

In this issue...

CO's Messages	2
Dr. Wayne Horn	3
Supporting the Amazon Frontier	4
Next Generation Sequencing	5
NMRC's CO Meets CDC in Cairo	6
AAALACi Recertification in Cairo	7
NAMRU-3, DIMO Collaboration	8
Roberts Receives IPMA-HR Awards	9
Cornell Vet Students Visit NMRC	9
Training for Nile Basin Countries	10
USUHS Residents Visit NMRC	10
NAMRU-2 PP Running Group	11
Dengue Diagnostic Devices	12
Kochel Retires	13
Ombudsman's Note	14

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Millennium Cohort Study, Largest Study in U.S. Military History, Extended 67 Years

From NHRC Public Affairs

SAN DIEGO - The Naval Health Research Center's (NHRC) Millennium Cohort Study was extended to follow service members and veterans during the entire course of their lifetimes. Given the significance and success of this study, the Office of the Assistant Secretary of Defense for Health Affairs approved the extension of the study to 67 years, May 21, 2013, making this not only the largest study in military history, but also the longest study. The study was originally designed in collaboration with all military service branches and the Department of Veterans Affairs to evaluate the health of service personnel throughout their military careers to advance knowledge regarding physical and psychological health outcomes. Originally the study was set up to follow service members for 21 years (20 years of service plus 1 year).

"This extension allows the Millennium Cohort Study researchers to investigate the temporal sequence of military experiences and their potential health outcomes among an aging cohort of current and former service members," said Dr. Nancy

Crum-Cianflone, Millennium Cohort Study principal investigator. She went on to add that since physical and psychological health conditions related to service may occur at any time during or after service and may involve long latency time periods (e.g., memory issues, cancer, and mortality), the continued assessment of service members over their total lifespans is imperative.

As force health protection continues to be a priority for the U.S. military, the Millennium Cohort Study's prospective design, size, longevity and ability to capture a full range of health-related exposures and outcomes will continue to provide critical information to military leaders and policymakers towards enhancing the long-term health of current and future generations of military members and their families.

"The study also includes spouses of military service personnel as part of the family component," said Crum-Cianflone. "The Family Study will provide a more complete understanding of the impact of service time on military families, including spouses and children."

Studying the health of military families in a large sample of service
(Continued on page 14)

Naval Health Research Center The Millennium Cohort Study – Quick Facts

58% of participants have deployed in support of the operations in Iraq and Afghanistan

43% of participants have left military service and continue to participate in the study

84% of responders completed their 2011 – 13 survey online

34% of the Cohort are women



NMRC Commanding Officer's Message



It's been pretty hectic for all of us so far this year, and now that summer is here I know we are all looking forward to the many opportunities to relax and refresh, enjoy time with family and friends, either close to home or far away. During the summer we often change the way we eat, the way we exercise and they way we have fun. To get the most out of summer, safety should be at the top of your list. There are the familiar safety reminders of preventing heat-related illnesses, keeping food safe when grilling, keeping away pesky bugs and avoiding poison ivy. We must also consider other risks that can have more serious consequences.

For our military members, this summer provides a sobering reminder of last year between Memorial Day and Labor Day when 20 Sailors and 13 Marines lost their lives. Twenty of those were motorcycle accidents, two drowned, two died during other recreational activities and two were pedestrian fatalities. For everyone who is part of the NMRC Enterprise, if you are driving during the summer, start every trip well-rested, drive during daylight hours, schedule breaks every two hours, never drink and drive and pull over if you get tired.

TRiPS, the Naval Safety Center's travel risk planning system, is an online, automated risk-assessment tool that provides information on the hazards faced on the highway: fatigue, not buckling up and driving too far. Access TRiPS through Navy Knowledge Online.

We all need to do our part to keep everyone around us safe. You all certainly deserve some well-earned time off for all your hard work. Keep summer safety in mind, be careful. Recognize the risks and make good decisions. You are all valuable members of our team and contribute so much to our success, I want to see you back at work whole and healthy and ready to tackle all the challenges that are before us.

NMRC Commanding Officer sends,
John W. Sanders III, CAPT, MC, USN



NAMRU-6 Commanding Officer's Message

In any conflict, having strong and dependable allies on your side can make the difference between victory and defeat. In the long war against infectious diseases that threaten public health and national security, being able to work with host nations that share the same sense of urgency about potential pandemics is a critical strategic element. However, making immediate, regular, visible advances at the "tactical level" is essential to keep our overseas relationships healthy and relevant. This is particularly true for the OCONUS NAMRUs, where our partner nation science colleagues are often challenged by political counterparts in their own governments to explain what the U.S. labs bring to the fight. If it isn't something headline-grabbing like the discovery or cure of a major outbreak such as the MERS novel coronavirus or H7N9 influenza, it's natural for the political leadership to wonder about the value or return on investment for supporting a U.S. presence. Expectations need to be managed, and that is where the diplomacy part of our assignments kicks in.

As the only U.S. military command in South America, NAMRU-6 has the good fortune to work with strong military and civilian allies in 15 countries. However, the treaty that places us in this strategically advantageous location is a simple 30-year-old document forged between the navies of the United States and Perú. In keeping that relationship healthy, NAMRU-6 has invested heavily in technical training, network, laboratory and communications systems improvements, and study collaborations as examples of the constant renewal of our commitment.

In recent months, we had the opportunity to capitalize on a high-visibility undertaking that garnered attention at the highest levels of leadership in both the U.S. and Perú and that has already resulted in tangible acts of support for our continued presence in the region. In this issue, I hope you will enjoy reading about how Navy Medicine R&D helped launch a new class of Peruvian Navy ships designed to bring health and civic services and telemedicine capability to the far reaches of the Amazon frontier and how that act bodes well for future boots-on-the-ground research activity in Latin America.

David B. Service, CAPT, MSC, USN
Commanding Officer, Naval Medical Research Unit No. 6

In Memory of Dr. Wayne Horn, NSMRL Medical Director

By Cmdr. Fred Yeo, Executive Officer,
Naval Submarine Medical Research
Laboratory

GROTON, Conn. - Dr. Wayne Horn served as Medical Director of the Naval Submarine Medical Research Laboratory (NSMRL) from 1999 to 2013. Horn was the Navy's lead for submarine disaster survival, escape and rescue and a recognized international expert in the field. His achievements are unrivaled and have transformed the field of submarine escape and rescue from that of no potential for escape and survival to that of successful escape and prolonged survival from depths of greater than 600 feet.

Horn represented the United States at NATO submarine escape and rescue conferences, wrote international standardization agreements, developed the blueprints (Guard-Books) for submarine escape, designed and tested the submarine escape suit, developed long-term submarine survival sustainment solutions, and was the driving force to reinstitute pressurized submarine escape training into the submarine

force. He was instrumental in developing medical standards for the safe integration of women into submarines and conducted several congressionally mandated research studies on the issue of the effects of submarine service on women's reproductive health.

Horn was born in the Panama Canal Zone in 1947 to Edgar and Lois Horn and settled with his family in Bossier City, Louisiana. It was in Louisiana that he discovered his love of books and science and was rarely seen without a book in his hand. In junior high school he met Frieda Cogburn, who would go on to become his wife of 44 years. Horn earned his undergraduate degrees in chemistry and microbiology from Northwestern State University. In 1969 he received his Naval Commission as an unrestricted line officer and served on the minesweeper USS Prime (AM-466) and the Air Craft Carrier USS Oriskany (CV-34). After his Vietnam service, he worked as a product engineer at Western Electric, where he perfected the coin-collecting mechanism of the pay phone, and briefly for the U.S.

Geological Survey as an offshore oil-rig inspector. After this period in industry, he entered medical school at Louisiana State University and received his M.D. Following this, Horn completed a family practice residency and practiced in the private sector for 10 years prior to re-entering the military in 1991. He completed Undersea Medical Officer training and was assigned to submarine squadron 10, King's Bay, Georgia, and earned his Submarine Warfare Qualification. He went on to serve as SMO at the elite submarine development squadron DEVRON-5, where he began to have a significant impact on submarines and submariner health.

Horn envisioned and initiated the Disabled Submarine Entry Team, which allowed for integration of various rescue elements, the Deep Submergence Rescue Vehicle, and the Submarine Rescue Chamber with the medical support element on the surface. His pioneering efforts were shared with most other Navies of the world, resulting in a coordinated robust concept of operations for submarine
(Continued on page 5)



Dr. Wayne Horn, third from the right, pictured with members of the Australian Navy during a collaborative research project.

NAMRU-6, Peruvian Navy Provide Support to Amazon Frontier

By Lt. Carlo Traverso, NAMRU-6 PAO

LIMA, Peru - The Peruvian Navy launched a new military ship (B.A.P.) in Mazan, Perú, called the Rio Napo as part of the country's Sustainable Mobile Platform for Social Action. The ship's mission is part of an ambitious new national program to bring government-sponsored services such as healthcare, education and banking to isolated populations along the tributaries of the Amazon River.

During the launch, a "telemedicine" component displayed its capabilities in the use of medical information exchanged from one site to another via electronic communications to improve patients' clinical health status and diagnostics. The demonstration involved the Peruvian Naval Hospital (CEMENA), Walter Reed National Military Medical Center (WRNMMC), and the new Peruvian Navy river ship B.A.P. Rio Napo on the Napo River.

The commanding officer of the U.S. Naval Medical Research Unit, No. 6 (NAMRU-6), Capt. David Service, coordinated the military-to-military phase of the demonstration and briefed the U.S. Ambassador to Perú, Rose Likins; Deputy Chief of Mission, Mr.



People watch as the Peruvian Navy launch a new military ship (B.A.P) in Mazan, Peru, called the Rio Napo.

Michael Fitzpatrick; and the U.S. Political-Military Advisory Committee on the final plan for U.S. support to the video teleconference (VTC) and telemedicine demonstration with the Peruvian Navy. The President of Perú, Ollanta Humala; Minister of Defense; Minister of Health; and military VIPs were all in

attendance to observe the international VTC during the vessel's commissioning ceremony.

The "telemedicine" event demonstrated the ability of the Peruvian Navy to communicate and consult with specialists from other countries and other areas of Perú. In addition to helping establish the communications link, NAMRU-6 provided technical training and equipment to the embarked Peruvian medical staff to assist with disease recognition and diagnosis.

NAMRU-6 was instrumental and a key player in establishing coordinated telemedicine connectivity and medical consultations with WRNMMC to help the Peruvian Navy succeed in this vital endeavor. Led by Service, NAMRU-6 coordinated all aspects of the VTC and telemedicine consultation and also provided laboratory training and equipment for the inaugural voyage of this new class of ship. Immediately following the christening ceremony and telemedicine demonstration, Peruvian President Humala and U.S. Ambassador Likins traveled to Washington D.C. to meet with President Obama and Secretary of Defense Chuck Hagel for planned bilateral defense talks.



The new ship's mission is part of a new national program to bring government sponsored services to isolated populations along the tributaries of the Amazon.

Navy Tests Next Generation Sequencing to Gather DNA Information

SILVER SPRING, Md. - Next Generation Sequencing (NGS) is a surveillance tool used by researchers to rapidly and economically gather DNA information from biological samples. The Department of Defense is looking into using NGS at installations outside the continental United States (OCONUS).

"This is a way for researchers in the U.S. to help our overseas colleagues detect and characterize emerging pathogens," said Lt. Vishwesh Mokashi, department head of the Genomics and Bioinformatics department at the Naval Medical Research Center (NMRC).

NMRC researchers are working with scientists at the Los Alamos National Laboratory (LANL) to test the deployment of the NGS technology called "Edge Bioinformatics." NMRC researchers are identifying the logistics required to gather the necessary bioinformatics information, specifically DNA sequence information about thousands of organisms from *E. coli* to Ebola virus, as well as determining the data management systems needed that would lead to the successful stand-up of NGS capabilities at OCONUS locations.

"It sounds complicated," said Mokashi, "but what it boils down to is a point and click software program that will automate some aspects of bioinformatic analysis and help OCONUS scientists to analyze NGS data."

Bioinformatics is a very specialized field of DNA data analysis that requires a unique blend of training in biology and computer science. The sheer size and complexity of NGS

datasets cause bioinformaticists to routinely write their own computer programs to answer whatever question the experiment is designed to ask. Smaller labs in universities and overseas often do not have the resources available to support a team of bioinformatic professionals or the high-performance computers required for their work.

The Edge Bioinformatics software is being designed to enable trained bioinformaticians in the U.S. to support OCONUS scientists by logging in remotely to help troubleshoot and to interpret results of automated analyses that the OCONUS labs will perform.

"This system, when deployed, will allow for enhanced customized data analyses, which overseas laboratory personnel may not currently be set up to do," explained Mokashi.

A live demonstration of the Edge software prototype was conducted at NMRC's Biological Defense Research Directorate (BDRD) at Ft. Detrick in Frederick, Md, June 12, to give stakeholders a feel for the analytic capabilities of the system, the intuitiveness of the user interface, and the small footprint of the computational hardware it runs on.

Researchers from BDRD and LANL staged two examples of how an OCONUS scientist could analyze NGS data using the Edge Bioinformatic software.

In one example, the goal was to diagnose a new strain of flu from a clinical sample and then quickly design a diagnostic test for that strain.

The team also demonstrated how

the OCONUS scientist and a bioinformatician in the United States could work together through a remote connection to interpret results of the automated analyses. In half a day's time or less, the automated system produces results that a single Ph.D. biologist in an OCONUS lab might work days or weeks to produce manually.

"We were able to successfully demonstrate the analytic power of our system and how user friendly it is during the demonstration," said Mokashi. "This is just one step of many that needs to be taken before we can go live with the deployment of the system. Once that happens, we will be able to support a range of analysis types, from polymerase chain reaction assay development to characterization of an unknown organism."

The demonstration was widely attended by representatives from Navy Medicine, the Walter Reed Army Institute of Research, the Armed Forces Health Surveillance Center – Global Emerging Infections Surveillance and Response System, the U.S. Army Medical Research Institute of Infectious Diseases, and the Defense Threat Reduction Agency.

"The demonstration successfully showed that bioinformatic software modules could be controlled by a remote operator to assess results and provide feedback on various steps during NGS data processing," said Mokashi. "This system, when completely deployed, will support both Army and Navy OCONUS labs, creating a common platform for NGS data analysis."

In Memory of Dr. Wayne Horn, NSMRL Medical Director

(Continued from [page 3](#))
rescue missions worldwide.

In 1999, he moved to Groton and served the remainder of his career as the Medical Director at NSMRL. During this period, he wrote more than 25 peer-reviewed medical articles and 30 technical reports, was part of more than 50 research projects, directed the

first at-sea submarine survival exercise, conducted research on carbon dioxide removal technology, performed women's health monitoring studies to address reproductive health concerns for women serving on submarines, and was instrumental in the cessation of smoking on board submarines.

Horn's lifelong contributions to the health and welfare of submariners will have immeasurable impact on generations of future submariners. Successful escape of submariners from a disabled submarine is only possible today thanks to Horn's commitment, ingenuity and dedication. He passed away June 4, 2013.

NMRC Commanding Officer Meets CDC Representatives in Cairo

CAIRO - Capt. John Sanders, commanding officer of the Naval Medical Research Center (NMRC) in Silver Spring, Md., led discussions with representatives from the Centers for Disease Control and Prevention (CDC) concerning ongoing collaborations at the U.S. Naval Medical Research Unit No. 3 (NAMRU-3), June 6. With him were Capt. Kevin Russell, director of the Armed Force Health Surveillance Center, and Lt. Cmdr. Nathaniel Smith, NMRC's director for administration.

The purpose of the visit was to discuss ongoing collaboration between NAMRU-3 and CDC as well as the current relationship and possibilities for future collaboration. The visit included a meeting with CDC representatives Dr. Tom Chiller, the acting director of Global Disease and Detection, and Jenny Parker, the deputy director for Operations and Management, Center for Global Health, to discuss the Global Disease and Detection Program at NAMRU-3. They also participated in a comprehensive overview of Research Science Directorate activities.

Sanders had the opportunity to visit the International Emerging Infections (IEIP) site in Damanhour, Egypt, which is located in the Egyptian governorate of Beheira.

Dr. Adel Mansour of the NAMRU-3 Bacterial and Parasitic Disease Research Program, who has been



NAMRU-3's Lt. Cheryl Rozanski conducts a tour of NAMRU-3 facilities for Capt. John Sanders, NMRC commanding officer and CDC representatives Dr. Tom Chiller, the acting director of Global Disease and Detection; and Jenny Parker, deputy director for Operations and Management, Center for Global Health.

Ministry of Health and Population and NAMRU-3 and CDC through meetings with the Undersecretary of Health and Population, Dr. Mohamed Meneese, the head of the governorate's central public health laboratory, Dr. Moustafa Maaroo, and the director of the general

assembled to receive certificates of appreciation from Dr. Erica Dueger, head of the Global Disease and Detection Program at NAMRU-3. The visitors also viewed posters describing current NAMRU-3 and Ministry of Health IEIP activities.

Sanders summarized his visit by saying, "It is wonderful to have the opportunity to visit NAMRU-3 again. Of course, it is delightful to get to see and visit with old friends from NAMRU-3 and the Ministry of Health, but it is also a great chance to discuss the current state of affairs here. With all the challenges that have come after the revolution, there are often worrisome news reports about Egypt. This is a chance to see for myself that NAMRU-3 still has a strong partnership with the Ministry of Health and there is still great work being conducted here. I am already looking forward to my next opportunity to come back to visit."

"This visit clearly demonstrated the good relationship between the Ministry of Health and Population and NAMRU-3 and CDC through meetings with the Undersecretary of Health and Population, Dr. Mohamed Meneese, the head of the governorate's central public health laboratory, Dr. Moustafa Maaroo, and the director of the general hospital, Dr. Alaa AIGHoneimi."

working with the Ministry of Health in Damanhour for the past 11 years, said, "This visit clearly demonstrated the good relationship between the

hospital, Dr. Alaa AIGHoneimi."

In addition to hospital and laboratory tours in Beheira, a large group of health care professionals

AAALACi Recertification Visit to the Navy Laboratory in Cairo

From NAMRU-3 Public Affairs

CAIRO - A two-man team from the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALACi) recommended recertification of the U.S. Naval Medical Research Unit No. 3 (NAMRU-3) Animal Research Program after a site inspection, June 12. AAALACi is a private, nonprofit organization promoting the humane treatment of animals in science through voluntary accreditation and assessment programs. Dr. John Norton, DVM, Ph.D. from Duke University, and Dr. Michael Huerkamp, DVM, Ph.D. from Emory University conducted the inspection visit.

The Department of Defense requires all military laboratories using research animals to be AAALACi accredited. NAMRU-3's animal program, which has been accredited since 1996, must be recertified by AAALACi every three years.

"This certification allows NAMRU-3 to maintain its animal colonies, without which a large part of the scientific mission would not be able to be accomplished," said Army Lt. Col. Bonhage, head of the NAMRU-3 Animal Research Program.

NAMRU-3's animal research program currently has turkeys, pigeons, mice and hamsters. The laboratory's sand fly colony feeds on blood, with hamsters the preferred animal for this. Pigeon blood is used for feeding mosquitoes. The turkeys provide blood for NAMRU-3's work as a World Health Organization regional reference laboratory for diagnosing avian influenza. Mice and hamsters are also used for leishmaniasis research.

A key element of recertification is a review of the animal program description. Bonhage updated the program description to be in compliance with the newly issued and greatly expanded National Research Council Guide for the Care and Use of Laboratory Animals. His 153-page report with appendices was sent to AAALACi in March. AAALACi starts with this report to determine whether the facility meets certification criteria.



Capt. Buhari Oyoyo, NAMRU-3 CO (left), with AAALACi inspectors Dr. John Norton and Dr. Michael Huerkamp (center), congratulates Lt. Col. Bonhage (right) on the Animal Resources Program.

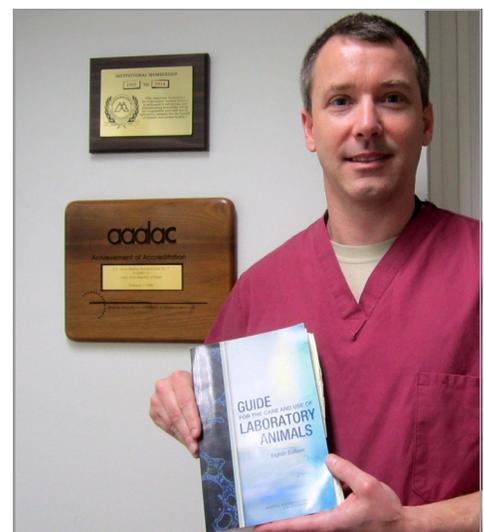
The AAALACi site inspectors also looked at NAMRU-3's Institutional Animal Care and Use Committee (IACUC) and animal care policies, including related safety and occupational health requirements for the animal care staff. They checked to see whether there had been any reports on issues involving the animals. The team also inspected the animals and animal facilities.

"The NAMRU-3 animal facility is an older facility, but well-maintained," said Norton, the lead inspector.

At the outbrief with key NAMRU-3 staff, Norton said there were no findings to report and they would recommend reaccreditation by AAALACi.

More than 880 companies, universities, hospitals, government agencies and other research institutions in 37 countries have earned AAALACi accreditation, demonstrating their commitment to responsible animal care and use. According to the AAALACi web site, AAALACi works with institutions and researchers to serve as a bridge between progress and animal

well-being. This is done through the accreditation process where researchers demonstrate they meet the standards required by law and are also going the extra step to achieve excellence in animal care and use.



Lt. Col. Michael Bonhage, Head Animal Resources Program, next to the AAALACi accreditation plaque.

NAMRU-3 Staff Collaborate with Visiting DIMO Training Team

From NAMRU-3 Public Affairs

CAIRO - Staff members from the U.S. Naval Medical Research Unit No. 3 ([NAMRU-3](#)) collaborated with a visiting Defense Institute for Medical Operations (DIMO) training team to present a short program to promote healthcare among the Egyptian military. Dr. Atef El Gendy of the NAMRU-3 Bacterial and Parasitic Disease Research Program worked closely with the five-member DIMO team to provide scientific presentations and serve as a scientific translator during the two-week training session. The emphasis on this trip was infection control and communicable disease prevention. The training course was held at the Egyptian Armed Forces Medical Complex in Kobry El Qobba, Cairo.

In April, the DIMO team provided two courses to Egyptian military medical staff - (1) Infection Control, Hospital Epidemiology and Medical Waste Management: Local and National Program Development, and (2) Avian/Pandemic Influenza Infection Control and Hospital Planning for Pandemic Management.



Dr. Atef attends DIMO presentation with Egyptian Army health professionals.

Gendy, who is a microbiologist, gave presentations on sampling planning for clinical specimen collection and transportation of infectious substances and the role of the clinical microbiology laboratory in infection control programs and during disasters.

Following the training, the Egyptian military's Infection Control Program consultant, Dr. Shereen El Masry, requested laboratory training at NAMRU-3 for the Kobry Elkoba Military Hospital laboratory staff.

DIMO is a dual service agency with representatives from the Air Force and Navy who provide world class,

regionally focused healthcare education and training to partners around the world. A small facilitating agency that utilizes subject matter experts throughout DoD to develop curriculum and teach courses around the world, DIMO brings people of various countries together to establish a common base of understanding among dedicated healthcare professionals. Specific emphasis on building international healthcare bridges, disaster preparedness, communicable disease prevention and other current healthcare issues provide a unique opportunity for the Air Force and Navy to contribute to coalition partnerships.



DIMO team pictured with Egyptian Army health professionals.

Dayton's Nicholas Roberts Receives Two Awards from IPMA-HR

From NAMRU-Dayton Public Affairs

DAYTON, Ohio – Nicholas Roberts, deputy director for administration at the Naval Medical Research Unit Dayton ([NAMRU-Dayton](#)), was recognized by the International Public Management Association for Human Resources (IPMA-HR), greater Dayton Chapter, during the association's 51st Annual Award Luncheon held at Wright-Patterson Air Force Base, May 1.

The association recognizes outstanding civilian human resources employees in the Dayton metropolitan area. This year, Roberts, surrounded by his wife, mother, father, brother, and several supporters from NAMRU-Dayton, heard his name not once, but twice, and walked away to applause at receiving two awards: the HR Specialist award and the IPMA-HR
([Continued](#) on page 11)



From left: NAMRU-Dayton commanding officer Capt. Doug Forcino, Nicholas Roberts, and executive officer Capt. Jeff Andrews.

Cornell University Veterinary Students Visit WRAIR, NMRC

SILVER SPRING, Md. - Students from Cornell University visited the Walter Reed Army Institute of Research (WRAIR) and the Naval Medical Research Center ([NMRC](#)), June 12. Lt. Col. Ken Despain of WRAIR coordinated the event. The students are part of the Cornell University Leadership Program for Veterinary Students, in which they gain firsthand knowledge from distinguished military and civilian scientists about the veterinary medicine and biomedical sciences at large. NMRC commanding officer Capt. John Sanders greeted the group, after which they were taken on a tour of the vivarium and the insectary and were given the opportunity to speak with researchers from the Navy dive, blast/neurotrauma and malaria departments.

The students in the program are competitively selected from veterinary schools around the globe, where they represent the best of the best. Many of the students will go into the



Cornell University veterinary students in a session with Navy and Army leaders where they discussed topics about veterinary medicine and biomedical sciences. Photo provided by Cornell University.

research and development field and some may even join the military to pursue a career there.

“They have the potential to shape the future of veterinary medicine,” said Despain.

Cairo Participates in Training Program for Nile Basin Countries

From NAMRU-3 Public Affairs

CAIRO - For the past three years, researchers from the U.S. Naval Medical Research Unit No. 3 (NAMRU-3) have actively contributed to the training program for medical professions from Nile Basin countries, hosted by the Suez Canal University Faculty of Medicine and funded by the Japan International Cooperation Agency (JICA) and the Egyptian Fund for Technical Cooperation with Africa office (EFTCA). The focus of this year's training was quality management of concurrent infection and control of TB/HIV for Africa.

Clinicians, researchers and technologists from Burundi, Rwanda, Sudan, Djibouti, Kenya, Democratic Republic of Congo, Tanzania, Uganda and Egypt visited NAMRU-3,

May 20. Lt. Cmdr. Tupur Husain, acting head of the Bacterial and Parasitic Disease Research Program (BPDRP), welcomed the group and gave an introduction on the mission of NAMRU-3. Later, the group toured NAMRU-3 and heard specific presentations on a variety of topics related to working in a research laboratory.

The BPDRP presenters included Dr. Hanan El Mohamady, who discussed universal safety precautions for laboratory workers related to working with TB and HIV samples; Dr. Mohamed Abdel Maksoud, who discussed in detail the conventional methods for laboratory detection of TB and the microscopic-observation drug-susceptibility assay for the diagnosis of TB, a rapid and low cost assay for TB detection; and Dr.

Moustafa Abdel Fadeel, who lectured on serology in diagnosis of TB.

Dr. Omar Dessouki, the Suez Canal University program organizer, would like to expand NAMRU-3's role in the three-month long program. "The course participants were more than satisfied with the visit, the presentations and the tour. I am looking forward to further collaborations," said Dessouki.

The mission of NAMRU-3 is to study, monitor and detect emerging and re-emerging disease threats of military and public health importance and to develop mitigation strategies against these threats in partnership with host nations and international and U.S. agencies in the Central Command, European Command, and Africa Command areas of responsibility.

NMRC Hosts Visit by USUHS Occupational Health Residents

SILVER SPRING, Md. – As part of a growing partnership between the Naval Medical Research Center (NMRC) and the Uniformed Services University of the Health Sciences (USUHS) Occupational Health Residence Program, NMRC researchers Lt. Rebecca Pavlicek and Lt. Andy Cronin hosted the second annual visit by Occupational Health residents to NMRC, June 12. The residents visited NMRC to learn more about how the Navy conducts research and to gain valuable insight on how to apply environmental and occupational health knowledge in order to assess, prevent and control physical, biological and chemical hazards relevant to protect the Navy.

"These doctors are the future protectors of Navy personnel both in the fleet and in the laboratory," said Pavlicek.

The residents were at NMRC for a day-long event that consisted of six sessions. Each session delved into different areas within the realm of Occupational Health. Some of the topics discussed were bio-safety, chemical hygiene, environmental,



Lt. Andy Cronin (far left) and Lt. Rebecca Pavlicek (far right) pictured with Uniformed Services University of the Health Sciences Occupational Health residents. Pavlicek and Cronin hosted the second annual visit by the residents to NMRC, June 12.

radiation, and veterinary services with NMRC and Walter Reed Army

Institute of Research subject matter experts leading the discussions.

NAMRU-2 PP Running Group Participates in Half Marathon

By Megan Clavier, NAMRU-2 Phnom Penh

PHNOM PENH, Cambodia – There’s nothing like a little sweat and physical exertion to bring a team together. June 16, the Naval Medical Research Unit No. 2 Phnom Penh (NAMRU-2 PP) running team was up at 4:30 a.m. and off to their next big race - the Phnom Penh International Half Marathon.

Leading the pack was NAMRU-2 PP researcher Dr. Nary Ly, who won the race in 2012, followed by many runners who would be tackling their first 10-kilometer race and Noel Pajutan, who was going for his first 21 kilometer race!

Piseth Ly, NAMRU-2 laboratory technician, joined the running team because she believes it is a great way to be healthy and to meet with other staff outside of work. She went on to say that when she finished the race, she felt amazing and happy as her time was much shorter than when she was training. When asked whether she would run again, she happily responded, "For sure, I want to run again and again. Running is my favorite sport."

Many of her coworkers shared the same enthusiasm. With weeks of training behind them, spirits were



NAMRU-2 PP staff at the starting line of the Phnom Penh International Half Marathon.

high and the staff appeared prepared for the road ahead. Thirteen runners in all finished the race and excitedly cheered on Ly as she stood on the podium, having taken second place in the women’s half marathon.

The next race will be the Thansur Bokor Mountain Half Marathon, 10-

kilometer, 3-kilometer, and bike race in Kampot, Cambodia. Running straight up Thansur Bokor mountain sounds daunting to say the least, but the team is ready for the challenge. Many will be waiting for the Angkor Wat race taking place in December,

(Continued on page 12)

Dayton’s Nicholas Roberts Receives Two Awards from IPMA-HR

(Continued from page 9)

Human Resources Employee of the Year.

Roberts was recognized for his management of the laboratory’s human resources functions and his leadership skills. He streamlined the preparation of new position descriptions. He also developed a command-wide civil service appraisal cycle process and an automated calculation process that relies on a formula-based spreadsheet. He also developed numerous human resource electronic products that have been sought after by government and civilian organizations throughout the country.

The IMPA’s purpose is to enhance the image of public sector employees by providing community-wide recognition. The program provides an excellent means of honoring the outstanding personnel who make significant contributions to their respective organizations and the community as a whole.

Photo: Col. Cassie B. Barlow, Commander of the 88th Base Wing at WPAFB presents the IPMA-HR Human Resources Employee of the Year award to Nicholas Roberts, NAMRU-Dayton’s Deputy Director for Administration.



Multicenter Clinical Evaluation of Dengue Diagnostic Devices

SILVER SPRING - In a recent Naval Medical Research Center ([NMRC](#)) Infectious Diseases Directorate seminar, June 21, Dr. Subhamoy Pal, a researcher in the Viral and Rickettsial Diseases Department (VRDD), presented his findings on four diagnostics devices: two rapid tests and two enzyme-linked immunosorbent assays. These diagnostic devices were evaluated in Asia and South America over a four-year period at field clinics by collaborators and Navy Medicine researchers from the U.S. Naval Medical Research Unit No. 2 Phnom Penh ([NAMRU-2 PP](#)) and U.S. Naval Medical Research Unit No. 6 ([NAMRU-6](#)).

Dengue fever is an operational problem faced by Department of Defense personnel in dengue-endemic countries, where outbreaks can severely compromise mission readiness. NMRC researchers, led by Dr. Shuenn-Jue Wu, a VRDD senior scientist, have been evaluating the promising diagnostic tests with the potential to be used by the warfighter in austere environments and by civilians in low-resource settings.

Pal discussed how the performance data and device specifications can be applied to generate concepts of operations for the Military Health System to determine which diagnostic assay would be most suitable for use at each role of care. The data showed that one of the dengue rapid tests fulfills military requirements and can be effective for making medical evacuation decisions as well as for performing triage or laboratory



Dr. Subhamoy Pal (left), a researcher in the Viral and Rickettsial Diseases Department, stands with Dr. Shuenn-Jue Wu (right) following Pal's presentation.

diagnosis in fixed medical treatment facilities.

The study was a collaborative, multi-site effort aimed at obtaining high-quality data for the Food and Drug Administration licensure of useful diagnostic tests for the warfighter. Researchers from NAMRU-6, NAMRU-2 PP, NMRC, and the Armed Forces Research Institute of Medical Sciences in Thailand all contributed to the generation of this high-quality data and evaluation.

Nearly 100 million people contract

symptomatic dengue fever every year around the world. The disease can present with a range of symptoms, some of which can be managed without hospitalization – but the more severe disease can be life-threatening with hemorrhage and shock. Since there is no preventive vaccine or drug to treat it, the only way to appropriately manage dengue infection is to accurately identify the disease, provide appropriate supportive therapies, and watch for warning signs requiring hospitalization and intensive care.

NAMRU-2 PP Running Group Participates in Half Marathon

(Continued from [page 11](#)) the highlight of the Cambodian running season. Some have even said they will train for the 10-kilometer race, which is a huge step given many of the running team members couldn't complete one lap around the track when they started last year.

Congratulations to everyone who

took part in the race! Stay strong, stay healthy, and keep up the good work!

The mission of NAMRU-2 PP is to identify infectious disease threats of military and public health importance and develop and evaluate interventions and products to mitigate those threats. NAMRU-2 supports

U.S. interests in the Pacific Theater and advances diplomacy in the region by conducting infectious disease research and improving disease surveillance and outbreak response assistance for infectious diseases of critical public health importance to the United States and our regional partners.

NMRC Dengue Researcher Retires After Twenty Years of Service

SILVER SPRING, Md. – Lt. Cmdr. Tad Kochel, head of the Naval Medical Research Center (NMRC) Infectious Diseases Directorate's Viral and Rickettsial Diseases Department, retired in a ceremony here, June 18. During his tour at NMRC, Kochel facilitated the first tetravalent Dengue DNA phase I clinical trial and established the NMRC Infectious Diseases Diagnostic Laboratory.

Dr. Kevin R. Porter, director of the NMRC Infectious Diseases Directorate and guest speaker at the retirement ceremony, said, "As your colleague in dengue virus vaccine development, thank you for your groundbreaking scientific contributions and the tireless hours you spent in the lab and overseas in the field in an effort to mitigate the devastating effects of dengue fever on the military and global public health."

"It was in Peru where Kochel developed his prowess for dengue research, not only from a vaccine development standpoint, but also from the standpoint of obtaining a comprehensive understanding of dengue fever pathophysiology and its tremendous public health impact," Porter continued. "He has clearly established himself as an expert in dengue virus research."

Kochel's twenty years as a Navy Medical Service Corps officer have taken him around the globe. After his 1999 deployment to Saudi Arabia, where he served under Operation Desert Focus and Operation Southern Watch, Kochel was sent to the Naval Medical Research Center Detachment in Peru (now the Naval Medical Research Unit No. 6) as head of the Virology Department. During that tour, Kochel established dengue transmission cohort studies in Iquitos and set up epidemiological studies in several countries as part of the vaccine trials site preparation. He came back to NMRC and continued his efforts toward the development of a dengue vaccine, introducing alternate methodology and antigen preparation and collaborating on the



Lt. Cmdr. Tad Kochel (center) stands on the stage as Cmdr. Stephen Lizewski passes 'Old Glory' to Lt. Cmdr. Michael Gregory, a Navy tradition, during Kochel's retirement ceremony, June 18. Photo by HM2 (FMF) Kyle Oldknow.

initial Dengue-1 DNA vaccine clinical trial. During his second tour in Peru, again serving as the head of the Virology Department, he initiated an influenza and febrile illness surveillance network in eleven countries and at the same time continued his work with dengue in Iquitos. For his final tour, Kochel was sent back to NMRC to serve as the head of the Viral and Rickettsial Diseases Department.

Kochel received numerous letters of appreciation and gifts from his friends and colleagues. During his retirement ceremony, a congratulatory letter from the former President of Peru, Mr. Alan Garcia, highlighted

Kochel's contributions to the country's public health efforts.

The letter included these sentiments, "Your efforts and collaborations with researchers in my country will outlast the eight years you spent living and working in Peru. I hope you take satisfaction in knowing you advanced our collective knowledge of viral diseases. On behalf of the medical researchers and people of Peru, I take great pleasure in wishing you happiness and success in all your future endeavors."

Kochel has more than 116 publications to date and was awarded a patent for the Dengue DNA vaccine.

Millennium Cohort Study, Largest Study in U.S. Military History

(Continued from [page 1](#))

members provides critical information that can be utilized to answer scientific, operational and policy questions.

The Millennium Cohort Study was initiated in 2001 and currently has over 200,000 participants. Although the original designers of the Millennium Cohort Study could not foresee the post-2001 military conflicts, the project is perfectly positioned to address health outcomes related to these and future operations. Deployment of more than 50 percent of Millennium Cohort participants in support of the wars in Iraq and Afghanistan enable researchers to prospectively evaluate detailed data from before, during and after these deployments. Areas of research include post-

traumatic stress disorder, depression, alcohol misuse, respiratory illnesses, sleep and chronic diseases.

NHRC was designated as the DoD Center for Deployment Health Research in 1999 by the Assistant Secretary of Defense for Health Affairs. To assist in this mission, NHRC established the Deployment Health Research Department. The department has the ability to quickly adapt and confront novel health concerns of DoD beneficiary populations and, where applicable, the general public. Staff members have expertise in epidemiology, medicine, psychology, reproductive health, biostatistics, complex data management, large mail and telephone surveys, and occupational health. Included among the core

programs of the NHRC Deployment Health Research Department are the Millennium Cohort Study, the Millennium Cohort Family Study, the Recruit Assessment Program, the DoD Birth and Infant Health Registry, and a collection of post-marketing vaccine safety and effectiveness studies.

For more information, visit <http://www.med.navy.mil/sites/nhrc/Pages/Department164.aspx>



Greetings from the NMRC Ombudsman!

As we move through the summer, I'd like to call your attention to the Department of Defense's "Total Force Fitness" initiative. The DoD takes force readiness seriously and recognizes there are many factors that contribute to a healthy force that's ready to meet the challenges of today's world. A number of these factors impact the force at the individual service member level. The DoD's Total Force Fitness concept views the service member's health holistically, encompassing one's physical, mental and spiritual health, as well as the health of the service member's community and familial relationships. With this in mind, the DoD has joined with America's National Prevention campaign, which aims to promote all aspects of healthy living. Specifically, the National Prevention campaign has identified seven health priorities: Tobacco-free Living, Preventing Drug Abuse and Excessive Alcohol Use, Healthy Eating, Active Living, Injury and Violence-free Living, Reproductive and Sexual Health, and Mental and Emotional Well-Being. For more information on the National Prevention campaign, visit: <http://www.surgeongeneral.gov/initiatives/prevention/strategy/>.

It is never too late to improve your health. Perhaps this summer is your opportunity to look inward. Use the broad categories outlined above and at the National Prevention campaign website and challenge yourself to ask questions about your own physical, mental and spiritual health. And don't forget the resources available to you and your family that are there to help you to make the improvements in your life that you are seeking. One excellent resource is the Navy and Marine Corps Public Health Center's Health Promotion and Wellness Site (<http://www.med.navy.mil/sites/nmcpbc/health-promotion/Pages/default.aspx>). This site has lots of links to guides and resources for everything from maintaining one's weight to tobacco-free living and psychological well-being.

Another good resource is the Human Performance Resource Center website, which has a section specifically dedicated to the Total Force Fitness initiative with articles on everything from "Promoting Psychological Resilience in the U.S. Military" to "Relationship Enhancement" and pain management. The Human Performance Resource Center site is located at <http://hprc-online.org/total-force-fitness>.

As always, if you are in search of other resources or assistance, please don't hesitate to contact me. I can be reached by phone at 301-233-9789 or by email at NMRC.Ombudsman@gmail.com.

I hope you have a healthy and happy summer!

Have a Fine Navy Day!
Alexandra Mora, NMRC Ombudsman