The history of military medicine is that great advances are made during wartime that improve survival and quality of life not only for our troops but also for the civilian population as these advances in battlefield medicine and rehabilitation make their way into civilian medicine.

The 2013 terror attack on the Boston Marathon with its tragic results and extraordinary acts of heroism and valor are a dramatic example of these advances in military medicine helping those wounded at home. We expect that the enormous strides that have been made in rehabilitation, with prosthetics and with helping heal the less visible wounds of these horrendous attacks, will help those in Boston and elsewhere heal and return to full lives.

While changes in trauma care may be readily apparent, the fact is that advances in military medicine and the contributions of those who serve as clinicians and researchers continue to make profound impacts on health care for our nation and our world during times of war and times of peace.

These lessons of war are hard won and we are mindful of both the cost and the obligation that comes with them. We have an ongoing obligation to those who have served—to help them and their families return to their lives. We have an obligation to continue to research, develop and improve our interventions—be they medical or surgical or psychological—to heal, protect and prevent injury.

The missions of the uniformed services and of their health professions are by no means limited to armed conflict. The Department of Defense and the Public Health Service are the nation’s first line defense against global disease and in promoting both health and well-being worldwide. Graduates and faculty of USU work as clinicians and scientists in laboratories and clinics around the world and care for not only our service members but also civilian populations.

We live in an era of global travel when emerging diseases and infections can become global epidemics in record-breaking times. The Military Health System, frequently led by USU alumni such as Army Colonel (Dr.) Peter Weina, deputy director of the Walter Reed Army Institute of Research, is guiding efforts to identify new viruses and prevent global outbreaks. Laboratory research to discover new treatments and preventive measures for infectious disease
is under way in several USU departments, including Microbiology and Immunology, in cooperation with the National Institutes of Health’s National Institute of Allergy and Infectious Disease.

When I arrived at USU in 2005, I was challenged by then Under Secretary of Defense for Personnel and Readiness Dr. David Chu to transform USU from a “medical school with some additional programs,” as I recall he phrased it, into a true academic health center. I believe that my colleagues and I have been successful at doing just that. Even more importantly, I believe that we have educated and trained a cohort of leaders in academic and military health care who represent the core of leadership for the Department of Defense and the U.S. Public Health Service. They are serving and will serve this nation going forward. This is the critical legacy of USU.

These are the missions of the Uniformed Services University of the Health Sciences. We conduct research to improve protection against infectious disease and to improve global surveillance of emerging diseases. We work to develop the policies and practices necessary to guide Military Health System decisions. And most importantly, we educate the next generation of leaders in military and public health medicine, for this is truly the central role of the University. Like the military academies, we are charged with ensuring the building of that essential central cadre of leaders in military medicine.

In this annual report we have highlighted some of the people and work that exemplify USU and its importance to the nation.

Charles L. Rice, M.D.
President
Uniformed Services University of the Health Sciences
The Uniformed Services University of the Health Sciences (USU) educates and trains the leaders of military medicine and public health. USU students are primarily active-duty uniformed officers in the Army, Navy, Air Force and U.S. Public Health Service (USPHS) who receive specialized education in acute trauma care, disaster response and humanitarian assistance, infectious disease, neuroscience, and preventive medicine.

USU’s teaching, research and clinical programs are closely integrated with those at the Walter Reed National Military Medical Center. Across the street from the medical center is the main campus of the National Institutes of Health. The physical proximity of these three world-class institutions, each dedicated to excellence in teaching, patient care and research, creates a globally unique academic health center of extraordinary depth, breadth and impact. Individually and collectively, these three organizations are dedicated to advancing health and biomedical discovery to serve our nation and improve the health of the world.

While the University’s main campus in Bethesda is ideally suited for scientific research and education in laboratory science, military medicine and nursing, and public health, this is but one of numerous campuses USU supports nationwide.

The education of USU’s students and the impact of our research is dramatically strengthened through the work of our partner institutions and campuses in the Military Health System (MHS) and USPHS. The national and global aspects of USU are another important facet of the University’s unique character that ties us to the Defense Department, the MHS and the USPHS.

Today, a large percentage of USU’s more than 5,000 physician graduates, 660 advanced practice nurses and 1,365 graduate program alumni support military and public health operations around the world through their clinical excellence, leadership and scientific expertise. This annual report speaks to important aspects of these individuals and this remarkable institution.
The Uniformed Services University is the nation’s academic health center. Just as the U.S. Military Academy-West Point, U.S. Naval Academy and U.S. Air Force Academy educate the leaders of the nation’s military, USU educates the leaders of the nation’s health corps who will work in the Military Health System and U.S. Public Health Service.

Our alumni serve around the globe and over the past 11 years have been deployed into combat with our troops in Iraq and Afghanistan. We serve the equally important mission of helping to ensure the peace by guarding against the spread of infectious disease, helping prevent global epidemics, and providing relief in times of natural and man-made disaster.

These individuals serve at the forefront of research in global health, disease prevention and health promotion. Our alumni also develop policy and practice responsibilities to ensure our service men and service women benefit from USU’s research and education breakthroughs.

Our core mission is centered on leadership: educating physicians, advanced practice nurses, dentists and scientists who will serve the nation in careers in military medicine and public health. The best testament of USU’s success is its alumni. Here are some of their stories.

Serving Medicine and Our Nation

“We owe the men and women of our military the very best medical care in the world and that takes the very best trained medical staff in the world. I am proud to say that it all happens right here in Maryland and the Uniformed Services University is at the heart of such care. USU educates medical students, biomedical scientists and advanced practice nurses and awards advanced degrees in dentistry and its alumni staff military and public health facilities caring for our troops, their families as well as countless civilians.

“After more than a decade of sustained conflict overseas, it is no surprise that USU alumni often are deployed. They have been wounded and sacrificed their lives in the line of duty. They have learned firsthand the costs and rewards of ‘caring for those in harm’s way.’

“Prolonged conflict has changed the way we treat physical trauma and disease. USU alumni conduct important fundamental and applied research that has advanced care for military and civilian populations in areas such as infectious disease, radio protectants, traumatic injury and prosthetics as well as nerve and limb regeneration. How we face the hidden wounds of war also is changing, and USU alumni are leaders in posttraumatic stress research, focusing on treatment and prevention for our troops and their families.

“Whether they serve in combat field hospitals or stateside military hospitals or public health facilities, in clinics abroad or in the U.S., the USU alumni are serving our nation and I am proud of all they do.”

—Senator Ben Cardin
D-Maryland
Applying Military Lessons to Civilian World

In 2013, Rear Admiral (Dr.) Michael Anderson, retired from his 34-year career with the U.S. Navy and Marine Corps, however, that did not mean the end of his medical career. A 1983 graduate from the School Medicine, the former medical officer of the Marine Corps became the senior vice president of quality and chief medical officer of the Harrison Medical Center in Bremerton, Wash., in July 2013.

During his military career, Anderson successfully advocated for a reformed relationship with the Department of Veterans Affairs that established a new type of joint health care delivery. He also established new clinical standards for garrison health care within the Navy’s operational forces. His expertise is already helping the Bremerton community, including the patients, physicians and staff of the medical center.

“When you go into a health care system, you look for opportunities to share common services and one of those common services is quality,” he told a Washington state newspaper. Though no longer serving in uniform, he says his mission now is the same as when he was a member of the military: “to deliver high-quality health care to our patients.”

Mars Beckons to Alumnus

Army Major (Dr.) Andrew Morgan, upper left, a 2002 graduate of USU’s F. Edward Hébert School of Medicine, was among eight military and civilian astronaut candidates selected by NASA for its 2013 class. More than 6,100 applicants sought admittance in a selection process that took more than 18 months to complete.

Morgan, who previously served as an emergency physician and flight surgeon for the Army Special Operations community, finished a sports medicine fellowship before heading to the Johnson Space Center in Houston last August. He began an extensive course of technical training at space centers around the globe to prepare for missions in low-Earth orbit and to an asteroid and Mars.

“These new space explorers asked to join NASA because they know we’re doing big, bold things here—developing missions to go farther into space than ever before,” said NASA Administrator Charles Bolden.
‘At the Cutting Edge of Battlefield Medicine’

NATO Special Operations Headquarters opened its Special Operations Forces Allied Centre for Medical Education in October 2013. The Belgian facility, which provides technology to enhance military medical techniques and training, will allow medical personnel to learn concepts and practice procedures from the point of injury to casualty evacuation.

U.S. Army Lieutenant Colonel (Dr.) Daniel Irizarry, photo left, a 1997 graduate of the School of Medicine, is medical adviser at NATO Special Operations Headquarters and serves as the center’s team lead.

The facility is “a much-needed addition to the support of Special Operations forces. Our cooperation with industry partners, military, government and nongovernment organizations, and academia ensures that we remain at the cutting edge of battlefield medicine,” Irizarry said at the center’s opening.

Alumnae Show Leadership Mettle

University graduates find their focus on mission and medicine places them in leadership positions throughout the uniformed services.

Navy Lieutenant Commander (Dr.) Shannon Stout, a 2007 graduate, became the first woman in 2nd Tank Battalion, 2nd Marine Division history to earn a field grade officer billet. She is the battalion medical officer.

“It’s exciting to be the first female medical (field grade) officer with 2nd Tank Battalion, and I am honored to be holding the plank with some other outstanding female Marines and sailors that were also part of the women in combat integration,” Stout said.

She began her military medical journey while attending the University of North Carolina Wilmington in 2000. Stout was enrolled in a medical school preparatory class when she met a female Navy corpsman, who described opportunities available in Navy medicine. Her career consideration turned into commitment on Sept. 11, 2001. She was accepted by USU and now hopes to put her education and experience to work guiding female medical officers as they continue to join the ground combat element.

Stout looks forward to “being able to help mentor and guide them and help them understand just some of the things I’ve gone through, the growing pains, because I know where they are coming from their first months here being a Navy physician,” Stout said.

Across the Pacific, Air Force Colonel Virginia Garner, a USU Daniel K. Inouye Graduate School of Nursing alumna, assumed command of the 15th Medical Group at Joint Base Pearl Harbor-Hickham in June 2013.

“Taking care of our nation’s heroes, past, present, and future, and their families is why I joined the Air Force,” the 2000 family nurse practitioner alumna said. “Now I have the unique opportunity to lead, partner with our sister services and the community, and care for the medics who will continue to fulfill this important mission.”

At Pearl Harbor-Hickham, Garner is responsible for providing medical and dental services for nearly 15,000 beneficiaries.
Extraordinary Heroism

F. Edward Hébert School of Medicine graduate, Navy Lieutenant Commander (Dr.) Michael Melia, was participating in a regional emergency medical systems conference at the Washington Navy Yard on Sept. 16, 2013, just as a gunman started making his way through the base’s Building 197, shooting at Navy Yard employees.

Melia, an emergency physician and tactical medicine officer who was serving as the deputy medical director for the Bureau of Alcohol, Tobacco, Firearms and Explosives, didn’t hesitate. He grabbed his limited tactical gear and medical trauma bag from his car and joined security officers as they searched for casualties.

With the gunman still active, Melia established a casualty collection point, and rejoined tactical teams as they swept the building, room by room.

He repeatedly entered and exited Building 197 as casualties were located, without hesitation or regard for his own personal safety, to render emergency medical assistance and to carry victims to a secured location where they could receive additional medical care, including one victim who had been shot in the neck numerous times. He continued assisting law enforcement officers until the “all clear” signal was given more than seven hours after the shooting had begun.

He demonstrated an extraordinary display of heroism in the face of extreme danger to provide direct medical care in a hostile environment.

A Portrait in Courage

When enemy forces launched a mortar attack on Firebase Chamkani, Afghanistan, in 2011, Air Force Captain Jennifer Curtis was stepping out of the door to her room. She felt the force of the blast, while smoke and debris instantly surrounded her. But thanks to her USU education and training and her quick actions, the class of 2009 alumna of USU’s Daniel K. Inouye Graduate School of Nursing helped save the lives of six soldiers who were wounded in the attack.

Curtis, a nurse practitioner working with U.S. Army Special Forces conducting village stability operations in the area, with help from a few of her colleagues, dragged the six injured men to safety while rounds continued to fly overhead. Curtis, the only health care provider present at the time, administered emergency medical care, keeping all six of the soldiers stable until they could be medevaced to a theater hospital. They all survived.

She received the Air Force Combat Action medal and the Bronze Star for her actions, and was featured in the Air Force “Portraits in Courage” series for her bravery.

By the Numbers

Physicians educated at F. Edward Hébert School of Medicine comprise:

- 10% of new medical officer accessions
- 25% of total medical officer force
- 35% of medical leadership within the Military Health System

Alumni from the Daniel K. Inouye Graduate School of Nursing represent:

- 50% of nurse anesthetists in the Military Health System
Out of This World

As retired Navy Captain (Dr.) Jonathan Clark and millions of people worldwide watched, Austrian skydiver Felix Baumgartner jumped more than 24 miles from the edge of space to Earth, becoming the first person to break the speed of sound without a vehicle. But Clark, a graduate of USU’s Charter Class of 1980, a member of the Baylor College of Medicine faculty and former flight surgeon, had a deeper interest in the project than most.

Clark was responsible for Baumgartner’s health—physical, mental and neurological—as the medical director for the Red Bull Stratos Team mission. A neurologist and six-time Space Shuttle crew surgeon for more than eight years at NASA, Clark took on the role to not only monitor and protect Baumgartner from the effects of extreme high altitude, but to try to establish new protocols for the benefit of future aviators and astronauts.

Award Winners Demonstrate Dedication to Art and Science of Medicine

Navy Commander (Dr.) Jennifer Espiritu was selected as the 2013 recipient of the American College of Preventive Medicine’s William Kane Rising Star Award. Espiritu, a USU School of Medicine class of 1998 alumna, is a Navy physician and Center for Disease Control Epidemic Intelligence Service officer.

Each year, the Military Health System’s “Building Stronger Female Physician Leaders in the MHS” award program selects up to six female physicians—one senior and five junior winners—from each service who have made significant contributions to military medicine and served as exemplary role models. In 2013, the senior winner of the fourth annual system’s award was Air Force Colonel (Dr.) Kimberly Slawinski, School of Medicine class of 1984. She is a vice commander assigned to the Air Force Medical Operations Agency in San Antonio.

Air Force Lieutenant Colonel Lisa Cole, a 2006 graduate of USU’s Graduate School of Nursing, was named by the Air Force Surgeon General as the 2013 recipient of the U.S. Air Force Clinical Excellence in Nursing Award, Field Grade Officer Category.

Navy Captain (Dr.) Maureen Padden, who graduated from the School of Medicine in 1992, received the Federal Health Care Executive Award for Excellence from the American Hospital Association in July 2013, for using her extensive experience as a family physician, teacher and executive to transform the way primary care is delivered in the U.S. Navy.
Alumnus Serves as Founding Chair of New University Department

A gifted alumnus, clinician, researcher and educator took on new responsibilities at USU, leading the newly established Department of Physical Medicine and Rehabilitation (PM&R). Retired Army Colonel (Dr.) Paul Pasquina, a USU School of Medicine class of 1991 graduate, is tailoring the department to meet the specific needs of the military population, both in education and research. (He is pictured with Army Major General (Dr.) Nadja West, Joint Staff Surgeon.)

Pasquina spent a number of years leading the PM&R and later, orthopaedics and rehabilitation departments, at Walter Reed Army Medical Center and Walter Reed National Military Medical Center prior to his retirement from active duty last year. His significant contributions to amputee care made Walter Reed the first institution in the world to introduce the clinical use and evaluation of the first motorized lower limb prostheses, most sophisticated upper limb prostheses, and the first-of-its-kind implantable microelectrodes to drive a prosthetic device. As one of the nation’s leading experts in amputee care, prosthetics and rehabilitation, Pasquina was sought by his civilian colleagues in Massachusetts following the Boston Marathon bombing in April 2013 to discuss the best way forward for the treatment of many of the bombing victims.

Combining his exceptional skills as a clinician, teacher and researcher, Pasquina is bringing that knowledge and expertise back to the University that educated him to help educate the next generation of health care providers as they “learn to care for those in harm’s way”—whether that is on the battlefield or in the streets of a major city.

Future Alumnus Offers Helping Hand

Army Major (Dr.) Christopher Bowen, a second-year student at USU’s Postgraduate Dental College, traveled to Vietnam in September 2013 to participate in a cooperative health engagement in Thanh Hoa Province.

The bilateral Army-to-Army mission focused on building medical and dental inter-operability between the U.S. and Vietnam, strengthening partnerships, and providing humanitarian assistance to the underserved people of Vietnam. Bowen and his colleagues worked in cooperation with East Meets West Dental and seven dentists from the Vietnamese Army and local provinces. Through solid teamwork and cooperation, they treated 390 patients in two and one-half days.

During this mission, Bowen presented a brief on “Dentistry in a Deployed Environment” at a Subject Matter Expert Exchange. Throughout the engagement, U.S. and Vietnam colleagues worked together to make the mission a success.
Education

The Uniformed Services University of the Health Sciences is committed to excellence in military medicine and public health during peacetime or war.

The University educates health professionals dedicated to career service in the Department of Defense and U.S. Public Health Service and with scientists who serve the common good. USU is accredited by the Middle States Commission on Higher Education, and its component professional programs by the appropriate professional organizations and societies.

At USU’s F. Edward Hébert School of Medicine, Daniel K. Inouye Graduate School of Nursing, Postgraduate Dental College and Armed Forces Radiobiology Research Institute, USU students learn the art and science of healing along with the leadership skills critical to their roles in military and public service. Students attending the University and affiliated military training facilities and other health facilities around the nation receive extensive clinical training with patients, experience the rigors and rewards of practice in varied settings, and master the fundamentals of biomedical science, clinical medicine and leadership.

This education serves graduates well when they begin to serve their country with military units and in Public Health Service laboratories and clinics. The experience they gain at USU will remain with them for years as they serve and provide the essential leadership for the uniformed services and our nation. USU alumni are among the most dedicated and accomplished in the world.

One-of-a-kind Institution

“I am so proud to have the Uniformed Services University in the great state of Maryland. USU is a one-of-a-kind institution. It trains the next generation of military medical personnel. It brings cutting-edge research to the front lines, keeping our armed forces safe so they can keep our country secure. From helping to relieve the effects of posttraumatic stress to finding cures for infectious diseases, the wonderful work of USU is not only seen in our military—but throughout the world.

“As Chairwoman of the Senate Appropriations Committee, I know that my predecessor, Senator Inouye, would be honored to see his name above USU’s esteemed Graduate School of Nursing. Throughout his long record of public service, he was a champion for nursing and accessible, quality care. Together, we fought for USU as a jewel in our military, and a standard-bearer for military medicine throughout the world.

“With USU, Maryland is the only state that has a private, public and federal academic health center. I’m proud that USU is part of that equation, as we work to foster education, innovation and exploration in Maryland. Each day, the men and women of USU accomplish incredible feats. As we look back on lessons learned in the last decade, I know that USU will accomplish so much more—bringing health, peace and prosperity to people the world over.”

— Senator Barbara Mikulski
D-Maryland
‘America’s Medical School’

In the fall of 2013, President Rice named Dr. Arthur L. Kellermann the fifth dean of USU’s F. Edward Hébert School of Medicine. Kellermann is one of the nation’s leading experts in emergency medicine, public health and health policy.

Kellermann’s distinguished career is anchored in academic medicine and public health. Prior to joining USU, he held the Paul O’Neill-Alcoa Chair in Policy Analysis at RAND, a non-profit research organization. He was a professor and founding chair of emergency medicine and public health and associate dean for health policy at the Emory School of Medicine in Atlanta where he also established the Center for Injury Control in Emory’s School of Public Health.

A former two-term member of the board of directors of the American College of Emergency Physicians, Kellermann was subsequently given the College’s highest award for leadership. He also holds “excellence in science” awards from the Society for Academic Emergency Medicine and the Injury Control and Emergency Health Services Section of the American Public Health Association. Elected to the Institute of Medicine (IOM) of the National Academies in 1999, he co-chaired the IOM Committee on the Consequences of Uninsurance and served on several other IOM committees. He currently serves on the IOM’s Governing Council.

A clinician and researcher, Kellermann practiced and taught emergency medicine for more than 25 years in public teaching hospitals in Seattle, Wash.; Memphis, Tenn.; and Atlanta, Ga. His research addresses a wide range of issues, including health policy and information technology, injury prevention, traumatic brain injury prevention and treatment, emergency care, and disaster preparedness.

In recruiting a new dean for the University’s School of Medicine, President Rice noted that this appointment came at a critically important time for the University saying, “The new dean has taken up his role at a challenging time as military medicine enters into a new period of dealing with collecting, organizing and exporting the knowledge and advances of the past decade-long wars. The School of Medicine has been deeply engaged in curriculum reform and the new dean will continue and enhance these important efforts.

“Dean Kellermann brings to the School and this University a keen and deep understanding of public health, academic medicine and the ways in which institutions and government collaborate for the public good. His commitment to the highest standards of academic, professional and scholarly achievement will continue USU’s progress as an institution critical to this nation’s well being and security.”

Kellermann is equally enthusiastic about the opportunity to lead the School of Medicine, which he regularly asserts is “America’s medical school.”

“We have a unique mission, an exceptional faculty and a vital mission. Our students come from across the United States, and they serve around the world. We serve as the leadership academy for the Military Health System as well as the U.S. Public Health Service. While we teach essentially the same core curriculum as civilian medical schools, we also cover military-relevant topics such as tropical disease and public health, battlefield injury, global health, logistics, and humanitarian assistance. Moreover, our students are trained to be leaders who know how to work collaboratively in teams and to reach across disciplines. Our newly reengineered curriculum addresses such 21st century topics as cultural sensitivity, international law and medical ethics.

“Unlike civilian medical schools, our mission is focused on tackling the most important challenges faced by the Department of Defense and the U.S. Public Health Service. These two critical federal agencies shape our research agenda in fundamental ways, and drive us to find solutions.

“And finally, whereas most civilian medical schools are affiliated with civilian teaching hospitals, USU’s medical school shares its Bethesda campus with Walter Reed National Military Medical Center, a world-class tertiary care center. Across the street is the National Institutes of Health, the world’s premier biomedical research facility. And our national network of ‘teaching hospitals’ includes the Military Health Systems’ premier facilities, from Portsmouth to Honolulu. There’s simply no other institution like it.”
Curriculum Reform Takes Root

To stay at the forefront of American medical education, the F. Edward Hébert School of Medicine reengineered its curriculum to address the challenges and needs of military medicine in the 21st century. The new curriculum, which began formal implementation in the fall of 2011, is organized around the theme of “Molecules to Military Medicine.” It incorporates four conceptual pillars: The integration of basic and clinical sciences across all four years, early patient contact, adaptability to unique learning styles, and the use of advanced educational technologies.

Instead of the traditional “2 plus 2” approach of loading the first two years of medical school with department-centered basic science classes and the last two years with clinical rotations, the new curriculum is divided into three major segments: an 18-month pre-clerkship, 12 months of core clerkships and an 18-month post-clerkship period, all of which incorporate specialized instruction and training related to the unique aspects of military and public health medicine. The new curriculum includes more time for senior electives along with an opportunity for students to complete a Capstone Project—an extended period of advanced clinical, military and public health-relevant, or bench-related research.

USU’s class of 2015 will be the first to graduate under the new curriculum. They completed their all-important clerkship year with rotations in military treatment facilities across the country. They are now integrating their clinical learning with additional exposure to basic science topics at the start of their post-clerkship period. The goal of this sequence is to produce physicians who understand the “why” of medicine as well as the “what” and the “how.”

Development of the new curriculum has required an “All of School” effort. Everyone pitched in. However, three individuals in particular stand out. Alison O’Brien, Ph.D, professor and chair of Microbiology and Immunology and Louis Pangaro, M.D., professor and chair, Department of Medicine, worked closely together to weave the basic and clinical sciences together.

O’Brien brought her extensive expertise in basic science research and education to the process of designing the new curriculum. Pangaro, a national authority in medical education, helped shape the forward-looking approach to reform and to adapt the School of Medicine curriculum to USU’s unique mission in the military health care system. Air Force Colonel (Dr.) Arnyce Pock, associate professor of medicine and director of the School’s Office of Curriculum Reform, ably assisted the pair.

Working together, these three and USU’s faculty produced an integrated curriculum that incorporates state-of-the-art educational methods, instructional technology, clinical simulation, real-world experience and scientific inquiry to ensure that the uniformed services will receive graduates who are ready to care for those who go in harm’s way.
Alumnae Work to Ensure Students’ Success

The F. Edward Hébert School of Medicine offers both military and academic support services for its students to ensure a successful medical school experience. As alumnae and as leaders of those functions, Army Lieutenant Colonel (Dr.) Brigilda Teneza, Navy Captain (Dr.) Patricia McKay, and Army Colonel (Dr.) Lisa Moores each have a unique perspective that contributes to that success.

Moores, a class of 1989 graduate, is a critical care pulmonologist who has been a member of the school’s faculty since 1996. She served as associate dean for clinical sciences for more than six years before her appointment as acting associate dean for student affairs, where she supervises the quality of student academic and campus life and represents the student viewpoint whenever policy is made or needed.

McKay replaced Moores in the clinical sciences dean role after serving as the commandant and interim surgery department chair. The class of 1993 alumna’s experience as an associate professor of surgery at USU and director of the hand surgery center at Kimbrough Ambulatory Care Center at Fort Meade, Md., and her many years as a Navy surgeon made her uniquely suited for the job working with the medical student curriculum and educational programs in the clinical years, the academic performance of students, and the subsequent graduate medical education of students.

Although Teneza is the newest addition to the team as commandant of medical students, she is no stranger to the University. She earned her medical degree as a member of the class of 1997 and later returned for her master’s degree in public health in 2009 as part of a preventive medicine residency. Teneza has held a faculty appointment in the department of Preventive Medicine and Biometrics for more than four years. The pediatrician-turned-public health physician oversees the day-to-day military requirements of the medical students.

Graduate Education Key Element of Mission

Medical students are one component of the F. Edward Hébert School of Medicine; graduate education in science, psychology and public health is the other. USU medical students are members of the uniformed services: Army, Navy, Air Force or U.S. Public Health Service. Each year somewhat fewer than half of incoming students are “prior service,” having served in the military, ROTC or attended one of the service academies. Others enter the University from the civilian world with no prior uniformed service.

The graduate programs in USU’s school of medicine are open to civilian and military applicants. The graduate programs are committed to excellence in the didactic and research education of master’s and doctoral degree students.

Graduate education is an important and integral component of the academic mission and scholarly environment of USU. The University’s graduate students leave USU prepared for productive and high-impact careers in many areas of practice and research in the biomedical sciences, clinical psychology and public health.

These graduates serve the nation in public service, create new scientific knowledge, train the next generation of scientists, and contribute to the advancement of health and science in both public and private positions.

Degrees Offered by School of Medicine

Doctor of Medicine

Interdisciplinary Ph.D. degrees in:

- Emerging Infectious Diseases
- Molecular and Cell Biology
- Neuroscience

Doctoral degrees in:

- Clinical Psychology
- Medical Psychology
- Environmental Health Sciences
- Medical Zoology
- Public Health

Master’s degrees in:

- Public Health
- Tropical Medicine and Hygiene
- Health Administration and Policy
- Military Medical History
Postgraduate Dental College

Research Focus

All degree candidates at the Postgraduate Dental College engage in research projects. Recent examples of the diverse research into biomedical materials includes:

- Surface Detail Accuracy and Dimensional Stability of a New Hybrid Vinyl Polyether Siloxane Impression Material Under Dry and Moist Conditions
- Abrasive Wear of Four Direct Restorative Materials by Standard and Whitening Dentifrices
- Dentin Bond Strength of Resin Cements Using Simplified Adhesive Agents.

One of USU’s newest programs, based in San Antonio, is its Postgraduate Dental College. The Executive Dean, retired Army Major General (Dr.) Patrick Sculley, formerly served as deputy surgeon general, chief of staff of the Army Medical Command, and chief of the Army General Corps. He is a graduate of Webster University and the State University of New York at Buffalo, and is board certified in comprehensive dentistry and a certified health care executive. Sculley is also dual-hatted as USU’s Senior Vice President of University Programs, overseeing the University’s interests in the southern region.

The Postgraduate Dental College comprises the Army Postgraduate Dental School, with sites in Fort Bragg, N.C., Fort Gordon, Ga., Fort Hood, Texas, and Schofield Barracks, Hawaii; the Naval Postgraduate Dental School, located at the Walter Reed National Military Medical Center in Bethesda, Md.; and the Air Force Postgraduate Dental School, with two locations based at Keesler Air Force Base, Miss., and Lackland Air Force Base, Texas.

Each school grants a Master of Science in Oral Biology degree after the completion of a graduate dental residency program. All students matriculated into the program have obtained a Doctor of Dental Surgery or a Doctor of Dental Medicine degree. A total of 72 military dentists have graduated from the Postgraduate Dental College to date. In 2013, 43 master’s graduates across seven dental disciplines received degrees.

The college is research intensive and reflects not only USU’s increasingly interdisciplinary approach to health care, but also the Military Health System’s recognition of the importance of health promotion and disease prevention through comprehensive education and research.

“All of USU’s dental programs are extremely challenging with strong didactic, clinical and research components woven into the curriculum,” said Sculley. “Meeting these benchmarks is difficult, but USU’s newest alumni achieve this feat through hard work and dedication. It’s a big accomplishment for them, but an even greater benefit for military medicine as a whole, since America’s warriors and their families benefit from USU’s graduate education programs.”

In Service to Humankind

As part of the military-unique curriculum, the residents and staff of the two-year Advanced Education in General Dentistry residency program at Lackland Air Force Base, Texas—part of the University’s Postgraduate Dental College—are involved in humanitarian missions.

The missions, called Medical Readiness Training Exercises, deliver medical and dental care to underserved populations around the world while providing unique training to medical and dental providers. The missions often take place in remote areas of these countries in harsh working conditions, typically without electricity or running water.

The residents and staff of the college’s residency program joined medical providers for two-week missions in Haiti and the Dominican Republic in 2013. During one mission, the six-member dental team (three dental officers and three enlisted technicians) completed more than 1,100 dental procedures on more than 800 dental patients at three sites. The dental team served with other medical providers (e.g., family practitioners, dermatologists, optometrists, pharmacists) who provided medical exams, eyeglasses, medications and minor surgical procedures to more than 8,000 residents.

Degrees Offered by Postgraduate Dental College

Master of Science in Oral Biology Programs:

- Comprehensive Dentistry
- Endodontics
- Oral and Maxillofacial Pathology
- Orofacial Pain
- Periodontics
- Prosthodontics

Vice President of University Programs, overseeing the University’s interests in the southern region.
Honoring Daniel K. Inouye

The University honored Senator Daniel K. Inouye (D-Hawaii)—the second longest-serving senator at the time of his death in 2012—by naming the Graduate School of Nursing after the iconic World War II hero during a ceremony in October 2013. The event lauded Inouye’s steadfast commitment to military medicine and USU.

Throughout his 53-year political career, Inouye supported and authored key legislation to improve military medicine by establishing USU in 1972, and later championing a bill for a graduate nursing program in 1992.

Although Inouye built much of his political career around military advocacy, his veneration for uniformed nurses and physicians was born long before he took office.

As a soldier in the famed 442nd Regimental Combat Team, Inouye stood out. A courageous leader, Inouye quickly rose through the Army’s ranks, but his military career was interrupted after he was injured in Italy. Although Inouye’s wounds were dire and his right arm had to be amputated, military doctors and nurses saved his life and gave him a new perspective.

“The care my father got on the heat of the battlefield and at hospitals back home was incredible,” said Inouye’s son, Ken. “He spoke about it a lot when I was younger, and it left a huge impression on me, because the underlying theme of my father’s stories was always the debt he felt to his providers, and how they not only saved his life, but helped get him in the right frame of mind to move past his injuries.”

Uniformed nurses care for patients in locations as dangerous as the wounds they treat. Armed with unique skills, graduates of the school are capable of making life-and-death decisions in seconds for one or for thousands on the battlefield.

In 1992, the University developed its nursing school to meet the increasing needs for advanced practice nurses in the uniformed services. Experienced military and civilian faculty members used a signature curriculum of the fundamentals of advanced nursing in the military context.

Whether a student chooses to follow a master’s degree or doctorate degree path, they share the common goal of advancing professional nursing practice for service members, their families and other beneficiaries.

Inouye paid his gratitude forward on Capitol Hill. He was one of USU’s most important proponents over the past four decades, and he also introduced legislation that established USU’s Graduate School of Nursing, saying, “The federal government should establish its own nursing school similar to that currently in existence for physicians.” That legislation resulted in the creation of USU’s Graduate School of Nursing.
Dean Hinshaw: A ‘Living Legend’

Ada Sue Hinshaw, Ph.D., dean of USU’s Daniel K. Inouye Graduate School of Nursing, has announced her upcoming retirement in May 2014 following graduation of the 2014 class. For more than six years, Hinshaw has served as dean, overseeing a period of growth and enormous progress for the school.

Among her many accomplishments, Hinshaw developed a close working relationship with the chiefs of the Nurse Corps of the military services, which was exemplified by their decision to include the dean of the GSN as a regular member of the Federal Nursing Service Chiefs. She greatly strengthened the academic rigor of the Advanced Practice Nursing programs and skillfully managed the transition of those programs from the Master’s degree to the Doctor of Nursing Practice degree.

Hinshaw also recruited key faculty members to strengthen research programs, developed a partnership with the Department of Veterans Affairs in patient safety, and oversaw the successful reaccreditation of a number of GSN academic programs. She developed a highly successful model of shared governance, initiated the Behavioral Health advanced practice nursing program and met the Air Force’s need for an accession program for CRNAs. Hinshaw is working closely with School of Medicine Dean Kellermann to develop an innovative inter-professional education program.

Best known for her contributions to nursing research and education as well as health policy, Hinshaw has held many leadership positions during her career. Before joining USU in 2008, she was dean/professor at the University of Michigan, School of Nursing (1994 to 2006). She was the first permanent director of the National Center for Nursing Research and the first director of the National Institute of Nursing Research (1987 to 1994).

Active in health policy, she was president of the American Academy of Nursing (1991 to 2001), and is a member of the Institute of Medicine of the National Academies and on the Institute’s Governing Council. She co-chaired a study entitled Keeping Patients Safe: Transforming the Work Environment for Nurses (2004), and served as Scholar-in-Residence at the Institute (2006-2007). She chaired the Institute of Medicine committee that examined the safety of the federal childhood immunization schedule.

Throughout her career, Hinshaw has conducted nursing research focusing on quality of care, patient outcomes, measurement of such outcomes, and building positive work environments for nurses. She is the recipient of 13 honorary doctoral degrees.

Hinshaw received a Ph.D. and M.A. in sociology from the University of Arizona, an M.S.N. from Yale University and a B.S. from the University of Kansas.

Hinshaw was named a “Living Legend” in a career-capping honor at the American Academy of Nursing’s 38th Annual Meeting. She has been a leader in the Academy since her initial induction as a Fellow in 1978 and was elected to serve as President in 2001.

Degrees Offered by Graduate School of Nursing

- Master of Science in Nursing
- Doctor of Philosophy in Nursing Science
- Doctor of Nursing Practice

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Part of Esteemed Group

Two AFRRI officers accomplished a challenging feat in 2013 by passing both portions of the rigorous Certified Health Physicists Examination. As a result, Army Major Aaron Miaullis and Air Force Captain Brian Livingston (pictured at right) joined an esteemed group of health science professionals who have earned a certification in Comprehensive Health Physics from the American Board of Health Physicists.

Institute Benefits Humanity

USU’s Armed Forces Radiobiology Research Institute (AFRRI), created more than 50 years ago during the height of the cold war, remains relevant and important today in the face of threats of radiation contamination through accidental release or acts of terrorism.

Air Force Colonel (Dr.) Lester “Andy” Huff, a 1988 graduate of USU’s F. Edward Hébert School of Medicine, was assigned to the Institute in 2007 as head of the Military Medical Operations Department. Today, he leads AFRRI as its director, exploring closer ties with our basic science departments and developing the intellectual and resource infrastructure for a basic research program in radiobiology.

The Institute aims to develop effective countermeasures that serve as defensive military options as well as medical treatment and agents to deal with radiation accidents. AFRRI addresses the services’ requirements simultaneously from three perspectives: prevention of health hazards, assessment of biological damage, and treatment of injuries resulting from exposure to ionizing radiation alone or in combination with chemical or biological agents encountered on the battlefield.

The Medical Effects of Ionizing Radiation course provides postgraduate medical education to about 600 attendees annually. The 2.5-day course is offered worldwide about 20 times per year. Geared toward health care providers, the course offers a basic understanding of ionizing radiation, the biological damage it causes, triage tools for assessing radiation injury, and treatment strategies to improve recovery and long-term survival. It provides militarily relevant continuing medical education credit.

The Institute’s research focuses on methods to prevent, assess and treat injuries resulting from the effects of ionizing radiation. Of particular interest are studies that explore countermeasure development, risk assessment and biodosimetry.

Among products that AFRRI has developed is Neupogen, a protein that stimulates the growth of white blood cells in the body, helping the body fight against infection.

The Institute also works collaboratively with government agencies, academic institutions and civilian laboratories in the United States and other countries to research the biological effects of ionizing radiation. In addition, AFRRI provides medical training and emergency response to manage incidents related to radiation exposure.

Humanity benefits from research in these areas. These developments are applicable to rescue operations involving, for example, terrorist actions or industrial nuclear accidents. The core competence in radiation biophysics and the technical database developed from AFRRI research are also applicable to astronauts exposed to space radiation.

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While pursuing its commitment to world-class educational opportunities for tomorrow’s uniformed services medical leaders, the University also dedicates itself to groundbreaking military and public health research. Its scientific interests span a vast array of topics in fundamental and applied research, from radiobiology and infectious disease to traumatic brain injury, suicide risk and human performance.

The University’s research efforts go hand-in-hand with its educational and clinical care focus. Faculty of the School of Medicine, Graduate School of Nursing, Postgraduate Dental College and Armed Forces Radiobiology Research Institute work with students to improve the world’s understanding of basic biomedical science, create innovative products and technologies, and develop the most effective clinical practices.

University researchers conduct scientific investigations to ensure military health and readiness and to benefit humankind. Its close proximity to world-class clinical and research facilities at the Walter Reed National Military Medical Center and National Institutes of Health produce collaborations that reach around the world. This strong and enduring partnership yields greater understanding of the importance of research to military and public health.

**At the Forefront of Research**

“Every time I talk with a wounded soldier, I ask about the care they’re getting at Walter Reed. They always give me a big thumbs-up. The reality is, the care is as good as it is because so many caregivers got their start at USU.

“The University plays a critical role in educating health professionals for the Military Health System (MHS) and U.S. Public Health Service (USPHS). Its alumni play critical leadership roles in these organizations.

“Underpinning the educational programs of the University and also critically important to the nation are the University’s research programs. USU researchers are at the forefront of research in areas such as infectious disease, traumatic brain injury, posttraumatic stress, regenerative medicine, public health remediation, family and child health, and environmental health. The University’s research agenda is driven by the missions and concerns of the MHS and USPHS, including worldwide health, health of our troops, infectious disease, and the role that health plays in world stability and sustaining peace.

“I am particularly pleased by new initiatives between USU and the National Institutes of Health situated across the street from the University and the Walter Reed National Military Medical Center. It is gratifying and exciting to see new and important collaborations between federal entities engaged in the essential work of health care and biomedical research for this nation and our world.”

—Representative Chris Van Hollen
(D-Maryland)
Infectious Diseases: Intensive Work, Collaboration Key to Breakthroughs

**A Vaccine for Hendra Virus**

Over the past two decades, fear of the Hendra virus has become part of everyday life for the Australian horse community. The highly infectious agent emerged from flying foxes, the world’s largest bats, in the 1990s. It is transmitted from the bats to horses to humans.

To date, Hendra virus has been found only in a few places in the world. Australia experienced an unprecedented number of 18 outbreaks across Queensland and New South Wales in 2011, during which 22 horses died or were euthanized. The virus appeared in horses eight times in both 2012 and 2013.

But thanks to a scientific discovery originating from the lab of USU’s Christopher Broder, Ph.D., professor of Microbiology and Immunology, a Hendra vaccine has been developed for horses and clinical trials will begin in 2014 in Australia in people, using an anti-Hendra and anti-Nipah virus monoclonal antibody that Broder and his scientific collaborators developed. The antibody has already been credited with saving lives, having been successfully administered under compassionate use protocols in Australia in 2010 and 2012, and recently in the United States in 2013. To date, Broder’s vaccine for Nipah virus (the virus at the center of the fictional Hollywood film “Contagion”) is the only effective vaccine against a Class I bioterror agent.

**Combating Devastating EHEC Infections**

Consuming diets higher in fiber may increase the risk for certain *Escherichia coli* (EHEC) infections, according to a study published in the Proceedings of the National Academy of Sciences in 2013.

University scientists demonstrated that mice fed high-fiber diets (HFD) had elevated levels of intestinal butyrate, which—although a beneficial gut metabolite—enhanced the gut binding-capacity of Shiga toxin made by a food-borne bacterium called *EHEC* O157:H7. Alison O’Brien, Ph.D., chair of the Department of Microbiology and Immunology, led the study, which was funded by NIH’s National Institute of Allergy and Infectious Diseases.

**Unlocking the ‘Chlamydia Paradox’**

Chlamydia, the most common sexually transmitted disease in the U.S., is on the rise. More than 1.4 million cases of the disease were reported nationally in 2011, but the Centers for Disease Control and Prevention estimates that the actual number is probably double that since most people do not seek testing and go undiagnosed.

University scientists Anthony Maurelli, Ph.D., (pictured at left) and George Liechti, Ph.D., recently discovered the presence of a cell wall in the bacterium that had previously eluded scientists since they started searching for its existence 50 years ago. This discovery may hold the key to better understanding how to treat a disease that can cause sterility in men and women, pelvic inflammatory disease, and ectopic pregnancies and is also the leading cause of preventable blindness worldwide.

Their findings were reported in, “A new metabolic cell-wall labeling method reveals peptidoglycan in Chlamydia trachomatis,” in the Dec. 11, 2013 online edition of the journal *Nature.*
Global Health: Key USU Mission

Health promotion and disease prevention are top missions of the Military Health System and therefore an important educational and research mission of USU. Prevention and public health are not only important national strategies to preserve military strength and readiness, they are key to helping stabilize other nations worldwide. This mission is of necessity global as our graduates care for those who travel from nation to nation, often in harsh and underserved environments. Our graduates must be able to diagnose and treat the widest variety of diseases and syndromes and understand local cultures. As the Defense Department moves to the critical mission of sustaining the peace, it is equally important to help nations develop their own abilities to provide health care and build public health capacities.

Among the many USU departments and faculty members engaged in these missions are faculty members in the medical school’s Preventive Medicine Department Global Health Division. They use holistic teaching approaches, where factors like culture, economics, religion, politics, demographics and social influences are carefully weighed.

“Global health is complicated,” said Dr. Stephen Waller, an associate professor in the Global Health Division. “There is no formula to follow, just basic principles that improve community health through multidisciplinary action.”

This includes breaking cycles of behavior in areas where unsanitary or dangerous health conditions exist. It also means fostering policies and actions that favor lasting solutions over transitory remedies.

“The first time I really started thinking about global health was during a humanitarian mission in Haiti. We set up our clinic in a local school,” said Air Force Colonel (Dr.) Edwin Burkett, (pictured right) director of the Global Health Division. “The clinic was an open-bay facility with minimal staff or supplies. Flies buzzed around patients with open wounds, and it was generally unclean. I realized quickly our team was in the wrong spot.”

If his clinic had been tied to local facilities, Burkett’s team could have shared their knowledge and resources with local health care providers. This would have made their work in Haiti more impactful and sustainable, he said.

Drawing from this lesson and others, Burkett and Waller encourage their students to plan for the best long-term possible outcomes when developing global health plans. They also share their expertise with other leaders in the Consortium of Universities for Global Health. USU was recently inducted into the group’s prestigious network, which is an international organization dedicated to ending health inequalities around the world.

The Center for Disaster and Humanitarian Assistance Medicine (CDHAM) is another of the University’s programs actively involved in global health engagement.

Until recently, U.S. national security operated from two mostly independent pillars: diplomacy and force projection. Today, national security is based on the “three D’s” of diplomacy, defense and development.

For its part, the center operates under the premise that health is “a global common good.”

“Along with safety, education and other public health benefits, people expect their government to help provide health care,” said Charles Beadling, M.D., director of CDHAM. “By assisting legitimate governments to build capability and capacity in health, the United States can create political stability that leads to our security.”

Promoting Healthy Living

In a 2013 article published in Obesity, Marian Tanofsky-Kraff, Ph.D., an associate professor in the Department of Medical and Clinical Psychology at USU, shared updates from a collaborative study on obesity prevention.

To combat the military’s obesity problem, Tanofsky-Kraff, along with Tracy Sbrocco, Ph.D., an associate professor in the Department of Medical and Clinical Psychology, and Navy Captain (Dr.) Mark Stephens, chair of the Department of Family Medicine, is exploring ways to promote healthy living through a pilot study focused on good behavior habits and reducing stress.

“At the time we initiated this review, there was really no solid compilation of the research on obesity or eating disorders in services. We know how hard it is to treat obesity. We need prevention. We need to stop it before it happens,” said Tanofsky-Kraff.
GSN Faculty Contribute to Knowledge Through Research

As the Daniel K. Inouye Graduate School of Nursing has matured during the past 20 years, so too has the research focus of its faculty. Faculty research clusters around four broad areas: traumatic injury recovery, deployment issues and military family health, psychological health promotion, and military health systems. Some highlights of recent research include:

- Marguerite Littleton-Kearney, Ph.D., R.N., is investigating the effects of oral hormone replacement therapy on cerebral vessels after injury.
- Matthew D’Angelo, DNP, CRNA, is undertaking a pilot study that uses a mathematical model on subjects with intravascular volume abnormalities to predict blood volume loss and to guide intraoperative fluid therapy.
- An evaluation of Behavioral Risk Factor Surveillance System’s survey measures and methodology is the focus of work by Sandra Bibb, DNSc, R.N., (pictured at left). She is investigating the concept that the surveillance system may be a potential “index model” for total force fitness.
- In a single-subject design, Susan Budassi Sheehy, Ph.D., R.N., is looking into a nurse-coached exercise program to determine if it increases muscle strength, improves quality of life and increases self-efficacy in people with tetraplegic spinal cord injuries.
- Using a posttraumatic stress disorder checklist and recorded semi-structured interview, Susanne W. Gibbons, Ph.D., is examining combat health care providers and resiliency. Her work centers on adaptive coping mechanisms during and after deployment.
- Preliminary results of a study by Army Colonel Paul Lewis, Ph.D., focuses on the effects of smoking on wound healing in a sample of military amputees. The work suggests that, on average, smoking lengthens healing time by 37 days, reduces the ability to cover distance on a two-minute walk test and increases rehabilitation time by 14 days.
- In a rat model of retained shrapnel using military-grade tungsten alloy containing cobalt, Christine E. Kasper, Ph.D., R.N., is raising the possibility that metal body-burdens can affect blood-brain barrier permeability especially following a traumatic brain injury.

Infectious Disease Program Links Government, Private Sector

The Infectious Disease Clinical Research Program is a unique research collaborative that represents one of the important roles USU plays in bringing together government agencies and the private sector to advance public health and ensure national security.

The program, formed in 2005 through an agreement between the National Institutes of Health’s Institute of Allergy and Infectious Diseases (NIAID) and USU, recognizes the operational, strategic and scientific importance of infectious diseases to the U.S. military. Led by Army Colonel (Dr.) Mark Kortepeter, the program builds broad collaborations among DoD and NIAID investigators and develops affiliations with partners from academia and private industry.

All research within the program focuses on clinical questions associated with militarily important infectious disease risks. The diseases may affect training and readiness at the individual or unit level and nearly always have significant impact on the nonmilitary populations as well.

According to Kortepeter, “one of the more notable achievements of the past year was the launch of the traveler’s diarrhea treatment trial among volunteers in the U.S. and United Kingdom military in Afghanistan, Djibouti and Kenya, in partnership with overseas laboratories in Cairo and Nairobi. We have also begun a partnership with the NIH/NIAID, National Institutes of Mental Health, and National Institute of Neurological Disorders and Stroke to study neurocognitive disease in HIV-infected individuals. Moreover, we have completed our initial study report on hygiene measures at Fort Benning, Ga., to reduce the incidence of skin and soft tissue infections. This last study was a massive two-year trial that enrolled more than 30,000 trainees. We have also begun enrolling patients in our multidrug-resistant gonococcal (GC) surveillance study and are in the process of setting up a GC research repository at USU.”
CSTS Launches Military Family Members Bereavement Study

The University’s Center for the Study of Traumatic Stress (CSTS) has launched the National Military Family Bereavement Study, the first large scientific study of the impact of a U.S. service member’s death on surviving family members.

“Our study has two phases, both of which aim to understand and define the grief process in a multi-dimensional way,” said Dr. Stephen Cozza, associate director of the CSTS and study lead.

In phase one, participants complete an online questionnaire that covers a broad range of topics related to the loss experience. The center is also collecting saliva samples, so researchers can identify candidate genes that may contribute to resiliency or prolong and intensify grief.

In the second phase, two or more members of the same family are interviewed on three separate occasions over two years, either by phone or in person. This long-range data collection gives center experts a closer look at unique loss experiences over time.

“Is a mother’s grief different than a spouse’s grief? Does bereavement change if a service member’s death is combat-related, a suicide, homicide or accident?” Cozza said. “We hope our research will find answers to these questions and more.”

In less than four months, the center has recruited more than 700 participants and collected nearly 300 samples. The center plans to recruit thousands of new volunteers over the next two years.

“This is an opportunity for us to do good work and help people get through a difficult time,” Cozza said. “We hope our findings impact policy in meaningful ways, so survivors grieving the loss of a loved one get the support they need.”

To understand the importance of this study, center experts have put together touching video stories about several of the survivor families that are available at www.militarysurvivorstudy.org/survivor-stories.php.

Study Assesses Mental Health Resilience

The Army Study to Assess Risk and Resilience in Servicemembers (STARRS) is the largest study of mental health risk and resilience ever conducted among military personnel. Investigators are using five separate study components to identify factors that help protect a soldier’s mental health and factors that put a soldier’s mental health at risk. According to Dr. Tom Insel, director of the National Institute of Mental Health (NIMH), this project addresses one of the most pressing public health challenges facing the nation. The project itself has been characterized as “The Framingham Study of Suicide.” It is the largest study of mental health risk and resilience ever conducted among military personnel.

The five-year study will continue through June 2014. It is being conducted by an interdisciplinary team of renowned experts led by Dr. Robert J. Ursano of USU and Dr. Murray Stein of the University of California, San Diego. The research team includes scientists and clinicians from University of Michigan, Harvard Medical School and the NIMH.

Findings will be reported as they become available, so that the Army may apply them to its ongoing health promotion, risk reduction and suicide prevention efforts.

The length and scope of the study allows researchers to focus on periods in a military career that are known to be high risk for psychological problems. The information gathered from volunteer participants throughout the study will help researchers in identifying both potential risk factors and potential “protective” factors. Because promoting mental health and reducing suicide risk are important for all Americans, the findings from the Army study will benefit service members and the nation as a whole.
Center Enlists Multiple Disciplines to Unlock Mysteries of Brain Injury

USU’s Center for Neuroscience and Regenerative Medicine (CNRM), a collaborative intramural federal program involving the Department of Defense and National Institutes of Health, brings together expert clinicians and scientists from across multiple disciplines to catalyze innovative approaches to traumatic brain injury (TBI) research.

The center’s programs emphasize aspects of importance to the military populations, with a primary focus on patients at Walter Reed National Military Medical Center. The University is responsible for its operation and management.

Because of the impact of TBI among military populations, the center served as a catalyst for collaboration, innovation and advancement of knowledge of the incidence of TBI and the identification of interdisciplinary approaches to assess the injury and promote recovery. The center’s research programs address the full spectrum of TBI, with special focus on militarily relevant forms of injury such as blast, penetrating and repeat neurotrauma events, including the effect of high anxiety and concurrent development of posttraumatic stress disorder with brain injury.

Tissue Repository Opens

The world’s first brain tissue repository aimed at helping researchers understand the underlying mechanisms of TBI in service members opened at the center in 2013.

The repository will allow researchers to answer important questions about what happens to the brain after exposure to blasts and whether the different forms of brain injury experienced in the military lead to chronic traumatic encephalopathy. The neurodegenerative disorder involves the progressive accumulation of tau protein in nerve cells within certain regions of the brain.

“Little is known about the long-term effects of traumatic brain injury on military service members,” said Dr. Daniel Perl, a neuropathologist with the center and director of the repository. “By studying these tissues, along with access to clinical information associated with them, we hope to more rapidly address the biologic mechanisms by which head trauma leads to chronic traumatic encephalopathy.”

The U.S. Army Medical Research and Materiel Command provided a multi-year grant to establish the repository.

Partnering to Understand Neurotrauma

Two professors affiliated with the center will participate in new multi-institutional consortia focused on translational and clinical research into posttraumatic stress disorder and the chronic effects of mild traumatic brain injury.

Ramon Diaz-Arrastia, M.D., Ph.D., professor of Neurology and director of Clinical Research at the CNRM, will participate in the consortia, along with Perl. Diaz-Arrastia’s research interests focus on understanding the molecular-, cellular- and tissue-level mechanisms of secondary neuronal injury and neuroregeneration. He will provide access to critical military populations for studies of mild TBI and the many diseases associated with combat duty.

The five-year collaboration, a U.S. Army and Department of Veterans Affairs effort, comprises the Consortium to Alleviate Posttraumatic Stress Disorder and the Chronic Effects of Neurotrauma Consortium. Both consortia are part of the national research action plan for improving access to mental health services for veterans, service members and their families.
While in many ways a typical U.S. academic health center, USU has several unique aspects. These differences include our students—who tend to be a little older and more frequently married—perhaps because they can afford to make these commitments, as they do not have to go into debt to attend school and in fact receive a salary as active-duty officers while in school. The curriculum is also different in its emphasis on disease prevention and health promotion and in teaching students to practice in settings outside of hospitals, offices and clinics.

The University also has a number of centers that bring together multidisciplinary teams to address issues with immediate relevancy to the Military Health System and the U.S. Public Health Service. The centers focus on global health, traumatic brain injury, treatment and prevention of posttraumatic stress, and advanced simulation training. The unique curriculum also includes field exercises that are critical in preparing medical students and advanced practice nurses to practice in potential deployed environments. Our students report a unique “esprit de corps” among their classmates; a recognition that they will be practicing together for some years ahead. They engage in deeply cooperative learning. The most important unique characteristic is its mission to develop the nation’s leadership corps for the future.

Recognizing Military Medicine

On Armed Forces Day in 2013, former Senator Robert Kerrey addressed the University’s graduating classes. Dr. Charles Rice, USU president, introduced him, recalling Kerrey’s service to the nation and the severe wounds Kerrey suffered during the Vietnam War. Despite his injuries from a grenade explosion, he continued to direct his team and caught the enemy in the crossfire. For his actions, Kerrey was awarded the Medal of Honor and the Purple Heart.

Kerrey spoke of the often-unrecognized role of those who provide health care in the military and recalled the occasion when Senator Daniel Inouye received his Congressional Medal of Honor. At that time, Inouye expressed the wish that one of these awards had been given to the person whose job it was to save lives. As Kerrey said, Inouye “wished one of the citations had told the story of the man whose name was called many times during the fighting: ‘Medic!’”

Kerrey gave the following advice to the graduating classes: “More often than not your efforts will keep us alive, will help us mend, will take away our pain. The problem is you may just be too busy or too tired to recognize the good you are doing.

“My only reliable advice is this: Don’t get so tired that you don’t remember how fortunate we are that you have chosen this life. And on behalf of all your patients, who like me will be so anxious to get home that we didn’t say what we needed to say over and over and over again: Thank you, thank you, thank you.”

—Former Senator Robert Kerrey
The Murtha Cancer Center: A Collaborative Effort

The University joined in partnership with Walter Reed National Military Medical Center in 2013 to stand up the John P. Murtha Cancer Center of Excellence. The center, the only Cancer Center of Excellence within the Military Health System, offers its patients access to cutting-edge cancer diagnostic and treatment technologies.

The center is a patient-centric, tri-service military health care facility. Its comprehensive core of military and civilian oncologists, clinicians and researchers provide multidisciplinary cancer-care delivery and patient-family support services. A strong focus on translational research facilitates optimal access to evidence-based clinical practices and access to high-priority clinical cancer trials.

As a founding member, USU provides an essential basic research component augmented by strong collaborations with the NIH’s National Cancer Institute and others.

Center’s Book Becomes National Resource for Disaster and Disease

The Center for the Study of Traumatic Stress published a new book, “Disaster, Disease and Distress: Resources to Promote Psychological Health and Resilience in Military and Civilian Communities” in 2013. The book, a compilation of fact sheets and educational resources developed over a 10-year period, addresses important health and mental health issues of service members and their families impacted by deployments to Iraq and Afghanistan.

The resources are geared toward communities around the globe affected by natural and human-made disasters such as hurricanes, earthquakes and incidents of violence.

Center experts in the fields of military and disaster psychiatry developed the fact sheets in the book, many in the immediate aftermath of specific incidents, to educate military and civilian health care professionals; service members and families; government leaders at the federal, state and local level; and stakeholders in family and child trauma, workplace mental health, public health, human services and academia. The documents focus on planning for, responding to and recovering from traumatic events. Many of these fact sheets address health and mental health issues related to the risks of suicide.

The book features four sections: deployment health issues, family health, disaster preparedness and response, and special populations, such as Guard and Reserve and mental health professionals. The book is available for download at www.cstsonline.org.

Consortium Recognized as Center of Excellence

The Consortium for Health and Military Performance, a joint USU and service effort focusing on the health and performance of the warfighter, reached a notable achievement in 2013: recognition as a Department of Defense Center of Excellence.

The consortium is a joint medical resource for the Department of Defense that provides education, basic and clinical research, and clinical expertise in the area of military-unique human performance optimization. Army Colonel (Dr.) Francis O’Connor, associate professor, is medical director of HPRC, while Patricia Deuster, Ph.D., is a professor and the consortium’s scientific director.

Its Human Performance Resource Center is an online clearinghouse for evidence-based information and key resources to help service members and their families in all aspects of performance to achieve total fitness and, ultimately, human performance optimization.

Optimal performance includes not only being physically active and eating well, but also psychological, social/familial, behavioral, spiritual, nutritional, physical and environmental fitness.

The center has both general and specific information, resources, strategies, tools and apps/videos organized around family and relationships, physical fitness, dietary supplements, nutrition, mind tactics, environment and total force fitness.
USU Sim Center Dedicated to Former Dean

USU’s National Capital Area Medical Simulation Center was dedicated to Dr. Val G. Hemming, (pictured right) dean emeritus of the F. Edward Hébert School of Medicine. He was the impetus behind USU’s Sim Center, one of the largest, most advanced simulation centers in the world.

Hemming’s vision—inspired by his efforts to modernize USU’s curriculum through cutting-edge technology in a risk-free environment—was lauded at the naming ceremony by the event’s keynote speakers, including Maryland Congressman Chris Van Hollen; the Honorable Jonathan Woodson, Assistant Secretary of Defense for Health Affairs; Dr. Ronald Blanck, chair of USU’s Board of Regents; and Dr. Charles Rice, USU president.

It was particularly fitting that Blanck was present at this ceremony. As pointed out by Virginia Senator John Warner in a tribute to Blanck on the Senate floor in May of 2000, “General Blanck supported the establishment of this innovative center” at USU.

“In the military, we have a finite amount of time to create the competency for people who are going to be engaged in real-world situations and global situations—often in austere environments in which their talents are the difference between someone living and someone dying,” Woodson said.

Over the past three decades, simulation technology has gradually become a central part of health science curriculums around the world, and USU’s center is a trailblazing facility. It’s the only place in the nation that offers every facet of health care simulation under one roof, and USU medical students participate in nearly 40 different simulation exercises before they graduate.

The Sim Center has stayed at the cutting edge by incorporating advanced simulation technology and experiential learning into USU’s curriculum, just as Hemming envisioned 14 years ago.

Admiral Personifies USU’s Commitment to Leadership Development

Rear Admiral Helena O. Mishoe, (pictured right) an assistant surgeon general in the U.S. Public Health Service, is responsible for overseeing the National Heart, Lung and Blood Institute’s (NHLBI) health disparities research and training agenda. The NHLBI is part of the National Institutes of Health.

Mishoe, a 2002 alumna of USU’s F. Edward Hébert School of Medicine graduate program in public health, is the first director of the NHLBI’s Office of Research Training and Minority Health. She ensures increased participation in NHLBI’s training and career development programs through recruitment, mentoring and retention of biomedical and behavioral scientists.

“The Uniformed Services University of the Health Sciences is considered the ‘West Point’ for health leaders,” said USPHS Rear Admiral (Dr.) Boris Lushniak, acting U.S. surgeon general. “Since its inception, USU has been providing our uniformed service men and women with unparalleled education and is known for producing a strong cadre of officers who serve their country in the Department of Defense and in the U.S. Public Health Service Commissioned Corps. The graduates of USU are committed to the health care professions serving with excellence in military medicine and public health.

“As a Commissioned Corps Officer, I am proud of our USU graduates who serve nationally and internationally in federal agencies such as the Centers for Disease Control and Prevention, the National Institutes of Health, Indian Health Service, and the Food and Drug Administration,” he said. “The Commissioned Corps USU graduates embedded in these agencies have taken on leadership roles and have demonstrated merit in research, medicine and public health.”
Commencement Blends Tradition With Family

The Uniformed Services University of the Health Sciences commencement exercise is unlike any other graduation ceremony. The event incorporates the traditions and pomp and circumstance of both military service and academia.

During commencement, the president of the University confers both master’s and doctoral degrees to more than 200 students. This convocation marks the culmination of years of study and preparation for military and civilian members of each graduating class. Following the conferring of degrees, the Medical Officers of the Army, Navy, Air Force and Public Health Service leave the auditorium to change from their academic gowns into their service uniforms. On their return, they are sworn into service as physicians by their respective surgeons general.

Because some students are older than traditional graduates of health sciences universities, and because they have been able to attend school without incurring enormous financial debt and in a family friendly environment, USU’s commencements are very large and joyful family affairs. Some students are the first in their extended families to graduate with professional degrees or even from college, so the celebrations are widely shared. It is also true that graduates are leaving the University to go on to work and serve together in ways that are not replicated in other universities. For all these reasons, an extraordinary sense of shared vision and mission marks USU’s commencement.

The Postgraduate Dental College is on a slightly different academic year. Graduates of the college receive degrees in June in ceremonies at the installations where the respective programs are conducted.

Operation Bushmaster Tests Readiness for Combat Care

“Operation Bushmaster” is the University’s capstone field exercise for fourth-year medical students and graduate-level nurse practitioner students to test their knowledge of the challenges of delivering medical care in support of combat, peacekeeping and humanitarian-assistance operations. During these same exercises, first-year medical students receive their first tactical training in a field environment. These students learn directly about battlefield medicine and the demands of caring for patients in a simulated combat environment during these field training exercises at Fort Indiantown Gap, Pa.

The training exercise concludes with a simulated convoy attack during a nighttime operation, resulting in mass casualties. The students then draw on their education, training and experience as they try to make order out of chaos while triaging, treating and evacuating patients.

The “patients” for the exercise are first-year medical students who have had moulage makeup applied to create realistic-looking combat wounds. Seeing these simulated wounds during the exercises helps prepare the students for encountering the real thing for the first time in a combat environment or military hospital like the Walter Reed National Military Medical Center.

Increased emphasis on treating patients as quickly and as far forward as possible presents challenges that those going into military medicine need to be prepared to deal with and are not taught in traditional academic health centers. These include treating patients while under fire, treating injured enemy combatants and working with far less equipment than found in fixed medical facilities. USU’s fourth-year students face those challenges during the field exercise, along with carefully constructed leadership and ethical challenges, as they treat “patients” while rotating through a variety of roles they play as medical officers, litter bearers, logistics officers and unit commanders.

Bushmaster is another example of the unique education and training offered by USU to prepare students to take care of patients under circumstances that in no way resemble ordinary health care practice in an office, hospital or emergency room, but in situations they are likely to face under austere or otherwise challenging conditions.
Research Days Spotlight Student, Faculty Work

Research Days includes lectures, presentations and other scholarly activities of faculty, staff and students’ innovative research, as well as scientists from other institutions who are invited to speak. The 2013 event included the inaugural Faye G. Abdellah Lecture, named after USU’s founding dean of the Graduate School of Nursing with a presentation by Charles Vacchiano, Ph.D., CRNA, a professor of nursing and associate professor of anesthesiology at Duke University and a retired Navy Nurse Corps officer.

Li-Huei Tsai, Ph.D., director of the Picower Institute for Learning and Memory at the Massachusetts Institute of Technology, a leading expert in the field of neuroscience, with several ongoing investigations aimed at understanding the mechanisms underlying learning and memory also spoke.

Jonathan Yewdell, M.D., Ph.D., chief of the Cellular Biology Section of the Laboratory of Viral Diseases at the National Institute of Allergy and Infectious Diseases, was the keynote speaker at the Postdoctoral Fellows Symposium.

The final speaker, Harvey Fineberg, M.D., Ph.D., president of the Institute of Medicine, delivered Research Days’ capstone Presidential Lecture, “Doctors as Decision Makers: Coping With Uncertainty and Human Nature.” He encouraged health professionals at USU to carefully analyze the way they communicate and make important medical decisions.

Besides welcoming leading scientists from premier agencies beyond USU, Research Days also highlight the powerful work happening on campus with a special showcase of more than 300 research posters and lectures from faculty, staff and graduate students in the graduate programs, School of Medicine, Graduate School of Nursing, Postgraduate Dental College and the Armed Forces Radiobiology Research Institute.

Putting Skills Into Action

Navy Ensign John Hunt (pictured second from left) and Army Second Lieutenant Wells Weymouth, both members of the F. Edward Hébert School of Medicine class of 2016, put their emergency medical skills to work when they provided life-saving medical care to accident victims at a store in Gaithersburg, Md., after a car slammed through its walls, striking several people and critically injuring two.

Hunt and Weymouth had just finished phase one of the school’s first-year Combat Medical Skills course. They were on the second day of the course’s next phase when they were asked to go to the store to pick up some supplies for a wound debridement lesson. After picking up the supplies and while still inside the store, the pair witnessed the accident and immediately ran over to assist, assessing the victims’ injuries and checking airways and breathing, among other life-saving steps they had just learned. The pair also used their belts and those of bystanders as tourniquets to stem massive blood loss in one of the victims whose leg was nearly severed.

Emergency responders directly attributed the students’ actions with saving the severely injured man’s life. The Montgomery County Department of Fire and Rescue Services and the Gaithersburg Police Department later presented them with awards for heroism.
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