



Uniformed Services University School of Medicine

# Annual Report 2023



# TABLE OF CONTENTS

<b>Dean’s Message</b> .....	1
<b>Chapter 1 - Medical Education</b> .....	4
AAMC Graduation Questionnaire - Outstanding Results .....	4
About the Class of 2023 .....	4
Military-Unique Curriculum .....	5
Joint Expeditionary Medical Officer (JEMO) Project .....	5
CME - Leading the Military Health System .....	5
School of Medicine Faculty.....	6
Faculty Development .....	6
Dedication to Student Success .....	7
Student Accomplishments .....	8
Graduate Medical Education (GME).....	10
Opening Pathways to Medicine and Science .....	11
Enlisted to MD: Ten Years of EMDP2 .....	12
<b>Chapter 2 - Graduate Education</b> .....	13
Graduate Student Accomplishments.....	14
<b>Chapter 3 - Research and Innovation</b> .....	17
<b>Chapter 4 - Faculty Accomplishments</b> .....	22
<b>Chapter 5 - Advancing Military and Public Health</b> .....	25
USU Researchers Work to End Suicide in the Military .....	27
<b>Chapter 6 - National, International, and MHS-Wide Impact</b> .....	28
USU-Developed CME Courses Ensure Combat-Readiness For Surgeons and Exceptional Care in the Field For Warfighters.....	29
US - Ireland Partnership on Military Mental Health Training in the Field.....	31
<b>About the School of Medicine</b> .....	32
<b>School of Medicine Leadership</b> .....	33
<b>School of Medicine Departments and Centers</b> .....	34
Departments.....	34
Centers .....	35

# DEAN'S MESSAGE



In the short time since the conclusion of our 50th anniversary year, the School of Medicine has achieved major milestones in education, research, patient care, and service to the Nation.

In 2023, we wrapped up a nearly two-year effort to prepare for re-accreditation by the Licensing Committee for Medical Education (LCME), and made a strong showing in our annual American Association of Medical Colleges (AAMC) Medical School Graduation Questionnaire (GQ) - with nearly 95 percent of Class of 2023 medical students indicating high levels of satisfaction with their medical education. Our innovative Enlisted to Medical Degree Preparatory Program (EMDP2)

concluded its tenth year, and continues to offer talented enlisted members a pathway toward careers in medicine. Our medical students excelled in military, service, and research endeavors, receiving national recognition; and nearly half of the Class of 2023 earned author credit for peer-reviewed publications or posters.

School of Medicine scientists published truly groundbreaking military-focused research with major implications for civilian public health; most notably, a study that points the way toward a possible cure for symptomatic rabies. The Infectious Diseases Clinical Research Program launched a major research respiratory disease study at the United States Naval Academy, and continued to publish Long COVID findings from its highly regarded EPICC study. IDCRP also launched a major study on travelers' diarrhea, an illness that impacts operational readiness, as well as limiting work and leisure activities for civilians. And in cancer research, the Murtha Cancer Center Research Program (MCC)'s new high-performance data storage cluster is supporting rapid analysis of whole genome, transcriptome, and other molecular profiling data for a range of national Cancer Moonshot studies.



*Enlisted medics lead hands-on skills training for medical students*

In clinical care, the Military Health System's Joint Outpatient Experience Survey (JOES) ranked the Family Medicine University Health Center among the top ten percent of military health clinics for patient satisfaction. Our Center for Health Services Research (CHSR) published important research on health care disparities, helping to pave the way toward health equity across racial, gender, and socioeconomic lines. Research on the feasibility of including Walter Reed in the Maryland Trauma System represented a significant step forward in equitable access to trauma care and is leading a trend toward expanding access to military hospitals to improve trauma care in communities throughout the United States.

USU also worked to advance medical education, with faculty members from our Center for Health Professions Education publishing medical textbooks and research on medical education; and the School of Medicine played a leading role in developing and implementing nationally accredited continuing medical education programs in specialties including Anesthesiology, Surgery, and Psychiatry. Our Associate Dean for Student Affairs was honored with an American Association of Medical Colleges (AAMC) award, and our faculty also received a number of national awards for teaching and leadership excellence across a wide array of medical and research disciplines. And in education research, our Department of Military and Emergency Medicine (MEM) continued to publish research on our military medical curriculum, with significant contributions from student authors and enlisted personnel.

These achievements reflect the talent, dedication, and brilliance of our faculty, students, and staff; as well as our institutional commitment to goal-setting and continuous improvement. Early in 2022, the School of Medicine implemented a goal-setting system, Objectives and Key Results (OKRs), originally developed by John Doerr. As a result, we have improved collaboration, reduced waste and inefficiencies, and realized measurable results - most significantly, a 100 percent increase in the number of presentations at the annual Military Health System Research Symposium (MHSRS), and a significant increase in grant funding.

As we begin our second 50 years, the United States faces ongoing threats, including armed conflict, emerging infectious diseases, environmental challenges, and global economic uncertainty; and USU's mission is clearer and more urgent than ever. Thankfully, we are more than equal to the challenge, and we look forward to our next fifty years of service benefiting medicine, science, and the security of the Nation.

**Eric Elster, MD, FACS, FRCS Eng (Hon.)**  
**CAPT, MC, USN (Ret.)**  
**Professor of Surgery**  
**Professor of Molecular and Cell Biology**  
**Dean, School of Medicine**

# 1. MEDICAL EDUCATION

## AAMC GRADUATION QUESTIONNAIRE - OUTSTANDING RESULTS

Each spring, graduating medical students nationwide complete the American Association of Medical Colleges (AAMC) Medical School Graduation Questionnaire (GQ). The 2023 GQ results revealed high levels of student satisfaction among USU's Class of 2023.

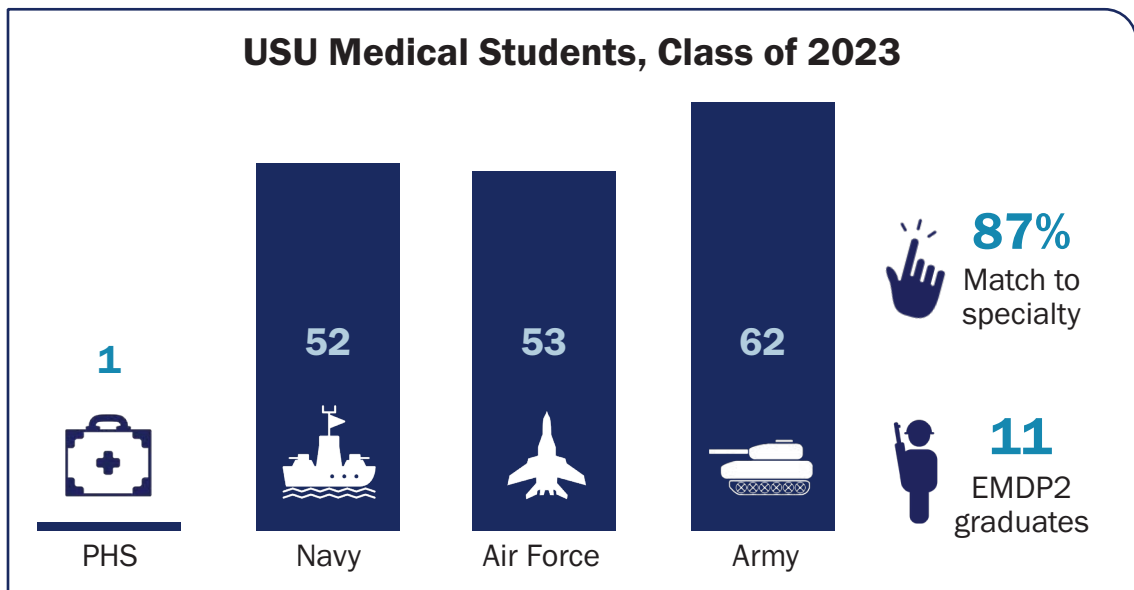
In the principal metric - Overall Student Satisfaction - **USU outscored all other medical schools** (and has done so for three consecutive years - 2021, 2022, and 2023). Responding to the statement "Overall, I am satisfied with the quality of my medical education," **94.8%** of USU's Class of 2023 medical students **AGREE** or **STRONGLY AGREE**, compared to 89.4% of all medical students. In addition to a strong overall score, USU also received high scores in measures of preparation for residency, clerkship experience, teaching quality, and faculty professionalism.

*"Overall, I am satisfied with the quality of my medical education"*

**94.8%**

## ABOUT THE CLASS OF 2023

The 168 members of the Class of 2023 represented the Army (62), Air Force (53), Navy (52), and Public Health Service (1). 11 members of the class were also graduates of the EMDP2 program. The Class of 2023 achieved an excellent match rate, with 87% of the class matching to their desired specialties. The top 5 specialties were Internal Medicine, Family Medicine, General Surgery, Emergency Medicine, and Pediatrics, which are all in high demand within the Military Health System.



## MILITARY-UNIQUE CURRICULUM

The **Military Field Practicum (MFP)** courses offer simulation-based training, with [Operation Bushmaster](#) being the cornerstone of this program. In October, the [Department of Military and Emergency Medicine \(MEM\)](#) successfully completed Bushmaster despite the threat of a government shutdown, gathering over 250 faculty members and staff to educate and train 380 medical and graduate nursing students at Fort Indiantown Gap, PA. MEM's research on the effectiveness of simulation-based field training was published in a *Military Medicine* supplemental issue, "[The Impact of Immersive Simulation-Based Education on Preparing the Next Generation of Military Medical Officers.](#)"



*Learning by doing: Simulation-based learning at Operation Gunpowder*

## JOINT EXPEDITIONARY MEDICAL OFFICER (JEMO) PROJECT

The **JEMO Project** was designed to identify the most operationally relevant knowledge, skills, and abilities (KSAs) covered in the School of Medicine's [Molecules to Military Medicine \(M2MM\)](#) curriculum. In 2023, we produced the **JEMO Curricular Report Card**, a comprehensive report on teaching and assessment for all 371 KSAs.

## CME - LEADING THE MILITARY HEALTH SYSTEM

The School of Medicine continues to develop innovative and accessible continuing medical education (CME) curricula in military-relevant specialties. In 2023, our [Department of Anesthesiology](#) created the [Military Anesthesiology Clinical Readiness Program](#), an online curriculum designed to prepare military Anesthesiologists and CRNAs to practice in operational environments, ensuring that expeditionary anesthesiologists or CRNAs are capable of providing the full scope of anesthesia care for those injured in combat.



# Military Anesthesiology Clinical Readiness Program



Preparing military Anesthesiologists and CRNAs  
to care for those in harm's way in operational environments

## *Military Anesthesiology Clinical Readiness Program*

Following a year-long collaboration between the American Psychiatric Association (APA) and [Department of Psychiatry](#) faculty members [Dr. Joshua Morganstein](#) and [Dr. Curt West](#), APA released “[Disaster and Preventive Psychiatry: Protecting Health and Fostering Community Resilience](#),” a 9-module, web-based interactive course that is now the most comprehensive online training in this critical topic area. Psychiatry also expanded UME education, implementing a new telehealth curriculum and incorporating telehealth into existing course modules.

The **Combat Craniomaxillofacial Trauma (CCTS)** course offers responsive, dynamic craniomaxillofacial trauma management CME, and course director **Dr. Dan Hammer** recently trained nine new CCTS instructors, forming the course’s inaugural teaching cadre. 2023 was also a very successful year for **Advanced Surgical Skills for Exposure in Trauma (ASSET+)**, with 96 learners; and **Combat Orthopedic Trauma Surgical Skills (COTS+)**, with 83 learners.

The [Department of Family Medicine’s Primary Care Sports Medicine Fellowship](#) (Director [LTC Chad Hulsopple](#)), the largest program of its kind in the country, now ranks first (of 199) in participant board scores (five-year average). Additionally, the [Val G. Hemming Simulation Center \(SIMCEN\)](#), as part of the **NCR Simulation Consortium**, received accreditation from the American College of Surgeons (ACS) as both an ACS Comprehensive Education Institute and an ACS Fellowship Program.

## SCHOOL OF MEDICINE FACULTY

As of February 2024, the School of Medicine has 6,758 appointed faculty members, of whom approximately 71 percent are military officers or retirees, and approximately 29 percent are civilians. 635 faculty members are billeted to USU, while 4,839 faculty members teach at Military Treatment Facilities (MTFs) throughout the United States.

## FACULTY DEVELOPMENT

2,132 individual faculty members participated in over 9,500 [Faculty Development](#) programs in 2023, earning over 11,500 credits spanning 649 offerings at 34 locations. The program also conferred 142 certificates to recognize faculty members who completed a full certificate-track program.

## 6758 Appointed Faculty Members\*

Military - 4,839



71.6%

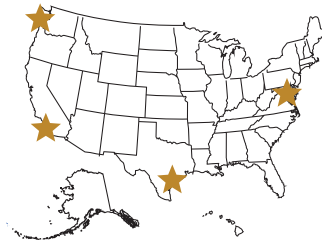


635 faculty members billeted to USU

Civilian - 1,919



28.4%



4,839 faculty members at MTFs throughout the US

\*as of February 2024

### DEDICATION TO STUDENT SUCCESS

Joining a small number of U.S. medical schools, the **Office of Academic Affairs** established a **Longitudinal Coaching Program**, pairing students and faculty coaches who meet at regular intervals throughout the four years of medical school. Members of the Class of 2026, the program's first participants, report that having a coach enhanced their well-being, enabled them to better recognize and receive feedback during clinical skills development, and ensured accountability for their progress toward academic and personal goals. Coaches are both civilian and active duty military, representing all military services and various career stages spanning the full breadth of academic departments. Academic Affairs also developed and successfully deployed over 10 analytic dashboards that offer real-time visualizations of assessment data, providing insight that helps students and faculty to address performance gaps.



Faculty coaches, Longitudinal Coaching Program



*Learning AND teaching: A group of Army MS2s developed an ultrasound skills training course, and delivered training to fellow students and medics.*

In November, Associate Dean for Student Affairs **Col Pamela Williams, MD**, received the American Association of Medical Colleges 2023 Careers in Medicine® Excellence in Medical Student Career Advising Faculty Advisor Award, recognizing the accomplishments and commitment of a faculty advisor who is dedicated to helping students succeed in fulfilling their career goals. Col Williams received the award in person at the November AAMC Learn Serve Lead Conference.

## STUDENT ACCOMPLISHMENTS



*ENS Mary "Katie" Robey competes vs. Air Force at the Armed Forces Basketball Tournament, November 2023*

USU medical students earned awards and recognition for accomplishments in the classroom, the laboratory, and the community. In June, Army medical student **2LT Brent Bubany** was selected as a Pat Tillman Scholar, and EMDP2 student **SSG Sean Clerkin** received the 2023 NAEMT/ North American Rescue Military Medic of the Year Award. Medical students **2LT Ha Kim**, **2LT Sabreenah Khan**, **2LT Emamake Odafe**, **2LT Dave Holovac**, and **2LT Rebecca Beard** contributed to the medical school curriculum by developing and delivering an ultrasound course following their completion of an ultrasound operational elective at Brooke Army Medical Center.

Late in the year, Army medical students **2LT Gartrell Bowling** and **2LT Michael Deegan** completed the demanding Army Sapper Leader Course and earned their Sapper tabs. Additionally, two of our medical students represented the Navy and the United States in national and international athletic competition. **ENS Megan McLaughlin** (soccer)



*Army medical students earn Sapper tabs, November 2023*

competed with Team USA in the CISM World Military Championship, held in Bunschoten / Spakenburg, Netherlands in June and July; while **ENS Mary “Katie” Robey** was selected to compete as a member of the All-Navy Women’s basketball team in November’s Armed Forces Basketball Tournament. Also in November, **ENS Alexis Russell** was a guest on the “WarDocs” podcast, where she discussed her pathway from enlisted service in the Navy to medical school through the [EMDP2](#) program.



*ENS Megan McLaughlin on the field at the CISM World Military Championship, July 2023*



*EMDP2 graduate and Navy medical student  
ENS Alexis Russell*



Senator Tammy Duckworth congratulates NCC graduates, June 2023

### GRADUATE MEDICAL EDUCATION (GME)

The [National Capital Consortium](#), which sponsors all military GME programs in Maryland, Northern Virginia, and Washington DC, is the largest GME sponsor in the Military Health System. The NCC currently sponsors 63 training programs across all levels of GME (Internship, Residency, Fellowship) covering both medical and allied health programs. In 2023, the NCC had 256 graduates: 134 Army, 90 Navy, 26 Air Force, two Public Health Service, one Canadian Air Force, and three civilians; and NCC students achieved a 97 percent board certification exam pass rate. In June, retired Army Lieutenant Colonel and U.S. Senator Tammy Duckworth spoke at the NCC graduation ceremony, reminding graduates to “keep paving the way for those coming up behind you by caring for those in front of you.”

### National Capital Consortium 2023



**256** 256 graduates: 134 Army, 90 Navy, 26 Air Force, 2 PHS, 1 Canadian Air Force, 3 civilians

**63** 63 internship, residency, and fellowship training programs

**97%** NCC students achieved a 97% pass rate for Board certification exams

## OPENING PATHWAYS TO MEDICINE AND SCIENCE

The innovative [Enlisted to Medical Degree Preparatory Program - EMDP2](#) - commissioned its tenth cohort of enlisted service members, who completed the two-year program and entered medical school as officers. 11 members of the Class of 2023 were also EMDP2 graduates. In March, Senator Bernie Sanders visited USU to learn more about EMDP2 and to see if the program can be scaled to boost diversity in medicine in the civilian sector.

[Dr. Jessica Bunin](#) completed the AAMC Healthcare Executive Diversity and Inclusion Certificate Program (HEDIC), and then established the Community Building for Civil Discourse program, offering full-day civil discourse retreats to faculty and staff. Medicine Professor [Dr. David Burmeister](#) secured \$150,000 in funding from the Oak Ridge Institute for Science and Education (ORISE) to support paid summer internships for talented high school and college students. In 2023, over 500 students applied to the ORISE program. Led by Anesthesiology Associate Professor [Dr. Krista Highland](#), the School of Medicine introduced **Project ASPEN**, an inclusive language train-the-trainer program. Over 50 trainers became program “champions,” and delivered the training to nearly 500 learners. Associate Professor [Dr. Tasha Wyatt](#) of the [Center for Health Professions Education \(CHPE\)](#) also continued to publish research on inequities in medical education, especially for first-generation students and others from backgrounds traditionally underrepresented in medicine.



*EMDP2 Commissioning, May 2023*



Senator Bernie Sanders visits USU to learn more about EMDP2, March 2023

## ENLISTED TO MD: TEN YEARS OF EMDP2

In 2014, the School of Medicine established the Enlisted to Medical Degree Preparatory Program - EMDP2 - as a way to expand pathways to medicine and make military medical careers possible for first-generation students and others from backgrounds traditionally underrepresented in medicine. The program offers a structured, two-year preparatory course, via a partnership between USU and George Mason University, which allows talented enlisted military members to complete undergraduate medical school prerequisites and prepare for the Medical College Admissions Test (MCAT). Upon successful completion of the program, the enlisted students commission as officers in their respective services, and enter medical school at USU or at a civilian institution (a service obligation applies in either case). Since program inception:

**158** students have completed the EMDP2 program

**141** were admitted to medical school

**41** have completed their medical degrees and launched careers in military medicine

## 2. GRADUATE EDUCATION

In 2023, the School of Medicine granted certificates, Master's degrees, and PhDs in eight distinct fields of study:

- [Emerging Infectious Diseases \(EID\)](#)
- [Global Health and Global Health Engagement](#)
- [Health Professions Education \(HPE\)](#)
- [Molecular and Cell Biology \(MCB\)](#)
- [Clinical Psychology \(MCP\)](#)
- [Medical Psychology \(MPS\)](#)
- [Neuroscience \(NES\)](#)
- [Preventive Medicine and Biostatistics \(PMB\)](#)

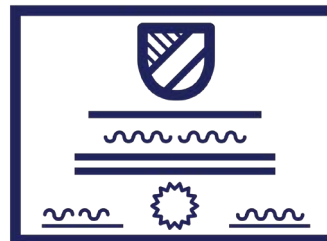
With 19 new PhDs, 48 Master's graduates, and 294 graduate students completing certificate programs, our graduate education programs continue to educate the next generation of military medical and public health scholars.

### Graduate Education - Class of 2023

**294** Certificates

**48** Master's Degrees  
(MHAP, MHPE, MHTM,  
MPH, MS, MSPH)

**19** PhDs







First-place team, Emory Morningside competition, March 2023

## GRADUATE STUDENT ACCOMPLISHMENTS

In March 2023, a team of graduate students took first place in the prestigious Emory Morningside Global Health Challenge. **CPT Airyn Nash, Remle Scott, Kevin Guan, and Joshua Trowell** (advisor **Dr. Weyinshet Gossa**) developed a solution for the challenge “Preventing Maternal Death in Haiti’s Central Plateau,” and emerged as the top team among a very competitive field. Also in March, PMB graduate student **LT Lynn Van Airsdale** (research mentor **Maj Courtney Hintz**) took 1st place in the American College of Preventive Medicine annual Board of Regents Scientific Excellence Award competition; and MCB student **Matthew Gillen** (advisor [Dr. Rachel Cox](#)) presented “Isoforms of Drosophila TRAK1/2 homolog Milton differentially control bidirectional mitochondrial movement along microtubules in germ cells” at the Annual Drosophila Research Conference in Chicago, IL. In July, MPS graduate student **Megan Parker** (advisor [Dr. Marian Tanofsky-Kraff](#)) was named a winner in the 2024 NIH Fellows Award for Research Excellence (FARE).

**Arielle Pearlman** (advisor [Dr. Natasha Schvey](#)) of the [MPS doctoral program](#) received the Academy of Eating Disorders Award for her research on eating disorders in adolescents. MD-PhD student **2LT Savannah Kounelis-Wuillaume** (advisor [Dr. Martin Doughty](#)) received the Brain Injury Association of America (BIAA) Dissertation Award for “Immune Regulation of White Matter Remodeling and Repair in Traumatic Brain Injury,” while another [Neuroscience](#) student, **Mydirah Littlepage-Saunders** (advisor [Dr. John Wu](#)), received a Society for Neuroscience Fellowship for “G protein-coupled receptor modulation of striatal dopamine transmission: Implications for psychoactive drug effects.”



Clockwise from top left: Mydirah Littlepage-Saunders (center), 2LT Savannah Kounelis-Wuillaume (right), Megan Parker (right), and Arielle Pearlman



USU Science Review, Issue 2, September 2023

Additionally, our graduate students published the second issue of the USU Science Review, a student-led publication established in 2022 by [MCB](#) graduate student **Rohini Manickam** with the support of Associate Professor of [Biochemistry](#) [Dr. Tharun Sundaresan](#) and Faculty Advisor **Laura Bauman** (Assistant Dean for Graduate Student Development). The USU Science Review provides students with opportunities to develop their writing and editing skills; and features student- and faculty-authored articles, reviews, conference recaps, reflections, and more. The editorial team includes Senior Editors **ENS Taj Keshav**, **Marina Wylie**, **Claire Robey**, and **Anthony Erb**; and Junior Editors **Joshua Trowell**, **Marina Tso**, **Srija Seenivasan**, **Harrison Rudd**, and **Hyun Lee**.



*L to R: CPT Chad Beach, MHAP Program Director LCDR Christian Betancourt, ENS Britney Bessarab, ENS Norbert Owusu, and ENS Charlcie Roman, DMV Case Collaborative, November 2023*

Early in November, four first-year [Master of Health Administration and Policy \(MHAP\)](#) students (**ENS Britney Bessarab, ENS Charlcie Roman, ENS Norbert Owusu, and CPT Chad Beach**) participated in George Mason University's new DMV Case Collaborative, a case competition in which students from each school work in multi-institution teams. USU was invited to participate as one of five pilot schools, along with George Washington University, Johns Hopkins University, Virginia Commonwealth University, and George Mason University. With Program Director [LCDR Christian Betancourt](#) serving as the group's advisor, ENS Bessarab's team won first place, and ENS Roman's team finished in second place.

### 3.

# RESEARCH AND INNOVATION

For research funding and expenditure, the School of Medicine remained among the top 20% of research institutions in the United States, with over \$401 million in total research funding (including \$62.8 million in Congressional funding, \$163.3 million in core funding, and \$175.1 million in competitive funding). Our researchers published nearly 2,000 peer-reviewed articles in high-impact journals, representing a 238% increase in research productivity during the period 2014 - 2023.

## 2023 Research Funding



**Over \$401 million**

**Total research funding awarded**

**\$62.8 million**

**Congressional funding**

**\$163.3 million**

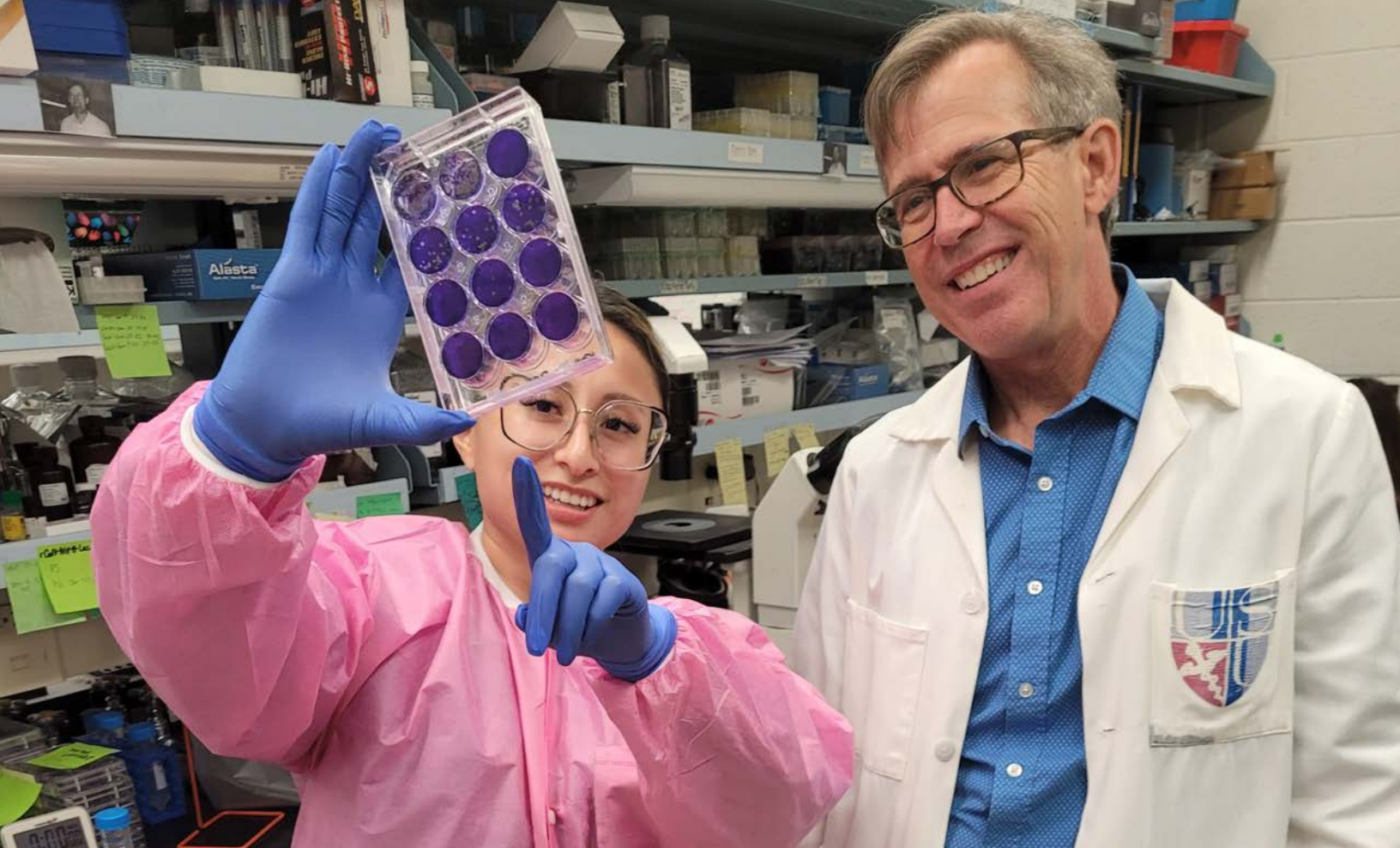
**Core funding**

**\$175.1 million**

**Competitive (peer-reviewed) funding**

USU's impact on medical science was evident in several notable research accomplishments, including a significant breakthrough in the fight against the deadly viral infection rabies. On September 28 (World Rabies Day), a team from the [Department of Microbiology and Immunology](#) led by [Dr. Brian Schaefer](#) and Department Chair [Dr. Christopher Broder](#), with [Dr. Kate Mastraccio](#) and PhD candidate [Celeste Huaman](#), published a study in *EMBO Molecular Medicine* that demonstrates an effective treatment for combating lyssavirus infection (rabies). The research team's findings suggest that this single-dose treatment could be easily administered for symptomatic rabies. This research represents a major advance, as rabies is 100 percent fatal in humans, and no post-symptom treatments currently exist. The study, "[mAb therapy controls CNS-resident lyssavirus infection via a CD4 T cell-dependent mechanism](#)," attracted worldwide media attention.

In April, *Scientific Reports* published "[Central role for neurally dysregulated IL-17A in dynamic networks of systemic and local inflammation in combat casualties](#)," a collaboration between the [Surgical Critical Care Initiative \(SC2i\)](#) and the University of Pittsburgh that may point the way toward better outcomes in wound healing. SC2i also prepared to launch an FDA clinical trial for its clinical decision support tool, **WounDx**, designed to support decision-making on closure of large traumatic extremity wounds by helping surgeons differentiate between wounds that are likely to heal normally versus wounds that may be prone to delayed healing. WounDx uses a combination of patient-specific clinical and biological



*Dr. Brian Schaefer, a professor in USU's Department of Microbiology and Immunology, and Celeste Huaman, PhD candidate*

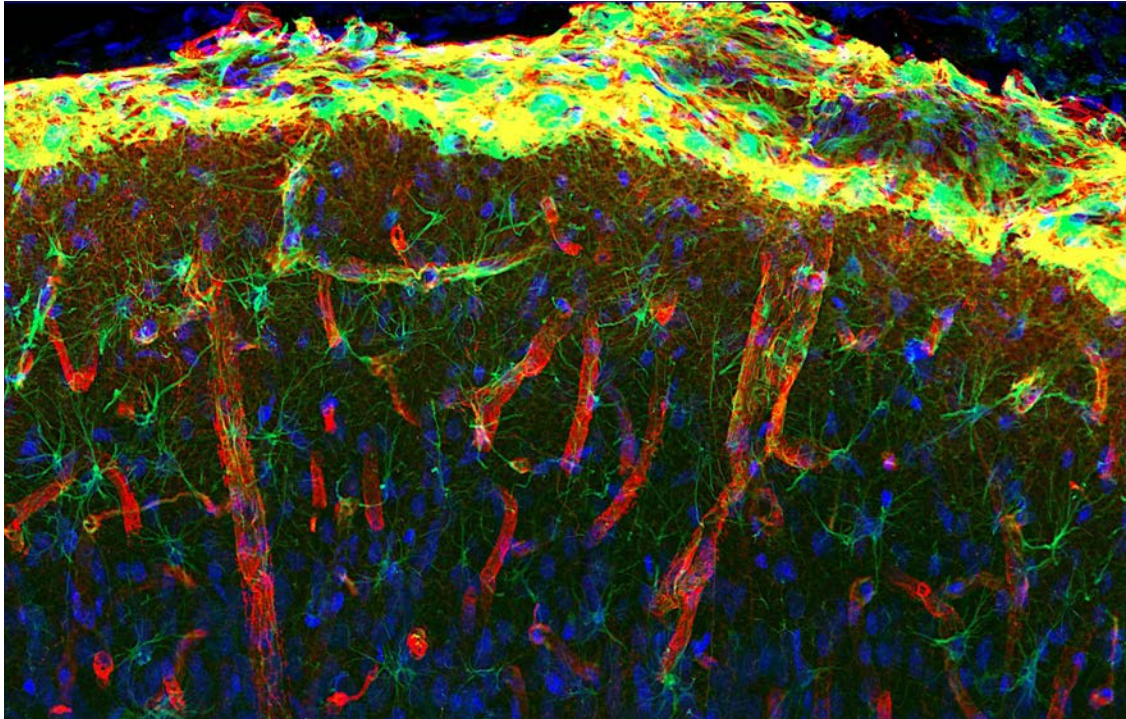
data, and is expected to improve successful wound closure rates from 70% to 85%. In 2023, SC2i also submitted two patent applications - one for WounDx and a second for “Dermatological Manifestation of Underlying inflammation,” a collaboration with the Johns Hopkins University that is focused on the apparatuses, methods, and systems for monitoring the immunological status of skin grafts. SC2i also published “Acute respiratory distress syndrome and acute lung injury in a trauma population with and without long bone fracture,” examining the relationship between acute respiratory distress syndrome (ARDS) and long bone fractures. Medical student **ENS Julia Larson** was the paper’s lead author.

In July, Doonesbury creator Garry Trudeau published a Washington Post op-ed, “The Best PTSD Treatment You’ve Never Heard Of,” discussing [Dr. Michael Roy's](#) double-blind study on Reconsolidation of Traumatic Memories (RTM), a promising new therapy for PTSD. In this op-ed, Trudeau urged policymakers to fast-track adoption of RTM as a PTSD treatment in the Military Health System.

[Biochemistry](#) Professor [Dr. Xin Xiang](#) published “[Aspergillus SUMOylation mutants exhibit chromosome segregation defects including chromatin bridges](#)” (*Genetics*, December 2023), demonstrating that SUMOylation mutants of *Aspergillus nidulans* exhibit chromatin bridge. Dr. Philip Jordan’s lab published “[SMC5 Plays Independent Roles in Congenital Heart Disease and Neurodevelopmental Disability](#)” (*International Journal of Molecular Sciences*, December 2023), examining the role of genetics in neurodevelopmental disability (NDD) resulting from congenital heart disease.

In the [Department of Dermatology](#), Assistant Professor [Dr. Helena Pasieka](#) established a laboratory and biorepository to study Stevens-Johnson syndrome (SJS) and Toxic Epidermal Necrolysis (TEN), two forms of a rare, life-threatening disease triggered by severe adverse skin reactions to some medications. USU is now one of a very small group of institutions conducting research on SJS-TENS, and caring for patients in conjunction with Walter Reed National Military Medical Center. In April, Dr. Pasieka received the Dermatology Foundation’s Medical Dermatology Career Development Award in recognition of her work.

The [Department of Neurology](#) secured \$12 million in grants, which will fund “ADEPT: Adaptive Trial for the Treatment of Depressive Symptoms Associated with Concussion Using Repetitive Transcranial Magnetic Stimulation Protocols” and “A Randomized Controlled Trial of Stellate Ganglion Block with Ketamine for PTSD” ([Dr. David Brody](#) PI); and “Wearable Neurotechnology for Treatment of Insomnia” and “Sleep Therapeutic and Biomarker Collaborative for Warfighters” ([CDR Kent Werner](#) PI).



Cover image, *Cerebral Cortex* 1 August 2023, Nicholas Breehl

Led by Department Chair [Dr. Regina Armstrong](#), researchers from the [Department of Anatomy, Physiology, and Genetics \(APG\)](#) published “[Neuronal tau pathology worsens late-phase white matter degeneration after traumatic brain injury in transgenic mice](#)” (*Acta Neuropathologica*). This study examined neuronal tau pathology as a contributing factor in the post-traumatic degeneration of white matter tracts that exhibit traumatic axonal injury, a hallmark pathology of traumatic brain injury. The Department also published “[Actigraphic evidence of persistent sleep disruption following repetitive mild traumatic brain injury in a gyrencephalic model](#)” in the August 1 *Cerebral Cortex*; which featured a cover photo taken by Neuroscience graduate student **Nicholas Breehl** (advisor [Dr. Sharon Juliano](#)).

The **Center for Military and Precision Health (CMPH)** completed a large-scale rare genetic variant analysis for Parkinson’s Disease, using whole genome sequencing data from The American Genome Center. A study of 7,184 PD cases, 6,701 proxy cases and 51,650 healthy controls identified rare variant factors for two known and seven novel genetic risk genes. This is the largest analysis of rare genetic variants in Parkinson’s Disease to date, and provides new evidence regarding the role of neuroinflammation in PD.

[Dr. Mark Haigney](#) and [Dr. David Saunders](#), in the [Department of Medicine’s Translational Medicine Unit](#), launched the COVIVA - 1 study, a long-haul COVID treatment trial using ivabradine for Postural orthostatic tachycardia syndrome (POTS).



Scientist Liqun Jiang, PhD, with CMPH Hamilton liquid handling platform

The [Consortium for Health and Military Performance \(CHAMP\)](#)'s "DoD/VA - National Comprehensive Health and Musculoskeletal Prediction, Intervention, and Optimization (CHAMPION One)" was one of five projects selected for Joint Incentive Fund (JIF) funding for FY23. As CHAMP Director [Dr. Patricia Deuster](#) explains, "the CHAMPION project presents a unique opportunity for CHAMP and the Veterans Health Administration (VHA) to translate big data predictive models into individualized reports for service members in transition, which will help them better understand their whole health needs as they enter the VHA as veterans."

In the [Department of Gynecologic Surgery and Obstetrics \(GSO\)](#) the laboratory of [Dr. John Wu](#) continued to study the role of traumatic events (TBI and sleep restriction) on the hypothalamic-pituitary-adrenal neuroendocrine axis in a sex-dependent manner and across the lifespan. Within the confines of women's health, GSO's research shows the impact of parity on the stress response to TBI. [Dr. William Catherino](#)'s lab published leading-edge research on uterine fibroids, with direct relevance to service member readiness. The [GYN Cancer Center of Excellence \(GYN-COE\)](#) concluded its 20th year in 2023; and also concluded its APOLLO study on high-grade serous ovarian cancer, the fifth most-common cause of cancer-related death in American women. The APOLLO research was published in early 2024.

[Pathology](#) Associate Professor [Dr. Geeta Upadhyay](#) received a Congressionally Directed Medical Research Programs (CDMRP) FY23 Breakthrough Award for her work on small molecular inhibitors in treatment of triple-negative breast cancer, a particularly aggressive form of breast cancer. The Canadian Journal of Microbiology also published [Dr. Michael Daly](#)'s review of forty years of research on *Deinococcus radiodurans*, a radiation-resistant bacterium.

[Dr. Vijay Singh](#), Professor in the [Department of Pharmacology](#) and the [Armed Forces Radiobiology Research Institute \(AFRRI\)](#) secured several million dollars in grant funding to study radiation countermeasures, including a NIAID grant for "Development of PLX-R18 Cell Therapy as a Countermeasure for Hematopoietic Acute Radiation Syndrome" (a collaboration with Pluri Biotech

Ltd. of Haifa, Israel) and a Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense (JPEO-CBRN) grant for “Advanced Development of BIO 300 Oral Tablets as a Prophylactic Medical Countermeasure for Acute Radiation Syndrome” (a collaboration with Humanetics Corporation, Minneapolis, MN). These studies will support development of medical countermeasures against hematopoietic acute radiation syndrome. [Pharmacology](#) Chair [Dr. Irwin Lucki](#) also received a grant from the Pharmacotherapies for Alcohol and Substance Use Disorders Alliance (PASA), a coordinated, multicenter collaboration funded by the Department of Defense, which will fund research on a non-hallucinogenic metabolite of ketamine, (2R,6R)-HNK and its potential to effectively counter the behavioral and physiological effects of stress and alcohol consumption in murine models of combined Post Traumatic Stress Disorder and Alcohol Use Disorder. Pharmacology secured over \$9 million in grants in 2023, published 35 articles in peer-reviewed journals, and trained 8 graduate and 6 MD/PhD students.

The [Military Traumatic Brain Injury Initiative’s \(MTBI<sup>2</sup>\)](#) INVICTA study of blast exposure during military Special Operator Heavy Weapons training received significant attention in 2023. An abstract reporting interim study results was the highest rated of more than 2000 submitted to the Military Health Services Research Symposium (MHSRS), and was selected as the opening presentation at the plenary abstract session.

The [Murtha Cancer Center Research Program \(MCCRP\)](#) acquired a high-performance data storage cluster to enable large-scale proteogenomic and molecular data analysis. MCCRP conducts genome data analysis for many studies including national Cancer Moonshot Initiative projects such as **APOLLO (Applied Proteogenomics Organizational and Learning Outcomes)** and **PROMETHEUS (Project for Military and Toxin History Evaluation in US Service Members)**. The new data storage cluster will enable rapid analysis of whole genome, transcriptome, and other molecular profiling data.



*Murtha Cancer Center APOLLO Retreat September 2023*

The [Defense and Veterans Center for Integrated Pain Management \(DVCIPM\)](#)’s **Pain Registry Biobank** combines patient-reported outcomes with blood and tissue sample and medical history data from enrolled participants (both clinical participants and healthy control subjects), providing a patient outcomes registry that enables safety and efficacy assessments of new therapies. In 2023, DVCIPM opened a new site at Naval Medical Center Portsmouth, expanding the registry to six sites.

Late in the year, *Popular Science* selected the meniscus biofabrication technology used on the International Space Station and developed by the [Center for Biotechnology \(4D Bio<sup>3</sup>\)](#), as a top 50 innovation for 2023.



## 4. FACULTY ACCOMPLISHMENTS

Our faculty also received national recognition for accomplishments in education and research. [Surgery](#) Professor [Dr. Thomas Davis](#) received the Military Health System Research Symposium (MHSRS) Distinguished Service Award, in August 2023. [Pediatrics](#) Professor [Dr. Joseph Lopreiato](#) received two major national awards: the National Academy of Distinguished Educators in Pediatrics (NADEP) elected Dr. Lopreiato as Distinguished Educator in Pediatrics, and the American Academy of Pediatrics presented him with the Dr. Lou Halamek Award for Simulation in Pediatrics Education.



*Dr. Joseph Lopreiato (right) accepts the Halamek Award, presented by its namesake, October 2023*

In September, [Department of Medicine](#) Chair [Dr. Paige Waterman](#) was named a Fellow of the American Society of Tropical Medicine and Hygiene. Also in September, [Family Medicine](#) Professor [Dr. Jeffrey Goodie](#) received the Society for Health Psychology (APA Division 38) 2023 Excellence in Clinical Health Psychology Award.

In October, [Col Kerry Latham](#) received the American College of Surgeons Military Surgical Volunteerism Award, recognizing almost two decades of volunteer service around the world. USU President and School of Medicine Professor of Surgery [Dr. Jonathan Woodson](#) was also recognized by the American College of Surgeons, receiving the ACS Distinguished Lifetime Military Contribution Award. [Pathology](#) Professor [Dr. Barbara Knollman-Ritschel](#) was elected to the inaugural group for the Association of Pathology Chair's Academy of Distinguished Educators, while Professor of [Medicine](#) and [CHPE](#) Director [Dr. Steven Durning](#) received the American Educational Research Association (AERA)'s Distinguished Career Award.



*CPT Emily Parsons with Pediatrics Chair COL Patrick Hickey, October 2023*

USU alumna and [Pediatrics](#) Assistant Professor [CPT Emily Parsons, MD PhD](#) received the 2023 Uniformed Services Chapter East Outstanding Young Pediatrician award, presented in person at the Chapter's October meeting. Also in October, [Medicine](#) Professor and Clerkship Director [Dr. William Kelly](#) delivered the Mark J Rosen MD Endowed Memorial Lecture at the annual CHEST Congress.

In November, [Radiology](#) Chair [Dr. Vincent Ho](#) received the American Heart Association's Council on Cardiovascular Radiology and Intervention (CVRI) Distinguished Achievement Award for 2023. [Dr. Joshua Hartzell](#), [Medicine](#) Professor and Associate Director of the [Center for Health Professions Education \(CHPE\)](#), received the American College of Physicians District of Columbia Chapter Sol

Katz Teaching Award, an annual award. In December, [Surgery Chair Dr. Benjamin “Kyle” Potter](#) was announced as recipient of the Society of Military Orthopaedic Surgeons (SOMOS) COL Brian Allgood Memorial Leadership Award, which recognizes outstanding leadership in military orthopaedic surgery. Earlier in the year, Dr. Potter was also honored by the Henry Jackson Foundation for the Advancement of Military Medicine as a Hero of Military Medicine.



*Clockwise from top left: Surgery Chair Dr. Benjamin “Kyle” Potter, Medicine Chair Dr. Paige Waterman, Surgery Deputy Chair Col Kerry Latham, MD; and Radiology Chair Dr. Vincent Ho*

# 5.

## ADVANCING MILITARY AND PUBLIC HEALTH

Researchers from the [Department of Medicine](#) collaborated with the National Heart, Lung, and Blood Institute (NHLBI) to identify and address racial disparities in heart failure among MHS beneficiaries, one of several efforts aimed at identifying and addressing racial and socioeconomic health disparities.

One such disparity is in access to trauma care, and USU is leading the way in efforts to incorporate military hospitals into civilian trauma systems to expand access. In a 2023 *Journal of Surgical Research* publication, “[Geospatial Assessment to Improve Time to Treatment \(GAITT\)](#),” Class of 2024 medical student **2LT Matthew McDonough** and Professor of Surgery [Dr. Kyle Remick](#) used GIS mapping data to determine if the Maryland trauma system could benefit from the addition of the Walter Reed National Military Medical Center (WRNMMC) as a trauma care destination, and found that WRNMMC has the potential to provide vital aid to local communities, especially those within a 15-minute radius of the hospital. The authors also emphasized the potential benefit to military medical readiness, writing that “the inclusion of military hospitals in civilian trauma systems is a national priority dating back to the 2017 National Defense Authorization Act... serving a dual-purpose of aiding local citizens and sustaining readiness of MHS trauma programs and deploying personnel.” This research concludes that WRNMMC’s inclusion in Maryland’s trauma system could save lives and offer continuous medical practice for military personnel, while also addressing racial and socioeconomic disparities in access to emergency trauma care.

The [Consortium for Health and Military Performance \(CHAMP\)](#) continued its mission of optimizing fitness and health for service members. CHAMP hosted two summits in 2023: the [Total Force Fitness Musculoskeletal \(TFF-MSK\) Summit](#) (March) and the [Operation Supplement Safety \(OPSS\) Summit](#) (October). Co-hosted with the [Center for Health Services Research \(CHSR\)](#), and the [Musculoskeletal Injury Rehabilitation Research for Operational Readiness \(MIRROR\)](#) program, the TFF-MSK Summit emphasized musculoskeletal health, well-being, and career-long military fitness and readiness. The inaugural OPSS Summit addressed issues and questions around dietary supplements and their potential impact on health, readiness, resilience, and deployment status for Active, Guard, and Reserve service members. CHAMP’s educational websites, [hprc-online.org](#) and [opss.org](#), received a combined two million pageviews in 2023.

For several years, the [Defense and Veterans Center for Integrated Pain Management \(DVCIPM\)](#) has been collaborating with the Defense Health Agency in an effort to increase Naloxone prescription rates for patients with elevated risk for opioid overdose; and in 2023, the DHA compliance rate reached 79.5 percent.

The [Center for Rehabilitation Sciences Research \(CRSR\)](#) within the [Department of Physical Medicine and Rehabilitation \(PMR\)](#) hosted an event supporting a new joint research initiative, Bionics for Veterans (BIOVET). Under an official memorandum of understanding (MOU) between DoD and the Italian Ministry of Defense, this initiative leverages robotics technology to improve rehabilitative care. The event included a two-day “State of the Science” symposium on wearable robotics, which welcomed clinicians and scientists from the U.S., Italy, Germany, and the United Kingdom. Two new

research programs emerged from these events: **Fusing Amputation Surgeries with Prosthetic Technologies (FAST)**; and **Personalized Gait Rehabilitation for Veterans with Wearable Robotic Devices (BIONICRUS)**. Highlighting the importance of MSKI research, the Defense Health Agency allocated \$9.8 million in funding to address Deployment-Limiting Musculoskeletal Conditions, awarded to three USU research programs; PMR's **Musculoskeletal Injury Rehabilitation Research for Operational Readiness (MIRROR)**, as well as the [Consortium for Health and Military Performance \(CHAMP\)](#) and the [Center for Health Services Research \(CHSR\)](#).

April is the Month of the Military Child, and the [Department of Pediatrics](#) celebrated with the **3rd Annual Partnership for the Military Child Health Symposium**, led by Associate Professors [Dr. Elizabeth Hisle-Gorman](#) and [Dr. Binny Chokshi](#). Featuring presentations, panel discussions, a poster session, and keynote addresses from the Honorable Ashish Vazirani, DUSD for Personnel and Readiness and Ms. Patricia Barron, DASD for Military Community and Family Policy, the Symposium provided a forum to review the current state of research on military child and family health, and share information about critical community programs that support military children and families.



*Military Child Health Symposium, April 2023. Left: Dr. Binny Chokshi leads a panel discussion. Right: Dr. Elizabeth Hisle-Gorman delivers a presentation.*

Also in April, [Pathology](#) Professor [Dr. Daniel Perl](#) met with members of the 160th Special Operations Aviation Regiment of the 101st Airborne Division (the “Night Stalkers”) at Fort Campbell, Kentucky to discuss aspects of inordinate exposure to repeated subconcussive blast and explain how current research by the [DoD/USU Brain Tissue Repository](#) may explain persistent neurologic/behavioral sequelae experienced by many members of the Night Stalkers.

To better reflect its mission of lessening the destructive impact of traumatic brain injury (TBI) in the military, the Center for Neuroscience and Regenerative Medicine (CNRM) became the [Military Traumatic Brain Injury Initiative \(MTBI<sup>2</sup>\)](#). Famed news anchor and reporter Bob Woodruff, himself a TBI survivor, narrated MTBI<sup>2</sup>'s launch video.

## USU RESEARCHERS WORK TO END SUICIDE IN THE MILITARY

**Medical and Clinical Psychology (MPS) Professor Dr. Marjan Holloway** is Director of the **Suicide Care, Prevention, and Research (CPR)** Initiative, which partners closely with the Department of Defense and Department of Veterans Affairs. Working with an adapted version of the DoD Standardized Suicide Fatality Analysis (DoD StandS) model, Dr. Holloway's team works closely with Service leaders to investigate possible causes of recent military suicides.

The Defense Health Agency selected the **Center for Deployment Psychology (CDP)** to assist with responding to critical items noted in the 2022 Suicide Prevention and Response Independent Review Committee (SPRIRC). CDP has also begun work on a contract aimed at reducing veteran suicide by researching, planning, executing and evaluating a pilot program at several VA pilot sites. Focusing on hereditary suicide risk, scientists from the **Center for Military and Precision Health (CMPH)** identified 19 genes with uncommon protein-coding variants associated with suicide attempt in a diverse sample of 13,584 soldiers from the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS), including 979 with a history of suicide attempt.

Understanding stressors that contribute to suicide risk is critical to targeting interventions. The Center for the Study of Traumatic Stress (CSTS) published "Understanding a time of high risk for suicide: Adversities associated with separation from military service among National Guard and Reserve service members" in *Psychiatry*, 86(2), focusing on high-risk events for service members. "Predictors of suicide attempt within 30 days of first medically documented major depression diagnosis in US Army soldiers with no prior suicidal ideation," published in *BMC Psychiatry*, provides insight on intensive treatment for depression to reduce the risk of suicide. The CSTS STARRS initiative also developed new suicide risk assessment tools for clinicians; and CSTS's Suicide Prevention Program developed 12 evidence-based resources to address suicide risk factors.

To improve psychiatric care for service members and families, the [Department of Psychiatry](#) focused on telehealth access, with an emphasis on strengthening the telehealth curriculum for Psychiatry clerkship students. Psychiatry also spearheaded an effort to build a national network of uniformed psychiatrists, fostering collaboration, knowledge sharing, and a unified approach to addressing challenges in military psychiatry.

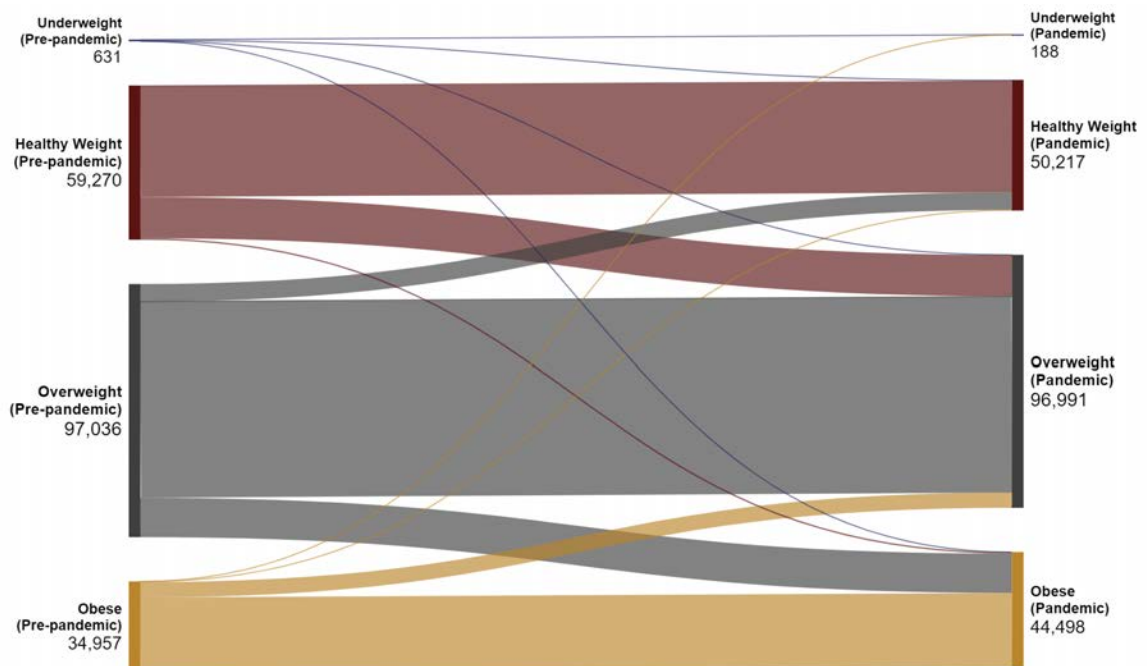
The [Center for Health Professions Education \(CHPE\)](#) now has over 350 graduates and over 300 learners. 2023 was a record year for CHPE scholarship spanning multiple domains, with over 110 faculty and almost 20 student publications. In 2024, Health Professions Education will become a separate Department, with CHPE remaining a key component of the new Department.

# 6. NATIONAL, INTERNATIONAL, AND MHS-WIDE IMPACT



School of Medicine Departments and [Centers](#) made important contributions in research, education, and clinical care, with impacts across the Military Health System and the nation. The [Department of Pediatrics](#) contributed two chapters to the 2023 US Army Peacekeeping and Stability Operations Institute (PSKOI) manual. Pediatrics (led by Associate Professor [Dr. Binny Chokshi](#)) also developed a plan to increase WIC enrollment among eligible military families as a step toward addressing food insecurity in the military, with a grant funding a pilot program at Fort Campbell, Kentucky. Findings from the [IDCRP Trauma Infectious Disease Outcomes Study \(TIDOS\)](#) (with direct input from [Dr. David Tribble](#)) were used to support the 2023 update of the Joint Trauma

System clinical practice guideline on management of invasive fungal infections in war wounds (CPG 28). The FDA also cited IDCRP findings in its updated COVID vaccine recommendations. Additionally, IDCRP and [PMB](#) faculty ([Dr. Brian Agan](#), [COL Robert O'Connell](#), [CDR Mark Simons](#), [Dr. Timothy Burgess](#), [Dr. David Tribble](#), [Dr. Simon Pollett](#)) briefed the White House Office of Pandemic Policy and Response on Long COVID. IDCRP was invited to present findings from the **Epidemiology, Immunology and Clinical Characteristics of Emerging Infectious Diseases with Pandemic Potential (EPICC)** study on machine learning-based Long COVID phenotypes to the National Academies Committee on Examining the Working Definition for Long COVID.



Sankey diagram depicting Army BMI changes through the COVID-19 pandemic (Amanda Banaag)



## USU-DEVELOPED CME COURSES ENSURE COMBAT-READINESS FOR SURGEONS AND EXCEPTIONAL CARE IN THE FIELD FOR WARFIGHTERS

In 2023, USU's continuing medical education (CME) efforts continued to focus on KSA (knowledge, skills, and abilities) development and evaluation, especially in the area of trauma surgery. Three CME courses designed specifically to develop and improve clinical readiness in surgeons required to manage traumatic injuries have proven remarkably effective in ensuring deployment readiness for military surgeons:

**ASSET+ (Advanced Surgical Skills for Exposure in Trauma).** Developed at USU in conjunction with the American College of Surgeons, ACS has become the standard pre-deployment cadaver-based trauma surgery training for the US military and NATO partners. Over 800 military surgeons have successfully completed the ASSET+ course, **including 96 in 2023**. Participants receive 30 CME credits for completion.

**COTS+ (Combat Orthopaedic Trauma Surgical Skills).** COTS+ is an orthopaedics-focused procedural skills assessment course designed to replace the Extremity War Surgery Course. The course was developed at USU and piloted at Portsmouth in 2020. **83 surgeons completed COTS+ in 2023**. Participants receive 30 CME credits for completion.

**CCTS (Combat Craniomaxillofacial Trauma Surgery).** CCTS is a craniomaxillofacial trauma management course designed to help surgeons provide exceptional care to warfighters, in demanding and austere environments. Developed at USU, the course incorporates input from nearly 60 Army, Navy, and Air Force Surgeons across five surgical subspecialties (Oral and Maxillofacial, ENT, Plastics, Neurosurgery, and Ophthalmology). CCTS recently established a faculty training program that produced nine certified CCTS instructors. The course applied for CME authorization in 2023; upon approval, CCTS will offer 30 CME credits to participants.

The [Center for Health Services Research \(CHSR\)](#) also published a major study on obesity in the military in the wake of the COVID-19 pandemic, which was cited in both academic and popular literature. "[A cohort study of BMI changes among U.S. Army soldiers during the COVID-19 Pandemic](#)" (*BMC Public Health*, July 2023) documented changes in body mass index among Army soldiers before and during the pandemic. The Associated Press covered this study ("Pandemic pounds push 10,000 U.S. Army soldiers into obesity") and CHSR Director [Dr. Tracey Koehlmoos](#) was also invited to discuss the study on SiriusXM's "Primary Care." CHSR is continuing to conduct studies on obesity changes during the pandemic on Navy, Marine Corps, and Air Force service members.

Early in 2023, [Dr. Mark Haigney](#) was featured on NBC's "Meet the Press" to discuss the benefits of cardiac testing in the military. Although sudden cardiac death has long been recognized as the leading cause of death in military recruits, cardiac screening has not kept pace with research on causes. Since 2020, the [Military Cardiovascular Outcomes Research \(MiCOR\)](#) program has screened over





*Slava Ukraini: Conversation with Ukrainian healthcare professionals, March 2023*

8000 cadets and midshipmen at the military academies, using improved electrocardiographic criteria and equipment. The data has been presented to the Armed Services Committees and is being used to study the “benefits to the Department of providing an electrocardiogram to every individual who undergoes a military accession screening.”

Contributing to a major public health milestone, [PMB Professor Dr. Deborah Girasek](#) served as a member of the Working Committee that developed the US National Water Safety Action Plan, a first-of-its-kind national plan to “transform the country into a nation where water safety is a natural part of everyday life and people enjoy the benefits of water, safely.” International cooperation was also a key in educational efforts. In March, the Department of [Military and Emergency Medicine \(MEM\)](#) hosted a group of Ukrainian doctors and medics at **Advanced Trauma Life Support (ATLS)** and [Operation Gunpowder](#). At the invitation of the International Brain Research Organization (IBRO), [Anatomy, Physiology, and Genetics \(APG\)](#) Professor [Dr. Sharon Juliano](#) organized and presented a workshop for young African medical school faculty at July’s Teaching Tools Workshop (TTW) in Africa event in Johannesburg, South Africa. Contingencies from Israel, Ukraine, Taiwan, Germany, and Ireland also participated in [Operation Bushmaster](#) in October.

Working with the [Center for Global Health Engagement](#), [Military and Emergency Medicine](#) sent a team of physicians, residents, and analysts to Honduras to quantify KSAs achieved by Brooke Army Medical Center residents rotating in a public hospital in Honduras. Participants gained experience working in austere conditions, and provided valuable assistance to Honduran physicians. The team included MEM Chair [CAPT Sherri Rudinsky](#), Associate Chair for Education [Col Leslie Vojta](#), [Lt Col Paul Conroy](#), [Mr. Eric Regalbuto](#), and [Ms. Jessica Jackson](#).

## US - IRELAND PARTNERSHIP ON MILITARY MENTAL HEALTH TRAINING IN THE FIELD

Dr. Mathew McCauley is a Dublin-based clinical psychologist, University of Dublin professor, and reserve officer in the Irish Defence Forces. He was first introduced to USU in 2007, when he attended a two-week residential training program with the Center for Deployment Psychology. In 2019, during service within NATO's Science and Technology Organisation, he reconnected with his former USAFE colleague Dr. Layne Bennion (USAF MC, Ret), now a faculty member at USU. Dr. Bennion invited Dr. McCauley to deliver a seminar on international military mental health at USU, establishing a new partnership that continues today.

Since 2018, USU has been incorporating military mental health into medical field training, through the Combat Operational Stress Control (COSC) component of Operation Bushmaster. Dr. McCauley has participated in Bushmaster's COSC for the past five years, serving as a visiting faculty member. As Dr. McCauley explains, COSC covers psychological and behavioral health in battlefield conditions, addressing a broad array of military psychology theories and skills in forward deployed environments. During COSC, first-year medical students act as patients, presenting with symptoms outlined on their "casualty cards," which pertain to a range of operationally focused clinical and occupational health scenarios. The "patients" are well-briefed before they begin simulating their assigned scenarios, and senior military behavioral health students develop unique skills in this unparalleled educational context. Students manage patient flow and triage, provide interventions, continue to appraise conditions, and monitor clinical and operational priorities, trends and issues, while briefing the COSC and mission command structures. Throughout the exercise, students receive real-time feedback from faculty observers and instructors.

Like its American counterparts, the Irish Defence Forces holds various medical field exercises, and Dr McCauley hopes to continue developing the military mental health elements of these exercises. In 2023, Dr. McCauley invited Dr. Ryan Landoll (Lt Col, USAF, Reserve) to deliver a briefing on Bushmaster and the exercise's COSC component to the Medical Branch Director of the Irish Defence Forces. Dr. Landoll, who serves as Assistant Dean for Pre-Clinical Sciences, is also a reserve clinical psychologist with the USAF and a behavioral health instructor at Bushmaster. His briefing was very well-received, and the Irish Defence Forces Medical Corps has expressed an interest in exploring the potential for further engagement.

Dr. McCauley has also begun to conduct research centered around Bushmaster. In 2022 and 2023, he co-authored and co-delivered presentations on Operation Bushmaster and the use of simulation-based military mental health education for both Division 19 (Society of Military Psychology) at the APA annual conference, and the UK's annual tri-service Military Mental Health Symposium. Recently, Dr. Landoll, Dr. McCauley, and the Behavioral Health at Bushmaster faculty team secured grant funding to study the efficacy of the behavioral health component of Bushmaster. After data gathering, literature review, and field observation are complete, Dr. Landoll hopes to publish the team's findings in late 2024 or early 2025. Dr. McCauley looks forward to returning to Bushmaster, and continuing to serve as a faculty observer and instructor.

# 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 works to achieve three strategic goals:

1. As the Nation's military medical academy, the USU School of Medicine will produce military physician-leaders and scientists who will drive innovation in academia and federal service.
2. The USU School of Medicine will be the focal point for medical education and training throughout the military physician's career lifecycle.
3. As a key Federal research and graduate education center, the USU School of Medicine will serve as the nexus of biomedical science, health services research, and innovation for the MHS.

A top research institution (with nearly 2,000 peer-reviewed publications in 2023), 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 greater retention rates than any other MHS accession source. 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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### **BIOCHEMISTRY (BIO)**

Chair: Teresa Dunn-Giroux, PhD

### **DERMATOLOGY (DER)**

Chair: Thomas Darling, MD PhD

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Chair: CAPT Monica Lutgendorf, MD, USN MC

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Chair: Tracy Sbrocco, PhD

### **MEDICINE (MED)**

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COL, USA MC (Ret)

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Chair: COL Vincent Capaldi, MD, USA MC

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Chair: Benjamin "Kyle" Potter, MD  
COL, USA MC (Ret)

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### **CENTER FOR DEPLOYMENT PSYCHOLOGY (CDP)**

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COL, USA MC (Ret)

### **CENTER FOR THE STUDY OF TRAUMATIC STRESS (CSTS)**

Director: Robert Ursano, MD  
Col, USAF MC (Ret)

### **CONSORTIUM FOR HEALTH AND MILITARY PERFORMANCE (CHAMP)**

Director: Patricia Deuster, PhD

### **DEFENSE AND VETERANS CENTER FOR INTEGRATED PAIN MANAGEMENT (DVCIPM)**

Director: CAPT Harold Gelfand, MD, USN MC

### **INFECTIOUS DISEASE CLINICAL RESEARCH PROGRAM (IDCRP)**

Director: COL Robert O'Connell, MD, USA MC

### **MILITARY TRAUMATIC BRAIN INJURY INITIATIVE (MTBI<sup>2</sup>)**

Director: LTC Bradley Dengler, MD, USA MC

### **MURTHA CANCER CENTER RESEARCH PROGRAM (MCCRP)**

Director: Craig Shriver, MD  
COL, USA MC (Ret)

### **SURGICAL CRITICAL CARE INITIATIVE (SC2I)**

Director: Eric Elster, MD  
CAPT, USN MC (Ret)





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