



UNIFORMED SERVICES UNIVERSITY

of the Health Sciences



ANNUAL REPORT
2015

A DECADE OF TRANSFORMATION



This annual report highlights the accomplishments of the schools and major programs of the Uniformed Services University of the Health Sciences (USU), with a focus on research. The report also recalls highlights of the presidency of Dr. Charles L. Rice, which ends in 2016.

USU has evolved over the past decade as a health sciences university that is recognized as a global leader in health professions education, research and clinical care. The University has built critical partnerships that serve both military medicine and the wider public health of the nation and the world.

Organizational change is difficult and complicated, requiring resourcefulness, consensus-building skills, patience, persistence and most importantly, vision and leadership. Great institutions neither become nor remain great without change, and they rely upon individuals who can bring the necessary attributes to effect change.

Today, USU is a vibrant and re-energized university. Clinicians around the nation and the world reach out to USU faculty for their experience and expertise. The University plays an expanded global role in health care and medical engagement in the nation's efforts to sustain the peace.

Other nations' military academic health centers seek advice from faculty and administrators at USU, the leadership academy for military health care education. Indeed, the University has educated a cadre of alumni who are international leaders in military and public health.

The University has undergone curricular as well as physical transformation. New schools, centers of excellence, graduate programs and revised curricula have transformed the knowledge base of our academic offerings. Physical transformation is seen through a new building housing the Daniel K. Inouye Graduate School of Nursing, part of a far-ranging effort to revitalize laboratories, facilities and infrastructure.

Over the past decade, President Rice recruited a cadre of distinguished leaders to serve in senior administrative and faculty roles. He also recruited a Board of Regents with extraordinary breadth and depth of experience in the Military Health System (MHS) as well as political, academic and public health leaders to advise him and the University. Throughout this report, members of the University and wider community describe Dr. Rice's influence on the institution.

With clear and unwavering vision, President Rice led USU into a new era of collaboration with the world's most important public entity in biomedical research, the National Institutes of Health.

This decade of transformation has created a solid foundation upon which USU will continue to thrive.

“Dr. Rice has done a superb job of leading the maturing of USU—from very good to great. He has anticipated challenges and seized opportunities so that USU is integral to military medicine and the U.S. Public Health Service.”

— Ronald R. Blanck, D.O.
Chair, USU Board of Regents



As many of you know, I am retiring as president of the Uniformed Services University of the Health Sciences, so this will be my last official letter of welcome for a USU annual report. In addition to discussing some of the many accomplishments of our faculty, students and staff during 2015, I also want to take the opportunity to share some reflections on my tenure.

Serving as president of USU has been the highest honor of my career. Everything I wanted to accomplish when I first became a physician and, later, an academic leader, has been realized through my service as president. My gratitude to everyone in government, the military, our Board of Regents, the USU family and colleagues in the academic community who have contributed so vitally to our unique mission over the past decade is profound. We have built on the great work of those who came before us, and we can take pride that USU is well positioned for the future.



When I became president in 2005, I recognized that our role as the nation's only federal academic health center, our location within the MHS's National Capital Region, and our proximity to the Walter Reed National Military Medical Center and the National Institutes of Health presented opportunities for groundbreaking partnerships that would advance all of our missions.

Today, those of us who shared this vision are seeing the results of working together. We are benefitting from strong and vital collaborations in patient care, integrated research teams, joint academic and clinical appointments, sharing of equipment and instrumentation, expedited patient access to facilities at Walter Reed Bethesda and NIH, and increasingly productive work that optimizes public investment in health care and medical research. These engagements have been formally named "Unity of Effort," and we continue to find creative ways to break down bureaucratic barriers and forge collaborations.

Academic institutions, and especially research universities across the United States, have been working to create interdisciplinary programs in recognition of the challenges and opportunities in science available through collaboration and commitment. We are enormously proud of the advances we have made to create new cooperative agreements and partnerships to expand the reach of similar federal organizations and departments in service of a unified mission: to increase fundamental knowledge, expand educational opportunities and provide ever-improving care for those within the MHS and now beyond.

This vision of interdepartmental cooperation has been an animating force of my presidency, but it is accompanied by a list of advances for USU that were achieved through the tireless efforts of an extraordinary team of leaders, faculty and staff who share a deep and abiding commitment to the mission of this University. Our 2015 annual report seeks to highlight some of these accomplishments made over the past year, and the past decade, in the classroom, the laboratory and the field.

Among these advances are transformed medical and graduate nursing curricula; new degree programs; a new pipeline for enlisted personnel to enter medical school; a new Postgraduate Dental School in San Antonio; expansion and renovation of our physical plant; dramatic growth in our research enterprise; new centers of excellence that lead the way in research and clinical care; close collaborations with international institutions and colleagues; and superb new additions to our administrative team, our faculty and our staff, to better educate, train and support our students and, ultimately, to care for the men and women in uniform we are privileged to serve. As always, the number of USU alumni who move into senior leadership positions in the MHS and Public Health Service continues to impress and inspire me, demonstrating the high quality of our education and the caliber of our students.

The USU community—faculty, staff, students and alumni—embodies the very best of the military and of the health professions. It has been a privilege to serve alongside them.

I will be leaving USU, but USU will never leave me.

Sincerely,

A handwritten signature in black ink that reads "Charles L. Rice". The signature is written in a cursive style.

Charles L. Rice, M.D.
President



“When I was appointed as medical director of the G.V. (Sonny) Montgomery VA Medical Center, I had the opportunity to meet with the Secretary of the Veterans Administration, Robert McDonald. Secretary McDonald asked me how USU prepared me for my VA career. I told him that my experience at USU provided the essential career progression that has given me the opportunity to lead a \$358 million facility providing care for 45,000 veteran patients.”

—David Walker, M.D.
Class of 1991

The Uniformed Services University of the Health Sciences is the nation’s academic health center. Located in Bethesda, Maryland, with Walter Reed National Military Medical Center and across the street from the National Institutes of Health, the University is a partner with these institutions in a Unity of Effort, sharing resources and capabilities for the most advanced clinical care and research in the nation and the world.

The University educates medical, nursing and dental officers for the Army, Navy, Air Force and U.S. Public Health Service and is the leadership academy for military health care worldwide. The School of Medicine conducts foundational research in public health, infectious disease, rehabilitative medicine and readiness. Graduate programs within the School of Medicine educate military and non-military personnel in critical public health and biomedical disciplines while supporting USU’s research efforts. The Graduate School of Nursing and Postgraduate Dental College educate leaders in graduate nursing and dental practice who conduct important research in their fields and infuse evidence into practice.

As the Department of Defense’s (DoD’s) health sciences university, USU is committed to serving the joint staff, combatant commands, service components and military departments. Its critical and far-reaching mission encompasses disease prevention and health promotion. With its international mandate and global mission, the University serves as a nexus for essential relationships among health care personnel worldwide seeking to manage global health challenges. USU provides resources, develops medical capabilities and offers direct operational support by leveraging education and training services, scholarship, and subject matter expertise to support the commander in chief’s national security strategy.

The University’s alumni help comprise the critical core and leadership of military health care and public health. A recent analysis of Navy physicians, for example, revealed that USU alumni held almost one-third of commanding officer and executive officer billets—positions that represent the pinnacle of military health professional leadership. More broadly, across the federal services, 31 USU graduates have achieved flag rank as generals or admirals, including the new Navy surgeon general, the recently retired surgeon general of the U.S. Air Force, four former deputy surgeons general and the former surgeon general of the Canadian Armed Forces. Graduates of the School of Nursing and Postgraduate Dental College are similarly well represented in leadership positions throughout the armed forces and other federal agencies.

Contributions of USU alumni to the nation extend beyond their military service. A recent study of 2,750 medical school graduates revealed that 71 percent of those who had retired from the military continued to work as civilian doctors in military clinics, Veteran Administration hospitals and other federal facilities.

The students, faculty and staff associated with USU are part of an organization with a clear and dedicated mission. They engage in first-class science and clinical education and training while serving others.





"The School of Medicine—'America's Medical School'—is unique among U.S. medical educational institutions," states Dr. Arthur Kellermann, the School's dean. "Students not only learn the art and science of medicine, they also prepare to serve our nation as leaders in military medicine and public health."

The School's innovative educational programs meld an academically rigorous medical education with 800 additional hours of training in military science, combat casualty care, tropical medicine, global health, ethics, operational medicine and health care leadership. This ensures that when USU graduates receive their diploma, they are ready to make a difference, anywhere, at anytime, in any setting—from a premier teaching hospital in the U.S. to a battlefield aid station or refugee camp.

Over the past decade the School of Medicine and its parent University have transformed themselves from a "schoolhouse" focused on educating practitioners to a comprehensive leadership academy dedicated to advancing military medicine and public health. To achieve this goal, USU has dramatically strengthened its support of the MHS — particularly its near-neighbor, the Walter Reed National Military Medical Center, as well as military treatment facilities from Portsmouth to Honolulu, from San Antonio to Tacoma.

USU has also strengthened its ties to several DoD and Department of Health and Human Services research agencies—most notably, the NIH. The result is an exceptional group of interdisciplinary research centers dedicated to solving some of the military's most pressing health care challenges. Examples include the Infectious Disease Clinical Research Program (IDCRP), which focuses on infectious disease challenges of particular importance to military personnel in deployed settings and is jointly sponsored by the DoD and the National Institute of Allergy and Infectious Diseases. Additionally, the Center for Neuroscience and Regenerative Medicine, jointly sponsored by the DoD and the National Institute of Neurological Disorders and Stroke, is tackling one of the greatest challenges in biomedical research—development of effective treatments for traumatic brain injury.

The John P. Murtha Cancer Center is dedicated to reducing the toll of cancer on the health and readiness of active-duty service members, the wellbeing of their families and the lifespans of military retirees. The DoD and the National Cancer Institute sponsor the center.

The Collaborative Health Initiative Research Program, a joint effort supported by the DoD and the National Heart, Lung and Blood Institute, is applying precision medicine to tackle high-priority cardiovascular, pulmonary and sleep problems of relevance to military service members, retirees and their families.

Over the past six years, the School of Medicine re-engineered and modernized its curriculum. Our new curriculum, "Molecules to Military Medicine," features early patient contact; an integrated, systems-based approach to learning basic and clinical science; and extensive use of medical simulation, including robotics, standardized patients, a unique Wide Area Virtual Environment facility and challenging field exercises such as Operation Bushmaster. Consistent with our role as the leadership academy for the MHS and the U.S. Public Health Service, USU has created a leadership curriculum that sets the standard for medical education worldwide.

Military medicine and medical education rest on a foundation of biological science, behavioral science and public health. To that end, the School of Medicine supports robust scientific programs in biomedical research, medical and clinical psychology, and preventive medicine. These programs not only generate high-impact discoveries ranging from molecular and cell biology to global health, they substantially contribute to the education of USU's medical, nursing, dental and graduate students.



Representing America

The student body of the medical school represents all of America. The School receives more than 3,000 applications each year from aspirants spread across the United States and its territories.

Among those who matriculate, almost one in five is the first in their family to graduate from college, one of three is a non-white minority and one of 10 started as an enlisted service member.

“Building a class of students that represents the diversity of America and, by extension, the world, helps prepare future physicians to be aware, adaptable and, above all, effective in aiding service members and families everywhere,” said Army Lieutenant Colonel (Dr.) Aaron Saguil, associate dean for recruitment and admissions.

PREPARED TO LEAD IN WAR AND PEACE

A military physician must be more than an excellent clinician—he or she must be prepared to lead, often in high-stress, high-stakes environments such as war zones or areas devastated by natural disasters.

To help medical students nurture the leadership skills essential to ensuring effective 21st-century health care and meeting the needs of the MHS, USU created a groundbreaking new program, Leadership Education and Development. The curriculum is incorporated into all four years of the School of Medicine. The goal is to ensure that every USU graduate has the capability to lead interdisciplinary groups of health care professionals to ensure optimal patient care and safety even in the most challenging field environments.

“USU must do more than educate clinicians, as important as that task may be,” said retired Army Lieutenant General (Dr.) Eric B. Schoomaker, professor and vice chair for leadership, centers and programs in the Department of Military and Emergency Medicine. “We must also produce health care professionals who are ready and able to function as high-performing team members, leaders of small groups and, ultimately, directors of large and complex health care organizations.”

The program includes classroom instruction, field training, plenary sessions, interactive experiences relevant to medicine and military medicine, and a capstone project. Sessions address the history and types of leadership, personality type and leadership, emotional intelligence, effective communication, character, communicating difficult information, and crisis communication.

In addition to Schoomaker, a former Army surgeon general, the program was designed by Neil Grunberg, Ph.D., a USU professor and social psychologist; retired Air Force Colonel (Dr.) John McManigle, deputy dean of the School; and Army Colonel (Dr.) Francis O’Connor, chair of the Department of Military and Emergency Medicine.

Contemporary medicine “requires coordinated and cooperative teamwork and leadership,” McManigle said. “The ‘one-stop-shop’ physician no longer exists.”

MARINES JOIN ENLISTED TO MEDICAL DEGREE PREPARATORY PROGRAM

The Enlisted to Medical Degree Preparatory Program, which began in 2014 with its first class of five soldiers and five airmen, accepted applications from enlisted Marines for the first time in 2015. The Secretary of the Navy authorized five slots for Marine applicants in the class.

The two-year undergraduate program is open to enlisted personnel of all ranks with less than 10 years of service. This partnership between USU and the services provides opportunities for highly motivated enlisted service members with strong academic records to prepare to apply to USU or civilian medical schools through the military’s Health Professions Scholarship Program.

Program participants are selected by their respective service and assigned to USU for two years. Students remain on active duty while completing coursework at George Mason University-Prince William Campus in northern Virginia. The program covers tuition, books and other expenses.

Nine students from the first class have applied and been accepted as first-year medical students at USU, Class of 2020.



INTERNATIONAL MILITARY MEDICAL SCHOOL CONFERENCE

The University was one of nearly a dozen institutions from around the world participating in the first International Military Medical School Conference in Bangkok, Thailand. The conference theme was “Humanitarian Assistance and Disaster Relief in the Military Medical School Curriculum.”

USU was represented by President Rice, along with Army Colonel (Dr.) Jeffrey Hutchinson, associate dean for clinical affairs and chief diversity officer for the School of Medicine, and medical students Navy Ensign David Lin and Army Second Lieutenant Amanda Case. Military medical schools from Bangladesh, China, India, Japan, Malaysia, Myanmar, Pakistan, Russia and Vietnam, along with host Thailand, also participated.

Highlights of the trip included a presentation by Rice on “Disaster Response: The Need for Professional Education,” and Hutchinson’s discussion on “U.S. Military Medicine: The Making of a U.S. Uniformed Physician.” Case presented a talk on personal growth and leadership, while Lin offered a poster about USU. Thailand’s Phramongkutkiao College of Medicine also demonstrated its medical field exercise, which they patterned after USU’s Operation Bushmaster.

CONSORTIUM DEDICATED TO EXCELLENCE IN GRADUATE EDUCATION

The National Capital Consortium (NCC) provides high-quality graduate education for physicians, dentists and other health professionals who care for military personnel and their families. Retired Navy Captain (Dr.) Jerri Curtis is the consortium’s executive director and the medical school’s associate dean for graduate medical education.

The NCC is the sponsoring institution for all military graduate medical education in the National Capital Region, including Walter Reed Bethesda; Fort Belvoir Community Hospital; Malcolm Grow Medical Clinics and Surgery Center, 779th Medical Group; and USU’s School of Medicine.

The consortium provides a unique scholarly environment for graduate medical education and other postgraduate health professions education. With its close proximity to NIH, the NCC serves as the sponsor for several NIH clinical fellowships, part of the 68 consortium-sponsored programs that serve as many as 700 residents at any given time.

Health care professionals have access to the University’s library, Val G. Hemming Simulation Center and anatomic teaching laboratory. Trainees travel worldwide and receive education that is uniquely relevant to, and shaped by, the demands of the mission of those who are served by the MHS.

The consortium is dedicated to excellence in both education and health care and to instilling in trainees the ethical values and standards expected of those devoting their lives to public service.



“Dr. Rice wisely insisted that the School of Medicine reengineer its curriculum and strengthen its research programs. He dramatically strengthened USU’s ties to Walter Reed Bethesda and the NIH, and reached out to provide more support to our national network of military treatment facilities. Through these changes and many others, USU transformed itself from a ‘schoolhouse’ to a high-impact, multi-dimensional health sciences university dedicated to supporting the line and advancing the mission of the Military Health System.”

Arthur Kellermann, M.D., MPH
Dean, School of Medicine



GRADUATE EDUCATION AT USU

“In the past two years, President Rice and Dean Kellermann have overseen the most dramatic evolution in the USU graduate education program to have occurred in the last four decades. These changes are transforming the nature of graduate education at USU, aligning it with the needs of our students, the DoD and the nation.”

—Gregory Mueller, Ph.D.
Associate Dean for
Graduate Education



Like the rest of the University, graduate education has been transformed by the principles and work underlying the Unity of Effort with Walter Reed Bethesda and NIH. As a result, USU has dramatically expanded opportunities for interdisciplinary work and collaboration with these institutions.

Through the Unity of Effort, USU has joined with NIH to establish two premier collaborative centers devoted to graduate and clinical research on personalized medicine for treating traumatic brain injury and genomic-based disorders of the heart, lungs and blood. These centers

support more than 100 principal investigators whose labs train both basic and clinical scientists in translational research that is vital to the uniformed services.

An essential part of medical education and research, the University's graduate programs are particularly strong in areas of biostatistics, cancer biology, infectious disease, medical and clinical psychology, molecular and cellular biology, preventive medicine, regenerative medicine, and traumatic brain injury. Each area has significance and relevance to the MHS's mission.

More than half of the 220 USU graduate students currently enrolled are members of the uniformed services. The vast majority of USU's graduates—those in uniform and civilians—spend their careers in federal service.

NEW DEGREE PROGRAMS ADDRESS NEED FOR EDUCATIONAL EXPERTISE

The School of Medicine developed two new rigorous and innovative programs—the master's and doctoral degrees in health professions education—to address a growing need within the MHS, one of the largest health systems in the nation with 9.6 million beneficiaries.

“The MHS has a pressing need for physicians with educational expertise to serve as leaders in undergraduate and graduate medical education,” explains retired Air Force Colonel (Dr.) Brian Reamy, senior associate dean for academic affairs. “All military services have suffered a significant attrition of senior ranking physician-educators and program leaders through retirements, separations and changes in promotion pathways, yet the number and scope of our educational programs continue to expand.”

The new degree programs are geared to active-duty medical professionals, including physicians, dentists, nurses and veterinarians, as well as civilian health professionals working in the MHS or Public Health Service.





"The Graduate School of Nursing provides the nation with the highest-quality advanced practice nurse clinicians, scientists and scholars dedicated to federal health service and health readiness for our military personnel," said Dean Carol Romano, Ph.D., R.N.

In 2015, the GSN achieved a national rank in the top 10 percent of best U.S. graduate schools of nursing, and continues to work toward achieving the vision of becoming America's premier nursing graduate school, transforming federal health and health care.

The GSN strategic plan reflects the University's five mission domains: education and training, research and scholarship, national security and global health engagement, leadership, and service. Achievements in these mission domains are accomplished through partnerships, innovation and focused outcomes.

EDUCATION AND TRAINING

One hundred and eighty-five students are enrolled in the GSN master's, Doctor of Nursing Practice (DNP) and Doctor of Philosophy programs, while 709 alumni are serving in a variety of key clinical, research and leadership roles. Over the past decade, a number of significant curricular changes have occurred: In 2006 the GSN graduated its first Doctor of Philosophy students; in 2012 the GSN transitioned advanced practice nursing education from a master's degree to a DNP, graduating the first students in 2015; and in 2014 the school launched a new women's health nurse practitioner program, offering both family and women's health nurse practitioner students the opportunity to dual certify in both specialty areas.

The GSN expanded inter-professional education in the areas of trauma, disinfection, reflective practice, behavioral health, military sexual assault and mass casualty exercises to prepare students for inter-professional practice in joint environments. Increased use of simulation across multiple clinical sites and innovative educational technologies enhance the learning environment; and battlefield ultrasound, acupuncture and the DoD-Veterans Affairs joint pain management curriculum reinforce graduates' readiness to care for those in harm's way.

RESEARCH AND SCHOLARSHIP

Faculty and student scholarship has expanded with 67 publications, 75 presentations and \$1.8 million in competitive external grant funding. Fifteen students were recognized as Jonas Veteran Healthcare Scholars, and the school was awarded two Robert Wood Johnson Future Nurse Scholar grants for doctoral students to produce science that promotes military readiness and the health of service members, veterans and their families.

In 2015 new GSN and university partnerships with the Health Resources and Services Administration, NIH, John P. Murtha Cancer Center and the military healthcare system focused on military family health, improved care for deployed women, evaluation of the education of en route care clinicians and best practices in obstetric patient safety. A research mentorship initiative for students and faculty fosters scientific inquiry and grantsmanship to advance the science that underlies federal and military health care. Selected areas of research focus on embedded metals, emergence delirium treatment among combat veterans, women in combat and neuropathic pain.



"Dr. Rice is a transformational leader. His vision for inter-professional education has created an invigorating environment for preparing the future generation of health care providers at USU. His commitment to creating a unity of effort through incorporation of diverse perspectives has positioned USU to transform military and federal health."

—Carol Romano, Ph.D., R.N.
Dean, Graduate School of Nursing

NATIONAL SECURITY AND GLOBAL HEALTH ENGAGEMENT

The GSN participated in several national and international events. Four nursing alumni directly supported the U.S. Public Health Service's international Ebola response, and the School participated in the NATO science and technology symposium in Paris as well as the Asia Pacific Military Health Exchange Conference in Vietnam.

In partnership with other USU schools and programs, the GSN worked to establish a memorandum of understanding for the first international visiting scholar from the Republic of Korea and initiated a collaboration with American Samoa's Department of Public Health to improve primary care in underserved areas and health care infrastructure.



STRATEGIC LEADERSHIP

Dean Romano continues to collaborate with the Federal Nursing Service Chiefs from the Army, Navy, Air Force, U.S. Public Health Service, Department of Veterans Affairs and Red Cross to address joint federal nursing issues, such as scope of practice and advanced education, and to keep congressional leaders informed about federal nursing.

Faculty members partnered with industry to lead a high-level disinfection program with perioperative clinical nurse specialist students and MHS surgical team members. The School finalized an agreement with the Naval Medical Professional Development Center to enhance the efficient management of student travel, clinical assignments and logistics.

The faculty continues to develop strong collaborations with professional and academic communities, sharing expertise and programs such as ultrasound-guided regional anesthesia education. Senior military faculty established broader collaborations to coordinate recruitment, utilization and career development of nurse scientists. The School initiated an inter-professional, cross-agency Women's Health Collaborative that brings together the GSN with the School of Medicine, USU Office of Research, Murtha Cancer Center, NIH Office of Research on Women's Health and Department of Veterans Affairs to build a community of researchers, educators, clinicians and policymakers interested in military women's health issues.

SERVICE

GSN faculty members actively lead and participate in their professional organizations. Eleven faculty members are Fellows of the American Academy of Nursing, while 11 hold Fellowships in eight other specialty medical and nursing academies. Twenty-five faculty members serve as reviewers and/or editors for 57 professional journals, including one faculty member serving on the Institute of Medicine editorial board. Students served as subject matter experts for simulation training at the 2015 Association of periOperative Registered Nurses Surgical Conference.

Close partnerships with MHS stakeholders have generated cutting-edge evidence-based practice projects directed at improving quality and safety and responding to MHS needs. Among the study areas are traumatic brain injury education for spouses, military sexual assault screening, contraceptive use among young service members, sleep hygiene and access to care.

The GSN enthusiastically embraces its commitment to serve the mission of the School and the University and proudly continues to build excellence in the next generation of nurse clinicians, scientists and scholars to serve our nation.

NEW DEAN LEADS PDC



Retired Air Force Colonel (Dr.) Thomas R. Schneid was named the new executive dean of the Postgraduate Dental College (PDC), following a nationwide search.

As executive dean of the PDC, Schneid oversees the Army, Navy and Air Force Postgraduate Dental Schools. He succeeds founding executive dean, retired Army Major General (Dr.) Patrick Sculley, former chief of the Army Dental Corps and deputy surgeon general.



Prior to his retirement from the Air Force in 2013, Schneid served as founding dean of the Air Force Postgraduate Dental School in San Antonio. He earned his undergraduate degree in 1975 from Princeton University. In July 1976, he was commissioned as an ensign in the U.S. Navy and attended the University of Pennsylvania School of Dental Medicine on a military health professions scholarship, earning his Doctor of Dental Medicine degree in 1979. Schneid spent the next three years as a Navy dentist and then left active duty for private practice while remaining in the Naval Reserves.

In 1986, he returned to active military service in the Air Force and spent the next several years completing a prosthodontics residency program, followed by a maxillofacial prosthetics fellowship at Wilford Hall Medical Center in San Antonio. In 1994, he became a Diplomate of the American Board of Prosthodontics and a fellow of the American College of Prosthodontics. He was later named a fellow of the American Academy of Maxillofacial Prosthetics, American College of Dentists and the International College of Dentists.

A YEAR OF TRANSITION

The year 2015 was one of transition, growth and maturity for the PDC. In just five and a half years, the PDC's number of affiliated programs has grown to 19, with the newest program, Air Force Prosthodontics, matriculating its first two students in July. The University awarded Masters of Science in Oral Biology degrees to the first graduates from the Joint Base San Antonio (JBSA)-Lackland Endodontics and Keesler Comprehensive Dentistry and Endodontics programs, contributing to 2015's total of 57 graduates, and bringing the total number of master's degrees awarded to 181 since the College's inception.

The Federal Services Dental Educators Workshop was held at USU for the first time in 2015. This important meeting, held annually for more than 20 years, provides faculty development training and brings together program directors and senior faculty from postgraduate dental programs to share ideas and determine areas for collaboration and resource-sharing. The meeting included President Rice and Dental Corps chiefs from the U.S. Army, U.S. Navy, U.S. Air Force and Canadian Armed Forces.

Members of the Naval Postgraduate Dental School make many vital contributions to USU's unique curriculum. In 2015, Lieutenant Commander Jayson Huber and three of his residents participated in USU's annual Operation Bushmaster, where they assembled Field Dental Units for casualty treatment and participated in the mass casualty exercise. Huber and eight dental residents also provided lecture training and practical demonstration on commonly encountered dental emergencies to more than 100 students from the School of Medicine and GSN.

The PDC continues to emphasize high-quality research as a key component of its integrated curriculum designed to train tomorrow's dental leaders and expert dental specialists with a scientific, evidence-based education. Residents and faculty authored or co-authored 40 publications; led 43 presentations at local, regional and national dental meetings; and received nine significant awards.

Retired Air Force Colonel (Dr.) Kraig Vandewalle, professor of Comprehensive Dentistry, Air Force Postgraduate Dental School, JBSA-Lackland Air Force Base, received the Thaddeus J. Weclaw Award from the Academy of General Dentistry for his selfless dedication to education, organized dentistry and the dental profession.

The PDC continued its collaboration with the GSN in support of dental resident research at the Army Postgraduate Dental School, providing critical faculty support to deliver a research methodology course for comprehensive dentistry and endodontics residents at Fort Bragg for the second consecutive year.

In conjunction with USU's annual Research Days in May, Army Major (Dr.) Paul Crites presented a report on his thesis: "Microtensile Bond Strength of an Adhesive System Containing 0.2% Chlorhexidine." Crites, a 2014 comprehensive dentistry graduate, had his thesis selected as best among the College's 2014 graduating class. His presentation focused on proposed evidence-based methods to produce better dental materials to improve care and enhance military readiness. Crites was selected as the 2015 Board of Regents Award winner for the PDC.

In 2015, Air Force Endodontics resident Major (Dr.) James K.T. Cullen received the PDC Research Award for his thesis entitled, "The Effect of 8.25% Sodium Hypochlorite on Dental Pulp Dissolution and Dentin Flexural Strength and Modulus," which was selected best among his graduating class.

The PDC remains active in a research collaboration with the Murtha Cancer Center at Walter Reed Bethesda through a pilot study on smokeless tobacco use in the U.S. military, with ongoing data collection under way at PDC sites at JBSA-Lackland and Fort Bragg. Concept development for additional collaborative research, which is studying the effect of oral health on the cost and efficacy of the medical treatment of selected chronic diseases, is currently under way. Both studies are outstanding opportunities for interaction between the dental, medical and nursing health professions.

Army Lieutenant Colonel (Dr.) Paul Colthirst returned to the Tri-Service Center for Oral Health Studies (TSCOHS) after completing a one-year fellowship with the Rand Corporation, bringing back a wealth of information on global health engagement.

Finally, Army Colonel (Dr.) Priscilla Hamilton, dean of the Army Postgraduate Dental School, retired after 30 years of honorable service. She received the USU Distinguished Service Award for her numerous significant contributions to the University mission.

FOUNDING PDC EXECUTIVE DEAN BIDS FAREWELL



Retired Army Major General (Dr.) Patrick Sculley describes himself as a "serial failure at retirement." Fortunately for the U.S. military and USU, he has been a success at everything else.

Sculley was the founding executive dean of the Postgraduate Dental College in San Antonio, and later USU's senior vice president for university programs. He also provided critical leadership to USU in crisis situations, such as the internal review of institutional policies and procedures for students following the shooting at Fort Hood. Among other efforts, he led University teams to establish the strategic framework on standing committees on strategic performance and resourcing and was the key leader in establishing the University's Medical Education and Training Campus (METC) affiliation.

The former chief of the Army Dental Corps, Sculley retired from the Army in 2002. He became executive director of Sigma Xi. He worked for the Texas A&M Center for Applied Technology as the director for science and technology, and then for USU, where he led the establishment of the new Postgraduate Dental College. He built the college from its earliest stages to a thriving program of 186 students and 200 faculty members.

But USU keeps beckoning: the University continues to look to Sculley for advice and leadership on such issues as the METC affiliation, Middle States accreditation issues and 2017 reauthorization issues. He is also working with the new executive dean.

"Dr. Rice positioned the University well for success, today and tomorrow, increasing the value of the University to DoD and the nation by expanding programs, centers and schools; responding to the needs of the services; focusing on transparency and fairness; and improving accountability and leadership development across the University's schools and programs."

—Retired Army Major General (Dr.) Patrick Sculley
Founding Executive Dean, PDC
Senior Vice President for University Programs



"More than five decades after its founding during the Cold War, the Armed Forces Radiobiology Research Institute remains an important part of America's national defense, using research expertise and collaborations with USU colleagues to prepare for new threats to U.S. military personnel," notes Air Force Colonel (Dr.) L. Andrew Huff, the institute's director and a USU School of Medicine alumnus (Class of 1988).



The institute, known as AFRRRI, was created in 1961, at a time when the United States was concerned about the possibility of a tactical nuclear battlefield with the Soviet Union. Congress sought to develop strategies to improve troop survival after exposure to otherwise lethal doses of ionizing radiation on such a battlefield. AFRRRI's subsequent research produced seven countermeasure therapeutic agents that may save thousands of lives in the aftermath of a nuclear detonation.

The institute created a division within the School of Medicine's Department of Pharmacology and Molecular Therapeutics to serve as an academic home for AFRRRI researchers. New AFRRRI principal investigators will be recruited into the School with an appointment in the pharmacology department, while current investigators seek non-tenured research faculty appointments. This will foster academic excellence and expand AFRRRI's research horizon into basic radiation biology areas. For directing its intramurally funded advanced research portfolio, AFRRRI established a Scientific Council, with oversight and guidance from outside the institute.

The institute received a \$100,000 grant from NASA to fund a fellowship to study the effects of long-term, low-level radiation exposure in connection with potential future manned missions to Mars. This fellowship gave AFRRRI a role in USU graduate education for the first time.

Carrying out its mission of protecting U.S. service members, AFRRRI researchers' accomplishments in 2015 included:

- Demonstrating that some metal formulations proposed for military munitions induce rhabdomyosarcoma around implanted pellets simulating shrapnel wounds.
- Discovering that a medical countermeasure (captopril), which enhances survival after exposure to pure ionizing radiation, decreases survival after radiation combined with burn injury. This is significant for planning responses to radiological/nuclear incidents.
- Elucidating the molecular signaling pathway (suppression of microRNA-30) that mediates the efficacy of a leading radiation countermeasure candidate (delta-tocotrienol). This is important in the search for drug targets for novel countermeasures.



AFRRRI personnel also taught DoD health care providers about the medical effects of ionizing radiation, and plan to teach the course to approximately 1,300 DoD staff in 2016.

"Dr. Rice set about supporting infrastructure, believing that such investment is key and important to a sense of permanence and confidence. USU has expanded its look and programs inside the MHS, across the street at NIH, and with other academic institutions around the nation and overseas. I believe USU has developed multiple ways to show its relevance to the MHS and woven itself into the fabric of the system. The services understand the relevance of education, research and training, and the University is seen as a national asset."

—Allen Middleton
Former Deputy Director,
Defense Health Agency;
Special Assistant to the
President, USU



USU's New VP FOR RESEARCH CHARTS VISION

Yvonne T. Maddox, Ph.D., former acting director of the National Institute on Minority Health and Health Disparities at the National Institutes of Health, was appointed USU's Vice President for Research in 2015.



In announcing her appointment, President Rice said, "Dr. Maddox comes to USU with a wealth of expertise in both federal and academic research and an unparalleled record of leadership in research administration, primarily at the National Institutes of Health. She is an internationally recognized authority on science and research policy and brings to USU an increased focus on collaborative research, global health issues and population health—all key issues for the DoD and USU."

Maddox received her Bachelor of Science in biology from Virginia Union University, Richmond, and her doctorate in physiology from Georgetown University. She began her career at NIH in 1985 at the National Institute of General Medical Sciences as a health scientist administrator, directing the trauma and burn injury program, moving from Georgetown University Medical Center where she was a research assistant professor. She studied as a visiting scientist at the French Atomic Energy Commission, Saclay, France, and graduated from the Senior Managers in Government Program of the Kennedy School of Government, Harvard University.

RESEARCH AT USU: BREAKTHROUGHS IN BIOSCIENCE

As a 21st-century academic health center, USU has the mandate to lead and conduct research, facilitate technology transfer and enhance clinical care—all of which are essential to improving the health and wellbeing of our military men and women, their families and communities.

University faculty, in collaboration with Walter Reed Bethesda, NIH and other agencies, are engaged in the most innovative science, working diligently in a unity of effort to pursue answers to scientific questions that require broad collaboration across disciplines. This approach builds on the USU focus in providing an inter-professional education and training environment and in creating health teams of the future.

INFECTIOUS DISEASES

USU faculty and alumni continue to be among the leading researchers working to combat the Ebola virus, including the development of a vaccine. The following is only a subset of the emerging bacterial and viral infections USU scientists are continuing to combat and conquer worldwide:

ANTI-MICROBIAL RESISTANT PATHOGENS

Investigators at USU have been at the forefront of combating anti-microbial resistant pathogens. One such study was forged to understand and prevent methicillin-resistant *Staphylococcus aureus* (MRSA) infections in the military population.

The Centers for Disease Control and Prevention (CDC) ranks MRSA among its "serious threat" anti-microbial resistant pathogens. Although MRSA skin and soft-tissue infections (SSTI) have become widespread, they appear to disproportionately affect certain high-risk groups, which include military service members. Most recent data indicate that SSTI account for approximately 1,500 hospitalizations and 65,000 ambulatory clinic visits in active-duty personnel each year. These infections occur in the deployed service member, but the hardest hit are service members in training.

Army Colonel (Dr.) Michael Ellis assembled a team of investigators from numerous agencies, departments and specialized areas, including CDC, NIH, Naval Medical Research Center and

several USU departments and has emerged as a nationally recognized leader in the field of MRSA epidemiology, pathogenesis and prevention.

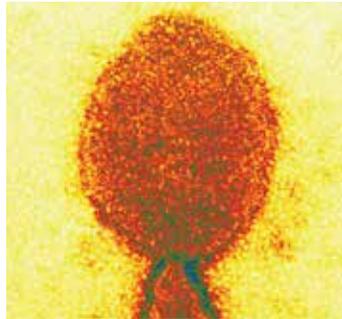
Ellis led his team in developing a rigorous prospective clinical study design, where weekly use of chlorhexidine body wash was a critical component. The results showed that personal hygiene and education measures, including once-weekly use of chlorhexidine, demonstrated limited effectiveness against MRSA. Nevertheless, this study, which was conducted at the only research site of its kind where military-relevant research can be studied in large trainee populations, suggests that there may be a role for chlorhexidine in community-based prevention strategies. Ellis was selected for the 2014-2015 James Leonard Award for Excellence in Clinical Research for his publication in the journal *Clinical Infectious Diseases* in 2014.

HUMAN CLINICAL TRIALS BEGIN FOR DEADLY HENDRA VIRUS THERAPY

The world's first human clinical trials for a treatment against Hendra virus, a rare but deadly disease, recently began in Australia, using a human monoclonal antibody discovered by a team of University scientists led by USU investigator Christopher Broder, Ph.D.

The Hendra virus is a highly infectious agent that emerged from large bats in the 1990s to cause serious respiratory and neurologic disease outbreaks in humans and livestock in Australia. Broder, supported by the National Institute of Allergy and Infectious Diseases/NIH, first isolated and characterized the monoclonal antibody known as m102.4, which recognizes both the Hendra and Nipah viruses. Antibodies—proteins found in blood or bodily fluids of vertebrates—are used by the immune system to recognize and neutralize viruses, bacteria and foreign substances.

The m102.4 antibody attacks a critical component of Hendra virus and blocks its ability to infect cells. The substance, the world's first antibody administered to humans as a post-exposure therapeutic against Hendra virus infection, was later used to characterize a successful vaccine against Hendra for animals. This is the first vaccine against a Biosafety Level-4 agent to be licensed and commercially deployed.



“When I left NIH to become the USU vice president for research, I knew I was, once again, teaming up with an outstanding former trauma surgeon and researcher, as I had known Dr. Rice as one of my NIH grantees. As USU president, he has chosen to focus the University on its uniqueness and strengths. He chooses not to dwell on challenges, rather to accelerate our pace and face the challenges head on. As he once stated, ‘I am inspired by our University’s past and I am excited for its future.’ Dr. Rice has built a legacy, one worth leaving behind, and I am proud to be a part of it.”

—Yvonne T. Maddox, Ph.D.
Vice President of Research,
USU

SHIGA TOXIN RAPID DIAGNOSTIC ASSAY EARNS TECH TRANSFER AWARD



For the third consecutive year, USU earned the 2015 Federal Laboratory Consortium Award for Excellence in Technology Transfer. The award was presented for research done by Alison O’Brien, Ph.D., chair of Microbiology and Immunology. O’Brien and her colleagues addressed a key challenge in diagnosing infections caused by strains of *Escherichia coli* (*E. coli*) bacteria which produce Shiga toxins. They developed two rapid assay formats employing monoclonal antibodies, which can detect Shiga toxin produced by multiple strains of *E. coli*.

Two immunologically distinct types of the Shiga toxin are responsible for approximately 265,000 intestinal infections each year in the U.S. These Shiga toxin-expressing bacterial strains have caused multiple foodborne outbreaks due to consumption of undercooked meat, raw milk, lettuce, spinach and other foods. Such infections can result in acute diarrhea, hemorrhagic colitis and in 5 percent to 10 percent of cases, life-threatening hemolytic uremic syndrome. The syndrome is marked by kidney failure, hemolytic anemia and clotting disorders, which can result in long-term vascular and neurological damage or death, with children and the elderly most susceptible.

As a result of the research, these rapid tests are now able to detect and differentiate the two toxin types in about 30 minutes, allowing timely diagnosis and the implementation of appropriate treatment plans. The Shiga toxin diagnostic technology was successfully transferred under a license.

WOUND HEALING AND TISSUE REPAIR

Battlefield surgeons and civilian physicians could have a powerful new tool to help patients recover from traumatic injuries, including life-threatening wounds from explosions, thanks to continued research conducted by the USU Departments of Surgery and Dermatology.

By studying blood and tissue samples from patients, a team of military and civilian researchers, led by Navy Captain (Dr.) Eric Elster, chair of the Department of Surgery, has identified a model to predict the chances for successful wound-healing in individual patients. These predictions could help surgeons make critical, time-sensitive decisions, such as when to close a wound.

Using advanced computer analytic methods of the samples collected, the team was able to determine the presence of cytokines (proteins) that in turn could predict which patients would develop an inflammatory response that would lead to local wound failure. The result of such failure can include infection, amputation or death. The end result of this research was a decision support tool to guide the timing of wound closure.



In complementary efforts, Dr. Rajesh Thangapazham, an early career investigator in the Department of Dermatology, is studying appearance-related disorders such as hair loss and scarring due to skin disease, burns or trauma. One goal of this research is to help patients who have critical areas of their body covered by scar tissue by stimulating de novo hair follicle neogenesis in skin substitutes made entirely with cultured human cells. This major advance in skin regeneration is predicted to improve skin stability and healing and ultimately lead to a viable clinical strategy for restoring hair.



TRAUMATIC BRAIN INJURY AND MENTAL HEALTH

SMELL TEST HELPS IDENTIFY BRAIN TRAUMA

Investigators at USU's Traumatic Brain Injury Surgical Research Program have developed an olfactory (smell) test to help identify brain trauma shortly after an event while on the front lines of combat. This study, led by Air Force Colonel (Dr.) Michael Xydakis, is the first to investigate olfactory impairment in combat casualties during acute and subacute phases of injury.



The Acute Military Measurement Olfaction Identification Test uses the olfactory system, which processes thousands of different odors, sending signals to the brain that interprets the smell by linking it to a past memory. The research involved 231 service members at Walter Reed Bethesda who had been injured due to explosions during tactical combat operations overseas. They were given the test shortly after their arrival at the medical center, as time is important.

If memory is impaired, as is the case with Alzheimer's disease, sleep deprivation and acute traumatic brain injury, the olfactory task is not entirely possible to achieve. When the smell test results were irregular in a subject, those troops were three times as likely to have corresponding abnormalities on their brain scans.

Obtaining a CT scan in a combat zone is difficult and challenging. Thus, having a rapid, accurate and noninvasive test that can assist identification of an acute brain injury will help service members and anyone on the frontlines, including civilian first responders, such as police and firefighters, who may use this test when treating polytrauma patients. The olfactory test has great clinical diagnostic possibilities and this research has been highlighted in numerous publications.

“Under Dr. Rice’s leadership, the University’s role, capacity for and breadth of research expanded, with funding received in a single year increasing from approximately \$100 million to up to \$300 million. This was, in part, related to increased engagement with DoD sponsors and the establishment of military-relevant research portfolios in surgical critical and trauma care, infectious diseases, rehabilitation medicine, neurodegenerative medicine and traumatic brain injury, and global health.”

—Retired Army Colonel (Dr.) Mark Kortepeter
Former Associate
Dean for Research,
School of Medicine, USU

RISK FACTORS FOR SUICIDE ATTEMPTS

Dr. Robert Ursano, chair of the Department of Psychiatry and director of the Center for the Study of Traumatic Stress at USU, along with Dr. Murray Stein of the University of California, San Diego, served as co-principal investigators of the Army Study to Assess Risk and Resilience in Service members (Army STARRS), the largest study of mental health risk and resilience ever conducted among U.S. Army personnel.

Using Army STARRS data, Ursano and his colleagues identified risk factors for Army suicide attempts by enlisted soldiers and officers in Iraq and Afghanistan. Among the primary predictors are socio-demographic factors, length of service, deployment history, and the presence and frequency of a mental health diagnosis, according to the study "Suicide Attempts in the U.S. Army during the Wars in Afghanistan and Iraq, 2004-2009." The study found that enlisted soldiers accounted for 98.6 percent of all suicide attempts versus 1.4 percent for officers.

Researchers also estimate that enlisted women had nearly 13 times the risk of female officers for a suicide attempt, and enlisted soldiers who entered the Army at 25 years or older had more than 16 times the risk of officers in the same group for a suicide attempt. The study made a distinction between predictors for suicide attempts versus suicide, and identified a group for intervention and preventive care by helping to define who is at risk.

The results represent the most comprehensive accounting of U.S. Army suicide attempts to date and reveal unique risk profiles for enlisted soldiers and officers, further highlighting the importance of focusing research and prevention efforts on enlisted soldiers in their first tour of duty.

PREVENTING OBESITY IN MILITARY COMMUNITIES



The research laboratory of Marian Tanofsky-Kraff, Ph.D., professor of medical and clinical psychology, is investigating high obesity rates among children of military members and the rates of disordered eating.

Tanofsky-Kraff and her team of researchers from USU, Fort Belvoir Community Hospital and the National Institute of Child Health and Human Development at NIH, conducted a study of 23 overweight adolescent female military dependents and 105 age-, sex- and Body Mass Index-matched civilian peers.

Through interviews and questionnaire assessments of eating-related and general psychopathology and metabolic function tests, it was shown that military dependents reported more binge-eating episodes over the previous three months compared to civilians.

Seventeen percent of military dependents met criteria for Binge Eating Disorder as compared to only 2 percent of civilians. Compared to civilians, military dependents reported more shape, weight and eating concerns. Military dependents also reported greater depressive symptoms.

This study was only open to girls, but now all children will be included in a new ongoing study. Prior research suggests that men in the military may have the same or higher rates of disordered eating than military women.

Obesity is not just a problem related to the health of the dependent, but also is costing the MHS close to \$1 billion to treat morbidities associated with obesity. Studying eating disorders in adolescence is important because many adults with eating disorders begin in their adolescent years. In addition, results of these studies will help clinicians understand weight-gain trajectories and prevent worsening eating problems and metabolic functioning among military dependents.

Murtha Cancer Center

The John P. Murtha Cancer Center is expanding its cancer care and translational research operations to other military treatment facilities (MTFs) in accordance with its mission as a DoD Center of Excellence. Its work has been driven by strengthened collaboration between USU and NIH's National Cancer Institute.

The center is dedicated to reducing the toll of cancer on the health and readiness of active-duty service members, the wellbeing of their families and the quality of life of military retirees. Its goal is to build a network of interdisciplinary cancer clinical trials, translational research and clinical support throughout the MHS.

The center meets the needs of DoD beneficiaries by optimizing federal cancer resources, enhancing cancer research and discoveries, decreasing duplication, leveraging technologies, enhancing intellectual capital, and increasing educational and training opportunities.

Four medium-to-large tri-service MTFs have been selected for pilot testing in Mississippi, North Carolina and Virginia and more facilities will be added as results are analyzed and resources become available.

USU RESEARCH: GOING FORWARD

Ongoing research studies at USU indicate that stress can have short-term as well as long-term effects on overall health, including heart health and other chronic diseases. The Departments of Radiology, Cardiology and Psychiatry are investigating the effects of both posttraumatic stress disorder and traumatic brain injury and their link with cardiovascular disease.

The Collaborative Health Initiative Research Program (CHIRP), a major initiative of USU and the National Heart, Lung and Blood Institute, was launched to study research on the causes, prevention, mitigation and treatment of heart, lung and blood diseases, and sleep disorders—all of which affect the readiness of the uniformed services and the health of military families.



The study is headed by Dr. Harvey Pollard, USU's chair of Anatomy, Physiology and Genetics and CHIRP director, along with Deputy Director Dr. David Scott of the Department of Medicine. The program will integrate clinical epidemiological databases with whole genome sequencing, along with other "-omics," such as proteomics and metabolomics.

This is a precision medicine initiative that promotes President Obama's personalized medicine agenda, which offers an approach to disease prevention and treatment that considers the unique genes and environment of each patient, with the ultimate goal of delivering the right treatment, at the right time, to the right patient. Dr. Francis Collins, NIH director, highlighted the initiative in his keynote address at USU Research Days 2015.

As research at USU continues to grow and innovate (research projects number more than 300 and total research funding exceeds \$295 million), the vision is to optimize and create an outstanding climate of support for USU researchers (faculty and students), broadly enabling stellar research advances. New funding opportunities targeting faculty development, student training and mentoring programs are being created and research collaborations within the university, across the campus, and with other federal and non-federal entities continue to be fostered.

The growth of biological databases within DoD and the private sector provides promise and challenges, but USU's strategy, moving forward, is to assume a leadership role in building a multidisciplinary biorepository for the future, and to explore its potential benefits in improving the health of military men, women, their families and communities.



The University serves as the center for academic collaborations among scientists and clinicians within the MHS and increasingly with others in the federal government engaged in biomedical research, public health improvement and clinical care. Partnerships are also being developed with civilian academic health care systems, with many of these collaborations being facilitated through the University's various research centers and consortiums.

CENTER FOR DEPLOYMENT PSYCHOLOGY

The center trains military and civilian behavioral health professionals to provide high-quality, deployment-related behavioral health services to military personnel and their families. More than 2 million service members have deployed during the conflicts overseas, including many who have deployed multiple times. With these increased deployments, service members and their families undergo greater stress and face psychological health challenges.

TRI-SERVICE CENTER FOR ORAL HEALTH STUDIES

The center, part of USU's Postgraduate Dental College, was chartered by the DoD Tricare Management Activity, now the Defense Health Agency, to provide research and data collection services for the provision of dental care to all DoD beneficiaries. The center provides consultative services to students and other USU faculty on oral health research topics, general dental and oral health subjects, and data sources related to dental care in the military.



CONSORTIUM FOR HEALTH AND MILITARY PERFORMANCE

The consortium, a DoD Center of Excellence, carries out and translates research to improve service member performance in the field and when returning to duty. The program aims to be DoD's best resource for evidence-based information on human performance optimization to improve the performance and resilience of our service members and their families.

CENTER FOR GLOBAL HEALTH ENGAGEMENT

This center, established in 2015, seeks to leverage academics, scholarship and subject matter expertise from across USU and the DoD to provide support, resource advocacy, capability development and operational support for the DoD's global health engagement. Its functions will include education and training of future leaders, knowledge integration to inform development of best practices, as well as assessment, monitoring and evaluation of global health engagements conducted across the DoD.

DEFENSE & VETERANS CENTER FOR INTEGRATIVE PAIN MANAGEMENT

Established in 2003, the center works to improve the management of pain in military and civilian medicine. Through clinical research efforts, the center has become a model for effective integration of acute and chronic pain medicine. In 2015, the Department of Defense voted to designate the Defense & Veterans Center for Integrative Pain Management as a DoD Center of Excellence.

INFECTIOUS DISEASE CLINICAL RESEARCH PROGRAM

The program, which celebrated its 10th year in 2015, focuses on infectious disease challenges of particular importance to military personnel in deployed settings. The DoD and the National Institute of Allergy and Infectious Disease jointly sponsor the effort. Program protocols have improved evidence-based Joint Trauma System clinical practice guidelines, made Ebola virus treatment and post-exposure prophylaxis experimental products available to U.S. service members, and improved therapeutic outcomes with the ultimate goal of a functional cure for HIV infection.



Defense Health Horizons

This effort, conceived and sponsored by Assistant Secretary of Defense for Health Affairs Dr. Jonathan Woodson and President Rice, provides the MHS with access to both civilian and military health care expertise on issues the system's leadership foresees as potentially important and challenging in the near- and mid-future. This "internal think tank" is complemented by the exceptional intellectual power of the University's faculty, staff and students.

The endeavor develops actions for the MHS and outlines potential policy implications. The critical difference—and value for the MHS—is the group's goal to complete its work on any particular topic in less than 90 days. The group is analyzing topics ranging from graduate medical education, pain management and opioid use in the MHS to policy implications for women's health benefits.

Horizons steering committee members include renowned health care thought leaders such as Dr. Carolyn Clancy, chief medical officer, Department of Veterans Affairs; retired Navy Rear Admiral (Dr.) Christine Hunter, chief medical officer, U.S. Office of Personnel Management; Dr. Brent James, quality officer and executive director of the Intermountain Institute for Health Care Delivery Research; Allen Middleton, special assistant to the president, USU; retired Army Lieutenant General (Dr.) Eric Schoomaker, professor and vice chair for Leadership, Centers & Programs, USU; and Dr. Gail Wilensky, economist and senior fellow, Project HOPE.

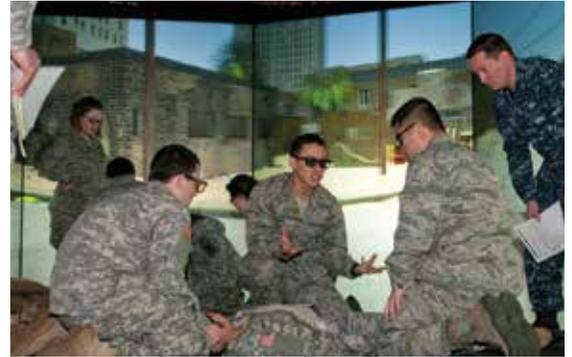
VAL G. HEMMING SIMULATION CENTER

Working with a wide array of partners from DoD, other federal agencies and civilian universities, the Val G. Hemming Simulation Center at USU is at the leading edge of innovation, offering an expansive selection of training tools from simulated clinical exams to trainers designed to improve skills in procedures within the immersive setting of the Wide Area Virtual Environment for training teams of individuals in combat and disaster skills.

The center's approximately 30,000-square-foot space supports more than 38,000 hours of instruction each year to medical students, graduate nursing students, physicians and allied health personnel.

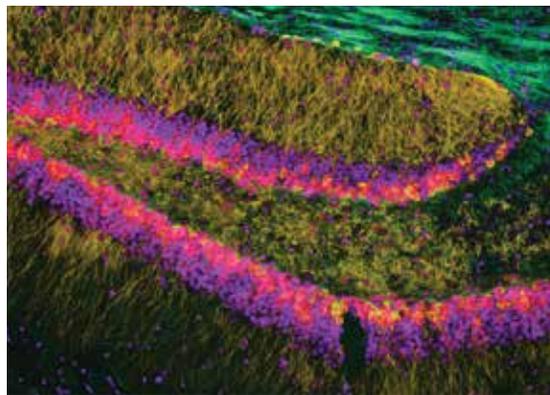
In 2015, the National Capital Simulation Consortium, which includes the USU simulation center, was granted two major accreditations:

- A five-year accreditation by the Society for Simulation in Healthcare for the consortium's Assessment, Research, Teaching/Education, System Integration and Patient Safety programs is the highest level that can be awarded to an organization. This is the first accreditation that the international body has awarded to the consortium, which includes USU, Walter Reed Bethesda and Fort Belvoir Community Hospital.
- The consortium earned reaccreditation as a Comprehensive Accredited Education Institute by the American College of Surgeons. A College-accredited institute addresses the educational needs of a broad spectrum of learners and advances the science of simulation-based surgical education.



CENTER FOR NEUROSCIENCE AND REGENERATIVE MEDICINE

The University's Center for Neuroscience and Regenerative Medicine studies the full spectrum of traumatic brain injury (TBI) with a special focus on military-relevant injuries. The center, established through congressional legislation in 2008, fosters collaborative efforts among USU, NIH's National Institute of Neurological Disorders and Stroke, and Walter Reed Bethesda.



An exciting collaborative effort between USU and the University of California, San Francisco (UCSF) began in 2015. For the first time, researchers from the two universities are working to develop drugs to treat chronic traumatic encephalopathy (CTE), a debilitating neurodegenerative disease that follows traumatic brain injury. Dr. Daniel Perl, director of USU's Center for Neuroscience and Regenerative Medicine Brain Repository for TBI, and Nobel Laureate Dr. Stanley Prusiner, director of the Institute for Neurodegenerative Diseases at UCSF, are leading the effort.

Research directed by Prusiner has shown that CTE found in military personnel and veterans who have been subjected to repeated episodes of concussion is caused by tau protein that undergoes aberrant folding. Tau prions self-propagate and spread throughout the brain along established nerve pathways causing destruction of brain tissue. In CTE, tau prions extend through the frontal lobes. As the disease spreads, individuals experience a loss of executive function and ability to cope. Drug and alcohol addiction is common and there is a high incidence of suicide.

Just 29 officers comprised the first class of graduating USU physicians in 1980. These trailblazers paved the way for more than 5,300 doctors; 1,430 scientists, clinical psychologists and public health officers; 750 advanced practice nurses and nurse educators; and nearly 200 advanced practice dentists to follow. Today, these distinguished alumni are working at military and civilian medical and dental treatment facilities, laboratories and universities across the globe, and they are improving nearly every aspect of worldwide health.

USU ALUMNUS NOW AN ASTRONAUT

USU alumni are accustomed to reaching extraordinary heights, but Army Lieutenant Colonel (Dr.) Andrew “Drew” Morgan may give new meaning to that phrase. He is the first Army physician to be selected as an astronaut.

Morgan, a 1998 West Point graduate who received a Doctor of Medicine degree from USU in 2002, was selected for the space program in 2013 and completed the rigorous two-year NASA astronaut-candidate training program, along with seven other military and civilian candidates. Over a period of 24 months they participated in a wide array of technical training that included robotics, simulated spacewalk training, flight training and Russian language instruction.

While waiting his turn to fly to the International Space Station, Morgan will spend the next several years in the NASA Astronaut Office’s Extravehicular Activity branch working on spacesuit design. Trained in emergency and sports medicine and having seen combat service with Special Forces, he will apply a unique perspective to his new role in furthering human exploration of space.

“The military gave me special skills, leadership experiences and incredible mentors along my path to becoming an astronaut,” he said. “I wouldn’t be here without them, and it will be my honor to represent the Army and military medicine in space.”

USU ALUMNA NAMED CHIEF MEDICAL OFFICER OF COAST GUARD



Since its creation, countless USU alumni have held senior positions of clinical and administrative leadership in the military and, after retirement, in military clinics, Veterans Administration hospitals and other federal facilities. As an example, a 2013 analysis of Navy physicians indicated that USU alumni held 27 commanding officer and executive officer billets—positions that represent the pinnacle of military medical leadership.

Joining these distinguished ranks is Public Health Service Rear Admiral (Dr.) Erica G. Schwartz, named in 2015 as director of Health, Safety and Work-life, and chief medical officer of the U.S. Coast Guard. Commandant Admiral Paul Zunkufft said Schwartz was “ideally suited” to her new position, citing her executive skills in leadership, management and health services.

Schwartz, who holds a Doctor of Medicine degree from Brown University and a Juris Doctor degree from the University of Maryland, completed her occupational medicine residency with a Master of Public Health degree with a dual concentration in health services administration and occupational and environmental medicine at USU in 2001.

Before her transfer to the Public Health Service and the Coast Guard in 2005, Schwartz served as a Navy occupational medicine physician. An expert in health care policy, she developed force health protection guidance for numerous contingency operations, including Hurricanes Katrina and Rita, the 2009 H1N1 pandemic, the 2010 Haiti earthquake, and the most recent Ebola outbreak in West Africa.



REMARKABLE CAREER LEADS ALUMNUS TO WALTER REED BETHESDA DIRECTORSHIP

Capping a remarkable career as a naval flight officer, physician and scholar, USU alumnus Navy Rear Admiral (Dr.) David Lane was named director of the Walter Reed National Military Medical Center in Bethesda, Maryland.

"I have known and worked with Rear Admiral Lane for many years and I know that he, as a USU alumnus, understands the critical importance of a close working relationship between the medical center and the University," said President Rice.

Lane, a 1991 graduate of the School of Medicine, previously served as the medical officer of the Marine Corps and director of health services for the Marines.

He enlisted in the Navy in 1975 as a hospital corpsman and was later accepted into the U.S. Naval Academy, graduating in 1981. Lane subsequently served as a naval flight officer in EA-6B Prowler aircraft before attending medical school at USU. After medical school, Lane completed a family medicine residency at the Naval Hospital in Bremerton, Washington, and served on clinical staffs at the Naval Hospital Bremerton, Naval Health Clinic Groton and Naval Medical Center San Diego before being selected as aide to the surgeon general of the Navy.

He has cared for patients at the Naval Hospital Rota, Spain; Naval Health Clinic Newport, Rhode Island; Naval Hospital Okinawa, Japan; and most recently at the Naval Hospital Camp Lejeune, North Carolina, where he served as commanding officer. Lane also served as a command surgeon with the Marines in the Pacific area of operations from 2004 to 2012, and spent two years at Yale University School of Medicine as a Robert Wood Johnson Clinical Scholar.



ALUMNUS RETURNS TO LEAD SCHOOL OF MEDICINE DEPARTMENT



An award-winning national leader in simulation education and patient safety is USU's new chair of Obstetrics and Gynecology in the School of Medicine.

Army Colonel (Dr.) Shad Deering, a 1993 graduate of the United States Military Academy at West Point and a 1997 alumnus of USU, is a board-certified perinatologist who also serves as assistant dean for Simulation Education in the School and previously as the deputy medical director for the University's Val G. Hemming Simulation Center.

As chair, Deering oversees the academic activities of a department that teaches medical students, conducts research and supports USU faculty working in military treatment facilities stretching from Walter Reed Bethesda to Tripler Army Medical Center in Hawaii.

While previously assigned to Madigan Army Medical Center in Tacoma, Washington, he served as the medical director for the Andersen Simulation Center. Throughout his six years in that position, he started, and continues to chair, the Army Central Simulation Committee, which is responsible for oversight of medical simulation for graduate medical education in the Army and trains more than 50,000 providers on an annual basis at the Army's 10 training hospitals.

Deering developed the Mobile Obstetric Emergencies Simulator, a highly innovative training program that provides simulation training on an actual labor and delivery unit to improve safety. It has been implemented in every hospital in the MHS that offers obstetric services and earned him the prestigious Federal Laboratory Consortium's annual Excellence in Technology Transfer Award.

HELPING TO IDENTIFY REMAINS OF MISSING U.S. TROOPS



On a 2015 deployment to Laos with a DoD team trying to find the remains of missing Vietnam-era servicemen, Army Colonel (Dr.) Melissa "Missy" Givens, a USU assistant professor, expected grueling work digging in sweltering heat and treating scores of villagers for medical problems.

But what she hadn't planned on was hitting unexploded ordnance with a pickaxe.

"I hit a big shell at one point with my pickaxe and held my breath," said Givens of the Department of Military and Emergency Medicine. Fortunately, the shell did not explode, and Givens and the team continued sifting through acres of dirt, seeking signs of American soldiers and airmen missing for decades.

"Until They Are Home" and "Keeping the Promise" are the mottos of the Defense POW/MIA Accounting Agency (DPAA), formed in 2015 through the merger of two government organizations charged with providing families and the nation at large with the fullest possible accounting of missing U.S. personnel. More than 83,000 Americans remain missing from World War II, the Korean War, the Cold War and the Vietnam War.

Givens provided medical support to the agency team that traveled to a remote area in Laos in March and April seeking remains at three sites—two where U.S. aircraft crashed, and a third where a two-person Special Operations team went missing. The team dug at all three sites. At one, a human tooth was recovered and is being analyzed in a DoD lab. At another, the team found gloves, helmets and other equipment that, after identification, will be returned to family members. Nothing was found at the third site.

Givens, a West Point graduate with a medical degree from USU and a master's degree in public health from the University of Texas, says her role was not only to provide camp medical support to the DoD team, but also to provide humanitarian assistance to local residents who worked with the mission and their families. She treated about 250 adults and children during her six-week stay.

"I really felt the physical work of digging and looking for these individuals was one of the more rewarding things I've done in my career," Givens said. "The work DPAA does brings closure for the families. Standing behind our promise to not leave anyone behind, it's an amazing testament to how we value our service members, and this mission was incredibly satisfying."

Another USU alum, Navy Captain (Dr.) Edward Reedy, is scientific director of the identification laboratory for DPAA at Hickam Air Force Base in Hawaii.

"My main job is to make identifications for missing and unaccounted-for servicemen," Reedy says. "Everybody deserves a name and everybody deserves to come home. I'm really working not only for that deceased and missing service member but the family, the next of kin, who want their family returned to them. They want answers, and we're trying to provide those answers to them."

Reedy, who received his doctorate in medicine from USU in 1998 and a doctorate in human pathology from the University of Maryland in 1990, calls DPAA's mission "very important and honorable work, and it's very satisfying when you make an identification on someone who's been missing for 70 years. All of us are motivated by our moral and ethical obligation to return service members who gave their lives in defense of our country to their loved ones."

“Chip Rice was the exact right leader at the right time for the Uniformed Services University of the Health Sciences. He is dedicated, determined, but always gracious, and he has been extremely effective. The Graduate School of Nursing, the Postgraduate Dental College, and more recently the Enlisted to Medical Degree Preparatory Program, are just a few of the lasting footprints he will have left behind as he moves on. Over 40 years into its history of producing outstanding military physicians, USU is now stronger and more relevant than ever thanks to Dr. Rice’s impactful leadership.”

—Retired Air Force Lieutenant General (Dr.) Thomas W. Travis
Former Air Force Surgeon General;
School of Medicine
Class of 1986 alumnus

ON THE FRONT LINES TO PROVIDE TRAUMA RESPONSE



Air Force Colonel (Dr.) Gianna R. Zeh, who earned her Doctor of Medicine degree from USU in 1993, is the commander of Task Force Medical-Afghanistan, as well as the 455th Expeditionary Medical Group at Craig Joint Theater Hospital, Bagram Airfield, Afghanistan.

She provides medical command and control for all medical forces in her area of operations, including U.S. and coalition forces in eight separate operating locations. In addition, Zeh commands the U.S. Central Command’s largest Role III hospital, providing trauma response and theater aeromedical evacuation capabilities for Operation Freedom’s Sentinel.

Prior to deploying, Zeh was the commander of the 96th Medical Group at Eglin Air Force Base, Florida, responsible for advising the installation commander on all medical matters as the director of Base Medical Services, which provides health care to more than 93,000 beneficiaries in the Eglin area. She directed medical planning and operations to meet peacetime medical contingencies and wartime deployments in support of combatant commanders. Zeh oversaw 1,550 personnel in six squadrons and 22 facilities and executed a \$160 million budget for a 55-bed military treatment facility with 29 clinics, seven operating rooms and 67 clinical services with 340 credentialed providers.

PARK SERVICE BENEFITS FROM ALUMNA’S EXPERTISE AND SKILLS

Few positions in public health have the potential to affect as many people as the one now held by USU alumna and Public Health Service Captain Sara B. Newman.

Newman was named in 2015 to head the National Park Service’s Office of Public Health. In that capacity, she leads the service’s public health efforts and acts as the principal adviser to the director for public health programs that affect 300 million visitors a year.

The Office of Public Health provides technical expertise on food and drinking water safety, wastewater and vector control, infectious disease surveillance, outbreak response, and health promotion. She also serves as the commanding officer for the public health operating division, administratively managing 48 officers detailed to offices and bureaus in the Department of the Interior.



Newman, who earned her Doctor of Public Health degree in 2002 from USU, has more than 20 years of experience as a public health professional. She has worked with the National Park Service for the past nine years, developing the public risk management program; providing policy, guidance and technical supports to America’s parks; as well as undertaking a range of visitor injury prevention initiatives.

COMING HOME TO USU, ALUMNUS TEACHES NEXT GENERATION OF NURSES

Dr. Matthew Welder, an assistant professor in the GSN, has returned to campus after a decade to teach the next generation of students.

Welder earned his Master of Science in Nursing degree in anesthesia nursing from USU in 2005. Less than three months later, he was deployed to Iraq where he treated hundreds of casualties and earned his first Bronze Star medal. Welder was selected to serve on a small-missions unit within the Joint Special Operations Command, spending several years as a member of this elite team. During that time, he was immersed in significant combat, earned his second Bronze Star and Combat Medical Badge, but suffered hearing loss as a result of an improvised explosive device.

From there, Welder, was assigned to the Army Surgeon General's office, where he developed an operating room utilization model for his Doctorate of Nursing project and developed the Surgical Service Line—a program that centrally standardized surgical services across the Army and the MHS to ensure a cost-effective, highly reliable organization. His Surgical Service Line results in more than \$40 million saved by the MHS each year. His achievements also resulted in his early selection for lieutenant colonel and the Legion of Merit. He ultimately retired from the Army and returned to the USU campus where he serves as a faculty member in the Nurse Anesthesia program.



STUDENT USES USU EDUCATION TO SAVE HIS OWN LIFE



Like all students who enroll in USU, Army Second Lieutenant Michael Polmear expected to give essential health care to service members and their families. Little did he imagine that he would provide potentially life-saving treatment to himself.

In the summer of 2015, Polmear, a second-year medical student who had recently completed his Combat Medical Skills (CMS) course and the final module of the first-year curriculum on gastroenterology and hematology at USU, along with his wife, Stephanie, both experienced climbers from Colorado, traveled to Wyoming to rock climb in Grand Teton National Park.

The pair began their climb of the Black Dike route on Middle Teton just after 8 a.m. on July 7, when without warning, a huge boulder fell from above and hit Polmear's left arm, crushing it. His upper arm bone was protruding through the skin, he was bleeding profusely and he lost the sensation in his left hand.

Using his good arm, Polmear took a sling from his climbing gear and used it as an arm brace for stabilization. Then he built an anchor and his wife lowered him down to the ground. He had learned in CMS that it was important to do a pulse check to determine if there was arterial bleeding. He found two separate pulses and knew he was going to live, but also that his situation was extremely serious. He found damage to muscle and bone, but not to his arteries.

Polmear was carrying a tourniquet with him and he and Stephanie quickly put it on his arm. The pain was excruciating, but he knew from CMS that it was crucial to apply the tourniquet very tightly to avoid bleeding to death. He pushed the bone back into his arm and wrapped it.

When help arrived and he was taken to a nearby medical center, Polmear knew from his studies the type of surgeon he would need to care for his injuries; he insisted they find an upper extremity, fellowship-trained reconstructive surgeon.

Back in Bethesda, and following a second surgery, working on rehabilitation, Polmear said being on the other side of the patient care spectrum gave him a new perspective as a provider, a deeper respect for the injured and showed him the value of embracing the process of discovering a new normal.

"I have embraced the opportunity to learn experientially from my injury," said Polmear. "Medical school has introduced me to numerous resources where I can find information and solace. Our curriculum also highlights the powerful combination of willpower, adherence to the treatment plan, and being active and healthy as the major contributors to the best outcome."



While the academic life of USU aligns with the curriculum of other U.S. academic health centers, the University's public and military health focus add extra emphases to both clinical and scholarly work. Education and training include not only classroom and research experience, but also field experience not found in civilian academic settings. In addition, the strong shared mission of faculty, students and staff creates a camaraderie among members of the USU community that binds people together through their years at the University and beyond. Our graduates expect to practice together and care for one another and their families throughout their lifetimes. Finally, USU is "family friendly" as students tend to be somewhat older and more often married than at other schools.

OPERATION BUSHMASTER HELPS PREPARE STUDENTS FOR BATTLEFIELD

There is nothing like Operation Bushmaster in American medical education.

Each fall, USU conducts the full-scale medical field exercise at an Army National Guard training base at Fort Indiantown Gap, Pennsylvania. Operation Bushmaster serves as a final graded examination for fourth-year medical students at the School of Medicine and a critical component of the advanced nursing program in the GSN. USU students learn combat medical skills early in their first year, and build on this over subsequent years until they are highly proficient.

The battlefield simulation—a resource-constrained, far-forward tactical setting—is made as realistic and challenging as possible. Students live in field conditions and work in teams, rotating through positions as commanders, executive officers, medical officers and ambulance team leaders.

During the 96-hour simulated combat zone, students assume leadership and clinical positions in a battalion aid station where they are presented with reality-based missions and operational problems. Simultaneously, students manage the medical care of simulated disease and non-battle injury patients, combat stress and trauma casualties.

The event culminates in a dramatic mass-casualty exercise. According to the scenario, an entire platoon is seriously injured, and the USU medical and nursing students must triage the wounded while also arranging for their evacuation.

More than 135 USU brigade staff, primarily enlisted personnel, supported Bushmaster (Military Field Practicum 202) under the direction of Army Colonel (Dr.) Melissa "Missy" Givens, a USU assistant professor. Military health care providers flew in from around the country to teach and grade participants on their medical knowledge and leadership abilities.

"An exercise of this scale cannot be accomplished without the absolute dedication of a team," Givens said. They all play an important role "in educating the future leaders of military medicine."



"One of the most impressive transformations that I have witnessed—and participated in—is an extraordinary expansion of the spirit of collaboration within the University. From silos to academic pastures, the USU community has grown together in times of economic hardship and ongoing world conflict—all the while remembering the core focus of 'Learning to Care for Those in Harm's Way.'"

Navy Captain
(Dr.) Mark Stephens
Chair, Department of
Family Medicine
School of Medicine, USU

346 USU STUDENTS GRADUATE ON ARMED FORCES DAY

The University's Commencement exercise, traditionally held on Armed Forces Day in Washington, D.C., took place for the 36th time in May. Medical students, advanced practice nurses, military dentists, scientists, clinical psychologists and public health professionals moved from student to alumni status. The commencement speaker was Air Force Lieutenant General (Dr.) Thomas W. Travis, who was then surgeon general of the Air Force and a 1986 USU medical school graduate. Former National Library of Medicine director Dr. Donald A.B. Lindberg was presented with an honorary Doctor of Humane Letters degree during the ceremony.

The USU commencement exercise is one of the nation's most unique graduation ceremonies. Most USU students are active-duty officers in the U.S. Army, Navy, Air Force or Public Health Service. Students enter the hall wearing academic regalia, but after receiving their diplomas, leave the stage to change into their military uniforms and return to recite their respective service commissioning oath, led individually by each surgeon general, or his or her representative, as they are promoted to their next rank.



Medical degree graduates from USU's School of Medicine also recite the Hippocratic Oath. Near the conclusion of the ceremony, the service themes of the Army, Marine Corps, Navy, Coast Guard, Air Force and Public Health Service are played by the U.S. Marine Corps Band—"The President's Own"—while current and former service members stand to honor all of the uniformed services.

COMMENCEMENT: BY THE NUMBERS

Graduates from the School of Medicine include:

- 163 Doctor of Medicine degrees
- 9 Master of Health Administration and Policy degrees
- 25 Master of Public Health degrees
- 2 Master of Tropical Medicine and Hygiene degrees
- 6 Master of Science in Public Health degrees
- 3 Master of Science degrees
- 3 Doctor of Public Health degrees
- 28 Doctor of Philosophy degrees

Graduates from the Graduate School of Nursing include:

- 3 Master of Science in Nursing (Adult-Gerontology Clinical Nurse Specialist) degrees
- 4 Master of Science in Nursing (Family Nurse Practitioner) degrees
- 19 Master of Science in Nursing (Nurse Anesthesia) degrees
- 11 Doctor of Nursing Practice (Family Nurse Practitioner) degrees
- 9 Doctor of Nursing Practice (Psychiatric Mental Health Nurse Practitioner) degrees
- 4 Doctor of Philosophy (Nursing Science) degrees

Graduates from the Postgraduate Dental College include:

- 17 Master of Oral Biology (Army program – Comprehensive Dentistry) degrees
- 4 Master of Oral Biology (Navy program – Comprehensive Dentistry) degrees
- 3 Master of Oral Biology (Navy program – Endodontics) degrees
- 1 Master of Oral Biology (Navy program – Oral and Maxillofacial Pathology) degree
- 3 Master of Oral Biology (Navy program – Periodontics) degrees
- 5 Master of Oral Biology (Navy program – Prosthodontics) degrees
- 3 Master of Oral Biology (Navy program – Orofacial Pain) degrees
- 11 Master of Oral Biology (Air Force program – Comprehensive Dentistry) degrees
- 4 Master of Oral Biology (Air Force program – Endodontics) degrees
- 6 Master of Oral Biology (Tri-Service Orthodontic Residency) degrees

Bethesda Cares: USU in the Homeless Community

For the past several years, USU students and Family Medicine faculty have partnered with Bethesda Cares (a local not-for-profit social services organization) to provide outreach for homeless individuals in Montgomery County.

Starting with the Medical Vulnerability Index, USU students canvas the streets of Bethesda and outlying areas to find the most vulnerable homeless individuals and assess their medical needs. The medically vulnerable are given priority for permanent supportive housing as a form of medical treatment. Students support a weekly clinic at the Bethesda Cares headquarters in downtown Bethesda to provide longitudinal care for homeless and displaced individuals.

Students also direct a home visitation program to ensure that newly housed clients have continuity of care until they find a regular medical home. During 2015, USU students helped six previously homeless individuals find permanent housing, participated in more than 200 clinical encounters and made over 20 home visits. Their work is making a difference in the local community.

NIH DIRECTOR PRESENTS RESEARCH DAYS KEYNOTE ADDRESS



National Institutes of Health Director Dr. Francis Collins delivered the Presidential Lecture during USU's annual Research Days symposium in May. More than 300 basic and clinical scientists and students presented their scholarly works during the two-day event.

The 2015 theme, "Celebrating Excellence in Research," reflected the complementary roles that nursing, public health, behavioral science, basic science and medicine play in health promotion.

The annual event encompasses four primary events: the GSN Research Colloquium, which brings together faculty and students to present and discuss nursing-specific research findings; Graduate Student Colloquium, which highlights the research interests and accomplishments of graduate students in USU's School of Medicine; and Postdoctoral Fellows Symposium and Faculty Senate Research Day, which draw together the entire USU community to share research achievements, foster collaborations and stimulate intellectual exchange. Together, these events serve to inform the local scientific community, collaborative institutions and other federal agencies about significant research projects conducted across the health sciences at USU and its affiliates.

The USU Postdoctoral Lecture followed Collins' address on "Exceptional Opportunities in Biomedical Research." Kim Lewis, Ph.D., University distinguished professor and director of the Antimicrobial Discovery Center, Department of Biology at Northwestern University, discussed "The Quest for Novel Antibiotics."

Janet D. Pierce, Ph.D., APRN, CCRN, FAAN, the Christine A. Hartley Endowed Professor of Nursing from the University of Kansas School of Nursing, discussed "Researchers: Guardians of Science," as the Faye G. Abdellah Lecturer for 2015.

Mary Helen Barcellos-Hoff, Ph.D., professor of Radiation Oncology and Cell Biology and director of Radiation Biology at the New York University School of Medicine, Langone Medical Center, delivered the first Armed Forces Radiobiology Research Institute Lecture, "Cancer in Context: A Systems Biology Approach to Radiation Carcinogenesis."

The Bullard Lecture, named for the late USU associate dean for Graduate and Continuing Education Dr. John Bullard, was given by Bruce Alberts, Ph.D., chair in Biochemistry and Biophysics for Science and Education at the University of California, San Francisco. His lecture was titled, "The Future of Biology: Keeping Science Healthy."

The annual Leonard and Wu Awards for Excellence in Research lectures, named for former USU department chairs Henry C. Wu, Ph.D., and Dr. James J. Leonard, were delivered by Army Lieutenant Colonel (Dr.) Michael Ellis, deputy director of the Infectious Diseases Division in USU's Department of Medicine and Michael J. Daly, Ph.D., professor in the Department of Pathology at USU, respectively. Ellis presented a lecture on "Prevention of Skin and Soft Tissue Infections in Military Trainees: Results From a Field-based Prospective," while Daly discussed "A Revolutionary Approach to Vaccine Development: *Deinococcus radiodurans* Mn Antioxidants."

PACKARD LECTURE

Dr. Tom Frieden, director of the CDC, presented the 2015 Packard Lecture "Ebola: Past, Present and Future" in March. Frieden became director of the CDC in June 2009. A physician with training in internal medicine, infectious diseases, public health and epidemiology, he is especially known for expertise in tuberculosis control. As commissioner of the New York City Health Department from 2002 to 2009, he directed the city's efforts to reduce smoking, cut trans fats from restaurant menus and established electronic health records. Frieden received both his medical degree and master's in public health from Columbia University.

The annual lecture was established by the University's faculty senate in honor of Hewlett-Packard co-founder David Packard, who served as deputy secretary of defense and USU's second president in the 1970s.

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SELECT HIGHLIGHTS OF THE UNIVERSITY OVER THE PAST DECADE

A team of senior academic and administrative leadership was recruited from within the Military Health System, other federal agencies and throughout U.S. academia to bring outstanding new talent and ideas to USU. Working with the University's existing deeply talented and mission-driven faculty and staff, the University embarked on an era of transformation of its academic programs, research capacity and physical plant. USU strengthened existing relationships with external entities and developed new ones while establishing its identity internally and externally as a leading academic health sciences university and vital component of the national defense infrastructure.

The University aggressively invested in revitalizing its physical plant and renewing research laboratory space—among many other projects, planning, building and opening the Daniel K. Inouye Graduate School of Nursing.

A USU branch campus was established in San Antonio with the creation and subsequent expansion of the Postgraduate Dental College and establishment of the Master of Oral Biology degree for the Army, Navy and Air Force.

Research programs have flourished and attracted new faculty and students. Scientific interchange with peer institutions has grown, and USU faculty are on the cutting edge of basic and clinical sciences, making major advances in health care, disease prevention and health promotion.

The University developed new academic programs, including the master's and Ph.D. programs in Health Professions Education, Master of Health Administration and Policy, Doctor of Nursing Practice, and Women's Health Nurse Practitioner. USU also expanded the Clinical Psychology program and implemented the LEAD curriculum, as well as alternative and complementary medicine curricula.

In close collaboration with the armed services, the University established the Enlisted to Medical Degree Preparatory Program to attract talented enlisted personnel to enroll in medical school.

The University was successful in working with Congress to achieve a "save-pay" provision that allows prior service officers to retain the pay they were receiving, rather than having to revert to a lower pay of a more junior officer as an entering medical school student. Additionally, Congress lifted a salary cap, providing for more competitive pay for USU employees, which is essential for continued competitiveness.

Important interdisciplinary academic centers were created, including the National Center for Disaster Medicine and Public Health; Center for Neuroscience and Regenerative Medicine; Consortium for Health and Military Performance and John P. Murtha Cancer Center, both Defense Centers of Excellence; Center for Rehabilitation Sciences Research; Collaborative Health Initiative Research Program; Surgical Critical Care Initiative; and Center for Global Health Engagement.

The University deepened and expanded its commitment to its role in global health leadership in service, education, research and clinical care. The long-term academic, clinical care and service work in global health and humanitarian assistance has expanded into major programs that span the globe.

With the creation of Defense Health Horizons, USU established the capacity to provide rapid, reliable and science-based advice to DoD leadership on pressing health policy issues.

Faculty and University leadership have become established and increasingly important sources of expertise in national and international forums for military medicine and public health care.

A highly experienced, committed and diverse Board of Regents was recruited to advise USU on key areas of change.

The University established and is fulfilling the vision of Unity of Effort in developing working relationships with and among other key entities of the Military Health System, in particular Walter Reed Bethesda, and other federal public health and biomedical research agencies—especially the NIH.





A Decade of Transformation



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