Scientists have discovered a unique pattern of scarring in the brains of deceased service members who were exposed to blast injury that differs from those exposed to other types of head injury. This new research was published online June 9 in Lancet Neurology, “Characterization of Interface Astroglial Scarring in the Human Brain after Blast Exposure: a Post-mortem Case Series.”

“Our findings revealed those with blast exposure showed a distinct and previously unseen pattern of scarring, which involved the portion of brain tissue immediately beneath the superficial lining of the cerebral cortex – the junction between the gray and white matter – and the vital structures that are adjacent to the cavities within the brain that are filled with cerebrospinal fluid. Those areas of the brain, damaged by blast, suggest that they may be correlated with the symptoms displayed by those who sustained a traumatic brain injury, or TBI,” said Dr. Daniel Perl, study senior author and professor of neuropathology at the Uniformed Services University of the Health Sciences (USU). “This scarring pattern also suggests the brain has attempted to repair brain damage from a blast injury.”

To better understand these blast brain injuries, researchers from USU, the Department of Defense Joint Pathology Center and the University of Colorado’s School of Medicine, examined brain tissue specimens derived from deceased service members, who had been exposed to a high explosive blast injury and had suffered several persistent symptoms. The researchers examined the brain tissues from five service members with remote blast exposures, as well as brain tissues of three service members who died shortly after severe blast exposures. They also compared these results with brain tissues from civilian (non-military) cases, including five with remote impact TBIs, and three cases with no history of a TBI.

“This changes the earlier paradigm of ‘battle injury’ and demonstrates unique and specific biological changes in brains due to these injuries,” said Perl, who also serves as director of USU’s Center for Neuroscience and Regenerative Medicine TBI Brain Tissue Repository.

Military members sustaining a TBI have often reported suffering from persistent post-concussive symptoms, which include a mixture of both neurologic and behavioral disturbances.

“These can include problems such as headaches, difficulty concentrating, sleep disorders, memory problems, depression and anxiety. Despite these prominent symptoms, conventional neuroimaging for mild TBIs typically has not allowed providers to “see” brain abnormalities, leading this to be considered the “invisible wound,” said Perl.

“This publication sheds some light, for the first time, into the nature of the persistent behavioral/neurologic issues being reported in numerous service members who have been exposed to high explosives. It will certainly stimulate important further research and change how we think about these problems. DOD, through the Military Health System, is at the cutting edge of research dedicated to caring for our troops, and I hope that these findings will point the way into devising more rational approaches to their diagnosis, prevention and treatment,” Perl said.

continued on pg. 7
Romero, Rodrick-Thomson Awarded Employees of the Quarter

Diana Romero, an admissions assistant in the USU Office of Recruitment and Admissions, was recognized as the senior employee of the quarter. (Photo by Tom Balfour)

By Staff Sgt. Stephanie Morris

Admissions Assistant Diana Romero, Uniformed Services University of the Health Sciences (USU) Office of Recruitment and Admissions, and Program Support Assistant Melisa Rodrick-Thomson, Department of Medicine, Cardiology Division, were recently recognized as the Senior and Junior USU employees of the quarter, respectively.

Romero's nomination for University Senior Employee of the Quarter was based on “her commitment to excellence of service to the University community,” said Sheena Ferrell, Recruitment and Admissions administrative officer.

According to Ferrell, Romero created and maintained a database which tracked details for 1,200 school of medicine applicant admissions committee reviews. She also reviewed and processed more than 900 applications for the School of Medicine over this past recruitment cycle.

Romero also supports the activities of the Admissions Office by attending Hispanic recruitment events at conferences, colleges and universities.

Ferrell explained that recently Romero provided “a great service” to the office by translating an information pamphlet from English to Spanish. The pamphlet contained information about the School of Medicine, the Graduate Program and the Health Professions Scholarship Program.

“The potential impact of this version of the publication significantly contributes to the university’s goal of improved diversity,” Ferrell said.

Romero has worked at USU for just more than seven years.

Rodrick-Thomson’s nomination for University Junior Employee of the Quarter was also based on “her commitment to excellence of service to the University community,” according to Dr. Louis Pangaro, Department of Medicine professor and chair.

Rodrick-Thomson provides administrative support for intra- and extramural grants, totaling more than $1 million. She also works closely with division research assistants, post-docs, Henry M. Jackson Foundation special projects personnel and other USU support agencies to oversee budget expenditures to ensure appropriate supplies and material are purchased, accounted for, and available to support the division’s research mission.

“Ms. Rodrick-Thomson is an exceptional administrative assistant,” Pangaro said. “She carries out her responsibilities with accuracy and speed, and she is always willing to learn new tasks and take on additional responsibilities.”

In the new “unity of effort” with Walter Reed National Military Medical Center, she has taken on the task of coordinating a new Genetic Arrhythmia Clinic.

During her department’s most recent administrative support shortages, Rodrick-Thompson stepped up, picking up additional grants management tasks, coordinating base and computer system access for new laboratory personnel, and working to resolve laboratory supply delivery issues.

Pangaro highlighted her as, “a problem-solver who succeeds in all of her duties.”

Rodrick-Thompson has worked at USU for 13 years.

Melissa Rodrick-Thomson, program support assistant in the Department of Medicine, Cardiology Division, is the junior employee of the quarter. (Photo by Tom Balfour)
More than 360 uniformed professionals received their well-deserved medical, graduate nursing, and biomedical science, public health and clinical psychology degrees on May 21 – Armed Forces Day – at the Uniformed Services University of the Health Sciences (USU) 37th commencement exercise at the Daughters of the American Revolution Constitution Hall in Washington, D.C.

Gen. John M. Paxton, Jr., assistant commandant of the U.S. Marine Corps, the second highest ranking officer in the Marine Corps, was the featured commencement speaker. “We are honored to be on your team and we desperately need you on our team because you will take us into future centuries, you will keep this great nation alive, you will bring Soldiers, Sailors, Airmen and Marines back to lead productive lives whether it’s inside or outside of the military,” said Paxton. “I am extremely proud of all of you. I congratulate you on all of your academic and medical accomplishments.”

“I challenge you to continue to learn. I challenge you to continue to train. I continue to challenge you to be the best you can because we need you,” Paxton said. “Congratulations, Semper fidelis.”

During one of the nation’s most unique graduation ceremonies, students entered the Hall to “Pomp and Circumstance” performed by “The President’s Own” U.S. Marine Corps Band. The graduates, a mix of military and civilian students, walked across the stage wearing their academic regalia. They received their diplomas and medical student graduates returned to recite their respective service commissioning oaths and receive promotion to their next rank.

Graduates from USU’s F. Edward Hébert School of Medicine include:
- 166 Doctor of Medicine degrees
- 1 Doctor of Public Health degree
- 16 Doctor of Philosophy in Basic Science degrees
- 8 Doctor of Philosophy in Clinical Psychology degrees
- 8 Master of Health Administration and Policy degrees
- 21 Master of Public Health degrees
- 9 Master of Science in Public Health degrees
- 1 Master of Science degree
- 3 Master of Tropical Medicine and Hygiene degrees

The Daniel K. Inouye Graduate School of Nursing at USU will confer:
- 1 Master of Science in Nursing degree
- 45 Doctor of Nursing Practice degrees
- 7 Doctor of Philosophy in Nursing Science degrees

The Postgraduate Dental College will confer during ceremonies this month:
- 66 Master of Science in Oral Biology Degrees

The pulse  June 13, 2016
National Museum of Health and Medicine Becomes Unique Classroom for GSN Students

Liz Lockett, collections manager, Human Developmental Anatomy Center, National Museum of Health and Medicine, offered a brief lecture on the Carnegie Collection and normal human development, to a group of students from the “Advanced Diagnosis and Management in Obstetrics/Embryology” class from the Uniformed Services University of the Health Sciences (USU) Graduate School of Nursing (GSN) May 25, 2016. (National Museum of Health and Medicine photo by Matthew Breitbart/Released)

By Sharon Holland

From Gen. John J. Pershing’s dentures to Civil War soldiers’ colons to the floor of an Air Force emergency room in Iraq, the collections at the National Museum of Health and Medicine live up to their reputation as some of the world’s most interesting specimens for research in military medicine and surgery. The site of many field trips, it also made a unique classroom recently for students in the Uniformed Services University of the Health Sciences (USU) Graduate School of Nursing (GSN).

More than 20 students in the GSN’s Family Nurse Practitioner (FNP) and Women’s Health Nurse Practitioner (WHNP) programs made the three-mile trek to the museum, located in Silver Spring, Md., as part of their “Advanced Diagnosis and Management in Obstetrics/Embryology” course, May 25.

The museum was founded by U.S. Army Surgeon General William A. Hammond as the Army Medical Museum in 1862 during the American Civil War as a repository for specimens of “morbid anatomy” along with foreign bodies and projectiles that had been removed from casualties. Photographs and information were also cataloged and the collection grew dramatically over the years. In the late 1800s and early 1900s, the museum staff engaged in research, including yellow fever and typhoid fever. In the 1940s, the museum’s research was largely focused on pathology, and the organization became an element of the Armed Forces Institute of Pathology, changing its name to the National Museum of Health and Medicine in 1989.

The museum relocated in 2011 to its current location at the U.S. Army Garrison-Val G. Hemming Simulation Center as part of the closure of Walter Reed Army Medical Center. It recently became a part of the Defense Health Agency.

The NMHM’s collections now consist of more than 25 million objects, including 12,000 items of medical equipment, an archive of historic medical documents, collections related to neuroanatomy and developmental anatomy, 5,000 skeletal specimens and 8,000 preserved organs.

Air Force Lt. Col. Jennifer Korkosz, assistant professor and deputy director of the WHNP program, came up with the idea of incorporating those into the classroom as an innovative way for the students to learn embryology.

“For a change of pace, we headed over to the National Museum of Health and Medicine to explore. We started with an informative presentation about medical illustrations and details about how the Carnegie embryology models were created. The Carnegie models are the premier 3D illustrations of embryological development that show us how changes take place in the growth and development of human embryos. By seeing the models, it helps make concepts come together and make much more sense. We got to see and examine a few examples from the collection and learn about the painstaking process through which they were developed,” said

continued on pg 9
Koehlmoos Awarded Navy Medal

By Christopher Austin

Director of the Health Services Administration Division, Dr. Tracy Koehlmoos of the F. Edward Hebert School of Medicine (SOM) at Uniformed Services University of the Health Sciences (USU), was awarded the Department of the Navy Civilian Meritorious Service Medal by the U.S. Marine Corps.

The award was based on her achievements as the special assistant to the assistant commandant of the Marine Corps in 2013 when she moved back to the U.S. from Jakarta, Indonesia, after the death of her husband, Army Col. Rand Koehlmoos.

In her role, she traveled to Afghanistan where she reviewed combat operations health systems. Koehlmoos followed the wounded warrior from the battlefield in Afghanistan to Landstuhl Regional Medical Center in Germany, the Walter Reed National Military Medical Center in Bethesda and finally to rehabilitation centers like the National Intrepid Center of Excellence.

“I conducted analysis of key issues from deployed healthcare providers and their Marine Leaders,” Koehlmoos said. “For example, there was a considerable urgency about the imminent demise of an electronic medical records system. Because of my efforts in awareness building, the Marine Corps reversed its decision and the program was secured.”

Koehlmoos’ career is tied to several accomplishments in the DOD as it continues to evolve to meet new priorities like regenerative medicine, complex allograft transplant, traumatic brain injury, tactical athlete development and more.

“I am just happy that General Paxton and the Marine Corps felt highly enough about me to put in the time and effort to honor me for my service to them,” Koehlmoos said. “It was such a growth experience and it definitely prepared me to lead the work I am now doing at USU.”

Wounds of War, continued from pg. 2

Other members of the research team include co-lead authors Sharon Shively, M.D., research assistant professor in USU’s Department of Pathology and USU contract employee of the Henry M. Jackson Foundation for the Advancement of Military Medicine; Iren Horkayne-Szakaly, M.D., neuropathologist and neuromuscular pathologist, Joint Pathology Center, Defense Health Agency; Robert V. Jones, M.D., senior neuropathologist, Joint Pathology Center, Defense Health Agency; James P. Kelly, M.D., professor of Neurosurgery and Physical Medicine & Rehabilitation, Colorado School of Medicine; and Regina C. Armstrong, M.D., professor of Anatomy, Physiology and Genetics, and director of USU’s Center for Neuroscience and Regenerative Medicine at USU.

Funding for the study was provided by the Defense Health Program.
USU Welcomes New EEO Manager

By Sharon Holland

Polly A. Saddler returned to the Uniformed Services University of the Health Sciences (USU) campus May 31 as the University’s new Equal Employment Opportunity (EEO) Manager.

Saddler is a Navy veteran formerly assigned as a health services management specialist at Walter Reed Army Medical Center from 1995-2001. She spent the next six years in the Department of Psychiatry at USU serving as a health services management specialist, where she managed the department’s third- and fourth-year programs, and as the military EEO representative.

First Graduate School of Nursing Alum Chosen for Flag Rank

By Sharon Holland

U.S. Public Health Service Capt. Susan Orsega was selected for promotion to Rear Admiral, becoming the first graduate of the Uniformed Services University of the Health Sciences (USU) Daniel K. Inouye Graduate School of Nursing (GSN) to do so. Orsega is a 2001 graduate of the GSN's nurse practitioner program.

The announcement came from U.S. Surgeon General Vice Adm. Vivek Murthy, who also appointed Orsega as the new Nurse Chief Professional Officer for the U.S. Public Health Service. As such, she will provide guidance and advice to the Surgeon General and administrative committees on matters such as recruitment, retention, and career development for officers within the nurse category.

Following her military career, Saddler served as a military human resources manager and EEO specialist at the Joint Task Force National Capital Region for five years, and as an EEO specialist at the Defense Health Agency for the past three years.

Saddler will oversee the EEO program, advise University leadership about specific concerns and ensure that we are in compliance with federal EEO laws. In addition, she will assist all civilian employees in discriminatory matters that have to deal with a workplace issue and oversee EEO training for employees.

Orsega is assigned as a senior program management consultant officer to the Department of Health and Human Services. She works at the National Institute of Allergy and Infectious Diseases (NIAID) at the National Institutes of Health. In this role, she serves as the lead program officer responsible for an international South African HIV research program, a partnership between NIAID, the Department of Defense and the South African National Defense Force involving 6,000 patients and 120 South African staff. She also plays a similar role with the Mali Africa NIAID TB-HIV project. She has traveled extensively to both African sites providing leadership, mentorship, training and site research operation guidance to the clinical staff.

“We are proud of Susan’s many NIAID achievements and her work in global health research,” said GSN Dean Dr. Carol Romano. “She remains active with the GSN and we look forward to our continued partnership.”
Darling Named Chair of Dermatology Foundation Committee

By Sharon Holland

Thomas Darling, M.D., Ph.D., chair of USU’s F. Edward Hébert School of Medicine dermatology department, was recently selected to chair the Dermatology Foundation’s 2016 Medical and Scientific Committee.

Darling has served as a member of the Medical and Scientific Committee for more than three years. The committee consists of clinicians and scientists from a number of U.S. universities throughout the country. They evaluate and rank research award applications for Dermatology Foundation funding each year using the NIH grant review procedure to identify promising and innovative investigators to advance dermatology research and improve patient care.

"I really enjoy working on this committee and the grant applications we review because it’s about the future of dermatology. We take the review of award applications very seriously. It’s so important for developing research careers and advancing knowledge about the skin and skin diseases. It’s exciting to see the high quality of the science being proposed, and how well qualified these budding investigators are.”

Darling was selected for his outstanding knowledge, research experience and his ability to identify applicants with clear potential to advance the dermatology specialty.

"This committee is such an outstanding group. The variety of backgrounds, experience, and science that we represent leads to discussion that really enables us to dissect and examine the great things about each application,” Darling said. “As chair,...

Museum, continued from pg. 6

"Educating nursing and medical students and other trainees has been part of the museum’s mission since 1862, so we’re glad to be able to continue that mission today with USU students,” said Andrea Schierkolk, NMHM public programs manager. "Connecting our research collections to current educational activities helps position the museum to support future research in many areas of concern to military medicine.”

"One of the best things about being at USU is the opportunity to interact with a variety of military clinicians. Lt. Col. Korkosz, like many of our military faculty, helps keep our curriculum fresh because she brings recent, relevant clinical experiences with her, but these faculty also energize the community with new ideas and help create novel learning experiences for USU students,” said Dr. Diane Seibert, interim associate dean for academic affairs in the GSN. “Innovative instructional approaches like taking the students on field trips, often make lasting impressions because these experiences spark curiosity and directly connect the real world to the learning experience, enhancing student learning.”
Navy Ensign Kayla Torrez-Chang, a first-year Uniformed Services University of the Health Sciences medical student, plays her harp for fellow students, faculty and staff members during the quarterly Apollo Society Open Mic at USU, June 8. Torrez Chang has been playing the harp for 21 years and this particular harp since she was eight years old. (Photo by Staff Sgt. Stephanie Morris)