

SCOPE

MAGAZINE OF NAVY MEDICINE RESEARCH AND DEVELOPMENT

ISSUE 8 SPRING 2025

A large, clear petri dish filled with a yellowish, opaque bacterial culture. The dish is resting on a dark surface with a white grid pattern. The lid of the dish has handwritten blue ink markings: "kp MRB1934 AG-24" on the left and "034 PR23" on the right. The main title is overlaid on the center of the dish.

NMRC Reaches Milestones

**in its Six Year CDMRP Award for
Bacteriophage
Therapy**

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Editor's Desk

Welcome back to SCOPE magazine, the official magazine of the best people in the United States Navy.

Putting this magazine together is just one small part of public affairs; a part that is equally fun and frustrating. The best part is everyone's receptiveness; when we say, "hey we're working on a story," NMR&D experts rise to the occasion, accommodating our questions, intrusions, and obtuse photo requests. The staff contributors listed below go above and beyond in piecing the SCOPE together. So, to the SCOPE staff, thank you and let's keep building better each issue.

To our readers... when you see SCOPE staff, let them know they're awesome. If not for them, we would all just be reading more emails.

Shout out and congratulations to my right hand, Sidney on being named NMRC Junior Civilian of the Quarter.

— Tommy Lamkin

THE SCOPE

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Lab samples from
NMRC bacteriophage
treatment research.
Photo by Elliott Page



NMR&D Discusses Strategies and Research for Warfighter Readiness at 2025 Strategic Planning Meeting

By Sidney Hinds

Naval Medical Research Command (NMRC) hosted Navy Medicine Research & Development (NMR&D) leadership for their 2025 Strategic Planning Meeting on Mar. 10-11.

Commanding officers, executive officers, senior enlisted leaders and science and technical directors attended the meeting virtually from commands across the globe, representing NMR&D's eight commands: NMRC, Naval Health Research Center, Naval Submarine Medical Research Laboratory, Naval Medical Research Unit (NAMRU) Dayton, NAMRU EUR-AFCENT, NAMRU INDO PACIF-

IC, NAMRU San Antonio and NAMRU SOUTH.

“For me, this was an opportunity to step back from the day-to-day operations and discuss how we support Naval and Joint warfighters”

The annual Strategic Planning Meeting is a touchpoint for NMR&D to appraise the accomplishments of the commands individually and collectively.

“For me, this was an opportunity to

step back from the day-to-day operations and discuss how we support Naval and Joint warfighters in the Indo Pacific,” said Capt. Nicholas Martin, commanding officer for NAMRU INDO PACIFIC, “and see how our colleagues across NMR&D are doing the same.”

NAMRU INDO PACIFIC is one of three OCONUS-based research commands within NMR&D. These commands conduct surveillance and treatment development for disease vectors in areas of strategic importance for the U.S. military, to protect service members from illness that could impair their ability to accomplish the DoD mission.

Continued on page 31



Emily Swedlund

NSMRL Divers Assist with CTEEA SeaPerch Regional Championship

By Emily Swedlund

Naval Submarine Medical Research Laboratory (NSMRL) divers were invited to assist with the 2025 Connecticut Technology and Engineering Education Association (CTEEA) SeaPerch Regional Championship.

SeaPerch is a STEM [science, technology, engineering, and mathematics] program that introduces middle and high school students to career opportunities in marine engineering and architecture. The program was founded by the Office of Naval Research (ONR) to educate students about the opportunities for engineering and marine design that exist in the Navy.

This year, 128 students from across Rhode Island and Connecticut participated in the competition, designing and building underwater remotely operated vehicles (ROVs), which they then maneuvered through an underwater obstacle

“We wanted students to see how Sailors are actually involved in the work, which is why we bring in real Sailors who can answer kids’ questions with authority”

course, assisted by Navy divers in the water and mentored by Navy submariners on deck.

“Being on the coast, near Electric Boat [U.S. submarine manufacturer] and so many Navy bases, we wanted students to see how Sailors are actually involved in the work, which is why we bring in real Sailors who can answer kids’ questions with authority,” said Seaperch Regional Coordinator Gregory Kane. “Kids get to relate to the Sailors who do this work, who also worry about ROV buoyancy or getting tangled in ropes. It’s a great opportunity for the kids to interact with professionals who have the same interests.”

Arriving before the championship started, members of NSMRL's dive team—Navy Diver 1st Class John Ahnen, Navy Diver 1st Class Cameron Duffy, Navy Diver 1st Class Nathan Helbing, Navy Diver 1st Class Connor Houtchens, and retired Hospital Corpsman 1st Class John Connors—provided in-pool support for the entire day, assisting with the construction of the obstacle course, any disentanglements and recoveries of ROVs, and breakdown of the course.

"This competition is such a cool opportunity for these kids," said Duffy. "It was eye opening to see how far technology has come where middle schoolers are creating these underwater robots, something I didn't see until I was already in the Navy. Those obstacle courses were

obviously very challenging, and the fact that they built those ROVs on their own was wildly impressive."

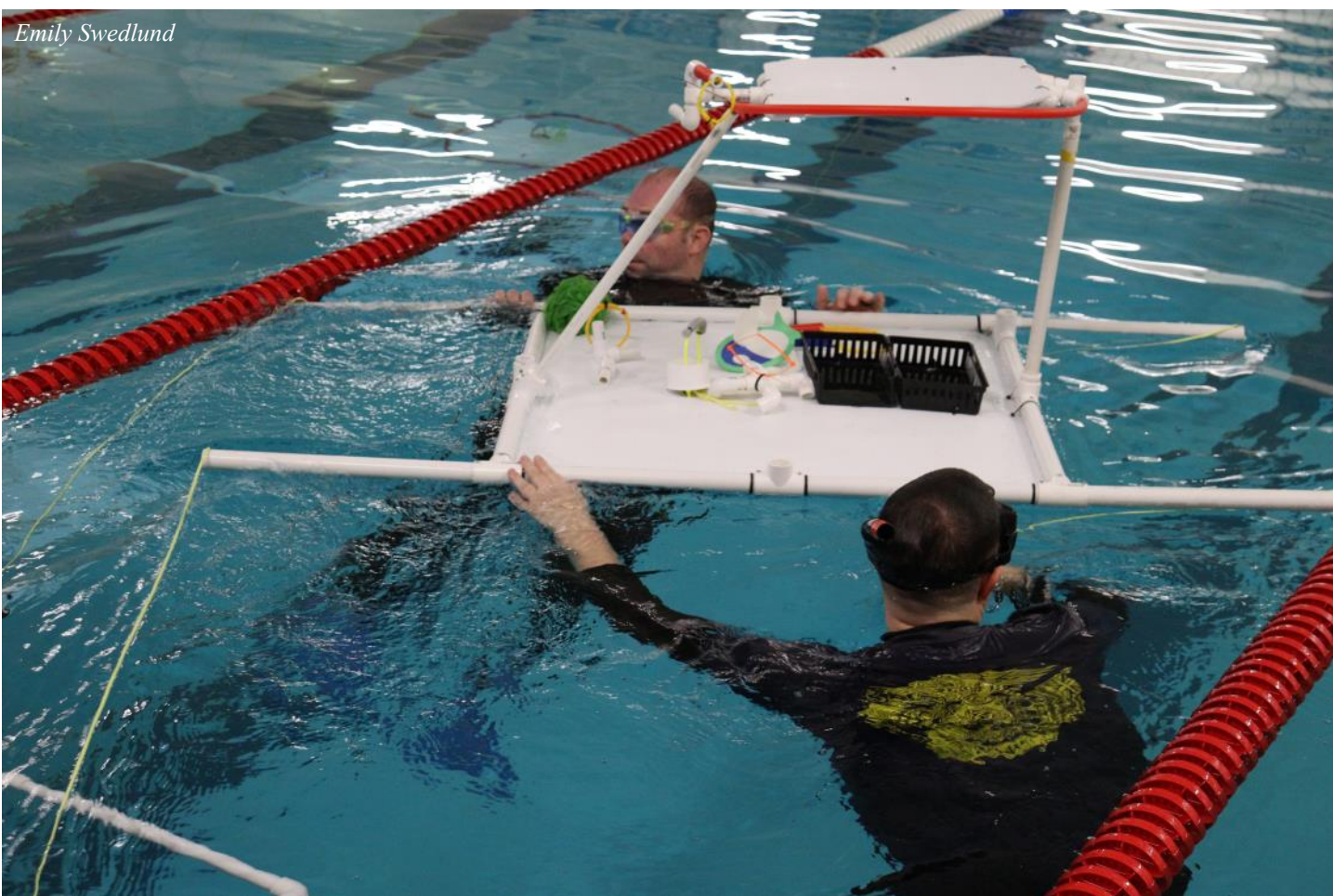
"It's great to watch these young minds and to see the way they think through a problem. If something goes wrong, they don't get frustrated and quit, they just take the pieces back to their bench and try again"

NSMRL's dive locker has been assisting with the CTEEA SeaPerch Championship since 2015, when

Kane reached out requesting diver support. Since then, the NSMRL dive locker has been the only volunteer team to return every year.

"These kids are the future of STEM," said Connors. "It's great to watch these young minds and to see the way they think through a problem. If something goes wrong, they don't get frustrated and quit, they just take the pieces back to their bench and try again. Having that science, technology, and manufacturing background, and that persistence, is something we need for our future warfighters."

NSMRL plans to continue this relationship, encouraging STEM interest in local schools and providing positive role models for students interested in Navy careers. ■





NMRC Takes Part in National Museum of Health & Medicine Military Medical Innovation Day

By Sidney Hinds

Naval Medical Research Command (NMRC) took part in the National Museum of Health and Medicine (NMHM) Military Medical Innovation event on April 26 to promote awareness of the command's research efforts on behalf of Sailor and Marine health and readiness.

The Museum, co-located with NMRC aboard the Forest Glen annex, was open to the public for the event, which featured representatives from DoD organizations presenting technology and advances in military medicine.

NMRC's exhibit included research

equipment and a prop biocontainment unit filled with objects for visitors to interact with through the unit's built-in gloves, simulating the experience of a scientist handling biological samples. Visitors were also able to get information from NMRC staff on the real-world applications of these tools.

"Highlighting the work we do at NMRC to improve the medical readiness of our Sailors, Marines, and the joint force to kids and adults from the community was amazing"

"This was a fantastic event at NMHM," said Dr. Jill Phan, NMRC Science Director. "Highlighting the work we do to improve the medical readiness of our Sailors, Marines, and the joint force to kids and adults from the community was amazing."

"This event allowed us to spark the interest of the next generation of potential scientists," Phan added, "and gave us the chance to talk to our colleagues about collaborative opportunities with other Navy research organizations. It was a fun and fulfilling Saturday and I'm thankful to NMHM for inviting NMRC to participate."

“We were thrilled that NMRC was able to join us to share information about some of their research and mobile laboratory technology”



Sidney Hinds

NMRC had several polymerase chain reaction (PCR) machines on display in their exhibits during the event, illustrating the increasingly compact size of the devices over time. NMRC had a modern version of the PCR machine on display at the command's booth, demonstrating to attendees how portable medical technology has become through advances from military medicine research and development.

“We were thrilled that NMRC was able to join us to share some of their research and mobile laboratory technology,” said Andrea Schierkolk, NMRC public programs manager. “Visitors loved trying to manipulate the Legos with the gloves inside the tent to get a better understanding of the challenges of working with lab samples in an austere environment.”

NMRC participates in outreach and DoD events to advance Navy Medi-

cine recruiting and retention goals to spread awareness of U.S. Navy opportunities in STEM fields and to maintain public trust through transparency on command activities on behalf of the U.S. military.

“The most memorable part for me was the families and kids who expressed curiosity about how medical researchers can deploy to areas of need, like the Liberia Ebola outbreak, and the kinds of technology that we have developed and use to do our work safely,” said Lt. Cmdr. Danett Bishop, an NMRC researcher on-hand at the event. “One little boy was asking very deep questions on the Ebola virus and marveled at how we could put such small amount of liquids into tiny tubes and be able to determine if someone was sick.”

For more than 160 years, the National Museum of Health and Medicine has cared for and maintained collections related to military medical innovation and research that has led to advances in the care of U.S. warfighters. ■



Sidney Hinds



Burrell Parmer

NAMRU San Antonio Researchers Collaborate for Novel Bone Fracture Fixation Technology

By Burrell Parmer

Researchers with Naval Medical Research Unit (NAMRU) San Antonio's Craniofacial Health and Restorative Medicine Directorate are engaged in a range of projects looking into technology designed to address and treat bone fractures in U.S. service members.

One such technology, BoneTape, a flexible, resorbable tape intended to stabilize broken bones around the face and head, has been a part of this research portfolio since 2024. Resorbable (or biodegradable) implants are composed of materials that are designed to gradually degrade and be absorbed by the body

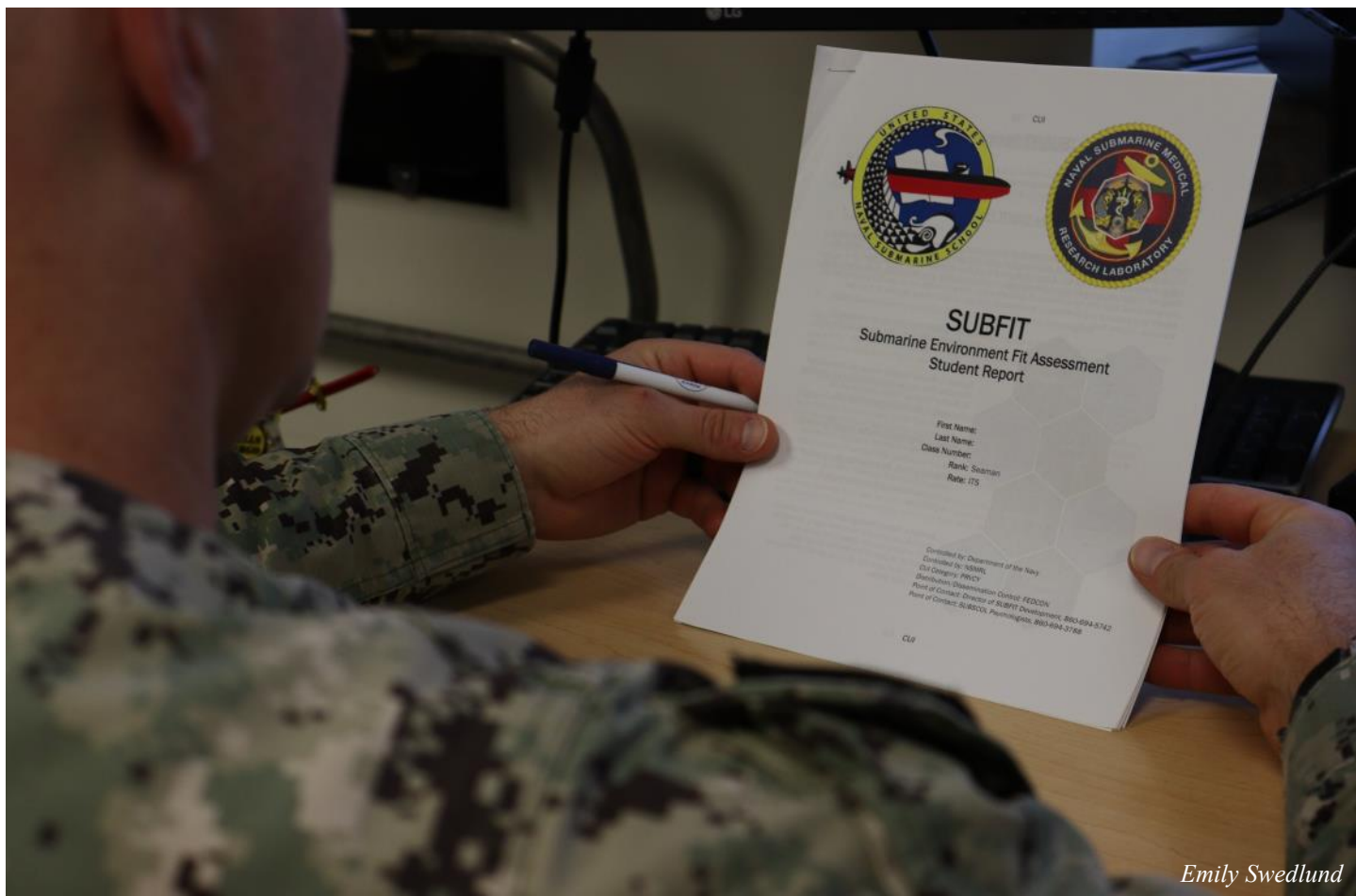
over time and thus eliminate the need for a second surgery to remove the device.

“Collaborators provide specific expertise unique to each project that provides insight”

Dr. Nancy Millenbaugh, with NAMRU San Antonio's Maxillofacial Injury and Disease Department, leads research into the use of BoneTape for bone fracture fixation, working in collaboration with the

U.S. Army Institute of Surgical Research, Uniformed Services University of the Health Sciences, and Cohesys, a medical device company.

“While we have the capabilities to provide high-quality research and data, collaborators provide specific expertise unique to each project that provides insight for specialized techniques and clinical perspective,” said Millenbaugh. “Collaboration with end users helps NAMRU San Antonio achieve our mission of supporting warfighter readiness and transitioning knowledge and products from experimental phases to actionable items and products.”



Emily Swedlund

SUBFOR to Expand Administration of NSMRL's SUBFIT Assessment

By Emily Swedlund

Naval Submarine Medical Research Laboratory's (NSMRL) Naval Psychological Readiness and Human Performance (NPRHP) team are expanding administration of the Submarine Environment Fit (SUBFIT) assessment to include all enlisted submariners.

The SUBFIT assessment includes a tailored, non-clinical measure of personality traits, behaviors, and attitudes identified as important to success during submarine duty. Currently, it is administered to enlisted Sailors and officers who are entering Naval Submarine School (NAVSUBSCOL), to ensure all

prospective submariners meet the necessary requirements for success in the submarine environment.

The SUBFIT assessment is an updated iteration of the Submarine Screener (SUBSCREEN), a tool used to screen prospective submariners from 1987 to 2020. In September 2017, the Navy Medicine, Submarine Force (SUBFOR), and

naval reactor communities came together to discuss the actions needed to update the submarine screening process. This set the stage for the development of SUBFIT, and SUBFOR began administering the assessment to NAVSUBSCOL students in April 2022.

“SUBFIT was created from the ground up, with the goal of retaining as many incoming submariners as possible,” said Dr. Dominica Hernandez, an applied psychologist with NSMRL. “Heavily focusing on the development of Sailors translates to having an undersea force that is resilient and ready for the fight.”

“We really want to maximize the effectiveness of the Sailors we have”



Lauren Laughlin

“We really want to maximize the effectiveness of the Sailors we have,” said Dr. Justin Handy, a cognitive psychologist with NSMRL. “So that means developing our Sailors on an individual level, which we hope will eventually impact the entire SUBFOR culture.”

“Unplanned losses are a key concern for SUBFOR leadership, and SUBFIT efforts to reduce these losses are appreciated”

NSMRL has been analyzing SUBFIT data to identify characteristics that may lead Sailors to leave the force early—an event known as unplanned loss (UPL)—with the goal of reducing UPLs by individualized mentoring for each submariner early in the career continuum.

In October 2024, NPRHP began a pilot expansion of SUBFIT to include enlisted Sailors on select submarines. Following the success of this pilot effort, SUBFOR leadership requested SUBFIT be administered to all enlisted Sailors, with a target completion date of September 2025.



Lt. James Caliva

“Unplanned losses are a key concern for SUBFOR leadership, and did a great job working with each SUBFIT efforts to reduce these crews’ leadership on strategies to losses are appreciated,” said Cmdr. reduce unplanned losses. SUBFOR Colin Young, Submarine Force Atlantic (SUBLANT) Medical Officer. “We just completed a successful pilot program, and NSMRL leaders are excited to determine whether SUBFIT will help mitigate this problem.” ■



MCI Nikita Custer



NAMRU EURAFCENT, Guinea Partners Enhance Disease Surveillance, Strengthen Force Readiness in Region

By Greta Ruffino

The U.S. military maintains the capability to act anywhere across the globe on short notice, to protect the interests of the nation. To do so, service members require the latest state-of-the-science information and technology to preserve their operational capabilities in the face of diseases and other health threats abroad.

Naval Medical Research Unit (NAMRU) EURAFCENT has begun working alongside Guinea's Ministry of Defense and National Malaria Control Program to enhance disease surveillance capabilities and bolster U.S. force readiness in the region.

"This initiative is an important step in expanding NAMRU EURAFCENT's impact," explained Lt.

"This initiative marks an important step in expanding NAMRU EURAFCENT's impact, reinforcing its role in regional disease research and military health support"

Cmdr. Matthew Montgomery, an entomologist with the command's Sicily-based headquarters, "reinforcing its role in regional disease research and military health support."

In support of this partnership, NAMRU EURAFCENT led a Global Emerging Infectious Surveillance (GEIS)-funded Skills Assessment and Subject Matter Expert Exchange event from February 22nd to 28th in Conakry, Guinea, aimed at improving the understanding of endemic disease threats to deployed U.S. forces and informing prevention and treatment measures against those threats.

Courtesy Photo



The exchange, led by Montgomery and Dr. Alia Zayed, a medical research scientist with NAMRU EURAFCENT's Cairo detachment, is part of the Vector Biology Research Program, which provides valuable insights into disease transmission risks, enabling U.S. forces to prepare for deployment in environments with high levels of endemic diseases. Attendees learned about vector-borne diseases, shared best practices in mosquito collection, identification and control techniques and conducted practical demonstrations to enhance mosquito surveillance capabilities.

The hands-on approach is intended to foster international collaboration in military health services, while also providing opportunities for more consistent data collection and reporting, to give a more accurate representation of potential health risks in deployed environments.

"Understanding the mosquito population gives us a much clearer idea of what health threats we face during deployments in a region," said Montgomery. "The Gulf of Guinea region is of high strategic im-

portance, and the successful execution of this event underscores the importance of continuous engagement in surveillance and vector management to safeguard U.S. forces in varied operational settings."

NAMRU EURAFCENT intends the exchange to mark the beginning of ongoing work alongside Guinea counterparts to best prepare both nations to address the health threats that those in the gulf and their American partners might face.

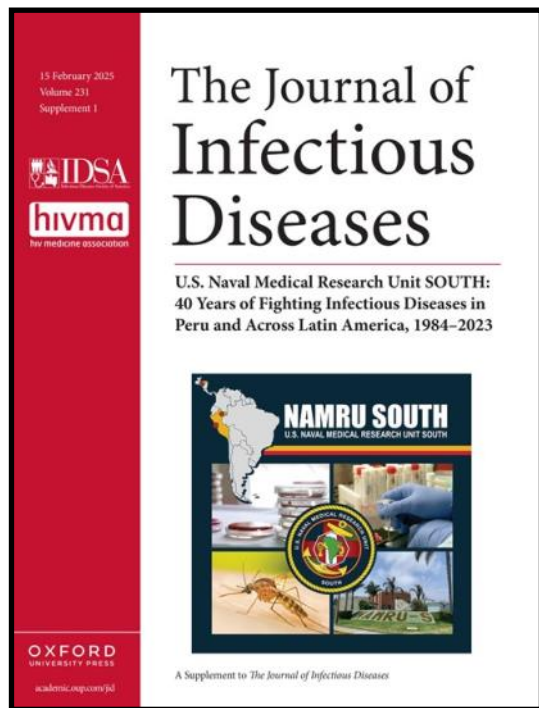
"By gaining a clearer picture of the threat environment, U.S. forces can better prepare to maintain mission capability throughout their operations," explained Zayed, a senior entomologist and regional expert. "The spread of *Anopheles stephensi* mosquitoes is of global concern since the species can bring malaria to urban environments.

"Equipping partner nation military personnel with the knowledge and skills to advance their understanding of infectious disease transmission is one of the ways NAMRU EURAFCENT entomologists support military health," Zayed added.

NAMRU EURAFCENT's research portfolio supports U.S. Africa Command (AFRICOM) regional objectives, including partnerships with host nation health sectors and military forces. The Vector Biology Research Program has ongoing surveillance projects in multiple West African countries, contributing to broader efforts in disease monitoring and control. ■



Lt. Cmdr. Matthew Montgomery



**JOURNAL OF INFECTIOUS
DISEASES PUBLISHES ARTICLE
ON 40 YEARS OF**

NAMRU SOUTH

WORK AND RESEARCH



STORY BY ELLIOTT PAGE / PHOTOS BY MONICA BARRERA

The Journal of Infectious Diseases published a collection of peer-reviewed articles by Naval Medical Research Unit (NAMRU) SOUTH on February 15, highlighting the command's ongoing military medical research efforts.

The articles cover 40 years of NAMRU SOUTH's medical achievements in infectious disease surveillance, control and prevention in Peru and other partner nations in Latin America, with the goal of ensuring U.S. service member readiness, and of reinforcing strategic global alliances.

"The research conducted by NAMRU SOUTH plays a crucial role in detecting and characterizing infectious disease threats that can impact the U.S. warfighter in deployed operations," said Capt. Michael Prouty, commanding officer for NAMRU SOUTH. "Through the efforts of our dedicated staff, of which 95% are Peruvian nationals, we are able to both maximize service member readiness, and protect the U.S. from emerging infectious diseases. Through our collaborations with partner nations, we strengthen these partnerships, enhancing health security for both the military and civilian populations."

The Journal of Infectious Diseases publishes patient and disease-focused research for scientific audiences, to help translate laboratory science into the clinical and experimental setting. The Journal is produced by the Infectious Diseases Society of America, whose work focuses on research, education and prevention efforts.

NAMRU SOUTH has driven research projects since 1983, when the Peruvian Navy invited the U.S. to collaborate on shared health science research objectives.

"The research conducted by NAMRU SOUTH plays a crucial role in detecting and characterizing infectious disease threats that can impact the U.S. warfighter in deployed operations"

The command is one of six overseas organizations within the DoD

dedicated to the detection, treatment and prevention of infectious disease prevalent in regions where U.S. military training, deployments or operations could occur.

"Constant environmental changes contribute to more frequent spread of emerging infectious diseases, potentially threatening DoD's readiness to achieve and maintain its national defense goals," explained Dr. Henju Marjuki, chief science officer at NAMRU SOUTH. "The U.S. National Biodefense Strategy recognizes that pathogens are global risks, and that enhancing resilience means strengthening global health defense to protect the nation in the same ways we develop and project conventional defenses."

NAMRU SOUTH conducts research on a wide range of infectious diseases of military and public health significance, and supports Global Health Engagement through surveillance of those diseases, including dengue fever, malaria, diarrheal diseases and antimicrobial-resistant infections. ■



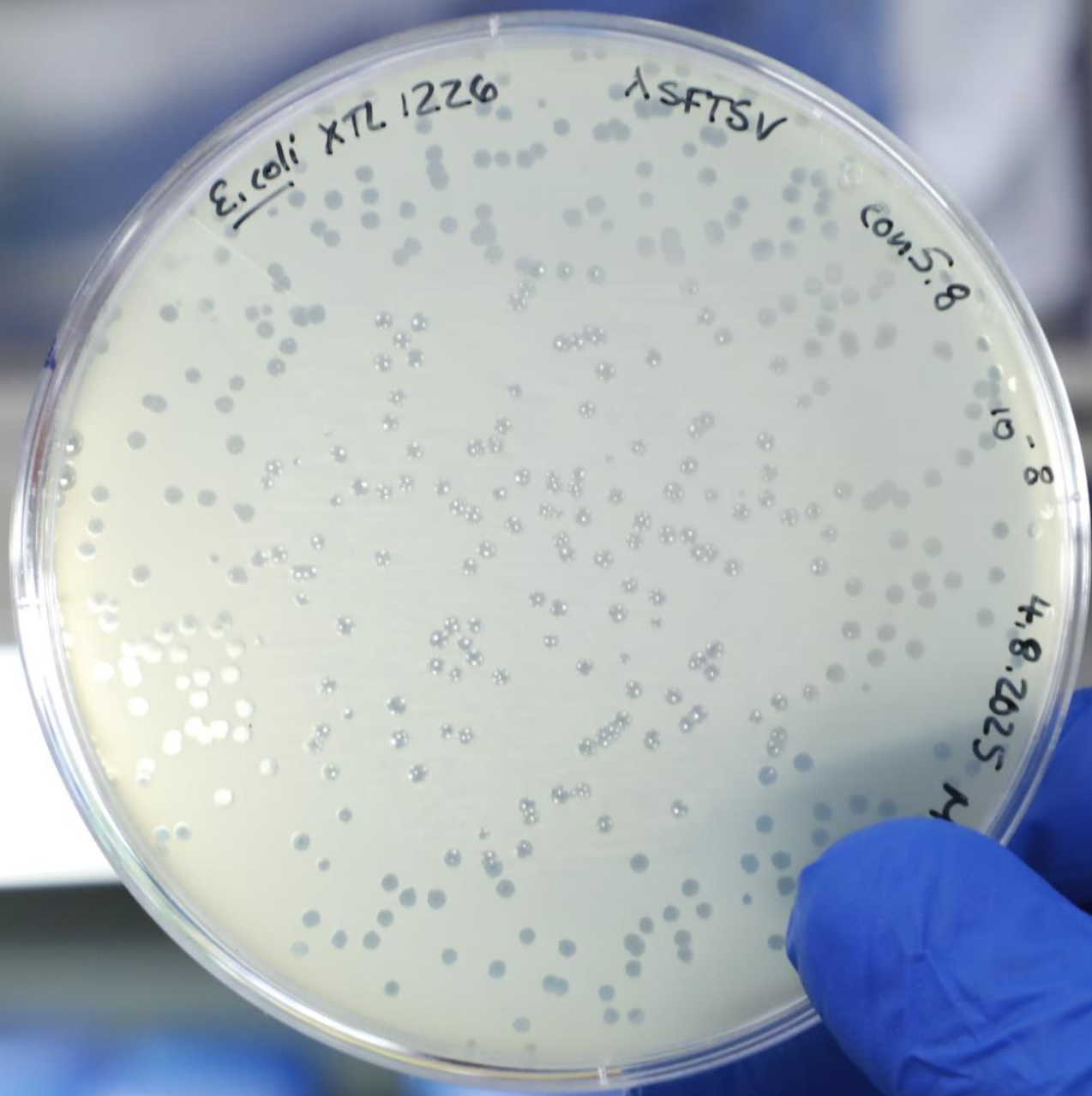




NMRC Reaches Milestones

**in its Six Year CDMRP Award for
Bacteriophage
Therapy**

Story and photos by Elliott Page



The landscape of bacterial health threats is ever-evolving and poses a significant risk to the readiness of the U.S. military, whose members are frequently exposed to bacteria through combat injuries and deployments to overseas locations.

Navy Medicine Research & Development (NMR&D) is engaged in bacteriophage therapy research to protect the warfighter from these threats, keeping U.S. forces ready and lethal.

Starting in fiscal year 2019, and over the course of a six-year funding period awarded by Congressionally Directed Medical Research Programs (CDMRP), NMR&D fulfilled major priorities in research focusing on bacteriophages (or phages), viruses that target and kill

“When harnessed and focused on top priorities, Navy Medicine and DoD researchers have incredible multi-disciplinary capabilities to advance medical technologies in support of warfighter medical gaps”

antibiotic-resistant bacteria. Naval Medical Research Command (NMRC) worked alongside U.S. Naval Research Laboratory and Walter Reed Army Institute of Re-

search (WRAIR), sharing research efforts in protecting the service member population. NMRC’s headquarters and WRAIR are co-located, creating a seamless, collaborative environment for those shared efforts.

“The greatest accomplishment [during this funding period] has been bringing the full capabilities of researchers across Navy Medicine Research & Development jointly alongside Army Medicine R&D to accelerate advancements in this technology,” said Cmdr. Mark Simons, director of NMRC’s Infectious Diseases Directorate. “When harnessed and focused on top priorities, Navy Medicine and DoD researchers have incredible multi-disciplinary capabilities to advance medical technologies in support of warfighter medical gaps.”



Phage cocktails can contain various combinations of phages, designed to attack specific bacteria. The four bacterial pathogens targeted during this research period were *Acinetobacter baumannii*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Staphylococcus aureus*, all of which can cause fevers, fatigue and swelling. In the absence of a phage cocktail (specifically, one that has been made ready through purification and sequencing), there are no targeted approaches for combating certain bacterial pathogens. Antibiotics can kill all varieties of bacteria in the body, both good and bad, unlike phages, which can be targeted to only kill harmful bacteria.

NMRC's pillar objectives during this award were to establish processes and technologies to develop bacteriophage cocktails for treatment of bacterial infections, and to develop fully-characterized products that will be the foundation for advancement into human clinical trials and eventual Food and Drug

Administration (FDA) licensure.

A fully-developed phage cocktail for patient treatment could allow medical professionals to precisely treat service members who are exposed to multidrug-resistant bacteria. This capability, depending on the type of bacterial infection, would allow infected service members to be treated intravenously, topically or both, to more rapidly restore combat strength and return to their missions on behalf of the U.S.

"We collect these phages, purify them and grow them in large quantities," explained Dr. Biswajit Biswas, chief of NMRC's Bacteriophage Science Division. "Then, we extract DNA, sequence its genome and analyze the phage very carefully to understand if it carries any toxins, since we cannot push something in the human systems if the phage carries toxins."

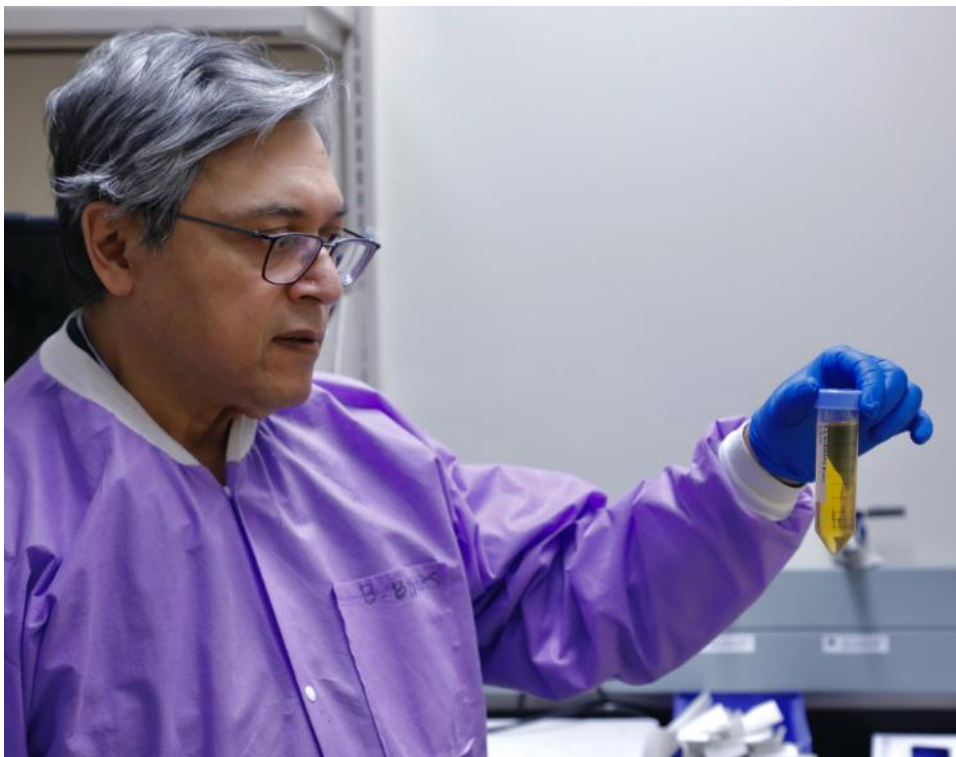
Currently, NMRC's labs have de-

veloped approximately 2,500 phage cocktails. Phages are one of the most abundant biological substance on earth, even outnumbering bacteria. Strung together, all of the phages on earth could encircle the Milky Way Galaxy three times. The effort to amass a library of over 2,000 phages is one that NMRC, fellow NMR&D commands and partner nations take on proudly, as this collection can be used for years to come to support development of novel treatments for infections.

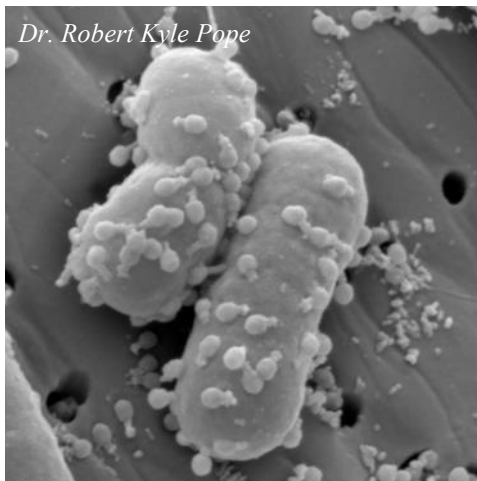
One of eight NMR&D commands, Naval Medical Research Unit (NAMRU) SOUTH, which conducts research on infectious diseases in South America, was the primary partner and supplier of phage isolates for the phage collection effort in this research period.

"As part of our Antimicrobial Resistance research surveillance efforts, NAMRU SOUTH has a unique and expanding repository of clinically relevant multidrug resistant bacterial samples," said Dr. Henju Marjuki, chief science officer with NAMRU SOUTH.

"These locally-collected strains are ideal candidates for identifying diverse new phages that could change clinical outcomes for hard-to-treat organisms," continued Marjuki. "These phages and their host strains have been previously sent to NMRC to be included in the development of a large globally-sourced library of phages that could eventually be used for personalized therapeutic cocktails, consisting of a mixture of different bacteriophages aimed at various bacterial species."



Dr. Robert Kyle Pope



The collection of phage particles can be an intricate process. Collection efforts span the globe, with phages collected from wastewater (bogs, sewers, rivers, etc.) and put through several rounds of purification and characterization before being developed into therapeutic cocktails, ensuring the phage is safe and effective for use.

NMRC's phage library also includes phages from WRAIR collected in Thailand, Kenya, and Georgia.

"WRAIR's Forward Labs coordinated very closely with the WRAIR Wound Infections Department to harvest new bacteriophages on four continents," said Dr. Mikeljon Nikolich, chief of Bacteriophage Therapeutics with WRAIR. "This network was a key engine in the Army-Navy collaborative effort to develop phage cocktails against multidrug-resistant infections.

NMRC has a record of success in treating illness with bacteriophage therapy resulting from their research and phage library. In 2015, Tom Patterson, a doctor who fell critically ill from *Acinetobacter baumannii* (nicknamed *Iraqibacter* from the early days of the Iraq war

where infected soldiers would fall ill from the bacteria), fell into a coma, and remained ill through multiple treatments, until he was administered an NMRC-developed cocktail intravenously.

"This is important," Biswas said. "It should be understood that before Tom Patterson's case, nobody used phage to treat systemic bacterial infection in the United States.

"It is important that the Navy lead the charge in phage therapy research"

Patterson's successful treatment set the stage for what NMRC hopes to accomplish with phage therapy research—administering phage to humans as an FDA-approved medicine.

"NRMC's next focus for phage research is Investigational New Drug applications with the FDA, to move the most promising cocktails into phase one safety and immune response studies," said Simons. "There is still work to do to support the application and manufacturing standardization for an early human study with these new phage cocktail prototypes."

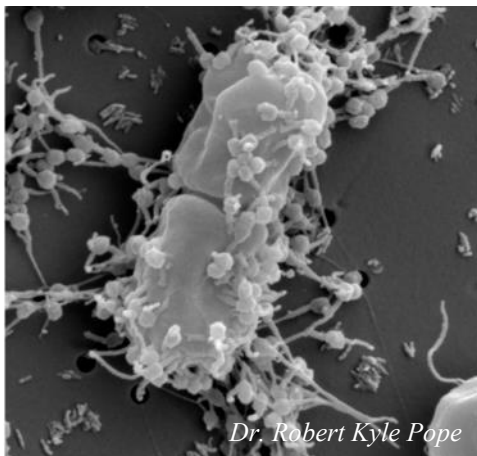
Leading research efforts in bacteriophage research on behalf of the warfighter is part of the U.S. Navy's mission to support the DoD in peacetime and wartime.

"It is important that the Navy lead the charge in phage therapy research," Simons explained. "Navy and Marine Corps warfighters are often first to the fight as expeditionary units, and thus will experience early casualties in a potentially prolonged-care setting. This will require novel antimicrobial countermeasures to be used early and throughout the continuum of care to treat antibiotic-resistant infections which are rising globally and highly prevalent in developing countries and high-conflict regions."

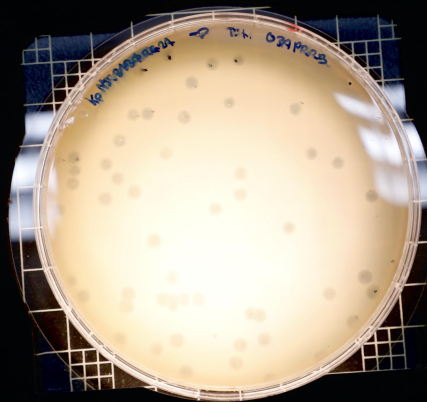
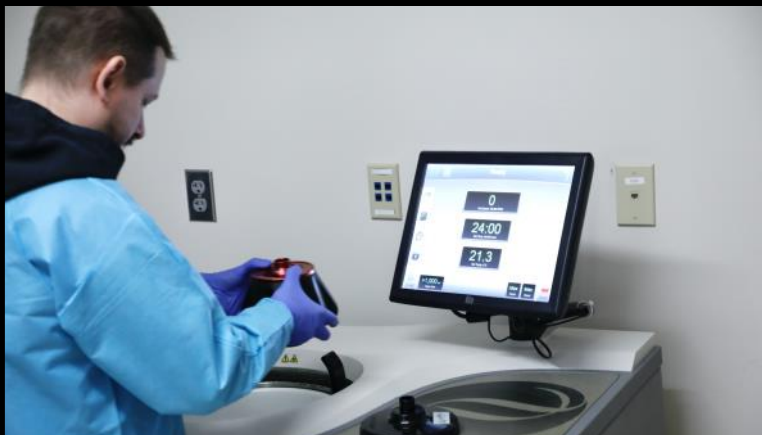
The impact of bacteriophage therapy research to the military population cannot be understated.

"Navy Medicine R&D is a leader in bacteriophage research so that we can bring this promising technology to clinicians and corpsman to improve battlefield survival for Sailors and Marines," Simons added.

The phage libraries, processes, technologies, evaluation pipelines and expertise gained throughout the course of the CDMRP award effort will inform the DoD's Bacteriophage R&D program as NMRC and WRAIR continue to jointly advance the technology and treatment of deployed military service members. ■



Dr. Robert Kyle Pope



A black and white photograph of Lt. Adam Wahl, a man with a mustache, sitting in a library. He is wearing a U.S. Navy camouflage uniform with a name tag that reads 'WAHL' and a 'NSMRL' patch. He is looking towards the camera. The background shows bookshelves filled with books. A large, stylized 'Q&A' graphic is overlaid in the top left corner.

Q&A

NMSRL'S NEW UMO

By Emily Swedlund

Lt. Adam Wahl, an undersea medical officer at Naval Submarine Medical Research Laboratory (NSMRL), went underway with the Los Angeles-class attack submarine USS Newport News (SSN 750) earlier this year. SCOPE Magazine sat down with him to discuss his career up to this point, and his time on the boat.

Editor's Note: Content from this Q&A has been edited for brevity and clarity.

Emily Swedlund: *Tell me about yourself! What brought you to the Navy?*

Lt. Adam Wahl: I'm currently the sole undersea medical officer, or UMO, here at NSMRL. I'm originally from Plainfield, Illinois, which is a suburb of Chicago. I didn't really come from a Navy background, but my grandfather served in the Korean war, so my family always had a lot of respect for service members, which was instilled in me at a very young age. But I didn't really think about joining the Navy until I was in my final year at the University of Miami [Coral Gables, FL]. I was studying neuroscience and had become good friends with a group of midshipmen who were set out to become submarine officers, and they really encouraged me to join. But I knew I wanted to go to medical school, and so figured I couldn't join until after I'd completed my residency. But then luckily, I met a Navy recruiter on my first day at OUWB [Oakland University William Beaumont School of Medicine in Auburn Hills, MI] who told me about the Health Professional Scholarship Program which would help pay for my medical degree, so I decided to go ahead and join during my first year of med school.

ES: *And how did you decide on undersea medicine versus other types of medical fields? That's a bit specific.*

AW: As I mentioned, I was close

with this group of submarine officers, and I wanted to figure out a way that I could use my medical skills to help the community that had inspired me to join the Navy in the first place. Eventually I want to go into ophthalmology, as I find vision really fascinating and have a good amount of experience in that field, but I'm happy that I'm currently able to give back to the submarine community as I can.

ES: *Oh wow, ophthalmology is a bit different than undersea medicine. What is the draw towards that field?*

AW: It actually started in middle school. I had some eye conditions that created a personal connection to the topic, and then as I got older I took summer courses in neuroscience and ophthalmology, and really wanted to dive deeper into the field. I was really intrigued by vision and ocular pathology, and during undergrad I was able to shadow an ophthalmologist and work as an optician. So that's definitely what I want to pursue down the line.

ES: *NSMRL is your first operational command, correct? Where were*

you before?

AW: So right after medical school I did my year-long internship training at Balboa Hospital in San Diego, and then I came to beautiful Groton to start UMO candidacy at NUMI [Naval Undersea Medical Institute]. I was there until October [2024], followed by dive school in Panama City, and then NSMRL right after graduation. A fun fact for you: My first training chamber dive was at NSMRL, and my first ever operational dive was in that same chamber, which I think is cool.

ES: *That is cool! And probably a pretty unique experience. How are you liking the life of a UMO so far?*

AW: I love it! What's not to love? But genuinely, this command is great and extremely welcoming. I get to work every day with multiple disciplines and get to be helpful in a lot of different ways, with regards to planning research and being operationally relevant. Working at the submarine clinic, being able to go on submarines, and having my own dive locker... it really does feel like a family.



It gets quite busy though, so I'm learning to adjust to this style of work. Research is very different than medicine.

ES: *In what way?*

AW: In medicine, you're always on your feet seeing patients and such, and managing those patients and their care is critical, but there's a sort of schedule that you follow. Whereas here, you're kind of continuously taking on different projects and responsibilities, and you have to properly allocate time for all those responsibilities, because the schedule isn't necessarily laid out for you. Working in a research lab is more of a juggling act, as we get last-minute taskers or shifting priorities.

ES: *You recently got the opportunity to go underway with a submarine. Can you tell me a little more about that?*

AW: Absolutely! First and most importantly; Hooyah 7-5-0!! But yes, I got to go underway with the

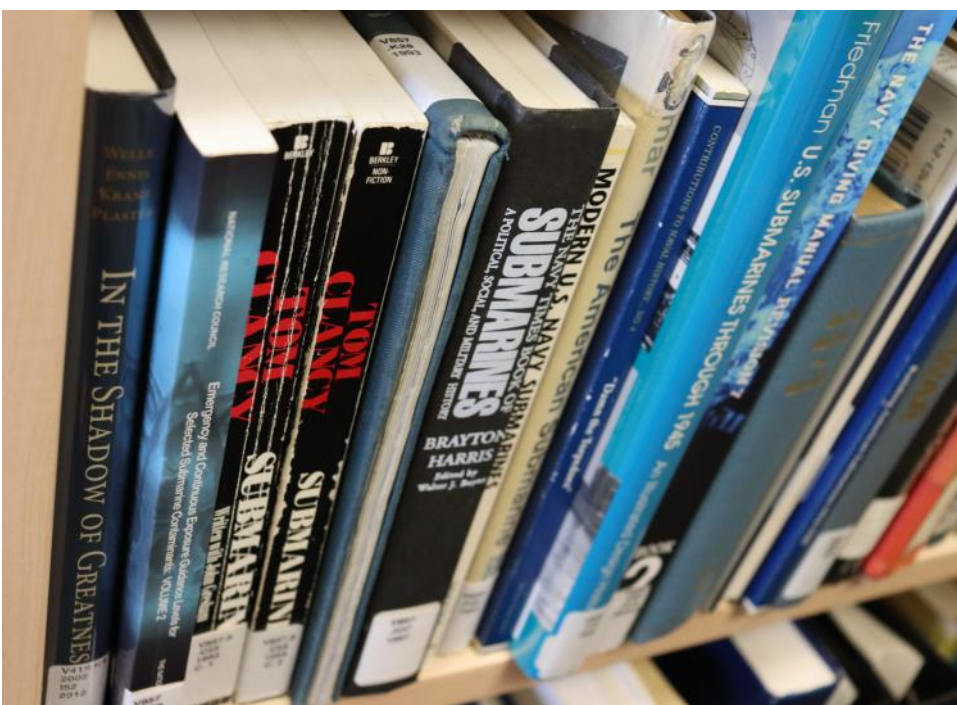


USS Newport News, which was laid down in 1984 and commissioned in 1989. It is the only currently-active Los Angeles-class submarine built here in Groton, and it's the oldest boat here in Groton. I think it's the second-oldest in the fleet [next to the USS Helena]. So the purpose of this underway was to train the submarine crew to ensure readiness for eventual deployment.

We were to do multiple drills and assess the capability of the subma-

rine and determine whether anything needed to be fixed from an execution perspective or a mechanical perspective, i.e., are the people doing the right thing or are there any fixture that need repaired. We ended up being underway for a little over two weeks.

ES: *And you were there primarily to assist with monitoring the atmosphere through NSMRL's SAHAP [Submarine Atmosphere Health Assessment Program], right?*



AW: Well I was there for a few reasons, but yes, I was assisting SAHAP with testing their new personnel monitoring device, and compare them to the current stationary badges that we use to monitor organic compounds in the submarine atmosphere. The current badges are placed in specific areas of the submarine, but personnel aren't necessarily in those areas 24/7, so we want to compare the atmospheric results from the badges that personnel wear as they go about their shifts to the stationary ones, and see what the difference was or if there was a major difference.



“pack out my rack,” while basically lying flat on the ground and that was a lot more challenging than I thought it would be. Even getting in and out of the rack is not what you’re used to... you can’t just flop down on your bed. I thought it was going to be difficult to sleep in those conditions, but I fell asleep within a minute every single time. It was actually the perfect environment for sleeping. It was cold, rocking, and pitch black, with built-in white noise. Truly a perfect sleeping scenario.

ES: In what way? And what were IDC is and what they do, for those the other reasons you mentioned? not familiar?

ES: Other than sleeping, what was your favorite part of going underway?

AW: As a UMO who is interested in becoming a submarine medical officer, I have to spend at least 30 days aboard a submarine, write up a thesis relating to submarines/personnel on submarines or their crew, and become submarine qualified. So that was one reason, but additionally, all submariners have to undergo a physical exam every five years to determine their deployability, and I was able to do those exams while aboard the Newport News. I was also able to provide any needed medical assistance and patient care. I also really wanted to help train the IDC [independent duty corpsman], who had never been underway before and was going to be working on submarines long-term. I wanted to make sure that when we were together, I was able to teach him as much as I could so he would feel more comfortable treating patients alone in the future.

AW: IDCs are enlisted hospital corpsmen who have done a year of intense medical training. They are the only medical personnel on the boat, and they report directly to the CO regarding medical problems. They have a lot on their plates, as they’re in charge of everyone’s health, and it can be a very stressful position. So I was glad to be able to assist with training as much as I could.

ES: Was being on a submarine what you expected?

AW: No, I expected to bump my head a whole lot more! It was more spacious than I expected. Like the passageways and the door entrances, I thought they were going to be tiny little vaults, but it just felt like a you were on a regular boat. But what I did find interesting was as much as I was prepared for the racks [sleeping areas] to be small, being on the bottom rack was eye-opening. I had to find ways to

AW: The people! I love being around people and I felt could learn a lot about multiple different people every day, which brought me a lot of joy. I got to directly work and build relationships with the community I’m serving, and there really is such a strong sense of community on a submarine, and I felt welcomed into that fairly early. By the end they were even jokingly asking me to go on deployment with them, and I was wanting to agree!

ES: And what was the worst part?

AW: I would say using the head [bathroom] with coveralls on. That was way more difficult than expected. For one, there aren’t many stalls, so you have long wait times, and when you do finally get a stall, it’s hard to get your coveralls off and not have things fall in the toilet. So that was definitely the worst of it all, although there was one other disappointing thing, but it was a little silly.

ES: And can you clarify what an

ES: *Oh no, please let us know!*

AW: Well, there is this storied cribbage board that is always on the oldest submarine, and I was really hoping it would be on this one, but alas, I was disappointed to learn that its apparently only a Pacific Fleet thing. The story behind the board is that supposedly during WW2, the CO of this submarine would play cribbage a lot, and one day he got a hand of 29 points, which is the highest points you can get, and then immediately sunk a lot of enemy vessels. So that win became a sign of good luck. But then, only a few days later, the XO drew a hand of 28, which is the second highest score, and they sunk the second highest number of vessels on that day! So that cribbage board became good luck for submarines, and is always kept on the oldest working sub, and I was really hoping to see it.

ES: *I'm so sorry! Maybe one day you'll get a chance to play the famous cribbage board. Was there any other questions you were fre-*

quently asked after you go home?

AW: I did get an opportunity about halfway through our underway to go up on the bridge and get fresh air, and that was just an incredible experience. It was a beautiful sunny day and I got to be out there for a few hours breathing in the fresh air and soaking in the sunlight, and looking down and seeing this gigantic submarine moving in the water, and it was so bizarre. Like I had a full moment of realization, which didn't happen until I was looking down in a sort of third person point



of view. It was sort of otherworldly.

ES: *Did it feel like you were exactly on the path you were meant to be?*



AW: Well yes, but also I'd had so many dreams before leaving about things going wrong, that I was intensely relieved when I was finally onboard. I never woke up being like, oh how did I get here, I was just very thankful that I didn't get left behind. But the whole experience felt like a summer camp in an austere environment. You don't have your phone and you can't access the outside world, and you're working really hard doing the drills and everything, but you're there with this great group of people and you create these relationships that just make the whole experience worth it.

ES: *Does it feel really like you've come full circle, doing your first underway on a sub while working at a laboratory that focuses on the safety and health of submariners, since submariners are the ones who convinced you to join the Navy?*

AW: Absolutely! Like you said, it really just felt full circle, and while I was underway, I was surprised to learn that the people were way more interested in the research NSMRL is doing than I thought they would be. They were really excited that we were doing research into the atmosphere and other submarine environment health subjects. I felt like it was full circle when people started coming up to me and asking if we could research certain medical things outside of what we've done before, and in reality, I think that's exactly what we should be doing at NSMRL and at all of our research labs. Getting to intimately know the communities that we serve so we can better identify what they need. ■

LOOKING *At*

with André B. Sobocinski
Historian, Bureau of Medicine and Surgery



The Extraordinary Admiral Stitt

The name Edward Rhodes Stitt is most likely unknown to many serving in today's Navy Medicine. Yet his many contributions continue to resonate deeply in our ranks. The illustrious Vice. Adm. Joel Boone, once described Stitt as a "great teacher, writer, and scientist." Although a fair description, it only hints at the scope of his influence or his many accomplishments. In his day, Stitt was a giant—a leading authority on tropical medicine research and education, the author of two seminal 20th-century medical textbooks, the driving force behind medical specialization across the Navy, and Navy Medicine's most well-known scientific figure.

Stitt was born on July 22, 1867 in Charlotte, North Carolina, but raised in South Carolina, and always considered himself native of the Palmetto State. He attended primary schools and a college preparatory academy in South Carolina before undergoing, what he referred to as, a "full classical course" at the University of South Carolina (then known as the South Carolina College of Agriculture and Mechanics). In addition to his study of Latin, Greek, and the liberal arts, he took courses in the natural sciences

which would greatly impact him. "In my junior year I developed quite a liking for chemistry and covered about three times as much laboratory and didactic [as was required]," Stitt recalled. After obtaining an A.B. in 1885, Stitt pur-

sued postgraduate work in laboratory chemistry before "drifting" into pharmacy. He graduated with a degree in pharmacy from Philadelphia College of Pharmacy and Science (now known as the University of the Sciences) in 1887.



This detour proved to be a stepping stone to medicine. In 1889, he earned his medical degree from the University of Pennsylvania, studying under Dr. William Osler—"the Father of Modern Medicine." The same year, Stitt received his commission as an assistant surgeon (equivalent to ensign) in the Navy.

Stitt entered the Navy during a transformative time for the sea service. Throughout the 1880s and 1890s, the U.S. Navy's presence was increasingly evident throughout the world as vessels were being assigned to the North Atlantic, South Atlantic, European, Pacific, and Asiatic stations. In addition to routine cruises, the Navy was frequently called upon to protect American citizens and American interests around the globe; to give assistance to victims of shipwrecks, earthquakes, fires, floods, and civil war; and to carry out special explorations in the Arctic, Alaska, Central America, and elsewhere.

In the wake of the Spanish-American War (1898), the United States found itself the steward of a burgeoning overseas empire, inheriting the "spoils" of Guam, the Philippines, Puerto Rico, and a nascent influence in Cuba and Samoa. Post-war, the United States became a Pacific naval power, boasting modern warships and strategically vital new stations dotting the ocean. This expansion, however, brought a stark and unavoidable reality for Navy medical officers: the insidious threat of tropical diseases. Dengue fever, yaws, leishmaniasis, filariasis, and the ever-present scourge of dysentery now demanded their attention and expertise. It was into

this new world that Edward Rhodes Stitt would not only navigate but ultimately thrive in.

In 1902, Rear Adm. Presley M. Rixey, entrusted Stitt with the planning, constructing, and equipping the bacteriology and chemistry laboratories at the newly established Naval Medical School in Washington, D.C.—a testament to Stitt's growing influence and scientific acumen.

Stitt's formative years in the Navy offered a dramatic introduction to international affairs and the human cost of conflict. An early assignment aboard the cruiser USS Baltimore placed him in the volatile atmosphere of Valparaíso, Chile, during the throes of the 1891 revolution. The ship's mission to "safeguard American lives" in this

turbulent environment led to the so-called "Baltimore Crisis." On October 16, 1891, a group of U.S. Sailors on liberty were descended on outside of a saloon by pro-Balmacedist mob (followers of ousted Chilean president José Balmaceda) wielding dirks, bayonets, and clubs with deadly intent. The result was tragic: one American sailor dead and seventeen others wounded. The grim task of retrieving and examining the body of the dead U.S. Sailor fell to Stitt.

After returning stateside, and following brief shore duty at Naval Hospital Philadelphia and the Bureau of Medicine and Surgery (1892-1893), where he was in charge of medical records and preparing the annual statistical report, Stitt served aboard the battleship USS Chicago, and cruiser USS New York, the first modern warships in America's "new Navy." Stitt's sea voyages and assignment as a medical officer to the Nicaraguan Canal Commission (1895) ignited a deep interest in tropical diseases, leading him to specialize in this area.

By the turn of the century, Stitt's expertise and reliability had earned him recognition as a "known quantity" among Navy leadership. In 1902, Rear Adm. Presley M. Rixey, the influential Navy Surgeon General, entrusted him with the planning, constructing, and equipping the bacteriology and chemistry laboratories at the newly established Naval Medical School in Washington, D.C.—a testament to Stitt's growing influence and scientific acumen.

The founding of the Naval Medical School in May 1902 marked a watershed moment for naval medical education. It served as the initial training ground for all newly commissioned physicians in the Navy, mandating a rigorous grounding in the fundamental disciplines of bacteriology, chemistry, preventive medicine, hygiene, epidemiology, and sanitation. These were the indispensable tools required for the accurate diagnosis, effective treatment, and thorough understanding of the diseases that threatened naval personnel and the populations they encountered. The instruction at this vital institution was provided by some of the most distinguished scientific minds of the era, including Stitt, as well as the renowned parasitologist Dr. Charles Wardell Stiles, a tireless advocate in the fight against hookworm, and Dr. Milton Rosenau, a leading public health expert whose research signif-

icantly advanced the understanding of anaphylaxis.

The impact of the Naval Medical School in the early twentieth century was profound and far-reaching. Its graduates—many of whom benefited directly from Stitt's instruction—became pivotal figures in public health initiatives worldwide. They spearheaded critical vaccination efforts against the devastating smallpox outbreaks in American Samoa and Guam; they were instrumental in developing and implementing anti-typhoid vaccinations, effectively eliminating this debilitating disease from the Navy and Marine Corps; they actively participated in numerous international relief missions providing essential medical assistance; they explored innovative treatment strategies for a range of infectious and tropical diseases; and they played a crucial role in advancing and refining the field

of preventive medicine, leaving a lasting legacy of improved global health. The primary tool for preparing medical personnel would be the school's laboratories.

Recognizing the critical importance of these facilities, Stitt visited scientific facilities at leading East Coast universities and Hoagland Laboratory in Brooklyn, N.Y., absorbing the best practices and innovative laboratory designs. Shortly thereafter, he was appointed the school's inaugural professor of bacteriology, chemistry, and tropical medicine. Rear Adm. Presley M. Rixey later lauded Stitt's foundational contributions, stating, "His selection for the work was most fortunate as few mistakes were made, and from the beginning, his energy and the comprehensive equipping of the laboratories relieved me of an immense potential embarrassment."



In 1905, seeing a need for cutting-edge instruction in tropical medicine, Rixey arranged for Stitt to undertake intensive study under the esteemed Sir Patrick Manson at the legendary London School of Tropical Medicine, the epicenter of knowledge in this burgeoning field. This resulted in his seminal study on blood of patients with dengue fever. He continued his research on tropical diseases across the Philippines, Guam, Japan, Hawaii, and Egypt. He later returned to the Philippines where he served as commanding officer of the Naval Hospital Canacao (1909-1911) and also the chair of medical zoology at the University of the Philippines.

His extensive research and travel abroad also bore fruit in the form of two profoundly influential medical textbooks: *Practical Bacteriology, Hematology and Parasitology* (1909) and *Diagnosis, Prevention, and Treatment of Tropical Diseases* (1914). These comprehensive works became indispensable resources for medical professionals worldwide, collectively going through seventeen editions, a testament to their enduring value and Stitt's authoritative knowledge.

Returning to the Navy Medical School, Stitt continued to ascend the ranks, first as an instructor, then as the director of its laboratories, and finally, in 1916, as its superintendent. The next year he was promoted to the rank of Rear Admiral.

While at the helm of the Naval Medical School, Stitt spearheaded the creation and deployment of "Navy laboratory and sanitation units"—the forerunners of today's

vital Navy Environmental and Preventive Medicine Units—to combat outbreaks of devastating meningitis and influenza, control other communicable diseases, conduct crucial epidemiological studies, assess sanitary conditions, and disseminate vital public health information. For his exceptional leadership at the Navy Medical School and his instrumental role in advancing "general sanitation and military work . . . throughout the service," Stitt was awarded the Navy Cross.

After years of dedicated service, building the reputation of the Navy Medical School as both a distinguished instructor and a superintendent, Stitt was appointed as the Surgeon General of the Navy. Serving in this role from 1920 to 1928, Stitt dedicated his tenure to emphasizing the critical importance of education and training, the necessity of postgraduate education, and notably, becoming one of the earliest and most influential Navy medical leaders to champion the indispensable role of medical research. Under his guidance, Navy medical personnel embarked on groundbreaking studies into submarine ventilation and habitability, the challenges of deep diving and decompression sickness, the unique medical demands of aviation training, and expansion of research into debilitating tropical diseases. His insightful perspective was articulated when he stated, "The navy is a great organization of scientists...and its progress is continuous. With every step forward, new medical problems arise, so it need not be feared that the field of medical research in the Navy will ever be an unfruitful one."

His tenure as Surgeon General was marked by significant achievements, including overseeing the construction of the state-of-the-art Naval Hospital San Diego, the establishment of the Navy Dental School (now the Naval Postgraduate Dental School), and the launching of USS Relief, a groundbreaking vessel uniquely built from the keel up as a dedicated hospital ship.

After leaving office in 1928, Stitt served as Inspector of Medical Department Activities on the Pacific Coast. He retired in 1931 but remained active, serving as a tropical medicine consultant for the Secretary of War during World War II. He passed away at the National Naval Medical Center in Bethesda, Maryland, on November 13, 1948, and was laid to rest in Arlington National Cemetery, leaving a legacy as a giant in Navy Medicine. ■

Sources: Stitt Testimonial (Dec. 6, 1920). General Correspondence (#126837). Bureau of Medicine and Surgery (BUMED) Record Group (RG) 52, National Archives, Washington, D.C.

Stitt, E.R. (N.D.). What the Medical Department of the Navy Does for the Man Entering the Naval Service. General Correspondence (#126837). Bureau of Medicine and Surgery (BUMED) Record Group (RG) 52, National Archives, Washington, D.C.

Stitt, E.R. Official Navy Biography (Posthumous), 1948. BUMED Archives.

NMR&D, cont'd from page 3

Leadership from the Defense Health Agency (DHA) Research and Engineering (R&E) attended the first day of the meeting, to explore areas of alignment between NMR&D and DHA objectives.

“We were fortunate to have leadership from DHA R&E attending on-site and virtually,” said Dr. Jill Phan, science director for NMRC, “keeping us in lock step for our common goal of ensuring the health and medical readiness of service members and their families across the joint force.”

“For the first time, NMR&D COs, XO’s and science directors had an opportunity to hear from DHA R&E leadership and portfolio managers,” added Capt. Franca Jones, commander, NMRC, “who described DHA’s research priorities in support of Joint force health and readiness. This exchange will ena-

ble NMR&D to better focus and conduct research with high impact to the Joint force and their families.”

Collaboration across the commands at the meeting also focused on the future operational needs of the U.S. warfighter, and potential new directions of research and development efforts to support Navy Medicine, the Fleet and the DoD.

“This year’s planning meeting provided time to discuss the critical R&D core capabilities across eight NMR&D commands to ensure we remain aligned to Navy Medicine and the Joint Force needs today and in the future,” Phan added.

This iteration of the strategic planning meeting was held virtually, allowing commands to hold discussions while maintaining leadership presences on the ground across NMR&D’s broad geographic scope

of laboratories.

“Navy Medicine R&D is operating as a very cohesive unit under the current leadership at NMRC,” observed Capt. William Howard, commanding officer for NAMRU Dayton. “Having the opportunity to showcase the military relevance of the research performed at NAMRU Dayton, along with getting updates on what our sister labs are doing, is always worthwhile.”

Headquartered out of right-Patterson Air Force Base, NAMRU Dayton operates two laboratories that investigate environmental health effects and aerospace medicine concerns that impact service members’ ability to perform their duties in environments unique to naval operations. ■

Bone Fracture, cont'd from page 8

According to Millenbaugh, 26% of battlefield injuries are to the cranio-maxillofacial (CMF) region, with more than one quarter of those resulting in fractures. Additionally, most CMF fractures occur to bones in the region between the upper and lower thirds of the face, such as the cheekbone.

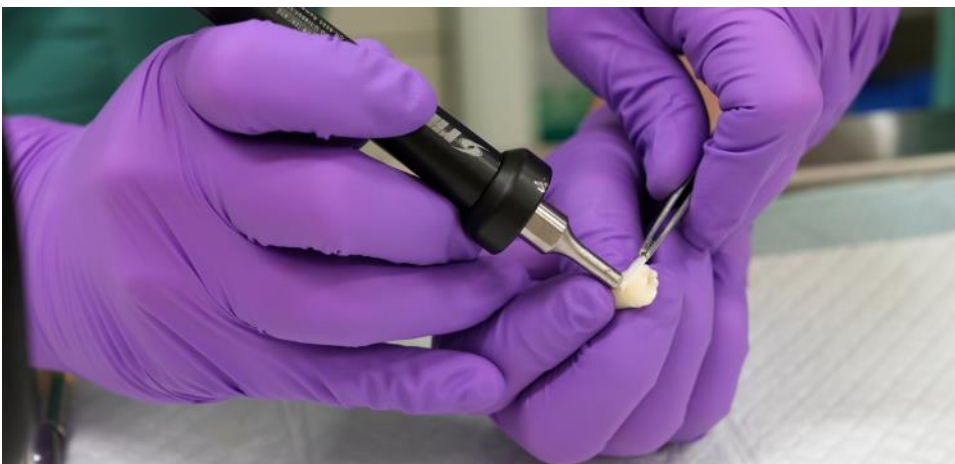
“This research will evaluate the efficacy of a resorbable internal fixation device that requires no drilling or further damage to underlying bone structure,” Millenbaugh said. “This device is expected to significantly reduce surgical time and duration of patient recovery while im-

proving post-injury quality of life and operational readiness.”

Researchers will compare the performance and safety of the BoneTape device to an FDA-approved predicate device. This data will be used by Cohesys as part of a 510(k)

submission to the FDA.

“We are committed to expanding partnerships in the medical field and the importance of sharing best practices, advancing medical capabilities, research and training opportunities,” said Millenbaugh. ■



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SILVER SPRING, Md. (April 24, 2025) Frederic Poly, from Naval Medical Research Command (NMRC), briefs visiting midshipmen from the U.S. Naval Academy on the command's research facilities, capabilities and opportunities, to better prepare them as future members of Navy Medicine. — *Elliott Page*



DAYTON, Ohio (April 7, 2025) Karen Mumy, director of NAMRU Dayton's Environmental Health Effects Laboratory (EHEL), describes the laboratory mission to members of the Advanced Aerospace Medicine for International Medical Officers (AAMIMO) course during a visit, which provided an overview of NAMRU Dayton's research capabilities and included tours of EHEL and the Naval Aerospace Medical Research Laboratory (NAMRL), highlighting the command's role in supporting human performance in extreme environments.

— *Zach Wilson*

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SILVER SPRING, Md. (April 4, 2024) Cmdr. Rhonda Lizewski, deputy science director with NMRC, engages with students at Weller Road Elementary School's STEM Career Day. Representatives from NMRC spent the day with 3rd, 4th and 5th graders answering questions, discussing careers within Navy Medicine and demonstrating laboratory equipment. — *Elliott Page*



SILVER SPRING, Md. (Feb. 26, 2025) Hospital Corpsman 2nd Class Maegan Dull (center), and Hospital Corpsman 2nd Class Alejandra Ramirez Alarcon, with NMRC, demonstrate the use of a prop biocontainment unit with students from Sargent Shriver Elementary School at the school's annual Career Day. — *Elliott Page*



SAN ANTONIO (May 1, 2025) Cmdr. Nicholas Hamlin (center) and Lt. Cmdr. Jeffrey Biberston (right), of NAMRU San Antonio, speak with Rear Adm. Walter Brafford, commander, Naval Medical Forces Development Command at Navy Day at the Alamo. — *Burrell Parmer*



DAYTON, Ohio (April 15, 2025) Dr. Richard Arnold, director of NAMRU Dayton's Naval Aerospace Medical Research Laboratory (NAMRL), discusses the Disorientation Research Device (DRD), also known as "Kraken," with Col. Dustin Richards, 88th Air Base Wing Commander, and Chief Master Sgt. Tessa Fontaine, 88th ABW Command Chief Master Sergeant, during a command visit. — *Zach Wilson*



SAN ANTONIO (April 28, 2025) Sailors, including members of NAMRU San Antonio, participate in the annual Pilgrimage to the Alamo during Fiesta San Antonio. The procession, a tradition since 1925, is comprised of historic, civic, patriotic, military and school groups who pay tribute to the Alamo heroes and the heritage of Texas. — *Burrell Parmer*

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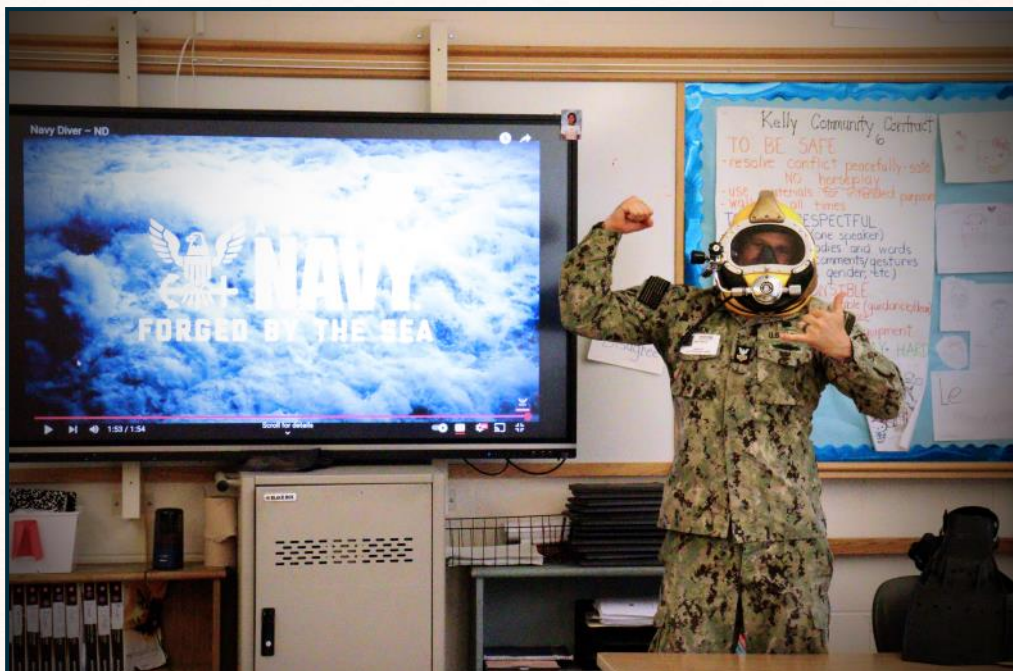
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SAN ANTONIO (May 7, 2025) Dr. Dao Ho, a research immunologist from NAMRU San Antonio presents research titled, "Evaluation of Blood Products and Therapeutics using In Vitro Models of Endotheliopathy" at a scientific seminar held at the Battlefield Health and Trauma Research Institute. — *Burrell Parmer*



NORWICH, Conn. (May 2, 2025) Navy Diver 1st Class John Ahnen, from Naval Submarine Medical Research Laboratory (NSMRL), presents on Navy diving during the Kelly Magnet Middle School Career Day. — *Emily Swedlund*



LIMA, Peru (March 20, 2025) Naval Medical Research Unit (NAMRU) SOUTH staff pose in front of command headquarters with visitors during a tour by Admiral Steve T. Koehler, Commander, U.S. Pacific Fleet. Command and Pacific Fleet leadership discussed NAMRU SOUTH's research capabilities and mission on behalf of the U.S. military during the visit. — *Monica Barrera*



SINGAPORE (May 1, 2025) Uniformed members from Naval Medical Research Unit (NAMRU) INDO PACIFIC pose for a group photo following a uniform inspection. — *Courtesy photo*

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HANOI, Vietnam (March 14, 2025) Staff with Naval Medical Research Unit INDO PACIFIC pose in front of Vietnam's newly-constructed Military History Museum during Ambassador Marc Knapper's visit to Hanoi.

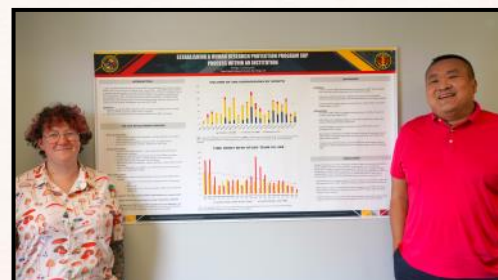
— *U.S. Embassy Hanoi*



SILVER SPRING (May 16, 2025) Uniformed members with Naval Medical Research Command pose for a group photo following a seasonal uniform inspection. — *Elliott Page*



SILVER SPRING, Md. (March 21, 2025) Capt. Guillermo Pimentel, deputy commander, Naval Medical Research Command, briefs visiting representatives from Naval Air Warfare Center-Aircraft Division, highlighting NMRC's facilities and capabilities. — *Elliott Page*



SAN DIEGO (March 12, 2025) Lorena Lynch and Phi Ngo from Naval Health Research Center (NHRC) pose with their research poster that outlines metrics NHRC's Institutional Review Board department collected from regulations and subject matter experts. This poster was presented at the Public Responsibility in Medicine and Research Conference last year, where it received high recognition. As a result, Department of the Navy Human Research Protection Program (DON HRPP) selected this poster to feature in the current addition of the DON HRPP newsletter. — *Danielle Cazarez*

A black and white photograph of two scientists, a man and a woman, both wearing white lab coats and safety glasses. They are leaning over a workbench, focused on their task. The woman is on the left, and the man is on the right. The background is slightly blurred, showing laboratory equipment and a window.

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