

**NAMRU-3 Celebrates 65 Years of Service in Infectious Disease Research**

*From U.S. Navy Bureau of Medicine and Surgery Public Affairs*

The U.S. Naval Medical Research Unit No.3 ([NAMRU-3](#)) celebrated 65 years of service in infectious disease research in Egypt, October 20.

An event celebrating the anniversary was held at the NAMRU-3 facility with a host of guest speakers from the Naval Medical Research Center, the Egyptian Ministry of Health, the U.S. Embassy and the World Health Organization (WHO).

Navy Medicine established a presence in Egypt in 1942 as part of the U.S. Typhus Commission tasked with reducing the impact of a typhus epidemic among troops and refugees during World War II. The success of this collaboration between the Navy and the government of Egypt led to the formal establishment of NAMRU-3 in 1946 to continue scientific partnership in infectious disease research.



*Capt. Richard Haberberger, Jr., NMRC commanding officer and NAMRU-3 alumnus, addresses the audience at the U.S. Naval Medical Research Unit No. 3 65th Anniversary Celebration. Seated from left: H.E. Anne Patterson, U.S. Ambassador to Egypt; H.E. Dr. Amr Helmy, Egyptian Minister of Health; Dr. Naeema Al-Gasseer, Assistant Regional Director and Acting WHO Representative in Egypt; and Ms. Mary Mirty, retired NAMRU-3 employee.*



*Mr. Eid Mahmoud Hassan (left), the most senior NAMRU-3 employee, and Mr. Bahig Abdel Mohaymen, the most junior NAMRU-3 employee, cut a cake congratulating NAMRU-3 on "65 Years of Excellence in Research."*

"Navy Medicine's doctors, nurses, dentists and medical service corps officers are dedicated to preserving and promoting health and wellness around the world," said Capt. Robin Wilkening, commanding officer, NAMRU-3. "One of the ways Navy Medicine achieves these goals is through the work of its overseas medical research laboratories. Of these, there is none with a prouder history or more impressive list of accomplishments than NAMRU-3."

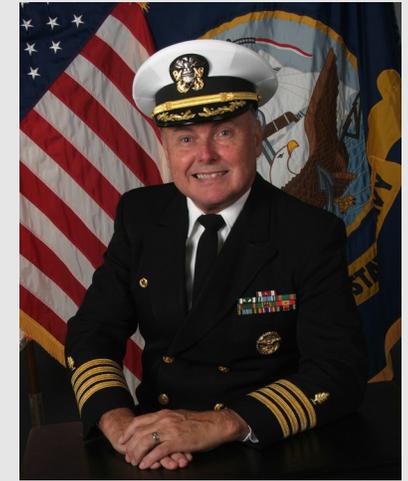
In the beginning, researchers focused on activities in Egypt and neighboring countries, but in recent years they have expanded activities in the Middle East, Sub-Saharan Africa, Eastern Europe and Central Asia. NAMRU-3 personnel and scientists routinely collaborate with regional research groups in the fields of disease surveillance, vaccine

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## Commanding Officer's Message



NMRC's research and development efforts impact and translate into new policies, procedures, and technologies addressing the specific medical issues of the Navy and Marine Corps and other DoD personnel in operational environments. We develop products and strategies to protect, treat and rehabilitate the warfighter as well as enhance performance. Given the experiences in Afghanistan and Iraq, some of our highest priority research objectives are to further Navy medicine's ability to address injuries and stresses resulting from the signature weapon – blast injury – and to further optimize warfighter resilience and performance in all environments across all platforms. Research efforts also focus on increasing the safety and improving operational capabilities for aviators; submariners; and explosive ordnance disposal, salvage, and husbandry divers. Research continues to unfold with ever-increasing success as our teams study not only the medical implications of conventional warfare but also the potential use of weapons of mass destruction and terrorism against our military forces and civilians.

As U.S. forces draw down in the Middle East and elsewhere, it will become even more imperative that deployed sailors and Marines be protected and adequately trained and equipped to operate in stressful environments. In this context, NMRC's mission becomes even more critical to the warfighter. Whether it is the development of new drugs to treat, vaccines to prevent, modeling and simulation software to equip, or the latest surgical innovations to preserve life and limb, both the CONUS and the OCONUS laboratories are dedicated to protecting the warfighter.

NMRC is well-positioned to respond to global health issues of concern to the Navy and DoD. Our three overseas laboratories build trust with local foreign national partners through collaborative infectious disease research and surveillance projects. This is a continuous process and is not limited to the laboratories' host nations, but rather, extends to a network of collaborative relationships in each laboratory's respective AOR. The OCONUS labs support the COCOM's Theater Security Cooperation Plan by improving the medical and public health capacity and adding to the stability of the foreign nations where there are ongoing research projects.

NMRC's mission supports the CNO's vision today and will continue into the next decade and longer. What is critical to our relevancy is supporting the scientific insight and innovation that will be required to mitigate health threats and situations not yet anticipated. To accomplish this, NMRC leadership will continue to enable researchers in the pursuit of innovation.

Commanding Officer sends,  
Richard L. Haberberger, Jr.  
CAPT, MSC, USN

## Research and Development's Global Role in Force Health Protection

*By Vice Adm. Adam M. Robinson, Jr., U.S. Navy Surgeon General*

I have said throughout my tenure as your 36th Surgeon General that medical research and development is crucial to future capability of our armed forces because, more often than not, our medical innovations derive from an idea or experiment in one of our laboratories. Researchers and scientists epitomize the spirit of interdisciplinary scholarship, innovation and entrepreneurship that lead to translational advancements in critical areas.

Our global research and development arm is dedicated to enhancing the health, safety, readiness and performance of Navy and Marine Corps personnel deployed around the world through cutting-edge medical research in a wide range of disciplines.

Today we are fortunate to have eight extremely capable Naval Medical Research Centers, Labs, or Units spanning four continents that conduct basic and applied research in infectious diseases, biological defense, combat casualty care, military operational and expeditionary medicine, bone marrow transplantation, aviation medicine and medical standards, and

diving and environmental medicine. I am also very proud of the bilateral agreement and Memorandum of Understanding for military medical partnerships we recently signed with the Vietnamese Ministry of Defense, which will increase our medical knowledge and capability in the Pacific for the health benefit of both our nations and the entire Pacific Rim.

As part of research studies and directly through funding by such distinguished partners as the CDC, USAID, Department of State and many others, our laboratories provide medical diplomacy through improving civilian public health, infection control and laboratory capacity building, and I couldn't be

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## Research and Development's Global Role in Force Health Protection

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prouder of their efforts.

While working to enhance U.S. and global public health is certainly an im-

portant mission for our research laboratories, their primary mission is maintaining a high state of readiness for our warfighters. Readiness ensures we

provide care for our people no matter where they are and no matter the situation they're in.

Our work continues.

Here is a quick snapshot of our global medical R&D capability with a summary of their areas of focus.

- [Naval Medical Research Center](#) – Silver Spring, Md. serves as our headquarters, focusing on solutions to operational medical problems such as battlefield neurotrauma and wounds, decompression sickness, naturally occurring infectious diseases, biological threat agents and bone marrow injury research.
- [Naval Health Research Center](#) – San Diego, Calif. works closely with operational units by conducting medical modeling and simulating analysis; monitoring the effects of combat exposure on psychological health; managing career-span deployment health and readiness programs, improving warfighter performance, and assisting in the implementation of military-specific HIV-prevention.
- [Naval Submarine Medical Research Laboratory](#) – Groton, Conn. conducts research into undersea human systems integration, submarine survival and rescue, diver bio-effects, hearing conservation, and situational awareness. They work in concert with the Naval Undersea Warfare Center, Naval Medical Center San Diego, NASA, NAVSEA, Naval Expeditionary Diving Unit, the U.S. Army Research Institute of Environmental Medicine and others.
- [Naval Medical Research Unit – San Antonio](#), Texas conducts medical, dental and directed energy biomedical research to enhance the health, safety, performance and operational readiness of Navy and Marine Corps personnel as well as addressing emergent medical and dental problems in routine and combat operations.
- [Naval Medical Research Unit – Dayton](#), Ohio conducts research in acceleration effects, aviation medical standards and personnel selection, physiological and cognitive effects of altitude, vision research, pulmonary health effects, neuro-toxicology/ neuro-behavior, reproductive health and systems biology.
- [U.S. Naval Medical Research Unit No. 2 Pacific](#) – Pearl Harbor, Hawaii conducts infectious disease research and surveillance in South Asia and Southeast Asia. Current studies include respiratory disease surveillance, malaria drug resistance, novel vector control measures and dengue cohort monitoring.
- [U.S. Naval Medical Research Unit No. 3](#) – Cairo, Egypt conducts infectious disease research and surveillance in the Middle East, Southwest Asia, Africa, and Eastern Europe. Current studies focus on influenza-like illness, acute febrile illness, diarrheal diseases, hemorrhagic fever, HIV, meningitis and infection control.
- [U.S. Naval Medical Research Unit No. 6](#) – Lima, Peru conducts infectious disease research and surveillance in South America including prevention strategies, clinical trials, chemotherapeutics, diagnostics, epidemiology and ecology. Researchers partner with the Peruvian Army and Navy, prestigious universities like Cayetano-Heredia and San Marcos, the Ministry of Health, USAID, CDC, NIH and several American universities.

## NHRC Scientists Invited to Present at Psychiatry Grand Rounds

Dr. Stephanie Kewley and Dr. Jerry Larson were invited to give a presentation October 14 entitled "Correlates of Antisocial Behavior among Marines" at Psychiatry Grand Rounds, Naval Medical Center, San Diego.

While mental health concerns among combat veterans have been extensively studied, awareness of combat-related behavioral health problems is also growing. Researchers in the Behavioral Sciences and Epidemiology Department at the Naval Health Research Center (NHRC) have increasingly focused on behavioral trends among service members. Some of NHRC's recent work was summarized by Kewley and Larson during this invited presentation.

Dr. Kewley presented a recent study she

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Stephanie Kewley, Ph.D. (left) and Gerald E. Larson, Ph.D., research psychologists with the NHRC Behavioral Sciences and Epidemiology department. Photo courtesy of NHRC Public Affairs.

# NAMRU-San Antonio Celebrates Navy Week at Local School

By Joe N. Wiggins, NAMRU-San Antonio Public Affairs

The annual celebration of Navy Week 2011 in the Texas community that calls itself "Military City, USA" continued when a Navy unit visited an elementary school October 27.

While at Sinclair Elementary School, officers from Naval Medical Research Unit-San Antonio (NAMRU-SA) visited classrooms and read to more than 100 students from some of the children's favorite books. The students ranged in age from kindergarten to third grade.

Capt. Vincent DelInnocentiis, commanding officer, and Capt. Steven L. Sidoff, head of dental research at NAMRU-San Antonio, each had captive audiences of more than 50 students as they participated in the school's reading program.

"This is something we have been doing at Sinclair Elementary for some time," said DelInnocentiis. "We enjoy giving back to and getting to know the community where we serve as well as getting to spend time with the students," he added. "Doing this as part of Navy Week 2011 helps us connect with the



*Capt. Vincent DelInnocentiis, NAMRU-San Antonio commanding officer, takes questions from students at Sinclair Elementary School in San Antonio before reading one of the students' favorite books. DelInnocentiis and other Navy members celebrated Navy Week 2011 in San Antonio to raise awareness of the Navy mission to the local community. Photos by Joe N. Wiggins.*

people of San Antonio."

While reading to students, Sidoff used the theme of the book to remind the students to work hard to achieve their goals. "The book talked about a lightning bug that couldn't be like the other lightening bugs," said Sidoff. "I asked the kids

if they ever had trouble doing something they really wanted to do, and reminded them to keep working hard to accomplish their goals."

The school's principal thanked the officers for their visit.

"The kids were just so thrilled to talk to them and listen to the stories," said Janice Williams, principal of Sinclair Elementary. "We welcomed the chance to have them visit with the children and have them see someone in positions like theirs come for a visit."

The Navy began celebrating Navy Week 2011 in San Antonio October 24 with numerous events scheduled to commemorate the occasion. Mayor Julián Castro held a proclamation ceremony October 24 with Assistant Secretary of the Navy Juan M. Garcia III. Sailors from USS San Antonio (LPD 17), Navy Band New Orleans and the Navy Blue Angels held about 40 events around the city during the week to help the community get to know more about the Navy.

One of the highlights of the week included the Navy's world famous  
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*Capt. Steven L. Sidoff, head of dental research at NAMRU-San Antonio, points out an illustration to one of the students at Sinclair Elementary School in San Antonio during the school's guest reading program.*

# NAMRU-Dayton Studies Jet Fuel and Noise-induced Hearing Loss

By Lt. Pedro A. Ortiz, NAMRU-Dayton

Hearing loss is one of the most prevalent service-connected disabilities for veterans of the armed forces, with noise-induced hearing loss being a major military operational health hazard. Although widespread hearing conservation measures have been adopted, noise-induced hearing loss is as high as 20-30 percent in the military.

Noise exposure standards have historically been based on the range of human auditory sensitivity and exposure duration; however, recent research has established that simultaneous and even successive exposure to noise and specific chemical agents, including those found in jet fuel, can potentiate noise-induced hearing loss or produce additive effects.

In a project funded by the Air Force Surgeon General, researchers from The Naval Medical Research Unit – Dayton ([NAMRU-Dayton](#)) at Wright Patterson Air Force Base, Ohio, the Air Force 711 Human Performance



Shooters launch an F/A-18F Super Hornet from a catapult during flight operations aboard the aircraft carrier USS Theodore Roosevelt (CVN 71). Photo by Mass Communication Specialist Seaman John Suits.

Wing/RHPBA and the Memorial VA Medical Center collaborated to determine whether there is an

association between jet fuel exposure and noise-induced hearing loss. The studies exposed rats to non-damaging “white” noise and jet fuel, both separately and in combination. While neither noise nor jet fuel alone had a significant effect on auditory function, significant dose-related impairment of auditory function was observed in rats co-exposed to noise and a high dose of jet fuel.

Although the studies were performed with Jet Propulsion (JP)-8, they will likely need to be expanded to JP-5, as well as the new battery of alternative jet fuels awaiting approval for military use.

Collectively, these results will allow a more accurate evaluation of exposure standards for the co-exposure of jet fuel and noise. This in turn will lead to significant savings due to decreased health care costs and the retention of specialized personnel, as well as savings due to reductions in long term health care and support for those leaving military service.



Airman Alexander Filipponi carries a refueling hose after filling an MH-60S Sea Hawk helicopter assigned to the Eightballers of Helicopter Sea Combat Squadron (HSC) 8 aboard the Nimitz-class aircraft carrier USS John C. Stennis (CVN 74). Photo by Mass Communication Specialist 3rd Class Benjamin Crossley.

## Haberberger, Oyoyo Meet Djibouti Officials, Tour Camp Lemonnier

Naval Medical Research Center (NMRC) Commanding Officer Capt. Richard Haberberger Jr., along with U.S. Naval Medical Research Unit No.3 (NAMRU-3) Executive Officer Capt. Buhari Oyoyo, attended meetings with distinguished officials from the Djiboutian Ministry of Health and Ministry of Research and Education. In addition, they visited Camp Lemonnier, the only fixed U.S. base under the Africa Command and home to the U.S. Combined Joint Task Force-Horn of Africa (JTF-HOA), October 21-22.

During sessions with the Djiboutian officials, Haberberger said he was very pleased to be able to observe first-hand the collaborative public health surveillance and response projects that NAMRU-3 and the Djiboutian Ministry of Health have initiated over the last few years. Current surveillance projects include acute respiratory illness, acute febrile illness, acute diarrheal illness, and sexually transmitted infections. It was noted that projects moved through initial discussions and planning stages to execution in record time. He also remarked on how impressed he was with the close relationship and enthusiasm shared be-



From left: Lt. Cmdr. Vince Grimm, Capt. Haberberger, and Capt. Oyoyo conduct a walk-through/around of the Expeditionary Medical Facility (EMF).

tween the Ministries and NAMRU-3.

“With the establishment of the National Institute of Public Health, Djibouti is well on its way to ensuring the health

security of its population and becoming a regional center of excellence for the Horn of Africa in infectious disease surveillance research and control. I am proud that NAMRU-3 and Navy medicine have played a role in that rapid growth in public health capacity,” stated Haberberger.

The next day, Haberberger and Oyoyo visited Camp Lemonnier. While there, they met with camp officials to discuss the possibility of acquiring a temporary research operating facility for an upcoming surveillance project. In addition, they were invited to meet-and-greet sessions with Expeditionary Medical Facility personnel and the JTF-HOA Force Surgeon, Capt. Walter Greenhalgh.

Haberberger summed up the visits by stating, “I envision a strong collaborative relationship well into the future with Djiboutian Ministry of Health, Ministry of Education and Research and NAMRU-3 partnering to assist with capacity training and continually improving infectious disease surveillance and response networks throughout Djibouti and elsewhere in the region. These research projects will help us better understand and ultimately mitigate the most significant infectious threats.”



From left: Lt. Cmdr. Vince Grimm (Expeditionary Medical Facility Officer in Charge), Lt. Syed Husain (Head, Cooperative Biological Engagement Program, NAMRU-3), Capt. Buhari Oyoyo (NAMRU-3 Executive Officer), Capt. Walter Greenhalgh (JTF-HOA Force Surgeon), Capt. Richard Haberberger, Jr. (NMRC Commanding Officer) and Lt. Cmdr. Steven Schutt (CTJF-HOA Force Health Protection Officer).

## NHRC Interviews Mental Health Professionals for Stigma Reduction Project

Researchers from the Naval Health Research Center's (NHRC's) Behavioral Sciences and Epidemiology Department interviewed mental health professionals for a video designed to demystify mental health treatment for service members. Mental health professionals working at Naval Medical Center San Diego; 1st Marine Division, Camp Pendleton; and the Veterans Administration, Fresno, explained common treatments for stress injuries and other mental health concerns, as well as the benefits of getting help early.

The video will be one component of a toolkit currently being finalized for Marine Corps leaders to help reduce the stigma of seeking help.

The toolkit will provide practical materials to enhance communication and reduce barriers to seeking care for stress injuries and other behavioral health issues. One of the objectives of the toolkit is to address negative attitudes toward mental health treatment.

To meet this objective, project investigators Suzanne Hurtado, Cynthia Simon-Arndt and Jenny Crain interviewed three mental health professionals. They explained common treatments for stress injuries and illnesses as well as the benefits of early intervention. They also discussed topics important to

service members such as confidentiality, medication and deployability, and support when a service member is reintegrated into the unit after treatment.

This video represents a collaboration between the research and treatment communities to address barriers to care and enhance the accessibility of treatment to service members with mental health concerns.

It is designed for use by senior enlisted leaders to educate

Marines and dispel myths about the nature of mental health treatment. When completed, the toolkit will provide another means of battling stigma and preventing the potentially harmful consequences of untreated stress injuries on individual Marines

and Marine Corps mission readiness. The goal is to create an environment that encourages Marines to seek behavioral health assistance and protects the readiness and effectiveness of not only the individual Marine, but of the unit.



*Suzanne L. Hurtado, MPH, health scientist, NHRC Behavioral Sciences and Epidemiology department. Photo courtesy of NHRC Public Affairs.*

## NHRC Scientists Invited to Present at Psychiatry Grand Rounds

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conducted along with colleagues from NHRC and Headquarters, Marine Corps. This study examined factors linked with self-reported antisocial behavior in a large sample of Marine service members. A total of 1,543 Marines served as study participants; all participants had deployed to combat zones in support of conflicts in Iraq and Afghanistan. The researchers identified five factors that had significant associations with antisocial behavior: post-traumatic stress disorder symptoms, deployment-related stressors, combat exposure,

younger age and being divorced. A unique finding of the study was the link between deployment-related stressors and antisocial behavior. This is an important finding because deployment stressors, which include factors such as difficulty in communicating with home, lack of time off, boredom or monotony, and problems with supervisors or chain of command, are potentially modifiable by the military.

Dr. Larson shared preliminary findings from a study examining Marines separating from active duty and transitioning back to civilian life.

Among the new Marine Corps veterans who were surveyed for the project, problems with irritability and temper were somewhat common and were associated with difficulty readjusting to civilian life along with many problematic behaviors such as substance abuse. The presentation explored conceptual differences between temperamental behaviors (yelling, slamming doors) and aggressive behavior (threats or perpetration of violence) and described associations between various aspects of anger expression and mental health.

## NAMRU-Dayton Participates at Combat Casualty Care Conference

By Dr. Lynn Caldwell, NAMRU-Dayton

The 2011 Advanced Technology Applications for Combat Casualty Care Conference was held August 15-18 in Fort Lauderdale, Fla. This annual meeting, sponsored by the U.S. Army Combat Casualty Care Research Program, is a major venue for scientists involved in both clinical and scientific activity related to military medical interests.

Past conferences focused on Army medicine; however, this year's meeting was the first joint effort from Army, Navy, and Air Force members to share their medical expertise. More than 1,300 people from both military and civilian institutions across the United States attended.

Col. Hack, director of the U.S. Army Combat Casualty Care Research Program, opened the conference August 15, and presentations throughout the week focused on human performance, dietary supplements, combat-related post-traumatic stress disorder, traumatic brain injury and wound-related issues such as infection and shock.

Dr. Richard Arnold, the scientific director at the Naval Medical Research Unit – Dayton ([NAMRU-Dayton](#)), at Wright Patterson Air Force Base, Ohio, presented results from research completed over the past year on individual differences in fatigue resistance during chronic and acute sleep restriction. The presentation was well received and elicited numerous questions from the audience.

Cmdr. Rita Simmons, NAMRU-Dayton



*A chief hospital corpsman instructs Reserve component hospital corpsmen. Photo by Mass Communication Specialist 2nd Class Ron Kuzlik.*

executive officer, attended the meeting as well. She had many occasions to discuss NAMRU-Dayton's new laboratory facility with various attendees, opening opportunities for future collaborations with Army, Air Force and other Navy scientists.

Overall, the meeting served as an excellent venue for sharing NAMRU-Dayton's current and future research, meeting other scientists and discussing future research needs in human performance.

NAMRU-Dayton's mission is to maximize warfighter performance and survivability through premier aeromedical and environmental health research by delivering solutions to the

field, the Fleet, and for the future. The Aeromedical Directorate conducts aerospace-relevant basic and applied research in the biomedical and behavioral sciences. Principal areas of investigation include spatial disorientation, situational awareness, motions sickness, adaptation to unusual acceleration environments, effects of altitude, sustained operations and fatigue, personnel selection testing and visual and auditory sciences. The Environmental Health Effects Directorate conducts basic and applied research to assess the toxicity of chemicals and materials used in military operations that may affect sailors as well as civilian populations.

## NAMRU-San Antonio Celebrates Navy Week at Local School

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precision aerial demonstration team, the Blue Angels, performing at the Randolph Air Force Base air show October 29-30.

Navy Medicine is a global health care network of 63,000 Navy medical personnel around the world who provide high-quality health care to

more than 1 million eligible beneficiaries. Navy Medicine personnel deploy with Sailors and Marines worldwide, providing critical mission support aboard ship, in the air, under the sea and on the battlefield.

NAMRU-San Antonio is one of eight Naval Medical Research centers, labs, or units spanning four

continents. Its mission is to conduct medical, dental and directed energy biomedical research to enhance the health, safety, performance and operational readiness of Navy and Marine Corps personnel as well as addressing emergent medical and dental problems in routine and combat operations.

## NMRC Participates in 2011 National Capital Area Research Summit

The Walter Reed National Military Medical Center (WRNMMC) in Bethesda, Md., hosted the National Capital Area Research Summit that brought together over 100 participants representing military research in the Washington, D.C. area.

Lt. Col. Molly Klote, chief, Department of Research Programs at WRNMMC, who organized the summit, opened the one-day event by pointing out the goal of the summit was to share information on available assets and research interests. She added that the summit provided a unique forum for research leaders and practitioners to build a network that would have a positive effect on the future direction of military research in the National Capital area.

Cmdr. Eric Elster, a researcher from the Naval Medical Research Center (NMRC), Silver Spring, Md., presented an overview of the current research efforts by the Regenerative Medicine Department.

"In the National Capital area we have been able to build a translational surgical research program centered on wounded warriors which involves attending surgeons, surgical residents



*At the 2011 National Capital Area Research Summit, Cmdr. Eric Elster from the Naval Medical Research Center, Operational and Undersea Medicine Research Directorate presented an overview of the current research efforts in the Regenerative Medicine Department.*

and scientists," said Elster. "This collaboration allows us to move seamlessly from the bedside to the bench in order to understand the response to injury in critically ill patients and develop new treatment paradigms."

Elster's presentation focused on his team's work on understanding the systemic response to injury in wounded warriors and how researchers are investigating many of the critical decisions made in this complex patient

population. The key research areas he highlighted were wound healing, the development of heterotopic ossification, modulation of the inflammatory response, hemorrhage control and advanced surgical imaging. He pointed out that his team was involved in training 21 surgical residents and five medical students. He also highlighted NMRC's key role in bridging the gap between the hospital and the research community.

## NAMRU-Dayton Solidifies Local Scientific Research Connections

*By Dr. Richard Arnold, NAMRU-Dayton Scientific Director, and Cmdr. Rita G. Simmons, NAMRU-Dayton Executive Officer*

As researchers at the Naval Medical Research Unit-Dayton (NAMRU-Dayton) transitioned existing in-house research to Wright-Patterson Air Force Base this spring, NAMRU-Dayton leadership also sought to establish new connections with scientific institutions in the Dayton, Ohio area. These connections are vital in realizing the Base Realignment and Closure (BRAC) aim of synergistically operating within the new Center of Excellence and achieving the goal of enhanced mission accomplishment through partner-associated growth. In an effort to cultivate Air Force partnerships, NAMRU-Dayton staff met with leadership from the

U.S. Air Force School of Aerospace Medicine (USAFSAM) and the Air Force Institute of Technology (AFIT) to discuss emerging topics of research interest.

Discussions with USAFSAM's research leaders included topics of how NAMRU-Dayton could provide current and innovative technologies for their students, work to develop several potential research collaborations, and build partnerships in future aeromedical research. These discussions led to the submission of four joint research proposals to a Broad Agency Announcement sponsored by the Air Force Surgeon General.

Another series of meetings with AFIT representatives was very productive. AFIT recently created Human Systems/Factors specialty tracts within the Systems Engineering graduate programs, an

area of expertise for several NAMRU-Dayton researchers. Conversations with the AFIT Human Systems Integration Program chair and lead professor explored the possibility of joint research efforts that would benefit the AFIT student population and the potential for NAMRU-Dayton staff to participate as guest lecturers.

NAMRU-Dayton also reached out to several Dayton area universities, including the University of Dayton Research Institute (UDRI) and Wright State Research Institute (WSRI).

NAMRU-Dayton and UDRI currently have two collaborative research studies ongoing and recently submitted two joint project proposals. In one ongoing project, researchers seek to identify the discrete neural processes that underlie  
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## NMRC Collaborates with Ghana to Fight Infectious Diseases

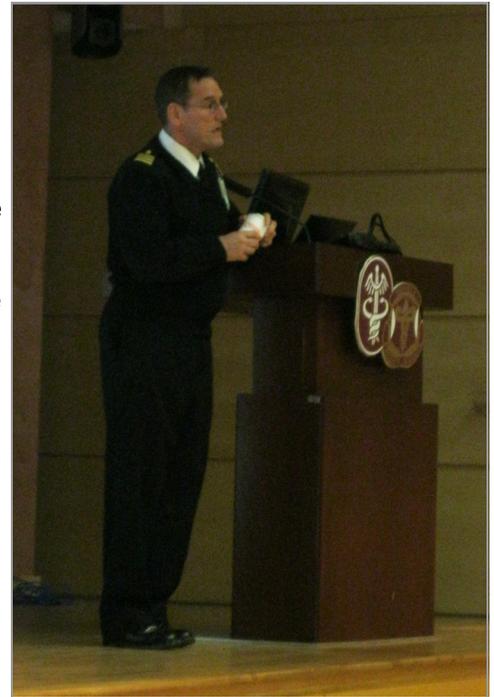
Since 1996, the U.S. Navy has partnered with the West African nation of Ghana in public health research of importance to the military and civilian populations in both of our nations. With a population of 24 million and a land area approximately the size of Texas, Ghana's number one infectious disease problem is malaria. During just one year, 2006, the World Health Organization statistics estimated over 12 million new cases of malaria and 41 thousand deaths in Ghana.

Our initial collaboration between the Noguchi Memorial Institute of Medical Research and the Ghana Health Service was launched out of the Navrongo Health Research Center in the poorest and northernmost Kassena-Nankana District. This research station was unique in having a demographic surveillance system that captured every birth, death and movement in or out of its population of 147,000 residents, and in having a sharply seasonal malaria transmission pattern. During the dry season in this Sahel-savannah area, there was almost no rainfall and malaria transmission virtually ground to a halt. Such a break in transmission and lightening of the malaria burden and its immune suppressive effect could possibly be used to improve the "take" of a vaccine.

With an eye to developing this asset into a clinical trial site for world-class evaluation of a malaria vaccine, researchers at the Naval Medical Research Center ([NMRC](#)) worked with

Ghanaian scientists to develop a proposal to the National Institutes of Health (NIH) for the development of personnel, laboratories, field sites and institutional review boards—essentially to help develop the capacity by an African nation to test malaria vaccine and not simply be a bystander or laboratory base. Our collaboration was successful in winning a five-year grant from the National Institute of Allergy and Infectious Diseases for the period 2001-2006 and a grant renewal for 2006-2011. More than 18 jointly authored reports have been produced out of this partnership since 1998, and more than 50 oral or poster presentations at international meetings have also resulted. Topics include entomological surveillance, rapid diagnostic assessments, vector transmission evaluations, malaria indicator surveys, retrospective case-control studies, and a pivotal trial of the DoDs newest "fire-and-forget" drug, tafenoquine, for prevention of malaria.

The Navy's research profile has broadened beyond malaria to include studies of leishmaniasis, respiratory disease/influenza and hemorrhagic fevers. In 2008-2009, the Navy developed a military-to-military influenza surveillance network and laboratory in Ghana, and during the 2010 influenza pandemic, this network contributed more flu strains than any other African nation for upgrading and modification of the next year's international "flu shot". The Navy's research collaboration with Ghana has been richly



*Cmdr. David Fryauff, senior scientist and director for overseas malaria research and chairman of the NMRC IRB, discusses the joint infectious disease research between the U.S. Navy, the Noguchi Memorial Institute of Medical Research, and the Ghana Ministry of Health from 1996 to 2011 during an IDD seminar October 21.*

productive and mutually beneficial. Navy scientists have been rewarded with lasting friendships based on hard work, trust, and highest scientific accomplishment.

## NAMRU-Dayton Solidifies Local Scientific Research Connections

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human visuospatial processing. Scientists will use UDRI's advanced 256-channel dense-array electroencephalography (dEEG) technology to record neuroelectrical activity from subjects during combinations of visual tracking tasks and vestibular stimulation created by NAMRU-Dayton's unique Visual Vestibular Sphere Device (VVSD). High-resolution dEEG recordings will be reconstructed in three-dimensional space and localized to specific anatomical brain structures, allowing researchers to distin-

guish between visual and motion influences on neural activity. In another study, UDRI provided necessary lab space and expert staff to transition NAMRU-Dayton's award-winning work on motion sickness countermeasures from Pensacola to Dayton. The study will examine the effectiveness of a low-dose intranasal spray of scopolamine as a quickly absorbed, field-expedient motion sickness countermeasure with little to no side effects.

NAMRU-Dayton hopes to form similar connections with WSRI, which develops

innovative technologies to be employed by government and commercial agencies.

As NAMRU-Dayton continues to grow and become an increasingly active contributor within the Dayton scientific community, the command expects the number of collaborations with other regional scientific institutions to increase significantly. These collaborations will strengthen NAMRU-Dayton's capability and capacity to innovate and create better solutions for the issues that face our men and women of the armed forces.

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development and vector control for tropical diseases. They also train local scientists in areas of medical research and dealing with public health challenges.

H.E. Anne Patterson, U.S. ambassador to Egypt, thanked NAMRU-3 for the command's commitment to Egypt. She said NAMRU-3 has continued to exemplify the best in collegial partnerships as it strives to counter infectious disease threats in Egypt, the eastern Mediterranean region and afar with the help of the Egyptian government and its people.

According to Vice Adm. Adam M. Robinson, U.S. Navy surgeon general and chief, Bureau of Medicine and Surgery, medicine builds bridges, builds trust and fosters cooperation.

"While the initial mission of the command was to maintain the health of deployed U.S. service men, NAMRU-3 has become an integral part of the

public health system in Africa and across the Middle East," said Robinson. "The work NAMRU-3 is doing is critical because by helping those in need around the world, the United States not only helps bolster stability but also works to create conditions of hope, which are the foundations of healthy societies," said Robinson.

The lab is currently supporting force health protection in the Horn of Africa, working closely with the Egyptian Ministry of Health and WHO, helping Djibouti with disease surveillance,

responding to disease outbreak in Yemen, fighting malaria in Liberia, conducting joint research with Ghana, and studying diseases in the Republic of Georgia.



*Capt. Wilkening, on behalf of the NAMRU-3 Locally Engage Staff, presented the distinguished Ibrahim Helmy Award to Mr. Ibrahim El-Maghrabi for over 40 years of service. Mr. El-Maghrabi was noted for his work in media preparation for different strains of bacterial growth.*

## Greetings from the NMRC Ombudsman!

This past month we celebrated the 236th birthday of the United States Navy. I would like to add my support and thank you to all the Sailors that serve our country here and abroad ensuring our freedoms.

**Exceptional Family Member Program:** The Exceptional Family Member Program (EFMP) was established by the Navy to support Sailors and their families with special needs. Enrollment will soon be available electronically through Navy Family Accountability and Assessment System (NFAAS) to make it easier and faster. Additionally, the EFMP module will enable case managers at Fleet and Family Support Centers to track information and referral requests and to develop and manage individualized service plans for new enrollees. The EFM user's guide is available at <https://navyfamily.navy.mil>.

**Combat the Winter Blues:** As the fall season progresses with cooler temperatures and shorter daylight hours, many begin to experience what is called the "winter blues." Symptoms are characterized by a drop in energy level, social withdrawal, oversleeping or insomnia, difficulty concentrating, irritability, weight gain, and carbohydrate cravings. Consider these tips to improve your mood and combat the winter blues:

- Exercise.
- Eat healthy.
- Get some sun.
- Reduce alcohol.
- Treat yourself.
- Relax.
- Embrace the season.
- Get social support.

**Child ID iPhone App:** The first mobile application created by the FBI provides a convenient place to electronically store photos and vital information about your children. You can show the pictures and immediately provide physical identifiers such as height and weight to security or police officers. Using a special tab on the app, you can also quickly and easily email the information to authorities with a few clicks. Download at <http://itunes.apple.com/us/app/fbi-child-id/id446158585?mt=8>.

If you need more information on these or any other resources, please contact me at [angela.prouty@med.navy.mil](mailto:angela.prouty@med.navy.mil) or 217-722-4981.

Angela Prouty  
Ombudsman, NMRC

# NMRC Commanding Officer Visits NAMRU-3 Ghana Detachment

The Commanding Officer of the Naval Medical Research Center (NMRC), Silver Spring, Md., Capt. Richard Haberberger, and the Executive Officer from U.S. Naval Medical Research Unit No.3 (NAMRU-3), Cairo, Egypt, Capt. Buhari Oyoyo, visited the NAMRU-3 Ghana Detachment. The purpose of the visit was to ascertain current research capabilities and discuss future collaborations aimed at enhancing public health capacity building in West Africa. During their visit, they were accompanied by the Officer-in-Charge of the Ghana Detachment, Lt. Cmdr. Chris Duplessis.

“The purpose of my trip to Ghana was to understand what kind of infrastructure they have in place and to see what kind of activities we are involved in, and to ensure our current and proposed projects are adequately supported,” said Haberberger.

The officers first met with the directors of Noguchi Memorial Institute for Medical Research, NAMRU-3’s primary collaborator in the region. Discussions centered on streamlining sample processing, strengthening laboratory capacity and ramping up operational capabilities. The Noguchi staff envisions expanding their foot-

print throughout the region by spearheading capacity building initiatives for other West African countries, such as Burkina Faso, Côte d’Ivoire and Togo. In addition, they met with executive level Ghanaian public, private and military health officials and the U.S. Ambassador to Ghana, His Excellency Donald G. Teitelbaum.

The NAMRU-3 Ghana Detachment began operations in 1995 with a primary focus on malaria vaccine research, but has expanded to surveillance studies involving influenza-like-illness, acute respiratory illness, acute febrile illness, diarrheal diseases and Lassa fever. Primary U.S. stakeholders for Ghana field activities include the Armed Forces Health Surveillance Center Global Emerging Infections Surveillance and Response

System, Centers for Disease Control and Prevention via its Global Disease Detection and Response Program, the National Institutes of Health and Military Infectious Diseases Research Program.

According to Duplessis, the Ghana Detachment’s vision is to increase public health capacity by initiating surveillance projects on leishmaniasis, herpes B seroepidemiology, sexually transmitted infections, Dengue Fever and human immunodeficiency virus.

Oyoyo explained, “The overall goal of the Ghana Detachment is to expand public health surveillance and research capacity building for Africa with Ghana as the central hub, and to cement its establishment as a public health center for excellence in the region.”



Capt. Haberberger takes a photo with the NAMRU-3 Ghana Detachment medical research staff in front of the Noguchi Memorial Institute for Medical Research.

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