the pulse

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the pulse

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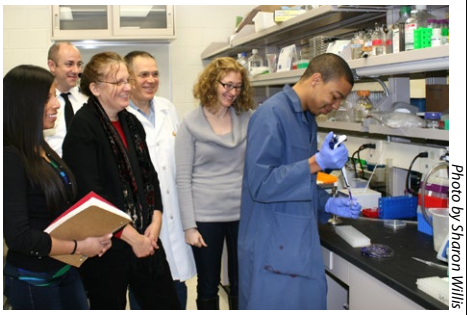

Photo by Sharon Willis

On the cover
From left to right: Michelle Pilligua-Lucas, Dr. Ann Jerse, Army Capt. Jonathan D'Ambrozio, Dr. Daniel Simon, and Leah Vincent look on as research associate Omari Jones-Nelson performs lab work at USU. *(See story, page 2.)*

Resistance is not futile; USU researchers seek new solutions for complex disease

By Christine Creenan-Jones, contributing writer

An effective single therapy for gonorrhea – a once treatable, highly contagious disease – is quickly evading modern medicine, again.

The antibiotic, cefixime, the newest drug on the market, is the latest casualty in a long line of failed defenses against gonorrhea. This highly adaptive sexually transmitted disease affects thousands of people each year, including a large number of servicemembers in all branches of the military.

Gonorrhea is starting to show signs of resistance to cefixime in many parts of the world, making the superbug increasingly prevalent and difficult to treat. Its resistance to other previously effective antimicrobials such as fluoroquinolones and spectinomycin, coupled with failed attempts at long-term treatment with penicillin, tetracycline and erythromycin, has rendered more powerful, easier-to-spread strains of gonorrhea.

"Over time, the strains mutate, making the possibility of untreatable gonorrhea viable," said Ann Jerse, PhD, a professor in the Uniformed Services University's Department of Microbiology and Immunology, who has won a number of awards for her research. "This is especially troublesome because gonorrhea is linked to many severe health problems, especially in women, including infertility, life-threatening ectopic pregnancy and chronic pelvic pain."

Jerse and others at USU are working hard to shed new light on gonorrhea. Her team is collaborating with the Global Emerging Infections Surveillance and Response System, a division of the Armed Forces Health Surveillance Center in Silver Spring, Md., to collect and analyze antibiotic-resistant strains of gonorrhea. Furthermore, Jerse is testing new products and technology for treating the vexing disease while also developing her own drug therapies.

"Gonorrhea is a big problem, and I want to help find a solution," she said. "We've made significant headway at USU, but there's definitely a lot of work to do before we truly understand this complex infection."

Graduate School of Nursing is celebrating "20 Years of Innovations

Submit your favorite GSN memories.
http://www.usuhs.mil/gsnanniversary/sharegsnmemory.html

Learn more about the Graduate School of Nursing
http://www.usuhs.mil/gsn
Celebrating "20 Years of Innovations" 1993–2013

NPS Partners with USU on Grad Certificate Program

By MC1 Grant P. Ammon

The Naval Postgraduate School's Modeling, Virtual Environments and Simulation Institute, in partnership with the Uniformed Services University of the Health Sciences, has developed a graduate-level certificate program that provides health care simulation center directors, staff, users and supporters with state of the art education focused on the theory and practice of health care simulation.

The Healthcare Simulation certificate program is delivered asynchronously to students across the country already serving as managers of programs using modeling and simulation to train health care professionals. Graduates of the one-year program will be versed in the current best practices of health care training and education.

"The students participating in our first cohort are already managing the use of simulation training," noted Navy Cmdr. Joseph Sullivan, director of NPS' MOVES Institute. "They are well established leaders in the health care profession, but their knowledge of simulation has been primarily self-taught. This certificate offers the opportunity for formalized training, and illustrates the underlying principles of applying and developing simulation solutions."

Noting the forecasted shortage of health care professionals in the coming decade, Sullivan sees modeling and simulation as an effective way to bridge a critical gap in the health care industry, and the development of a modeling and simulation management certificate as a meaningful endeavor. Each of the four courses offered in the certificate program pairs an NPS modeling and simulation professor with a subject matter expert from USU.

"The certificate program is a nice collaboration between the Uniformed Services University and NPS," noted Joseph Lopreiato, M.D., a professor of pediatrics and associate dean for Simulation Education at USU. "The MOVES institute has more than 10 years of expertise in modeling and simulation, but they have no expertise in the medical field.

"We are a graduate and undergraduate medical and nursing school," continued Lopreiato, who helped to develop the partnership and is currently enrolled in the certificate courses to glean a student's perspective of the program. "What we bring to the program is the health care content and expertise, and NPS brings the expertise in how to deliver modeling and simulation."

In addition to tailored instruction to students on the theoretical and practical application of the general methodologies of simulation, the course also aims to grow the body of scholarly knowledge and advance research efforts in the field of health care modeling and simulation.

"Each student in the program must produce or submit a proposal for a research project to earn the certificate," noted Lopreiato. "The health care system benefits because we generate research projects from the program, and this research will continue well after the certificate is earned. We expect there will be some scholarly work developed and the field of health care simulation will be moved forward with each iteration of this course," he continued. According to Wendy Walsh, a program coordinator from MOVES, the partnership between the two organizations deepens the education provided through the program.

"We are very fortunate to have amazing partners from USU acting as subject matter experts throughout the coursework," noted Walsh. "We could not deliver the quality of education without their efforts."

The creation and delivery of the modeling and simulation certificate exemplifies the strength of MOVES, and demonstrates the institute's ability to solve critical problems in a variety of domains.

"This is a good model we have in the MOVES Institute," noted Sullivan. "We can find application domains, and we can find science and technology that can be composed differently to meet the needs of that application domain. It's what we're doing with our partners from USU, and it can be replicated in a variety of areas to solve DOD problems."

With the inaugural cohort of students at the brink of completing their first course in the series, Lopreiato is optimistic about the effectiveness of the instruction, and the future application and success of the program within the DOD.

"This is the first year the course is running, we are already offering another certificate program next year," noted Lopreiato. "We are in the process of looking for long-term funding for this course to happen every year. We believe there is a large enough audience within the DoD to continue to grow this effort."

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O'Brien Named to National Advisory Committee

Photo by Thomas C. Balfour

Alison O'Brien, Ph.D.

The U.S. Department of Agriculture's Food Safety and Inspection Service announced the re-chartering of the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) and Alison O'Brien, Ph.D., chair of the Uniformed Services University of the Health Sciences' Department of Microbiology and Immunology is among the 22 new members named.

The committee is charged with providing recommendations to the Secretaries of Agriculture and Health and Human Services on microbiological criteria by which the safety and wholesomeness of food can be assessed. That work includes criteria for microorganisms that indicate whether foods have been adequately and appropriately processed.

"NACMCF's work provides FSIS and the Food and Drug Administration with a valuable resource for obtaining external expert advice on scientific and technical food safety issues for our nation's food safety programs," said FSIS Administrator Al Almanza. "Re-chartering this committee benefits the public interest and fulfills statutory responsibilities."

The committee membership consists of scientists from academia, industry, other organizations, and federal and state government as well as one individual affiliated with a consumer group, who is serving in a representational capacity. NACMCF members are appointed by the USDA Secretary in consultation with the Secretary of HHS with advice on membership from the Department of Commerce's National Marine Fisheries Service, the Department of Defense's Defense Logistics Agency, and the Department of Health and Human Services' Centers for Disease Control and Prevention.

O'Brien, who is a past president of the 43,000-member American Society for Microbiology, has been a faculty member in the USU microbiology and immunology department since 1978, and has served as chair since 1997. This appointment to NACMCF marks the second time she has served on the committee.

Doctor Outlines Global Health's Tie to Security Operations

By Erika Christ and Lisa Daniel, Military Health System

Defense Department efforts to improve global public health are an important and growing part of military stability operations around the world, the director of the department's Center for Disaster and Humanitarian Assistance Medicine said.

Charles Beadling, M.D., reflected on the center's mission and operations during a recent interview with health.mil.

"We do feel that there is a strong link between global health engagement and security," he said. Such engagement adds to security by improving the ability of governments to meet the needs of their populations, thereby reducing the tendency for insurgency or terrorism, he explained.

"Since 9/11, we know that we cannot ignore the global situation and rely on security only within our borders," Beadling added.

Until recently, the director noted, U.S. national security operated from two mostly independent pillars: diplomacy and force projection. Today, he said, national security is based on the "three Ds" of diplomacy, defense and development.

For its part, the center, which is part of the Uniformed Services University of the Health Sciences, operates under the premise that health is "a global common good," Beadling said.

"Along with safety, education and other public benefits, people expect their government to help provide health care," he said. "By assisting legitimate governments to build capability and capacity in health, the United States can create political stability that leads to our security."

USU's Center for Disaster and Humanitarian Assistance Medicine has been doing just that with its "global health engagements." Through its partnership with U.S. Africa Command, the center has focused engagements in about a dozen countries in eastern and western Africa, holding workshops and exercises to explore how those nations would respond to a global pandemic, he said.

"The general intent is to assist each partner nation to build capacity and capabilities to protect their population from natural or manmade disasters, reducing human suffering and death," Beadling said.

Continued to page 6

In Memoriam—George F. Nussbaum, Ph.D., RN

George F. Nussbaum, Ph.D., RN, an assistant professor in the USU Graduate School of Nursing, passed away Jan. 13, after losing his fight with pancreatic cancer. Originally from Amarillo, Texas, Nussbaum, a retired Colonel and Nurse Corps officer, served the nation for more than 30 years as an integral part of the Army Medical Department and had only recently joined the University as full-time faculty.

Initially starting his nursing career in the operating room, Dr. Nussbaum's commitment to patient safety through intelligent design came to fruition when he served as the Senior Clinical Planner for the U.S. Army Health Facility Planning Agency at the Office of the Army Surgeon General. It was because he was so skilled at creating highly functional healthcare facilities that he was recalled to active duty to assist in evidenced-based facility design for the National Intrepid Center of Excellence, located on the base with USU and the Walter Reed National Military Medical Center. The contributions of the team, in which Dr. Nussbaum was an integral part, were nationally recognized with the 2012 AIA Healthcare Design Award for having created a building that became an active part of the rehabilitative process versus a vessel that only contained the care delivery process. The design team was honored with this award for having used research and evidence-based design concepts to create a healing environment for patients with physical, brain, and psychological injuries.

Photo by Thomas C. Balfour

Dr. Nussbaum's love of teaching and facility design merged at USU when he first volunteered to teach in the GSN's newly-established Perioperative Clinical Nurse Specialist program in 2003, and later joined the faculty as an assistant professor with a focus on teaching healthcare systems and leadership in the new Doctor of Nursing Practice curriculum.

Dr. Nussbaum is survived by his wife, Jackie, and sons Justin and Jordan Nussbaum, along with his granddaughter, Shaina Nussbaum.

Funeral services will be held Feb. 9 at 11 a.m. at The Church at Severn Run, 8187 Telegraph Road, Severn, Md. Interment at Arlington National Cemetery will be held at a later date.

USU celebrates Nurse Corps birthday

By Christine Creenan-Jones

Army Col. Paul Lewis, PhD, an assistant professor in the Graduate School of Nursing, highlighted the Army Nurse Corps' remarkable history during a celebration commemorating the organization's 112th birthday on Feb. 1.

At the celebration, Lewis shared important milestones about the corps, including a retrospective look at pioneering Army nurses, beginning with the original corps, established in 1901. This all-woman team laid the groundwork for thousands of successors, including war veterans, scholars, researchers and leaders who've improved both hospital operations and frontline care. In the midst of these advancements, male nurses also broke a long-standing glass ceiling when they joined the Army Nurse Corps in 1955.

For today's Army nurses, the breakthroughs continue.

"The future is wide open. Anything is possible," said Lewis, before sharing some recent accomplishments made by Army nurses, including Lt Gen. Patricia Horoho's presidential nomination for Army Surgeon General in 2011. Horoho, who is also a USU Board of Regents member, is the first nurse and woman to fill this position.

FMIG Visit the White House

FMIG Courtesy Photo

USU medical students and faculty recently spent a day touring the White House and meeting with physicians from the White House Medical Unit as part of a visit organized by the Family Medicine Interest Group (FMIG).

Students Steve Warner, Robert Lystrup, Maggie Castile, Jessica Winters, Steve Lee, Melanie Pribich, Emily Parsons, Julie Do, Noel Dunn, Jill Piaggione, Luke Womble, John Sarette, Daniel Standish, Annelies Hickerson, Natalie Slepski, Kerry Philbin, Caroline Nguyen, Lucy Paterson, Greg Lausè, Meagan Sledge and Mark Prats, along with the FMIG faculty advisor, Maj. (Dr.) Christopher Bunt, participated in the visit.

Several groups of five students were each paired with a White House physician who gave them a tour of the White House. The physicians explained the history of each of the rooms and provided stories about their experiences at White House functions. After the White House tour, the group visited the Eisenhower Executive Office Building where they toured the clinic and offices of the White House Medical Unit.

"The most profound moment of the day came in the Medical Unit Conference room," said Prats. "Here, we listened to the physicians discuss their various career paths and had the opportunity to ask questions about what it is like to be a White House physician. At the end, each of the physicians provided our students with advice on how to get the most out their career in military medicine.

"It is events like this one that make our university and the military medicine community so special," Prats continued. "The White House physicians made us aware of the great time commitment their job is and yet, on their day off, took the time to mentor 21 young officers. Our interest group cannot thank them enough for their time and pearls of wisdom, which I know I will carry with me the rest of my career."

Doctor Outlines Global Health's Tie to Security Operations

continued from page 4

As part of that work, the center created the Emergency Management and Preparedness Program and was invited by the government of Mozambique to make it the first country to partner in the program, the director said. Beadling was among those who traveled to Mozambique in December as a first step. Center and Africom personnel are scheduled to travel there again in April to finalize plans, which are to be tested in an exercise next year.

That partnership will follow standard protocol of the center and Africom to build trust in bilateral relations, Beadling said. "It is important that the U.S. representatives act as facilitators and let the host nation lead the process so that it is an appropriate plan for them," he added.

The center developed a study to measure the effectiveness of its health engagements. The study is designed to develop a standardized process across the Military Health System and the services to evaluate the effectiveness of the engagements in meeting strategic security objectives, Beadling said.

Beadling noted the success of Operation Pacific Angel, in which the Air Force partnered with the Australian air force, Nepalese army and others in September to provide two weeks of treatment in Nepal and surrounding countries. And a successful conference in Ghana in August was part of the center's pandemic response program with Africom, he said.

"We are still in the early stages of defining our roles in [the health engagements] and determining how to best use them to improve our national security," Beadling said.

It is imperative, he added, for the center to work in close coordination with the State Department, the U.S. Agency for International Development, the United Nations and nongovernmental organizations to meets its goals.

USU Postgraduate Dental Students Awarded Queen Elizabeth II Diamond Jubilee Medal

Courtesy of USU Postgraduate Dental College

Courtesy Photo

LCol Dewayne Lemon presents Maj. Deidre Mclean with the Queen Elizabeth II Diamond Jubilee Medal. Maj. Mclean is a student in the USU Postgraduate Dental College. USU PDC student Maj. David MacPherson also received the award.

Two Texas-based master's degree students in the USU Postgraduate Dental College were recently awarded the Queen Elizabeth II Diamond Jubilee Medal from the Canadian Forces.

Major Deidra McLean, a senior resident in the U.S. Air Force Comprehensive Dentistry program at Lackland Air Force Base, along with Maj. David MacPherson, a senior resident in the U.S. Army Comprehensive Dentistry program at Ft. Hood, both Canadian Forces Dental Corps officers, were given the award in recognition of their significant contributions and achievements. LCol Dewayne Lemon, DMD, Director, Dental Services 3 - Dental Plans and Requirements, Canadian Forces, presented the two awards.

The medal was created to mark the 2012 celebrations of the 60th anniversary of Her Majesty Queen Elizabeth II's accession to the throne as Queen of Canada. The Queen Elizabeth II Diamond Jubilee Medal is a tangible way for Canada to honor Queen Elizabeth II for her service to their country.

Maj. McLean was presented the medal for her "uncompromising selfless service and loyalty to the Dental Corps, the Canadian Forces and its people" and "possessing the highest moral character."

Maj. MacPherson's award citation listed his "rich career, first in the Artillery, now as a Dental Officer" and his loyalty to the Canadian Forces as "paramount." The narrative also described him as a "superb clinician and fine Officer" whose "concern for his patients is only equaled by that for his subordinates."

"We and our Canadian dental colleagues strongly believe in the philosophy of 'train together, deploy together.' In recent deployments, American and Canadian dentists have served side by side. We are very proud that our master's degree residency programs provide a venue for shared training," said Maj. Gen. (ret.) Patrick Sculley, executive dean of USU's Postgraduate Dental College. "The receipt of this significant recognition by two of our Canadian residents attests to the exceptional quality of the Canadian students engaged in USU educational programs."

HPRC Health Tips

USU's Human Performance Resource Center Health Tips are intended to provide the USU community with information to help develop and maintain a healthy lifestyle. Check out the HPRC website at: http://hprc-online.org.

Get your running shoes-Is your energy lagging? Though it may be the last thing you feel like doing when you're tired, exercise -- even a brisk walk -- can be more effective than a nap or cup of coffee at fighting fatigue.

Make small talk-Engaging in casual conversation with others may help keep you as sharp as doing a word puzzle, according to some studies. Just 10 minutes of daily chatter appears to improve mental function and preserve memory.

Dehydration and cold weather- Most people associate dehydration with hot weather. Here's news: You can experience dehydration in cold weather too. Being active outside in cold weather for less than two hours doesn't usually present a problem. But for long-term exposure such as a field deployment, which can last anywhere from a few days to several weeks, the combination of heavy clothing and high-intensity exercise can lead to increased sweating and the possibility of dehydration. You may not feel as thirsty in cold weather as in other climates, because your body chemistry impairs your brain's ability to tell you when to hydrate. Cold weather also has the effect of moving body fluids from your extremities to your core, causing increased urine output and adding to dehydration.

The bottom line: When in cold climates, don't rely on thirst to be an indicator of hydration. Drink often, before you're thirsty. Water and sports drinks are the best fluids to maintain hydration, even in cold weather conditions. When you are in a situation where you need to monitor your hydration level keep in mind that carbonated and caffeinated beverages (including energy drinks) have a dehydrating effect since they increase urine flow, also avoid alcohol consumption in cold weather. It gives a temporary feeling of warmth but interferes with the body's ability to retain heat since shivering, the normal response to maintain body temperature, is delayed.

Uniformed Services University
of the Health Sciences