systematically collect and analyze military-specific patient-reported outcome (PRO) data for MSKIs, following more than 15,000 enrolled patients from pre-operative care through long-term follow-up. MIRROR provides program management, research engagement, and data collection support for MOTION, as well as serving as a liaison with DHA and the MOTION Steering Committee.

Psychological factors influencing ACL recovery. MIRROR is advancing understanding of psychological factors' impact on ACL recovery with a multisite research initiative led by **Lt. Col. Andrew Sheean, MD, FAAOS**. Dr. Sheean is examining the connection between intrinsic psychological traits such as resilience, mental health, and pain coping strategies and recovery outcomes following anterior cruciate ligament reconstruction (ACLR).




Early identification of shoulder instability. The MIRROR program published *“Revolutionizing Shoulder Instability Research with 3D MRI Imaging and AI.”* This research leverages high-resolution 3D MRI imaging and artificial intelligence to improve detection of structural abnormalities in the glenohumeral joint. MIRROR's goal is to improve diagnosis and update prevention and treatment strategies for recurrent shoulder instability in service members.

Research on GBL progression. *“Transcriptomics of Anterior Shoulder Instability: Differences in Gene Expression in the Blood of Patients With and Without Significant Glenoid Bone Loss”* (*Orthopedic Journal of Sports Medicine* 15 May 2025, Galvin et al) outlines a laboratory study of shoulder instability with and without glenoid bone loss. Led by a team at Madigan Army Medical Center, the research points the way toward a novel precision medicine approach to improving diagnosis and tracking of glenoid bone loss (GBL) progression in young athletes and service members.

SERVICE AND LEADERSHIP IN MILITARY HEALTH PREPAREDNESS

“Partnerships to Overcome the Peacetime Effect.” At the American College of Surgeons annual meeting, USU faculty and leaders including USU President **Dr. Jonathan Woodson**, School of Medicine Dean **Dr. Eric Elster**, **CAPT Matthew Tadlock**, **COL Danielle Holt**, and **COL Jennifer Gurney** led a panel discussion on “the peacetime effect” and its negative impacts on combat casualty care skills. [“Partnerships to Overcome the Peacetime Effect: Excelsior Surgical Society Panel Session,”](#) published in the *Journal of the American College of Surgeons*, outlined key takeaways from the session.

**Partnerships to Overcome the Peacetime Effect:
Excelsior Surgical Society Panel Session**

<p style="text-align: center;">Military Surgeons and Lifelong Learning</p>  <ul style="list-style-type: none"> • Military-Unique Curriculum • Robust Clinical Volume • Remain Military-Connected 	<p style="text-align: center;">Innovation in Simulation and Research</p> 	<p style="text-align: center;">Policy, Advocacy, Legislation</p>  <ul style="list-style-type: none"> • Joint Integrated Military Health System • Mission Zero Act
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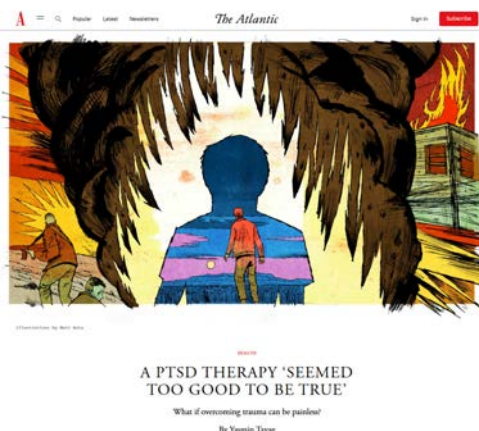
Cannon et al, *J Am Coll Surg*, May 2025



Graphical abstract, “Partnerships to Overcome the Peacetime Effect”

New TBI classification framework. Professor of Neurology **Dr. David Brody** was a key member of the working group that developed the CBI-M (clinical, biomarkers, imaging and modifiers) framework for classifying and characterizing acute TBI. The initiative builds on recommendations from the 2022 National Academies of Science, Engineering, and Medicine report, which called for a more precise and comprehensive classification system

for TBI. The CBI-M framework aims to improve patient care, research, and clinical trial design by providing a more nuanced understanding of TBI severity and outcomes.



The Atlantic features PTSD research. On June 2, *The Atlantic* published [“A PTSD Therapy ‘Seemed Too Good to Be True’”](#) detailing **Dr. Michael Roy’s** Reconsolidation of Traumatic Memories to Resolve Post-Traumatic Stress Disorder study (RECONTROL for PTSD). RECONTROL for PTSD is the first large-scale clinical trial of Reconsolidation of Traumatic Memories and investigates the

therapy’s effectiveness compared with prolonged exposure therapy.

CHAMP OPSS collaborates with US Anti-Doping Agency and Major League Baseball.

Operation Supplement Safety (OPSS) Director **Andrea Lindsey** and colleagues from the US Anti-Doping Agency and Major League Baseball published the *Drug Testing and Analysis Perspectives* piece “[Growing Trend of Novel or Experimental Substances Not Approved for Human Use Sold as Consumer Products Poses Threat to Athletes, Service Members, and Public Health](#),” warning of the dangers of unregulated products marketed as health supplements. The authors have established a Performance Enhancing Substances Consortium to “protect athletes, service members, veterans, and consumers from substances in dietary supplements and other wellness and performance products.”

“From the Lab to the Battlefield” - advancing transfusion science to benefit patient care. Dr.

Michael DeVan, a retired Navy Captain and Assistant Professor of Pathology, is working with **Dr. Vincent Ho**, Chair of the Department of Radiology and Bioengineering, to study biological cell generation as a way to develop on-demand blood products. This potentially groundbreaking research has major implications for combat medicine.



Photo courtesy of Dr. Michael DeVan

Connecting military families with nutrition assistance.

Pediatrics Associate Professor **Dr. Binny Chokshi**, Walter Reed Pediatrics resident **CPT Sidney Zven**, and Community Health Worker **Ms. Dakota Davis** published research showing that the Women, Infants, and Children (WIC) nutrition program is underutilized among service members; and they developed an outreach program to connect more military families with food assistance. Their work was highlighted in the USU News piece “USU Researchers Tackle Military Food Insecurity by Boosting WIC Engagement.”

Strengthening the US pharmaceutical supply chain. “A Comparison of the Essential Medicines Lists of the U.S. Department of Health and Human Services, the U.S. Department of Defense, the U.S. Food and Drug Administration, and the World Health Organization” (*Journal of the American Pharmaceutical Association, Janvrin et al*) compares essential medicines lists (EMLs) across multiple health agencies, with the goal of identifying and mitigating shortages and improving availability of medicines essential for warfighters and the civilian population. This publication was a joint effort between the Department of Pharmacology and the Center for Health Services Research (CHSR).

Stop the Bleed training. In May, USU students and Brigade members led a Stop the Bleed training event at the Montgomery County Public Safety Training Academy. Ten volunteers led simulation exercises including a mock bar fight and a major car accident. The training, which made use of creative simulation tools (paper knives, PVC pipe, a billiards cue, triage tape, and space blankets), was both effective and very low cost. Event organizer **CPT David Karasz, MD**, a 2025 USU graduate, reports that the team certified 100% of the



Stop the Bleed training, May 2025

39 participants. Trainers included **Maj Nicole McQueen, 2LT Alex Bennett, 2d Lt Taryn Cates-Beier, 2d Lt Savannah Champagne, 2d Lt Matthew Gadziala, 2d Lt Benjamin Hopper, HM1 Samantha Reilly, ENS Kaylee Valenzia, and 2d Lt Ian Zonfa.**

Quick response to infectious disease outbreak. In February 2025, a conjunctivitis outbreak affected 73 recruits at Joint Base San Antonio - Lackland. All of the recruits required medical attention, with one hospitalized for periorbital cellulitis. Researchers from the Department of Medicine studied this rare outbreak, documenting hygiene practices and treatment response. They quickly published their findings in “Outbreak of *Neisseria meningitidis* Conjunctivitis in Military Trainees - Texas, February-May 2025” (*MMWR*, 4 September, Ching, *et al*). Preventing future conjunctivitis outbreaks and effectively treating diagnosed cases is critical to training continuity and readiness.

Guidelines on care for heat-related illness. In September, the Warrior Heat and Exertion Collaborative (WHEC) published an updated Joint Service Clinical Practice Guideline (CPG) on Exertional Rhabdomyolysis. As MEM Professor and CHAMP Medical Director **Dr. Francis O'Connor** explains, heat-related illness is a very common military health issue, with significant impacts on warrior health and readiness. This new CPG ensures that military physicians and health care providers have current, accurate guidance on diagnosis and treatment.

Training and consultation support to JMAC. In August, **Dr. Quinn Biggs, Dr. Lucian Tatsa-Laur, Ms. Rehana Naik Olson, and Ms. Tanya Yahouedeou** of the Center for the Study of Traumatic Stress (CSTS) met with Joint Mortuary Affairs Center (JMAC) staff to discuss Mortuary Affairs / Fatality Management (MA/FM) activities, including preparations

for MA/FM operations in large scale combat operations (LSCO) and identifying MA/FM personnel in need of behavioral health support.

Military-civilian integration in trauma care. The commentary “[Military hospitals must not be excluded from civilian trauma systems](#)” (*Trauma System News Remondelli, et al*, 18 September 2025) features contributions from **Dr. Eric Elster**, **COL Danielle Holt**, **CAPT Matthew Bradley**, and **WRNMMC Director CAPT Melissa Austin**. Using Walter Reed and the National Capital Region as an example, the authors advocate for full integration of military hospitals into civilian trauma systems as a way to both strengthen military medical capabilities and improve public safety.

Preparing the civilian healthcare system to support DOW. On 23 October, the *Journal of the American Medical Association (JAMA)* published “[Preparing the Civilian Health Care System for Wartime: A National Imperative for Military-Civilian Integration](#)” (Goralnick, Holcomb, Elster, *JAMA*, 23 Oct 2025), an opinion piece urging a coordinated effort to prepare the civilian healthcare system to support the MHS in wartime. In the event of large-scale combat operations, the authors write, “much of the patient care burden would fall on the civilian health care system (which is) unprepared to manage a massive influx of military casualties.”

Innovative suicide intervention approach. A partnership between the Suicide Care, Prevention, and Research (CPR) Initiative and USU Val G. Hemming Simulation Center, the Chaplains-CARE training curriculum teaches suicide intervention skills grounded in cognitive behavioral therapy. In 2025, Chaplains-CARE delivered five intensive weeklong training sessions to 55 chaplain learners. During training weeks, approximately 50 actors portray varying levels of suicide risk, supported by 14 chaplain and mental health supervisor pairs. Led by PI **Dr. Marjan Holloway** (Professor, MPS), and **Co-PI Su Yeon Lee-Tauler, PhD** (Senior Scientist, HJF), the program has received outstanding participant feedback. One chaplain wrote: “Please do more of this! I want this to be required for chaplains—it’s so valuable personally and professionally.”

Prolonged Casualty Care for the Layperson. In May, Professor and Vice Chair **Dr. Melissa Givens** delivered the invited lecture, “Prolonged Casualty Care for the Layperson” at the Special Operations Medical Association (SOMA) Scientific Assembly. Later in the year, Dr. Givens published [A Practical Guide to Prolonged Casualty Care: What You Can Do Between First Aid and Delayed Arrival of Medical Care in Conflict Areas or Disaster Zones](#), a comprehensive handbook for lay people who may need to care for the sick and injured in the absence of professional medical help. Contributing authors include USU students and faculty, and command staff from medical units throughout the military.



Photo courtesy Dr. Melissa Givens

NASA Center of Specialized Research (NSCoR). Spaceflight stressors such as radiation, isolation, and sleep loss can lead to mission-critical performance errors. The combined effects of these stressors on performance during spaceflight remain unknown, and the new NASA Center of Specialized Research (NSCoR) will conduct research on cognitive, sensorimotor, and brain function during spaceflight. Assistant Professor of Pharmacology **Dr. Catherine Davis-Takacs** leads this initiative and has assembled a team of experts from six different US institutions studying space radiobiology, human operational performance, cognition, sensorimotor function, and predictive genomics.

International training mission to Senegal. The Department of Psychiatry expanded its global reach through an operational behavioral health mission to Senegal. In early December, Clinical Associate Professor **Col Kimberly Kumer** led a Military Operational Behavioral Health Mobile Training Team (MTT) to Dakar, Senegal. The team delivered a week-long program on operational mental health training to 25 military psychiatrists and nurses of the Senegalese Armed Forces.

Walter Reed Surgery rated among the best. The USU-Walter Reed Surgery department was one of only three military treatment facilities (MTFs) and only 77 hospitals in the world recognized by the American College of Surgeons National Surgical Quality Improvement (NSQIP) report for meritorious achievement in surgical outcomes. Walter Reed was rated “exemplary” in all-case morbidity, all-case urinary tract infection, and all-case surgical site infection. WR was also one of only two MTFs rated “exemplary” in all-case morbidity since 2019. USU medical students and NCC residents train with Walter Reed surgeons, making its consistently excellent performance a major advantage for surgical education at USU.

Highlighting the history of military surgery. In October, the American College of Surgeons published “[Civilian Surgeons Helped Shape Casualty Care in World War II](#)” (Holt and Cannon), a commentary and review of surgery practice and advances during WWII and after. The article covers the groundbreaking work of Dr. Edward Churchill and the founding of the Excelsior Surgical Society, ACS’s society for military surgeons. As author **COL Danielle Holt** points out, USU is leading the effort to document and disseminate wartime lessons on medicine and surgery.



COL Danielle Holt (photo: Tom Balfour)

Ensuring operational readiness. 4D Bio3’s Validated Assessment Program for Operational Readiness (VAPOR) is a partnership with the 59th Medical Wing at Joint Base San Antonio (JBSA). VAPOR’s Training Resilience in an Aeromedical Interoperable Learning System (TRAILS) program led multiple training events in 2025, including JBSA’s first ever joint in-flight training event with the US Coast Guard, Texas A&M’s School of Disaster Medicine’s annual Disaster Day Emergency Management exercise, and the Texas Air and Army National Guard’s CSAR-X exercises.

Prevention of Harmful Behaviors. The Center for Deployment Psychology (CDP) worked with the DoD Sexual Assault Prevention and Response Office (DoD SAPRO) to deliver the DoD’s standardized Prevention of Harmful Behaviors (PoHB) curriculum. This two-week virtual training provides foundational competencies for members of the DoD’s Integrated Primary Prevention Workforce (IPPW), who are tasked with implementing primary prevention strategies at installations and across military communities. This program launched in August 2025.

Studying NATO’s casualty care system. In “[Modeling Musculoskeletal Combat Casualty Care: NATO Trauma System Performance in Large Scale Combat Operations](#)” (JB&JS, Cote, et al, 11 September 2025), the Center for Health Services Research (CHSR) and collaborators used a simulation model to examine the effectiveness of the NATO trauma system during Large-Scale Combat Operations (LSCO). Study co-author and CHSR Director **Dr. Tracey Koehlmoos** writes, “The current NATO model experiences high rates of mortality in LSCO. The most effective modification entails situating field hospitals within one hour of ground transport from the battlefield.”

International research infrastructure expansion. In 2025, the Center for Rehabilitation Sciences Research (CRSR) secured funding to expand clinical trials and rehabilitation capabilities across allied nations. CRSR established the **Ukraine Partnership** with the First Medical Union and the UNBROKEN network in Lviv to evaluate pain interventions for war casualties. CRSR also launched a Nordic collaboration (Norway, Sweden, Finland, Denmark, Iceland) to synchronize civilian-military trauma systems for combat readiness. Additionally, the **US-Italian Bionics for Veterans (BIOVET)** collaboration co-hosted a surgical conference on limb restoration.

Service dogs for wounded warriors. CRSR’s **Wounded Warrior Service Dog Program (WWSDP)** expands the capacity of qualified Service Dog Training Organizations (SDTOs) across the United States to raise, train, and provide service dogs to service members and veterans with disabilities. Through an annual competitive grant process, CRSR awarded \$16.5M across 29 subawards in 2025 to support SDTOs’ efforts to train and place service dogs.



A quick rest for a service dog in training

Human performance optimization for the Army. Human Performance and Resources by CHAMP (HPRC) partnered with the US Army to develop its [Skills Qualification Identifier \(SQI\) for Holistic Health and Fitness \(H2F\)](#), and CHAMP (the Consortium for Health and Military Performance) delivered the train-the-trainer course for Army H2F Advisors. As **CSM Michael McMurdy** writes, “The H2F-A course will empower our NCO Corps to build human performance optimization into our long-term training calendars and better prepare our Soldiers for the rigors of Large-Scale Combat Operations.”



Photo: Janet A. Aker (DVIDS)

“A Lifesaving Chance.” The USU and DHA Opioid Overdose Education and Naloxone Distribution (OEND) program combats opioid overdoses by increasing naloxone access and education, ultimately saving lives. Inspired by the Veterans Administration’s successful Opioid Education and Naloxone Distribution (OEND) program, the [Defense and Veterans Center for Integrated Pain](#)

[Management \(DVCIPM\)](#), partnered with DHA to implement OEND within the Military Health System, an effort led by Associate Professor of Anesthesiology **Dr. Kris Highland** and **Kevin Galloway**, DVCIPM’s Director for Strategic Communications and Policy.

Expertise in healthcare simulation. Professor of Pediatrics and Assistant Dean for Simulation Education **Dr. Joseph Lopreiato** served as Editor for the [3rd Edition of the Healthcare Simulation Dictionary](#), published by the HHS Agency for Healthcare Quality and Research (AHRQ). Dr. Lopreiato is the Associate Director of the Val G. Hemming Simulation Center.

Clinical guidance on treatment of penetrating brain injuries. Military Traumatic Brain Injury Initiative (MTBI²) Director **LTC Bradley Dengler, MD** and faculty members from the Department of Neurology and MTBI² contributed to the Brain Trauma Foundation’s *Guidelines for the Management of Penetrating Traumatic Brain Injury, Second Edition*, an authoritative new textbook that provides updated clinical guidelines for the treatment of penetrating brain injuries, advancing evidence-based care for complex neurotrauma.

Free emergency resources for OB providers. The Department of Gynecologic Surgery and Obstetrics (GSO) developed the OB Emergencies mobile app, which provides emergency resources for providers, including:



- ✓ [Emergency Checklists](#): Covers OB emergencies such as Amniotic Fluid Embolism, Anaphylaxis, Breech Delivery, Cardiac Arrest, Cord Prolapse, Eclampsia, Hemorrhage, and Hypoxia.
- ✓ [Programmable Phone Numbers](#): Allows users to program 17 critical hospital phone numbers directly into the app for quick access.
- ✓ [Debrief Checklist](#): This debriefing tool is designed to be completed after an event with all team members, and can be edited and emailed for easy reporting of lessons learned to the hospital.

Hacking for Defense. The Digital Transformation Integration Center (DTIC) led MHS participation in **Hacking for Defense (H4D)**, a national innovation program sponsored by the **Defense Innovation Unit (DIU)**. H4D connects DOW stakeholders with university innovation teams to solve high-priority defense challenges. DTIC Director **LCDR Jacob Cole, MD** collaborated with clinical, operational, and research personnel from across the MHS to develop a set of problems aligned with future large-scale combat operations, combat casualty care, medical logistics, and digital health transformation. This was USU’s first coordinated submission of medical problem statements to H4D, reflecting our commitment to operational readiness, force health protection, and MHS modernization.

THE FUTURE OF MEDICINE

AI in Medical Education, Research, and Clinical Care

OMB Memo M-25-34 | NSTM-2 (September 2025) emphasizes the need to “ensure and extend American leadership in key critical and emerging technologies” especially artificial intelligence (AI). Throughout 2025, the School of Medicine focused on advancing AI in biomedical research, health professions education, and patient care.

Inaugural Hospital 2.0 Summit. With the support of the Henry Jackson Foundation, the School of Medicine hosted the **Hospital 2.0 Summit: Creating the Digital Twin**, gathering dozens of leaders from DHA, CDAO, and DASD along with industry and technology innovators. This two-day event explored AI-powered digital twin technology and its potential to revolutionize hospital operations, patient care pathways, and healthcare outcomes.

Clinical Decision Support Tools (CDSTs). In February, the FDA granted an Investigational Device Exemption (IDE) for Woundx™, a clinical decision support tool (CDST) designed to assist surgeons in optimizing the timing of wound closure. Woundx™, a product of the Surgical Critical Care Initiative (SC2i), will improve care for wounded warfighters and enhance medical readiness for future conflicts. During the first quarter of the year, SC2i was featured in Google advertising and marketing, including a full-page ad, “Improving critical injury outcomes for military personnel with the Uniformed Services University and Google AI.” In November, Google published the case study “[Uniformed Services University uses Google AI to improve outcomes for 467,000 patients annually](#)”, highlighting Google AI’s role in the development of CDSTs. With AI-powered precision medicine, SC2i has accelerated healing and improved health outcomes for 467,000 patients.

The Digital Technology Integration Center (DTIC). Established in 2025, the DTIC is a research and consulting center supporting MHS digital transformation objectives through leadership in innovation, collaborative research, workforce development, and advisory services. The DTIC will advise military and government leaders on all aspects of health technology integration.

AI in biothreat surveillance. In February, the Center for Health Services Education (CHSR) teamed with the Edward Via College of Osteopathic Medicine (VCOM) to launch a DHA-funded project aimed at enhancing biothreat surveillance. The team is developing an AI-driven public health dashboard supporting real-time monitoring and response to emerging biothreats in military and civilian public health systems.

AI Integration in Workforce Development. In 2025, the Department of Preventive Medicine and Biostatistics (PMB) introduced a new Certificate in Health Informatics and Information Science. The HIIS program is designed to equip researchers and clinicians with advanced skills in healthcare AI, data analytics, visualization, and more. Fully online and flexible, the program can be completed in 12 to 36 months, accommodating military and professional commitments.

Research and Thought Leadership. School of Medicine researchers published a series of papers on AI in healthcare and education in 2025.

- **LCDR Jacob Cole, Lt Col Joshua Duncan, and Dr. Rebekah Cole** published [“Using Pretrained Large Language Models for AI-Driven Assessment in Medical Education”](#) (*Academic Medicine*, 22 Aug 2025, Cole et al), concluding that use of AI in assessments may relieve faculty from repetitive grading tasks, leaving more time free for teaching, research, and clinical care.
- [“Transforming Military Healthcare Education and Training: AI Integration for Future Readiness”](#) (*MilMed*, 2025 Sep 1, Peacock et al) is a review of literature on integration of AI technologies in medical and health professions education, with an emphasis on safe and ethical use of AI in military medical education. Class of 2027 medical students **2LT Brad Snively** and **2d Lt Brandon Jensen** are named authors.
- In September, *Military Medicine* published the commentary [“Readying Military Medicine for AI-Enabled Warfare”](#) (Cole, Simmons, Duncan, Cole, Peacock). The authors write, “Military healthcare professionals must be equipped to critically engage with AI tools, deliver care in degraded environments, and navigate ethically ambiguous situations under extreme pressure and uncertainty.”

RESEARCHING THE FUTURE FIGHT

“Future War” concepts in military medical research

Beyond emerging technologies such as AI, the School of Medicine is publishing research on the most future-directed aspects of warfare and medicine. Several major themes have emerged that center “future war” concepts in research, including Drone Medicine, Nuclear Defense, Advanced Trauma, and Technology in Education.

Drone medicine. “The Medical Implications of Emerging Unmanned Aircraft Systems in Military and Combat Environments: A Narrative Review” (*MilMed*, 2025 Nov 1, Nowadly et al), a 2025 review of “unmanned aircraft systems... in military medical operations” places USU at the forefront of the autonomous evacuation debate.

Nuclear defense. New 2025 studies on acute radiation syndrome in animal models outlined in “New opportunities and current challenges using animal models for the discovery of novel countermeasures for acute radiation syndrome” (*Expert Opinion Drug Discovery*, 2025 Aug 1, Singh et al) highlight the increasing relevance of the Armed Forces Radiobiology Research Institute (AFRRI) in a threatening geopolitical climate.

Advanced trauma. Publications covered in “A Scoping Review of Military Combat Casualty Data on Submassive, Massive, and Supermassive Transfusions” (*MilMed*, 2025 Jan 16, Banerjee et al) continue to refine the protocols that save lives on the battlefield.

A technology-savvy medical workforce. In “Military Medical Student Technology Readiness and Resource Utilization” (*MilMed*, 2025 Jul 1, Bulaklak et al) researchers in the Department of Health Professions Education (HPE) examine medical education technology use by students, an example continuous analysis of how digital tools are shaping the next generation of military doctors.

ABOUT THE SCHOOL OF MEDICINE

The USU School of Medicine trains and educates physicians, scientists, and health professionals dedicated to leadership and service careers in the U.S. Armed Forces or Public Health Service. Our students are commissioned officers in the United States Army, Navy, Air Force, Coast Guard, and PHS, who receive full military pay and benefits (as well as a tuition-free medical education); and repay the nation through service commitments (seven years for military, ten years for PHS). Focused equally on medical education, research and innovation, and service to the Nation, the School of Medicine is:

1. The Nation's military medical academy, producing military physician-leaders and scientists who drive innovation in academia and federal service
2. The focal point for medical education and training throughout the military physician's career lifecycle
3. A key Federal research and graduate education center that serves as the nexus of biomedical science, health services research, and innovation for the Military Health System

A top research institution (among the top 5% of US research universities for federal research funding), USU conducts research on military-relevant topics including TBI, PTSD, rehabilitation and prosthetics, precision medicine, emerging infectious diseases, cancer, trauma care, and more. School of Medicine alumni comprise 25% of Military Health System physicians and 33% of MHS leadership; and our graduates have a half-century history of remaining in their respective services far beyond their service obligation. The USU School of Medicine has been leading biomedical research and innovation, advancing public health, and educating tomorrow's military physician-leaders for over 50 years.

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