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the pulse

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Learning to Care for Those in Harm's Way

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**On the cover**

USU Medical and Clinical Psychology students and a K-9 trainer enjoy the company of some of the companion dogs from Warrior Canine Connection. See full story on Page 3. (Photo by MC3 Laura Bailey).

Deering Named Chair of Obstetrics and Gynecology Department

Courtesy Article

Army Col. (Dr.) Shad Deering will be the next chair of Obstetrics and Gynecology in the F. Edward Hébert School of Medicine at the Uniformed Services University of the Health Sciences (USU), according to an announcement by School of Medicine dean Dr. Arthur L. Kellermann May 8, 2015.

Deering, a board-certified perinatologist who currently serves as assistant dean for Simulation Education in the School of Medicine at USU and the deputy Medical Director for the University's Val G Hemming Simulation Center, will succeed Air Force Col. (Dr.) Christopher Zahn, who retired earlier this year to become the Vice President for Practice Activities at the American College of Obstetrics and Gynecology. As chair, Deering will oversee the academic activities of a department that teaches medical students, conducts research and supports USU faculty working in military treatment facilities stretching from Walter Reed National Military Medical Center, Bethesda, Md., to Tripler Army Medical Center in Honolulu, Hawaii.

"Col. Deering is the ideal choice to lead our Department of Obstetrics and Gynecology. He is a national leader in simulation education and patient safety. In addition to being an outstanding military officer, he has impeccable credentials in academic and clinical medicine," said Kellermann.

He is a 1993 graduate of the United States Military Academy at West Point, and a 1997 alumnus of School of Medicine at USU. He completed an obstetrics and gynecology residency at Walter Reed Army Medical Center/National Naval Medical Center, and later completed a three-year maternal-fetal medicine fellowship at Georgetown University Hospital.

Deering's first assignment after fellowship was at Madigan Army Medical Center, Tacoma, Wash., where he was the chief of Obstetrics. While there, he deployed in support of Operation Iraqi Freedom as the medical director for the Deployed Combat Casualty Research Team which was responsible for oversight of more than 100 research protocols in the combat theater of operations. While at Madigan, he also became the medical director for the Andersen Simulation Center. Throughout his six years in that position, he started, and continues to chair, the Army Central Simulation Committee, which is responsible for oversight of medical simulation for graduate medical education in the Army,

and trains more than 50,000 providers on an annual basis at the Army's 10 training hospitals.

Deering developed the Mobile Obstetric Emergencies Simulator (MOES), a highly innovative training program that provides simulation training on an actual labor and delivery unit to improve safety. It has been implemented in every hospital in the U.S. Military Health System that offers obstetric services. MOES was awarded two patents and won a Department of Defense Patient Safety Award for Technology as well as the Federal Laboratory Consortium Award for Excellence in Technology Transfer. Deering has authored or co-authored more than 100 publications with an emphasis on patient safety.

In 2011, he returned to USU to serve in his current capacity. As such, he has increased training within his division by more than 100% and worked to integrate high-fidelity trauma simulation into the Military and Emergency Medicine department curriculum and the University's capstone interdisciplinary field exercise, Operation Bushmaster.

Deering is the current chair of the ACOG Simulation Consortium, chair of the Society for Maternal-Fetal Medicine Simulation subcommittee, and the Chair of the Medical Modeling and Simulation Training Working Group, which was created at the direction of the Assistant Secretary of Defense for Health Affairs, and charged with developing the enterprise solution for medical simulation within the Military Health System. He remains an active clinician. He has delivered babies in 10 different states and a combat zone.



Army Col. (Dr.) Shad Deering will be the next chair of Obstetrics and Gynecology in the F. Edward Hébert School of Medicine at USU. (Photo by Sharon Holland)

NIH Director Dr. Francis Collins to Speak at Uniformed Services University 'Research Days'

by Sharon Holland

National Institutes of Health director Dr. Francis Collins will deliver the Presidential lecture during the Uniformed Services University of the Health Sciences (USU) annual Research Days symposium, May 12-13. More than 300 basic and clinical scientists and students will also present their scholarly works during the two-day event held on the university's campus.

This year's theme, "Celebrating Excellence in Research," reflects the complementary roles that nursing, public health, behavioral science, basic science, and medicine play in health promotion. The annual two-day event formally encompasses four primary events -- the Graduate School of Nursing Research Colloquium, which brings together faculty and students to present and discuss nursing-specific research findings; the Graduate Student Colloquium, which highlights the research interests and accomplishments of graduate students in USU's F. Edward Hébert School of Medicine; and the Postdoctoral Fellows Symposium and Faculty Senate Research

Day, which draw the entire USU community to share research achievements, foster collaborations, and stimulate intellectual exchange. Together, these events serve to inform the local scientific community, collaborative institutions, and other federal agencies about significant research projects conducted across the health sciences at USU and its affiliates.

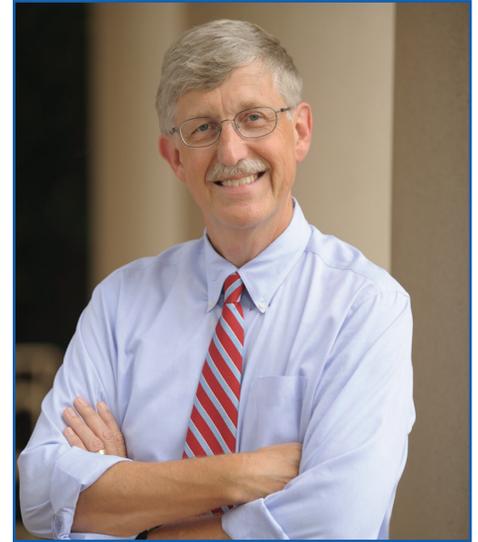
Collins will present, "Exceptional Opportunities in Biomedical Research," on Wednesday, May 13, in the University's Sanford Auditorium.

On Tuesday, May 12, Janet D. Pierce, Ph.D., APRN, CCRN, FAAN, the Christine A. Hartley Endowed Professor of Nursing from the University of Kansas School of Nursing, will present "Researchers: Guardians of Science," as this year's Faye G. Abdellah Lecturer.

Mary Helen-Barcellos-Hoff, Ph.D., professor of Radiation Oncology and Cell Biology and director of Radiation Biology at the New York University School of Medicine, Langone Medical Center, will deliver the first Armed Forces Radiobiol-

ogy Research Institute Lecture, "Cancer in Context: A Systems Biology Approach to Radiation Carcinogenesis."

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NIH Director Dr. Francis Collins will deliver the Presidential lecture during the USU annual Research Days event. (NIH Photo)

CDP-led program cited as model for mental health legislation

Courtesy Article

Indiana Senator Joe Donnelly introduced legislation recently to improve mental health services for veterans, and is citing a program that uses content developed at the Uniformed Services University of the Health Sciences (USU) and speakers from the University's Center for Deployment Psychology (CDP) as the model for future endeavors.

Donnelly introduced the "Community Provider Readiness Recognition Act," which was inspired by the Star Behavioral Health Providers (SBHP) program. Since 2011, USU's CDP, the Military Family Research Institute at Purdue University, state National Guard and other local partners have worked together to develop the SBHP program in the state of Indiana with expansion to other states, currently including Michigan, Georgia, South Carolina, Ohio, New York and California.

SBHP is a tier-based continuing education program offering CEUs to clinical professionals through up-to-date workshops focused on the unique needs of the military community. SBHP aims to enhance behavioral health providers' scope of knowledge and skills for addressing the

deployment- and reintegration-related concerns of military Service members, Veterans and their families. This distinct program promotes grassroots networking by providing training events in various parts of the state and actively involving the National Guard and the National Guard Bureau Directors of Psychological Health.

CDP faculty members create and maintain the curriculum for SBHP and deliver the workshops several times a year in each state. In addition, CDP faculty trains mental health professionals from local communities in the select states to deliver the Tier One presentations. CDP speakers and trainers are nationally-recognized subject matter experts in deployment psychology and evidence-based therapies. CDP presentations for SBHP and other programs have been consistently evaluated by participants as highly effective, both in content and competency.

Providers who complete all three tiers of SBHP have a greater understanding of military culture, deployment cycle stressors, combat-related conditions, and effective, evidence-based treatments for behavioral health problems including insomnia, suicidal behavior, and PTSD. SBHP also provides a searchable, confiden-

tial registry of participating providers who have completed these varied tier levels so Service members, Veterans, and their families know they are entering a therapeutic relationship with a provider who elected to receive additional training to care for their unique needs.

Additionally, the state National Guard checks each provider's licensing credentials to ensure all providers on the SBHP registry are current and in good standing with their particular licensing board.

"Today, less than one percent of the U.S. population serves in the U.S. military. As a result, few civilian clinical providers – doctors, nurses and behavioral health professionals – have even a basic level of knowledge about military culture and the stressors and rewards of military service. Working with its partners, USU's Center for Deployment Psychology created the Star Behavioral Health Provider program to bridge this gap in understanding," said Arthur L. Kellermann, MD, MPH, dean of USU's F. Edward Hébert School of Medicine. "In my view, any civilian healthcare professional who treats veterans, active duty service members and their family members should have this training."

Twins retire with 50 combined years of USU service

by Mass Communications Specialist 3rd Class Laura Bailey, writer and photographer

Fraternal twins, Tina and Rina Roberts, have just retired from Uniformed Services University after a combined 50 years, May 1.

In that span, they have seen many members of USU community come and go. Students graduate, faculty retire and staff head to their next duty stations. Farewells are inevitable, but the retirement of Rina and Tina Roberts of the James A. Zimble Learning Resource Center (LRC), is perhaps the first of its kind in the university's history.

In 1982, Rita jumped at a job opportunity at the university as a clerk-typist. She went on to become a library technician in the LRC at USU, conducting inner library loans. Ten years later, Tina joined her when she was hired in the LRC's references department.

Together, they have directly contributed to the successful distribution of more than 500,000 USU library resources internally and to libraries across the country, said Alison Rollins, head of reference and inter-library loans at the LRC at USU. Resources include articles from medical journals, books, dissertations and proceedings. This was no small task, but the twins remained undaunted day after day. Their mission was to get people the resources they needed as quickly as possible.

"Sometimes they would need some-

thing in a hurry and we would get it to them right away," said Tina. "We'd jump on it."

Advances in technology throughout the years and the ability to send requests via the internet made it possible for the quick turn-around, but it wasn't always so easy, said Tina. Hours spent hunched over a copier machine were just the beginning of a time-consuming two-week process that included "snail mailing" materials to requestors. Now, everything is sent through email and can usually be sent within an hour of the request.

Helping others has always been the highlight of their time at USU, even before there was internet, they said.

"I've really enjoyed working here," said Tina. "This has been my favorite job – just being around the students, the faculty and our co-workers. We'll miss the people the most."

"When we came here, it was like our second family," said Rina. "They appreciated us, they supported us, they gave us encouragement and they got us through. We've worked other places, but it wasn't like that. This is just a special place."

Retiring is bitter sweet, but they're ready for this new chapter to begin.

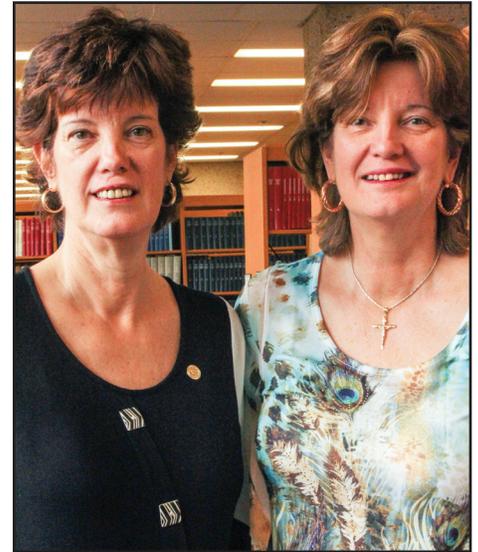
"We have a house on the beach in Ocean City, Maryland, and our plan is to move down there with our mom. She's

turning 90," said Rina. "I also want to volunteer at my church there."

Both of them are especially excited about volunteering at a horse farm.

"I love horses," said Tina. "I want to take care of them, learn to ride, brush them and feed them."

They both said they will continue to do in retirement what they did in their years at USU, which is to continue helping others and being the best they can be.



Fraternal twins, Rina (left) and Tina (right) Roberts retired together after 50 combined years of USU service. (Photo by MC3 Laura Bailey)

USU Hosts 10th Annual Amygdala, Stress and PTSD Conference

by Mass Communications Specialist 3rd Class Laura Bailey, writer and photographer

Clinical and basic science experts from around the world convened for the 10th Annual Amygdala, Stress and Post-traumatic Stress Disorder (PTSD) Conference, sponsored by the Uniformed Services University Center for the Study of Traumatic Stress, in collaboration with the USU Departments of Psychiatry and Family Medicine, the USU Neuroscience Program, and the Walter Reed National Military Medical Center Department of Psychiatry, Apr. 21. Over 400 clinicians and scientists registered for this outstanding conference which seeks to address the biological underpinnings of stress.

This year's theme, "Of Mice and Man," focused on the translation of science across the spectrum from the bench to the field. Featured speakers included: Dwight Berles, Ph.D., The Johns Hopkins School of Medicine, "Dynamic Behavior of Oligodendrocytes and their Progenitors in the

Adult Brain;" Harvey Pollard, M.D., Ph.D., USU, "Big Data Meets the Brain;" Abigail Marsh, Ph.D., Georgetown University, "Empathy on a Sliding Scale: Is Altruism the Inverse of Psychopathy?"; Jacek Debiec, M.D., Ph.D., University of Michigan, "The Neurobiology of the Intergenerational Social Transmission of Emotional Trauma;" and Daniel Stein, M.D., Ph.D., University of Cape Town, South Africa, "Trauma and PTSD in South Africa." These excellent presentations covered the wide range of scientific inquiry needed to uncover and address the roots of stress and trauma.

Participants freely discussed PTSD across invisible boundaries that sometimes stand between scientists and clinicians, said Dr. Robert Ursano, a professor of Psychiatry and Neuroscience and chairman of the Department of Psychiatry at USU. From small group sessions to large audience presentations the conference engaged with at-

tendees in order to maximize the interaction and potential collaborations between scientist and clinician.

"We're trying to take that somewhat technical information and deliver it in an interpretable and usable way for clinicians," said assistant chair of Research and assistant professor, Army Lt. Col. (Dr.) Gary Wynn, Department of Psychiatry, and scientist, Center for the Study of Traumatic Stress, USU.

Wynn said the conference allows scientists and clinicians to see the excellent work being done by researchers striving to solve PTSD and allows scientists to discuss concepts and future avenues of possible research needed to solve gaps in current clinical care.

"This conference offers a fresh perspective for hard working scientists and clinicians needing reinvigoration," he added. He hopes what was learned will be shared with others.

USU Test to "Sniff" out brain injuries

by Eric D. Ritter Writer/Editor

A new way of detecting Traumatic Brain Injuries (TBI) among injured service members is showing signs it can pass the "smell test", literally, thanks to research from Uniformed Services University's (USU) TBI Surgical Research Program.

Research on 231 Soldiers at the Walter Reed National Medical Center who had been injured due to explosions during tactical combat operations overseas were given the test shortly after their arrival to the medical center. Time is important with the test, so the injured service member had to be transported as quickly as possible to the medical center to be analyzed.

According to lead author of the study, Air Force Col. (Dr.) Michael Xydakis of the Department of Surgery in the F. Edward Hébert School of Medicine at USU, the olfactory test will help identify brain trauma shortly after an event while on the front lines of combat.

"This study is the first to investigate olfactory impairment in combat casualties during the acute and subacute phase of injury," Xydakis said.

The official name of the test is the Acute Military Measurement Olfaction (AMMO) identification test.

The olfactory system processes thousands of different odors, sending signals to the brain which interprets the smell by linking it to a past memory. If memory is impaired, as is the case with Alzheimer's disease, sleep deprivation, and acute traumatic brain injury, the task is not entirely possible. When the smell test was abnormal in a subject, those soldiers were all found to have abnormalities on their brain scans.

For years, the Department of Defense has been looking for a rapid screening test to diagnose TBI. Xydakis said since olfactory difficulties are so commonly associated with damage to the brain, it could help determine who should be removed from the field for further testing.

"Ultimately, the compelling interest identified by the DoD is the development of an FDA-approved diagnostic instrument which will assist in-theater military providers in determining which troops, sustaining combat-related injuries, require advanced neuroimaging," he said.

Having an accurate test that can help better identify an acute brain injury won't just help the service members with proper

care, but it will also help reduce the resources it takes to transport patients in a hostile area.

"Getting a CT scan in a combat zone is often the equivalent distance of placing a soldier on a helicopter in Washington, D.C., and sending them to Boston," he exclaimed. "It requires a significant investment in personnel and aviation resources, and not to mention flying troops over hostile terrain."

Xydakis sees a broader use for the USU-developed test outside of just the military. It is designed for anyone on the frontlines and that includes first responders like police and firefighters who may be exposed to civilian polytrauma patients.

Xydakis said the reaction from the medical community has been overwhelming. The test has been highlighted in dozens of publications, including the journal "Neurology".

As much pride and passion Xydakis said he is feeling regarding the test, he is enjoying that USU, as a whole, is taking center stage on such a large level to help deliver medical excellence.



Air Force Col. (Dr.) Michael Xydakis of the Department of Surgery in the F. Edward Hébert School of Medicine at USU wrote the report explaining the importance of linking loss of smell with TBI. (Courtesy photo)

"It's exciting to me," he said. "This continues to show USU's dedication to providing the best quality combat care in medicine."

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

Joining Collins on Wednesday, May 13, Kim Lewis, Ph.D., University Distinguished Professor and Director of the Antimicrobial Discovery Center, Department of Biology at Northwestern University, will present the USU Postdoctoral Lecture, "The Quest for Novel Antibiotics."

Army Capt. Paul Joseph Crites, DDS, MS, Department of Oral Biology in USU's Postgraduate Dental College, will deliver the Dental Award Lecture,

"A Report on a Thesis: Microtensile Bond Strength of an Adhesive System Containing 0.2% Chlorhexidine."

Rounding out the day's talks on Wednesday will be the annual Wu and Leonard Award for Excellence in Research lectures. The awards are named for former USU department chairs, Henry C. Wu, Ph.D., and James J. Leonard, M.D. Army Lt. Col. (Dr.) Michael Ellis, deputy director of the Infectious Diseases Division in USU's Department of Medicine, this year's Leonard Award recipient, will give, "Prevention of Skin and Soft Tissue Infections in Military Trainees: Results from a Field-based Prospective," while Michael J. Daly, Ph.D., professor in the Department of Pathology at USU, the Wu Award recipient, will present, "A Revolutionary Approach to Vaccine Development: Deinococcus radiodurans Mn Antioxidants."

Jindal selected for Fulbright-Nehru U.S. Distinguished Chair to India

by Eric D. Ritter, Writer/Editor

Dr. Rahul M. Jindal, Professor of Surgery and Global Health here at Uniformed Services University (USU), was recently selected for the Fulbright-Nehru Distinguished Chair to India.

The scholarship program is sponsored by the U.S. Department of State and consists of 40 distinguished lecturing and research awards. The selection will provide Jindal the opportunity to teach and conduct research for the next four months in India on transplantation medicine.

"The Fulbright Award is probably one of the highest academic achievements," Jindal said. "It allows me the opportunity to do research and teach in another country. My clinical and research work in the field of transplantation science and immunology strongly prepared me to apply for the program and ultimately be selected."

The primary goal for Jindal there is to increase understanding of transplant tolerance in a large cohort of patients undergoing kidney transplantation. Specifically, to evaluate and analyze the clinical tolerance in living renal transplantation cases. The second goal is to give seminars on the principles and practice of organ transplantation. The emphasis of these lectures will be on transplant tolerance.

Jindal added that his selection for the

Chair will also have direct positive impacts with USU staff and students.

"I took a study team from USU to India last September. As a result of this, we have signed two Memoranda of Understanding (MOU) with Indian universities and will allow some of our final year students to spend time in India for electives (Surgery and Tropical Medicine)," he said. "We already have a MOU with the Armed Forces College of Medicine, Pune, India. Four of our students will travel there to spend four to six weeks this year and in later years. Jindal continued that the Fulbright award will strengthen the collaborations he's been working on.

Jindal also said while he is there, he will use his position to increase the collaboration between military and civilian medicine.

"The scholarships have an enormous "name recognition" in India and other countries," he said. "I will be able to leverage this to increase military-to-military and military-to-civilian partnerships with various entities in India. I hope to see that will have a positive long-term impact."

Jindal concluded the award is one of the bigger personal and professional honors he's experienced in his long surgical career.



Dr. Rahul M. Jindal, Professor of Surgery and Global Health USU, was recently selected for the Fulbright-Nehru Distinguished Chair to India. (courtesy photo)

"I was very excited to be selected as it will further my own career and also give recognition of the academic work done by our university," Jindal said. "I will not only work at the host university in India, but also lecture in several other centers of excellence in India. I'm very pleased I've been allowed this opportunity."

Female children of service members more vulnerable to eating disorders, obesity than civilians

Courtesy of Medical and Clinical Psychology

Adolescent female military dependents may be at higher risk than civilians for eating disorders and associated problems, according to a study released May 8, 2015, in the online version of the International Journal of Eating Disorders. The study, "Comparison of Overweight and Obese Military-Dependent and Civilian Adolescent Girls with Loss-of-Control Eating," gives insight into the additional vulnerabilities of adolescent female military dependents and shows that they reported more disordered eating and depression than civilians.

Researchers from the Uniformed Services University of the Health Sciences, Fort Belvoir Community Hospital, and National Institute of Child Health and Human Development, led by Marian Tanofsky-Kraff, Ph.D., associate professor of

Medical and Clinical Psychology and director, Developmental Research Laboratory on Eating and Weight Behaviors at USU's F. Edward Hébert School of Medicine, conducted a study of 23 female overweight adolescent military dependents and 105 age- and BMI-matched civilian peers. All participants completed interview and questionnaire assessments of eating-related and general psychopathology, and metabolic function was measured for all participants.

Military dependents reported more binge eating episodes over the previous three months compared to civilians. Seventeen percent of military dependents met criteria for Binge Eating Disorder as compared to only 2% of civilians. Compared to civilians, military dependents reported more shape, weight, and eating concerns. Military dependents also reported greater depressive symptoms. Also, although pre-

liminary, findings suggested that military dependents may be more likely to have clinically significant insulin resistance than civilians.

"Previous research suggests that military dependents may face additional stressors compared to their civilian peers," said Natasha Schvey, Ph.D., a post-doctoral fellow in the Department of Medical and Clinical Psychology at USU, and lead author of the study. "The present study suggests that even when girls are matched on known risk factors for obesity and eating disorders, adolescent military dependents may be at greater risk for poor physical and psychological outcomes."

The authors say that these findings may demonstrate the unique vulnerability of military dependents and highlight a need to assess military dependents for eating-related and general psychopathology.

Warrior Canine Connection connects with USU students

by Mass Communications Specialist 3rd Class Laura Bailey, writer and photographer

The Uniformed Services University Psychology Club, along with the Department of Medical and Clinical Psychology, hosted a group of service dogs and their trainers, April 15, to demonstrate the benefits of having canine companions for veterans affected by psychological trauma.

The group from the Warrior Canine Connection (WCC) brought with them years of experience in social education the USU students can use in future psychological cases they feel a veteran can benefit from programs like that.

There are several local and national canine companion programs veterans have access to like Canine Companions for Independence, Vets Adopt Pets, American Vet Dogs and several others that are available for veterans to receive companion care.

According to Army Lt. Kathryn Eckland, a medical and clinical psychology student at the F. Edward Hébert School of Medicine at USU and treasurer of the Psychology Club, "The WCC enlists recovering warriors in a therapeutic mission of learning to train service dogs for their fellow veterans."

WCC executive director Rick Yount has been working with service dog for over two decades to develop therapeutic models designed to help military personnel with post-traumatic stress disorder (PTSD) and traumatic brain injury (TBI).

The warrior dog-training program provides a safe, effective, non-pharmaceutical intervention to help treat the symptoms of PTSD and TBI. The pilot program, established in 2008 at Palo Alto Veterans Affairs Men's Trauma Recovery Program (TRP) in Menlo Park, Ca., became a highly respected intervention.

The program expanded in 2009 to include Walter Reed Army Medical Center's Warrior Transition Brigade in Washington, D.C. The canine program grew substantially when, in October 2010, WCC was asked to be part of the PTSD and TBI research, treatment and education mission at the National Intrepid Center of Excellence (NICoE). After that, the canine program became readily available to USU students interested in working with therapy dogs.

Since its inception, the program has worked with thousands of service members and veterans who have participated

in the program. For just one example of the program's effectiveness, Yount recalled there was a Marine who had tried to take his own life a few months before entering the TRP, and weeks into the program, the Marine wouldn't engage while refusing to talk to other Marines. He would just sit in the corner with his sunglasses on, twitching and stayed really angry.

One day, Yount brought a service dog with him to the TRP and sat down with him next to the Marine.

"I didn't even try talking to him, because I knew it was pointless," said Yount. "He wasn't going to talk to me, but the dog was the secret weapon."

The dog went up to the Marine and started nudging him on his leg. The Marine turned to the side as if to say he didn't want anyone to bother him, let alone this dog, said Yount. So, the dog tried again to get the Marine's attention by nudging him. This happened several more times. This dog wouldn't stop until the Marine petted him, he said.

"Finally this dog jumps up on the Marine's lap and gives him a sweet little kiss on his cheek," said Yount. "I'm sitting there watching out of the corner of my eye. Then I say [to the Marine], 'Boy this dog really seems drawn to you, and I could really use some help to train this dog to help with wheelchairs and open doors to help out a veteran. If you wouldn't mind, I could use your help.'"

He gave the Marine an application to become a trainer. The next morning he learned the Marine had filled out the application and slipped it under the therapist's door.

"Everything they were throwing at him [the Marine], all the therapies, all the hospitals he was at – in his heart of hearts, he [the Marine] didn't feel like he deserved to feel better," said Yount. "So, what we're doing is flanking that resistance to treatment."

He explained to Psychology Club members that often times, those who don't feel they deserve to "feel better" just need the right "purpose" in order to propel them toward healing.

"To take somebody [warriors] out of in-theater operations where their lives depend on each other working together and then pulling them out of that – I think you create such a void-of-purpose," said Yount. "We need to do as much as we can to try and fill that."

Training a service dog relieves symptoms of PTSD and TBI and provides a "social lubricant," said Yount.

"When he [the Marine] would go out with his beautiful golden retriever, rather than him being isolated, the dog pulled people into him," he said. "It's also a buffer." Strangers are less likely to unintentionally ask questions that spark PTSD or TBI symptoms, he said.

"It's not 'Hey, you were in the military. What did you do?' It's 'Hey, what's your dog's name?'"

Yount told students there are several books, literature and websites veterans can read to get more information. They all work to explain the animal-human connection.

Powerful brain chemistry is at work when wounded warriors train dogs, said Yount. Oxytocin, a feel-good hormone, releases in the brain causing a "profound

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Specially-trained therapy dogs were brought to USU by the Warrior Canine Connection to show students and staff the effectiveness of canine companionship to help ease symptoms of psychological issues such as PTSD. (Photo by MC3 Laura Bailey)

CDC Director Tom Frieden Delivers 2015 Packard Award Lecture

by Mass Communications Specialist 3rd Class Laura Bailey, writer and photographer

Dr. Tom Frieden, director of the Centers for Disease Control and Prevention, presented "Ebola: Past, Present and Future and other Global Health Issues" during the 2015 David Packard Award Lecture at the Uniformed Services University, April. 15.

Frieden's lecture primarily focused on the recent Ebola outbreak and timeline of events and emphasized that rapid intervention is key to responding to that type of global health situation.

Frieden became director of the CDC in June 2009. He is especially known for his early work in tuberculosis control and the recent Ebola epidemic.

"We believe that Ebola virus is enzootic," said Frieden.

Infected bats come into contact with primates or other mammals which then expose humans to the virus, he said. This "theory" is likely how the virus transmits from the animal to human world and how a single Ebola outbreak can become an epidemic.

Frieden mentioned three core outbreak response essentials as identified by the CDC – speed, flexibility and making sure the front lines receive help first. Perhaps, of the three, speed is the most important, he said.

In September 2014, the CDC predicted that Ebola cases would roughly triple for every month of delayed intervention. Rapid

isolation and treatment of Ebola – or RITE treatment, developed by the CDC, addresses this concern. The CDC rightly predicted that employment of RITE treatment would lead to a rapid, exponential fall.

"Response time matters more than it's really possible to grasp," said Frieden. "By getting there quickly we could cut duration of the outbreak in half and double survival."

Frieden also discussed the collaboration between the CDC and the Department of Defense.

"From my time as CDC director it's been a very productive, constructive, respectful relationship between DoD and CDC and I look forward to a continuing and deepening partnership and collaboration."

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

Previous Packard Award Lecturers include Nobel Laureate Dr. Stanley Prusiner and NIH Director Dr. Francis Collins, among



Dr. Tom Frieden, director of the CDC presents "Ebola and Other Global Health Threats: Past Present and Future" to attendees during the 2015 David Packard Lecture at USU. (photo by Tom Balfour)

many other distinguished scholars and scientists.

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sense of attachment" in the trainer and dog. Fear and anxiety decrease as a result, while trust between dog and human increases.

"We try to get people [wounded warriors] to challenge their distorted cognitive thoughts," said Yount. "In order to convince this dog that the world's a safe place, you pretty much have to convince yourself. We're seeing that something as simple as a sweet golden retriever bumping into you or using you as a pillow can sometimes do what eight different meds can't do. It's fascinating."

According to many of the canine companion websites, their hope is that more research will provide more concrete scientific evidence that dogs provide powerful therapeutic support that improves the lives of wounded warriors and their loved ones.

More evidence is being sought out through current collaborations with researchers at NICOE, USU and private academic institutions.

F. Edward Hébert School of Medicine Holds Graduation Awards Ceremony

By Sharon Holland

The F. Edward Hébert School of Medicine at the Uniformed Services University of the Health Sciences (USU) held its Class of 2015 Graduation Awards ceremony May 7.

More than 30 awards were presented to 38 members of the class, along with three School of Medicine faculty. Additionally, 15 students were recognized for their induction into "Who's Who Among Students in American Universities and Colleges," and 16 were lauded for their role as student members of the School of Medicine Admissions Committee.

"In the years since the University and School were founded, the individual and collective achievements of our 5,000-plus alumni, and the talent and potential of this and every graduating class offer a powerful validation of Congressman F. Edward Hébert's vision," School of Medicine dean

Dr. Arthur Kellermann said in addressing the awards assembly. "As a few you know, my hobby is Twitter. On the way in to work today, I sent out two Tweets. The first said, 'Today is our annual awards day at "America's Medical School," when we recognize and celebrate the best of the best.' The second read as follows: 'It requires character and intellect to get admitted to USU, tenacity and discipline to graduate, and an extra dose of gift and grit to excel.'

"The values that Chairman Hébert displayed as he fought to create this University – foresight, tenacity and an indomitable will to succeed are on full display today. And yes, "gift and grit" are on display, too. Every student and faculty member we honor today embodies the values and personal characteristics Congressman Hébert hoped this University would foster. You are an inspiration to us all. If Congressman Hébert

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Daly receives second Henry Wu Award

Courtesy Article

For the second time in a little more than a decade, Dr. Michael J. Daly, a professor of Pathology in the F. Edward Hébert School of Medicine at the Uniformed Services University (USU), has been selected as the recipient of the Henry Wu Award for Excellence in Research.

The Wu Award recognizes a USU faculty member or AFRRRI scientist who, in the estimation of their peers, has made the most significant published scientific contribution to basic science research during the past three years. The award is named for the late Dr. Henry Wu, former chair of the School of Medicine's Department of Microbiology at USU. The recipient of the award gives his/her award lecture at the session named in honor of Dr. Wu during USU's Research Days, and receives a memento and a cash award of \$2,500.

Daly's award was based on his paper, "A reconstituted Mn²⁺-peptide complex of *Deinococcus radiodurans* preserves immunogenicity of lethally irradiated vaccines against viruses and *Staphylococcus aureus*," published in *Cell Host Microbe* 12,117-124 (2012), E. K. Gaidamakova, I. A. Myles, D. P. McDaniel, C. J. Fowler, P. A. Valdez, M. Gayen, P. Gupta, A. Sharma, P. J. Glass, R. K. Maheshwari, S. K. Datta and Michael J. Daly.

Daly joined the Pathology department at USU in 1992, following completion of his PhD degree in genetics at Queen Mary, University of London, and a post-doctoral fellowship at the National Cancer Institute, National Institutes of Health. Since joining the faculty, the focus of his research has been the genetic development of the extremely radiation-resistant bacterium *Deinococcus radiodurans* as a system to study DNA repair, as a model for functional genomics, for cleanup of radioactive waste sites, and most recently, for the development of vaccines against whole pathogens.

Based on a rubric for DNA recombination in yeast used as a postdoc at NIH, Daly was the first to develop a variety of novel techniques to study ionizing radiation-induced gene conversions and crossovers in *D. radiodurans*. A turning point for his laboratory was in 1996 when *D. radiodurans* was chosen by the U.S. Department of Energy (DOE) as one of the first

free-living organisms subjected to whole-genome sequencing. He published, along with collaborators at The Institute for Genomic Research in Rockville, Md., two genome papers in *Science* in 1999 – one reporting its Sequence and the other reporting its mapping.

Between 1999 and 2006, using the whole-genome sequence as a guide, his group engineered *D. radiodurans* for bioremediation of radioactive mixed waste sites. In 2001, they published a comparative genomics review which included predictions on *D. radiodurans* operon organization, and some of the earliest evidence for horizontal gene transfer. In 2002, with DOE collaborators, they published breakthrough research in *PNAS*, which validated functional predictions by a whole-proteome, mass-spectrometry-based approach using Fourier Transform Ion Cyclotron Resonance (FTICR). The following year, they published a second, related *D. radiodurans* paper in *PNAS* that reported the construction and utilization of one of the world's first whole-genome microarrays.

Since then, Daly and others have shown that few of the uncharacterized genes, at least individually, make a substantial contribution to recovery of irradiated *D. radiodurans*, and his focus shifted to cell-cleaning functions. In 2004, as first and corresponding author, Daly reported in *Science* the identification of a widespread Mn²⁺-dependent, nonenzymic mechanism required for extreme radiation resistance. In an article published in *PLoS Biology*, as first and corresponding author, he showed that intracellular Mn²⁺ ions accumulated in resistant bacteria protect proteins. Since then, his group has identified key radioprotective Mn²⁺-peptide complexes in *D. radiodurans*, reporting their structural properties in *PNAS*, with Daly as a corresponding author, in 2013.

In April 2012, as senior/corresponding author, Daly published a breakthrough paper in *Cell Host Microbe* on how to apply reconstituted Mn antioxidants of *D. radiodurans* to the production of irradiat-



Dr. Michael Daly has been selected for this year's Henry Wu Award for Excellence in Research. (Photo by Tom Bal-four)

ed vaccines – a novel approach that could expedite vaccine production for emerging and established pathogens for which no protective vaccines exist.

Daly's reconstituted *D. radiodurans* Mn²⁺-peptide-Pi complex now forms the basis of a powerful new irradiated vaccine approach which is being marketed and licensed by HJF. Ionizing radiation-induced destruction of a pathogen's genome is desired, while radiation-induced damage to the structural proteins (epitopes, etc.) is counterproductive to the preservation of antigenic potency. Under normal aqueous irradiation conditions, proteins, DNA and RNA are similarly damaged in a dose-dependent manner by gamma-rays. This destroys most protein epitopes at doses required to irreversibly inactivate a pathogen's genome. The *Deinococcus* Mn antioxidants uncouple protein and nucleic acid damage during supralethal irradiation (e.g., 50 kGy), leaving protein epitopes undamaged and their macromolecular structures intact, while obliterating a pathogen's genome - essentially yielding an "ideal" vaccine. Viruses and bacteria "bathed" in Mn²⁺-peptide-Pi and exposed to 40-50 kGy are killed by genome damage, but their lifeless "shells" retain the capacity to generate highly protective neutralizing antibodies in animals.

Dr. Michael Ellis Named Leonard Award Recipient

Courtesy Article

Army Lt. Col. (Dr.) Michael W. Ellis was selected for the 2014-2015 James Leonard Award for Excellence in Clinical Research.

The Leonard award, named for the late USU Department of Medicine chair, Dr. James J. Leonard, recognizes a USU faculty member or AFRRRI scientist who, in the estimation of their peers, has made the most significant published scientific contribution to translational or clinical research during the past three years. The recipient of the award gives his/her award lecture at the session named in honor of Dr. Leonard during USU's Research Days, and receives a memento and a cash award of \$2,500.

Ellis was nominated for his 2014 publication, "Hygiene strategies to prevent methicillin-resistant *Staphylococcus aureus* skin and soft-tissue infections: a cluster-randomized controlled trial among high-risk military trainees," by M. W. Ellis, C.D. Schlett, E.V. Millar, K.J. Wilkins, K.B. Crawford, S.M. Morrison-Rodriguez, L.A. Pacha, R.J. Gorwitz, J.B. Lanier, and D.R. Tribble, published in *Clinical Infectious Diseases* (Vol.58 Issue 12, pages 1540-1548, 2014) and follows a decade-long series of clinical research studies in the field.

The Center for Disease Control and Prevention (CDC) ranks methicillin-resistant *Staphylococcus aureus* (MRSA) among its "serious threat" antimicrobial resistant pathogens. Although MRSA skin and soft-tissue infections (SSTI) have become widespread, they appear to disproportionately affect certain high risk groups, which include military service members. Most recent data indicate that SSTI account for approximately 1,500 hospitalizations and 65,000 ambulatory clinic visits in active duty personnel each year. Moreover, SSTI is second only to influenza and pneumonia among infectious causes for hospitalization during the first two years of military service.

These infections occur in the deployed service member, but the hardest hit by these infections are soldiers in training. At Georgia's Fort Benning, the majority of cultured SSTI are MRSA and annual rates of medically-attended MRSA SSTI have been reported as high as 42 per 1,000, with 3% of SSTI patients requiring hospitaliza-

tions. These infections are also costly. It has been estimated that each MRSA SSTI has a direct cost of approximately \$2,200-3,000. Given the number of MRSA SSTI, these infections cost the U.S. Army alone \$14-32 million annually.

Ellis has been at the forefront of MRSA prevention within the Department of Defense and results from his cited work have informed the U.S. Army Training and Doctrine Command infection prevention policies. He first completed a large longitudinal observational study determining the importance of MRSA nasal colonization in military trainees for which he was recognized in 2005 with the Infectious Diseases Society of America's Emanuel Wolinsky award, given for the best original manuscript in *Clinical Infectious Diseases*, the Society's clinical journal.

Ellis has pioneered efforts to understand and prevent methicillin-resistant *Staphylococcus aureus* (MRSA) infections in the military population. Over the years, he has emerged as a nationally-recognized leader in the field of MRSA epidemiology, pathogenesis, and prevention.

Conducting large-scale clinical research in a military training population poses numerous challenges. Ellis has assembled and leads a team of investigators from numerous agencies, departments, and specialized areas, which include the CDC, the National Institutes of Health, Naval Medical Research Command, and several USU departments. Executing this research required Ellis to develop a robust field site at Fort Benning, Ga., with clinical research coordinators and microbiology laboratory assets. This site, which has been active for five years, is the only research site of its



Army Lt. Col. (Dr.) Michael W. Ellis has been selected for the 2014-2015 James Leonard Award for Excellence in Clinical Research. (Photo by Tom Balfour)

kind where military-relevant research can be studied in large trainee populations.

The study cited above relates the results of a CDC-funded two-year field-based, cluster-randomized trial aimed at assessing personal hygiene measures to prevent skin and soft-tissue infections (SSTI) among military trainees at Fort Benning, Georgia. Dr. Ellis led his team in developing a rigorous prospective study design, where weekly use of chlorhexidine body wash was a critical component of this prevention trial. The primary endpoints were incidence of overall SSTI and MRSA SSTI. This trial included more than 30,000 trainees. Dr. Ellis and his team found that personal hygiene and education measures, including once-weekly use of chlorhexidine body wash, did not prevent overall SSTI but demonstrated limited effectiveness against MRSA SSTI among high-risk military trainees. Nevertheless, these results suggest that there may be a role for chlorhexidine in community-based prevention strategies.

Awards From Page 8

is looking down on these proceedings – and I think he is – I bet he has a big grin on his face. We do, too.”

This year’s honorees were:

Vice Admiral James A. Zimble Valedictorian Award: Army 2nd Lt. Timothy Blood and Air Force 2nd Lt. Lauren Van Decar
Association of Military Surgeons of the United States (AMSUS) Award: Navy Ens. Sean Simmons

Surgeon General Awards:

United States Army Surgeon General Award: 2nd Lt. Elena Zitzman

United States Navy Surgeon General Award: Ens. Willis Lyford

United States Air Force Surgeon General Award: 2nd Lt. Robert Lystrup

United States Public Health Service Surgeon General Award: Ens. Jaren Meldrum
Service Awards:

Navy League Award, Sponsored by the National Capital Council of the Navy League: Ens. Lyndsey Kiss

Air Force Association Award, Sponsored by the Nation’s Capital Chapter of the Air Force Association: 2nd Lt. Erin Grindlay
Association of the United States Army Award, sponsored by the Association of the United States Army: 2nd Lt. Megan Garcia
National Association for Uniformed Services Admiral James Zimble Selfless Service Award: Army 2nd Lt. John Green

Faculty Awards:

School of Medicine Outstanding Biomedical Graduate Educator Award:

Cara H. Olsen, MS, DrPH, associate professor, Department of Preventive Medicine and Biostatistics School of Medicine

Outstanding Civilian Educator Award: Edward Jones, MS, instructor, Department of Anatomy, Physiology and Genetics

William P. Clements, Jr., Award: Army Lt. Col. (Dr.) Justin Woodson, associate professor, Department of Military and Emergency Medicine

Named Awards:

Emma Bockman Award: Army 2nd Lt. Mitchell Harris; **Honorable Mention:** Army 2nd Lt. Christopher Stark

John F. Maher Award: Air Force 2nd Lt. Shira Paul

Marcia Salzer Award for Humanism in Medicine: Army 2nd Lt. Ryan Akrami

Angeline Lazarus Navy Chapter of the American College of Physicians Award for Outstanding Achievement: Navy Ens. Natalie Slepiski

Gregory Argyros Army Chapter of the American College of Physicians Outstand-

ing Achievement Award: Army 2nd Lt. David Cook

Jeffrey P. Kavolius Award for Academic Excellence: Army 2nd Lt. Samuel Burns

Enrique Cervantes Agurre Medical Education Award: Air Force 2nd Lt. Robert Lystrup

The Mabuhay Award: Navy Ensigns Sara Drayer, Lyndsey Kiss, and Andrew Woodhouse, and Army 2nd Lts. Nicole Laferrier and Elena Zitzman

The Captain Richard Hooper Memorial Award: Army 2nd Lt. Christopher Stark

The Llewellyn J. Legters Foreign Area Medical Studies Award: Air Force 2nd Lt. Joshua Fields

A. Bernard Pleet Outstanding Student in Neurology Award: Air Force 2nd Lt. Lauren Van Decar

LTC Daniel Kayanan AMSUS Military Medicine Award: Navy Ens. Sara Drayer

Specialty Awards:

Society for Academic Emergency Medicine Excellence in Emergency Medicine Award: Navy Ens. Ellen Lesh

Government Services Chapter of the American College of Emergency Physicians Emergency Medicine Award: Air Force 2nd Lt. Elizabeth Chen

Air Force Chapter of the American College of Physicians Award: Air Force 2nd Lt. Joshua Fields

Uniformed Services Academy of Family Physicians Outstanding Student of the Year Award: Navy Ens. Chase Hughes and Air Force 2nd Lt. Robert Lystrup

Armed Forces District American College

of Obstetrics and Gynecology (ACOG)

Outstanding Student in OB/GYN Award: Army 2nd Lt. Megan Pagan

Pathology Honor Society Award: Army 2nd Lts. Ryan Akrami, Jonathan Jeter, and Bart Wilkison, Navy Ensigns Kelly Haensler and Todd Life, and Public Health Service Ens. Christopher Morris

Outstanding Student in Pediatrics Award: Air Force 2nd Lt. Erin Grindlay

American Academy of Pediatrics, Uniformed Services Chapter East, Outstanding Achievement in Pediatrics Award: Army 2nd Lt. Lauren Staiger

Outstanding Student in Psychiatry Award: Navy Ens. Willis Lyford

Who’s Who Among Students in American Universities and Colleges:

Navy Ensigns Thomas Allen, Kelly Haeusler, Willis Lyford, Sean Mock, Sean Simmons, Jessica Winters and Andrew Woodhouse, Army 2nd Lts. Noel Dunn and Bart Wilkison, and Air Force 2nd Lts. Joshua Fields, Robert Lystrup, Meghan Olsen, Mark Prats, Jaren Meldrum, and Hal Willardson

Admissions Committee Certificates of Appreciation:

Navy Ensigns Mary Carrington, Sara Drayer, Tracey Honohan, Chase Hughes, Lyndsey Kiss, Todd Lilje, Willis Lyford, Jordan Lyons, Lan Nguyen, and James Prieto, Air Force 2nd Lts. Maggie Castile, Elizabeth Chen, Joshua Fields, Douglas Katein-Taylor, and Brian Stephens, and Army 2nd Lt. Gabrielle Rolland



A group of students from the class of 2015 display their awards following the graduation awards ceremony at the F. Edward Hébert School of Medicine at the Uniformed Services University of the Health Sciences (USU) May 7. More than 30 awards were presented to 38 members of the class, along with three School of Medicine faculty. (Photo by Tom Balfour)

Final Frame



USU's Learning Resource Center gets new study carrels. The new carrels have soundproofing, thicker foam cushions, safer stairs to the upper decks and are certified for low emissions of Volatile Organic Compounds. (photo by MC3 Laura Bailey)