



NPS IN THE NEWS

Weekly Media Report – June 22-28, 2021

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COMMUNITY:

[An underwater robot competition gets students practicing science, developing solutions for global issues.](#)

(Monterey County Weekly 26 June 21) ... Celia Jimenez

A structure made of cables, circuits, plastic and metal frames that moves up and down trapping ping-pong balls might sound like a basic game, but this is an intricate process... On Saturday, June 19, the students gathered at the **Naval Postgraduate School's** Sea Land Air Military Research facility on Del Monte Beach in Monterey to test their concepts in front of a panel of judges.

EDUCATION:

[Game On! NPS' Wargaming Week Ties Tactics, Strategy to Improve Defense Planning](#)

(NPS.edu 23 June 21) ... Javier Chagoya

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[The Challenge Of Educating The Military On Cyber Strategy](#)

(WarontheRocks 25 June 21) ... Erica Borghard, Mark Montgomery and Brandon Valeriano

Malicious cyber activity is ranked by some as the primary threat to international security. The strategic implications of cyberspace are particularly salient in the military context. From an offensive perspective, the military has developed concepts for the use of cyber capabilities as an independent instrument of military power, as well as their use as part of shaping activities to enable conventional operations on the battlefield. From a defensive perspective, the U.S. Department of Defense is as vulnerable to cyber threats to its networks and critical warfighting capabilities as the rest of U.S. society, if not more so. Yet there are significant gaps in how the military educates the officer corps as a community about the nature and practice of cyber strategy and operations... Second, the **Naval Postgraduate School** plays a critical role in the military's cyber education system. Its longstanding Cyber Academic Group provides technical expertise unique in the professional military education system. Supported by the National Security Affairs and Defense Analysis departments, the school offers courses in cyber strategy through the Cyberspace Operations Fundamentals course. Through the Institute for Security Governance, the Naval Postgraduate School is also building cyber courses that focus on cyber strategy, policy, and operations.

FACULTY:

[How Bacteria on the Seafloor May One Day Power Underwater Drones](#)

(TechLink 22 June 21)

A team of U.S. Navy scientists has developed an upgraded biofuel cell that uses bacteria to generate electricity as a renewable underwater power source... "Essentially, it was very fortuitous because I applied my microfluidics



background to address an interesting problem in terms of biofuel cells,” said Kartalov, who joined the **Naval Postgraduate School** as an Associate Professor of Physics in 2016.

ALUMNI:

[Q&A: Heather H. Quilenderino, Director, U.S. National Ice Center and Commander, U.S. Naval Ice Center](#)

(SeaPowerMagazine 22 June 21) ... Richard R. Burgess

She qualified as a surface warfare officer on a guided-missile cruiser before laterally transferring to the naval oceanography community. She graduated from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution joint program in oceanography, earning a Master of Science in oceanographic engineering, and earned her Ph.D. in meteorology from the **Naval Postgraduate School**.

[St. Thomas Native Makes Coast Guard History as Newly-Minted Commander](#)

(St. John Source 23 June 21) ... Carol Bareuther

(St. Thomas Source 23 June 21) ... Carol Bareuther

(Virgin Island Daily News 23 June 21) ... Agata Popeda

Karima Greenaway Hantal, a native of St. Thomas, has been promoted to commander by the U.S. Coast Guard – the first woman of U.S. Virgin Islands descent to achieve the rank... Hantal is a 1999 graduate of the Ivanna Eudora Kean High School on St. Thomas and a 2001 graduate of the Naval Academy Preparatory School. She received a Bachelor of Science in Naval Architecture and Marine Engineering from the U.S. Coast Guard Academy in 2005. She subsequently earned a Master of Science in Mechanical Engineering from the **Naval Postgraduate School** in Monterey, California, where she received an outstanding distinction for her thesis on a Novel Nonelectrolytic Process for Chromium and Nickel Coating.

[Lompoc hires first female fire chief](#)

(KeyT.com 23 June 21) ... Julia Nguyen

The City of Lompoc announced its new fire chief on Wednesday... Her education includes a bachelor’s degree from Cal State University, Long Beach, and a master’s degree in homeland security from the **Naval Postgraduate School**.

[A Sailor's Advice on Life book released by Cleveland O. Eason](#)

(EIN Presswire 25 June 21)

Sailing For Your Future! Stand Guard on Your Basics and Unleash Your Confidence
“Everyone faces challenges in life. It’s a matter of how you learn to overcome them and use them to your advantage.” — Celestine Chua... He holds both a master’s degree in Systems Analysis from the **Naval Postgraduate School** in Monterey and an MBA from the University of Maryland.

[Fire Commissioner Daniel A. Nigro Appoints Thomas J. Richardson as Chief of Department and John J. Hodgens as Chief of Fire Operations](#)

(NYC Fire Department 24 June 21)

Fire Commissioner Daniel A. Nigro today appointed Thomas J. Richardson as Chief of Department, the highest-ranking uniformed position in the FDNY, and John J. Hodgens as Chief of Fire Operations... Chief Richardson is a 2010 graduate of the **Naval Postgraduate School** – Center for Homeland Defense and Security, where he earned a Master of Arts degree in Security Studies. He received his undergraduate degree at SUNY Empire State College. He has also attended both the FDNY’s Advanced Leadership Course (2015), the Fire Officers Management Institute (2009), and the Combatting Terrorism Center at West Point in 2006.

[A new 'mavor' at Fort Irwin hopes to expand the base's civilian reach, and end 'this COVID era'](#)

(Victorville Daily Press 24 June 21) ... Charlie Mcgee

A new leader is at the helm of Fort Irwin’s residential hub, where roughly 21,000 U.S. military personnel and family members live alongside the Army’s National Training Center and a NASA space-communication complex... Clarke graduated from U.S. Army War College as the Senior Army Fellow at its Asia-Pacific Center for Security



Studies. In civilian education, he obtained an undergraduate degree in criminal justice from Columbus, Ohio-based Capital University and a master's in defense analysis from the **Naval Postgraduate School** in Monterey.

UPCOMING NEWS & EVENTS:

June 29-Jul 2, 2021: [Strategic Communication Workshop \(SCW\)](#)

July 4: Independence Day (Observed July 5)

July 6: Summer Quarter Classes Begin

July 13: SGL with House Armed Services Committee Chairman Congressman Adam Smith



COMMUNITY:

An underwater robot competition gets students practicing science, developing solutions for global issues.

(Monterey County Weekly 26 June 21) ... Celia Jimenez

A structure made of cables, circuits, plastic and metal frames that moves up and down trapping ping-pong balls might sound like a basic game, but this is an intricate process.

A 450,000-gallon pool is half full of murky, greenish seawater, and the balls are confined within a 4-by-4-foot PVC frame. A robotic net moves up and down, trying to grab the balls. On the beach, a team underneath a shade tent is watching a screen, rather than the action in the water – they’re monitoring a camera and watching to see how this robot performs at what could be a useful project removing litter from the ocean.

Middle and high school students have been preparing for this day for months. It’s part of a competition for students working to develop technology skills meant to solve real-world problems with remotely operated underwater vehicles, or ROVs.

On Saturday, June 19, the students gathered at the **Naval Postgraduate School’s** Sea Land Air Military Research facility on Del Monte Beach in Monterey to test their concepts in front of a panel of judges.

“It’s really about preparing students for the technical workplace. It’s about workforce development, and giving them this pathway to apply their skills to engineer our robots to solve real-world problems,” says Jill Zande, executive director of Marine Advanced Technology Education for Inspiration and Innovation (MATE II).

MATE II is a nonprofit that grew out of the MATE Center at Monterey Peninsula College. The program is built to prepare the next generation of engineers, ocean scientists and technologists.

Students don’t need previous knowledge in STEM or robotics to participate. “We teach them how to design and build an underwater robot,” Zande says. That can include workshops, books and other instructional resources. And when it comes to actually building a robot, MATE II has starter kits: “We realized that a huge barrier to participation was access to parts and pieces, and just figuring out how to get started,” Zande adds.

Kitara Crain, an electrical engineer at Intel and mentor to the Geneseas team at Saint Francis Catholic High School in Sacramento, says engineering can seem scary, especially because in the movies it’s depicted as lab workers in white coats solving complex problems. But it can be simple: “If a parent changes a sprinkler or an outlet, that’s engineering,” she says. “It’s all about problem solving.”

The Geneseas team behind the ping-pong ball-catcher built a robot made largely from water bottles. The bottles are filled with cables, cameras, motors on the sides and a goalie net on top.

On competition day, there were challenges from the start. Only three of their five cameras were working and the compartments weren’t completely sealed – water got to the ethernet cable that transfers data. Once the robot was submerged, they lost two more cameras. But that’s all part of the process, Crain says: “This just gives kids the confidence that they can do anything and that mistakes are OK.”

Challenges aside, the team was able to complete their task, and placed first.

Riley Glenn, an 18-year-old Geneseas team member, notes no one on her team had previous STEM experience, but it was a change to apply science lessons to real life. “We decided to come out here to show how girls in STEM can get involved,” she adds.

This year, the MATE ROV Competition celebrated its 20th anniversary. The big changes in those 20 years, Zande says, are that parts are easier to find and robot sizes have gotten smaller.

The first MATE competition happened in 2001 at the Monterey Sports Center; since then, it has expanded to 42 regional competitions in the U.S. and gone international, with participants in 36 countries as about 800 teams globally compete to land a spot in the international competition.

Geneseas and the Warrior Tides Team from Valley Christian High School in San Jose advanced to the world championship, taking place at East Tennessee State University from Aug. 5-7.



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EDUCATION:

Game On! NPS' Wargaming Week Ties Tactics, Strategy to Improve Defense Planning

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NPS Students enrolled in the Wargaming Applications course execute strategies designed and developed in their 11-week class, presenting their capstone designs to wargaming sponsors who also participated in the games held across campus, June 2-9, 2021.

The Naval Postgraduate School (NPS) just took on some of the nation's most critical national security issues ... through analytic wargaming.

NPS' program has evolved into a national leader in the field of analytic wargaming, where the goal is to design a wargame that facilitates the collection and analysis of information provided by players immersed in a carefully, deliberately-crafted scenario. Results are either fed directly into a practitioner's decision-making process or are used to develop further analytic products as deliverables to sponsors from the DOD and the nation's allies and partners.

In rigorous detail, and on behalf of sponsors from around the Fleet and Force, NPS students rolled up their sleeves, designed and worked through a range of complex simulations of real-world challenges for the university's biannual Wargaming Week, hosted by the Naval Warfare Studies Institute (NWSI) Wargaming Center, June 2-9.

Wargaming Week is the culmination of an 11-week, hands-on course in wargaming applications held twice a year in June and December. Drawing on extensive research, sponsor interaction, and their own considerable military experience, the students developed and executed a range of different wargames to dive deep into technical and conceptual issues ranging from expeditionary operations, contested logistics, combating weapons of mass destruction and more.

"NPS is one of the very few institutions that has a robust wargaming education program to bring wargaming to the forefront and produce experienced wargaming practitioners that senior leadership can leverage," said Dr. Jeff Applegate, Director of NPS' Wargaming Activity Hub. "The great benefit of the wargaming course is it matches student teams with DOD or defense partner sponsors who have real-world problems. Their problems aren't articulated in terms of 'use this tool to solve this problem,' but rather, 'I have a difficult problem and help me understand how to solve it.'"

This quarter's sponsors included representatives from Defense Advanced Research Projects Agency (DARPA), Defense Threat Reduction Agency (DTRA), Australian Defense Force (ADF), Special Operations Command Europe (SOCEUR), Fleet Readiness and Logistics (OPNAV N4), Marine Corps Warfighting Laboratory (MCWL), and U.S. Army Pacific (USARPAC).

Some of the representatives actively participated in the role-playing as red or blue team members or provided subject matter expertise which further challenged students on how their gaming strategies addressed scenarios based on the sponsor's requirements.

Throughout the course, student teams are formed and matched with the sponsors who pose a question or issue they need answered. The students then get hands-on experience designing the foundations of their sponsor's wargame where they test and refine the wargame to ensure it addresses the sponsor's problem. This emphasizes the NWSI's applied "learn by doing" approach that best leverages NPS students' unique skills and attributes.

NPS students developed nine separate games and played them over the course of Wargaming Week, seven of which were conducted in-person on campus.



The games were a resounding success, Appleget noted, with sponsors able to see immediate impact and value in the results of the challenges they postulated to NPS students.

NPS Computer Science student Marine Corps Capt. Max Schlessel commented on the benefits of wargaming contested environments.

“It was a great opportunity to sharpen operational planning skills, and I was honored to take part in strategizing how to enable future [Amphibious Ready Group – Marine Expeditionary Unit] operations,” he said. “The wargame opened opportunities for the sponsors to better understand capabilities, and I was surprised to see how impactful a day of gameplay was to crafting future mission requirements.”

In another wargame, DTRA representatives provided subject matter expertise (SME) in combating weapons of mass destruction (WMD) and improvised threats. Early on in the design process, five panelists fielded questions by a team of NPS wargaming students on how escalation affects chemical, biological, radiological, nuclear and high explosives threat response and how decision-making is calculated.

Operations Research student Marine Corps Capt. Nikolas Anthony said talking with DTRA’s SMEs provided the foundation for developing a realistic and relevant wargame.

“With DTRA guidance, our team created a realistic scenario and a detailed data collection plan and we’re lucky enough to have experienced players to support our wargame,” he said. “There is a need to reenergize the integration of WMD threats within wargaming and operational planning.”

“Understanding the effects of current WMDs is the first step in increasing the lethality and survivability of a unit. DTRA can provide eye-opening awareness, wargaming support, and modeling and simulation for academic and operational forces.”

The wargaming process was win-win, Appleget said. Sponsors received critical input which now informs key decision-making; the students gained invaluable experience melding their military backgrounds with skill sets obtained at NPS before returning to the operational world, where they will apply this knowledge into future operations, said Appleget.

The Fall quarter’s wargaming topics are already being finalized, and include exploring the employment of manned-unmanned systems, and Distributed Maritime Operations/Expeditionary Advanced Base Operations in contested logistics command and control. Contact NWSI@nps.edu for more information.

[Game On! NPS’ Wargaming Week Ties Tactics, Strategy to Improve Defense Planning - Naval Postgraduate School](#)

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The Challenge Of Educating The Military On Cyber Strategy

(WarontheRocks 25 June 21) ... Erica Borghard, Mark Montgomery and Brandon Valeriano

Malicious cyber activity is ranked by some as the primary threat to international security. The strategic implications of cyberspace are particularly salient in the military context. From an offensive perspective, the military has developed concepts for the use of cyber capabilities as an independent instrument of military power, as well as their use as part of shaping activities to enable conventional operations on the battlefield. From a defensive perspective, the U.S. Department of Defense is as vulnerable to cyber threats to its networks and critical warfighting capabilities as the rest of U.S. society, if not more so. Yet there are significant gaps in how the military educates the officer corps as a community about the nature and practice of cyber strategy and operations.

The professional military education system faces several challenges in how it teaches future leaders practicing the profession of arms in the cyber domain. Cyber strategy programs are inconsistent across the services, are often under threat of funding cuts, and can be altered capriciously in the absence of clear guidance on what needs to be taught. Moreover, some core professors in the cyber security field have



limited practical experience, while others have limited academic background in teaching cyber strategy. Military reading curriculums more often feature fictional takes on cyber security than rigorous empirical accounts of the domain. War colleges and service schools have significant room to improve how they educate the officer corps to understand the cyber and information environment, including the core concepts and legal authorities critical to the domain.

The Cyberspace Solarium Commission was tasked with evaluating U.S. national cyber strategy and promoting the conditions to harness U.S. power in the cyber domain. In the context of improving U.S. military capabilities in cyberspace, the commission found that it would not be sufficient to just grow the cyber force or improve acquisition authorities. Rather, it is essential for military leaders across the services — beyond those directly engaged in planning and implementing cyber operations — to have a fundamental understanding of the role of the cyber domain in military operations and strategy. The commission’s March 2020 report contains a specific recommendation to enhance support for education on cyber strategy within the professional military education system. Specifically, the commission recommended that the war colleges and service schools establish permanent teaching and research faculty (sometimes called “Title 10 professors” at these institutions) “to communicate and investigate cyber strategy and policy at the national level as it affects the armed forces.” This recommendation was intended to institutionalize cyber strategy education in professional military education institutions.

However, as the commission staff began to work on the implementation of the recommendation, we recognized that simply creating positions for professors would not address the full scope of the problem. Rather, the U.S. military should establish standardized and institutionalized programs — not just professors of cyber strategy — across the services to ensure an appropriate level of military cyber education.

Implementing Cyber Security Education in Professional Military Education

On the modern battlefield, warfare will inevitably involve cyber operations integrated or in tandem with conventional operations. Divergent opinions about the utility of modern technology on the battlefield are exacerbated by a lack of understanding about the applications of technology to modern strategy. Therefore, U.S. military officers should be trained to understand how technologies like cyber operations are integrated into modern warfare, including an exploration of the history of emergent technology and its impact on the military. The military education community should seek understanding of how the deployment of modern capabilities allows new considerations in strategy formation and practice. Cyber specialists have a requirement to understand the implications of cyber tools because it is their core expertise. However, it is also valuable for warfighting officers (e.g., Navy “unrestricted line” or Army “combat arms”) to have an advanced understanding of the role of cyber operations. From a defensive perspective, for example, sensitizing non-cyber specialists to how adversaries may exploit the cyber vulnerabilities of the weapon systems and equipment they operate can promote the resilience of those systems, particularly in a combat environment. From an offensive perspective, better appreciating the role of cyber effects on the battlefield can improve how different capabilities work together — just as infantry and artillery officers are more effective when they understand how their respective movements and maneuvers contribute to achieving the overall objective.

Three military education programs stand out as promising for their focus on cyber security education and research, often providing unique degrees and certificates not available in civilian education. First, the National Defense University’s College of Information and Cyberspace has traditionally taken the lead on cyber education. It plays the role of coordination center for the Department of Defense University Consortium for Cybersecurity, and serves as coordinator for the National Centers of Academic Excellence for Cybersecurity. The College of Information and Cyberspace could continue to provide overarching guidance to the broader Department of Defense effort — provided critical gaps are remedied. The continued existence of the College of Information and Cyberspace has been under threat from the Department of Defense for some time, which has reduced capacity through the attrition of personnel due to funding reductions.

Second, the **Naval Postgraduate School** plays a critical role in the military’s cyber education system. Its longstanding Cyber Academic Group provides technical expertise unique in the professional military



education system. Supported by the National Security Affairs and Defense Analysis departments, the school offers courses in cyber strategy through the Cyberspace Operations Fundamentals course. Through the Institute for Security Governance, the Naval Postgraduate School is also building cyber courses that focus on cyber strategy, policy, and operations.

Finally, the Air Force Cyber College, a new entrant in the system, has rethought how to teach disruptive technologies to student bodies. The college offers professional cyber education to the Air Force and is developing a master of arts program in cyber strategy. Of specific interest is the course titled Cyberspace and Strategic Competition, which prepares students for “strategic level military and government service through the study of national security strategies and statecraft with a focus on cyberspace.” The Air Force Cyber College is also preparing a cyber leadership certificate in coordination with the National Security Agency, which provides 12-credit distance learning certificates to Air Force officers who have a cyber consideration in their billets. The faculty is interdisciplinary and comprises Ph.D.s, J.D.s, and reservists who instruct the officer corps, providing a unique diversity of knowledge and experience.

The three programs described above serve as exemplars in the professional military education system and should be enhanced and institutionalized, so they are not at risk with each change of command or changes in leadership at the national level. With institutionalization would come clear standards and collaboration across units to achieve parity.

It is also important to note that the service academies (West Point, Naval Academy, Air Force Academy, Coast Guard Academy, and Merchant Marine Academy) also offer important cyber security education to the incoming commissioned officer corps. Gaining a foundation in cyber strategy and operations at the beginning of an officer’s military career is beneficial. However, this is taught prior to individuals having developed the tactical and operational perspective that is important for understanding how to integrate cyber operations into operational planning. Therefore, while these programs certainly provide value, they should not preclude the development of more robust programs at the mid-career point, particularly given the dynamism of the cyber field and the operational and command responsibilities of more-senior officers.

Of course, there are other groups in the defense enterprise that conduct cyber research. For example, the Naval War College hosts the Cyber and Innovation Policy Institute and the Army Cyber Institute is located at West Point. Both institutes produce useful cyber research and academic work, but neither has clear teaching or training responsibilities (with the exception of academic instruction to the Corps of Cadets, in the case of West Point). Our focus here is on educating the warfighting officer corps — particularly at the senior O-3 level and above — to meet the challenges of cyber competition, rather than on research.

Therefore, to address gaps in existing programs, we recommend that Congress should direct the Department of Defense to conduct an in-depth study of its cyber strategy education offerings and provide a recommendation on the design of a comprehensive education program. This sort of comprehensive effort is not that far out of reach. First, each of the services should be offering significant programs in cyber strategy at their war colleges. The Air Force Cyber College sets a strong example of what this could look like. Moreover, the services should ensure that this effort is integrated across all of their professional military education programs, to include each service’s specific planner school (e.g., school of advanced warfighting, school of advanced military studies). Second, the degree granting programs in development at Air Cyber and Naval Postgraduate School should be offered to the entire joint force, as these programs remain ahead in terms of both the quality of instruction and their focus on cyber strategy and operations. Third, each service academy should continue its efforts to introduce the topic of cyber strategy to future officers and efforts should be enhanced to make this topic available in reserve officer training programs, as well. Finally, the College of Information and Cyberspace program at National Defense University should provide the overall direction and offer advice to each service as they expand offerings to their respective officer corps.

To operate in new domains the military education community should develop new ways of thinking about organizations and processes to develop and implement strategy. Simply hiring professors to teach cyber strategy will not address the full scope of educating military leaders. Therefore, the Department of



Defense should focus to gather the limited talent available to train future leaders, otherwise superficial offerings will only do a disservice.

Institutionalizing the Solutions

Additionally, institutionalizing a cyber education requirement in U.S. code is important to ensure the longevity of these programs. Therefore, in addition to maturing existing professional military education cyber programs, Congress should revise U.S. code, which sets joint professional military education standards, to include cyber and information operations strategy as core requirements. Currently, 10 U.S. Code § 2151(a) outlines joint professional military education requirements but makes no mention of educating the force about planning operations in the cyber domain. Instead, it refers to “joint planning at all levels of war.”

The language in U.S. code that establishes these standards is vague by design, which will still provide the services with considerable latitude to interpret that requirement. However, absent specific references to the cyber domain in U.S. code, competing requirements may crowd out a focus on cyber security and strategy as curriculum and leadership change. Amending U.S. code is not an insurmountable hurdle: it was recently revised to include “operational contract support.” Therefore, on its face, there is little reason to deny similar adjustments to other emerging domains as they become necessary to improve the ability of the profession of arms to understand the evolving impact of technology on combat.

That said, amending U.S. code is not a panacea, especially given how the language in law is broadly construed. Therefore, additional measures, such as establishing common cyber education standards in the chairman of the Joint Chiefs of Staff’s Officer Professional Military Education Policy, which provides professional military education guidance across the services, can help institutionalize and refine cyber curriculum standards. This guidance is also more adaptable, as the environment — and the resulting operational needs and challenges — evolves.

Without meaningful change and investment in professional military cyber education, service efforts will likely remain in a state of flux and uncertainty. The potential consequences of maintaining the status quo are significant. For instance, academic research on military innovation has shown that military organizations adapt poorly to modern technology when they are not sufficiently educated on the dynamics of change. Budget cuts are a fact of life in the military community, but so are cyber and information operations. In the absence of strong educational foundations, the military is at risk of being unprepared to engage in rigorous thought about the future application of technology on the battlefield.

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FACULTY:

How Bacteria on the Seafloor May One Day Power Underwater Drones

(TechLink 22 June 21)

A team of U.S. Navy scientists has developed an upgraded biofuel cell that uses bacteria to generate electricity as a renewable underwater power source.

Benthic microbial fuel cells take advantage of the natural, electron-expelling life processes of microorganisms living in the ocean floor’s sediment. They are already used to power small underwater sensors. But larger systems — such as those capable of charging underwater vehicles — have been hindered by low power densities and overall inefficiency.

After being approached by a Master’s student who wanted to work on benthic microbial fuel cells for her thesis, Emil P. Kartalov started to drum up ideas on how they could improve the device. Up to that point, his research had focused mainly on optics, biomedical diagnostics, and microfluidics.



“Essentially, it was very fortuitous because I applied my microfluidics background to address an interesting problem in terms of biofuel cells,” said Kartalov, who joined the **Naval Postgraduate School** as an Associate Professor of Physics in 2016.

Biofuel cells typically consist of a fairly spacious, hollow chamber containing the bacteria and a large electrode to harvest the electrons emitted by the bacteria. However, he noticed that current devices suffered from low electron capture efficiency, most likely due to the large distance between the electrode and bacteria themselves. Replacing the chamber with microfluidic confinement of the bacteria would force a much smaller distance between the two components — and hopefully, lead to an increase in electron capture efficiency.

“If you put the bacteria far away, how many electrons are going to start from the bacteria and reach the electrode? There will likely be a large attrition rate because those electrons can get easily absorbed in the water,” Kartalov told TechLink in a recent interview. “So why don’t we just confine the bacteria to be as close to the electrode as possible — as in, on the scale of tens of microns instead of millimeters or centimeters? That would make a huge difference, at least in principle.”

Kartalov and his student, Tricia D. Nguyen, fabricated a proof-of-concept benthic microbial fuel cell with a microfluidic chip to replace the chamber and a matching microelectrode matrix for charge capture. The microchannel width was approximately 100 microns, which allowed the bacteria to fit comfortably inside the chip, while the geometry forced the organisms to be at microscopic distances from the closest electrode.

They sent the prototype to Yolanda Meriah Arias-Thode, a scientist at the Naval Information Warfare Center – Pacific Division, for testing with actual sediment from San Diego Bay. The biofuel cell’s output power density, or power per unit area, was 160 mW/m². This value significantly exceeded the output power densities of previous devices, which ranged from 10 to 40 mW/m².

“You can actually take this microfluidic chip and upscale it by making more of them or building them differently, meaning you can start producing significant amounts of power,” he said. “For example, you can have something like bulk cubes at the bottom of the sea, where you have these things just producing power continuously, and perhaps charging supercapacitors or rechargeable batteries.”

Kartalov foresees his invention becoming the basis for power stations that can recharge fleets of underwater crewless vehicles, with military, commercial, and scientific research applications.

And the patent-pending technology — whose U.S. patent application was published on April 8, 2021 — is now available to private businesses for commercialization via TechLink.

To facilitate the timely transfer of Navy inventions, TechLink’s staff of certified licensing professionals provide no-cost consultation and facilitation services in support of a company’s application to obtain a license agreement and establish a mutually beneficial relationship with the Navy.

Joan Wu-Singel, a senior technology manager at TechLink, can explain the Navy’s intellectual property and the patent licensing process.

“This team has made innovative, significant improvements to the design of benthic microbial fuel cells that pave the way for more practical applications,” Wu-Singel said. “And through technology transfer, which allows government inventions to get transferred to companies, it’s a good business opportunity.”

[How Bacteria on the Seafloor May One Day Power Underwater Drones - TechLink | TechLink \(techlinkcenter.org\)](https://www.techlinkcenter.org/news/how-bacteria-on-the-seafloor-may-one-day-power-underwater-drones)

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ALUMNI:



Q&A: Heather H. Quilenderino, Director, U.S. National Ice Center and Commander, U.S. Naval Ice Center

(SeaPowerMagazine 22 June 21) ... Richard R. Burgess

She qualified as a surface warfare officer on a guided-missile cruiser before laterally transferring to the naval oceanography community. She graduated from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution joint program in oceanography, earning a Master of Science in oceanographic engineering, and earned her Ph.D. in meteorology from the **Naval Postgraduate School**.

She served as staff oceanographer for Naval Special Warfare Group 10, and for commander, Carrier Strike Group 10. Prior to assuming command of the Naval Ice Center, she served as the Operations Officer, Fleet Weather Center Norfolk. In 2016, she was awarded the Oceanographer of the Navy Commander Mary Sears Award.

Quilenderino discussed the operations of the National Ice Center with Senior Richard. R. Burgess. Excerpts follow:

What is the mission of the U. S. National Ice Center and the Naval Ice Center? What is the difference between the two?

QUILENDERINO: There is a slight difference, but we do have a mission that is one and the same, and our mission is to provide global-to-tactical scale snow and ice products, ice forecasting, and other environmental intelligence services to the U.S. government. The U.S. National Ice Center [USNIC] is made up of three agency components, so the Naval Ice Center [NIC] is the core component and the largest — the contribution from the U.S. Navy — and we are our own command. And so, I serve as the commanding officer of the Naval Ice Center as well as the director of the U.S. National Ice Center.

Our NOAA [National Oceanic and Atmospheric Administration] component is the Ice Services Branch of the Ocean Prediction Center, which is under National Weather Service, our newest realignment in May 2020. We also have a small Coast Guard component, which aligns under the Office of Waterways and Ocean Policy at Coast Guard Headquarters.

How is the USNIC funded?

QUILENDERINO: It's a combination of funding from the Defense, Commerce and Homeland Security departments. This year [2021], our budget is approximately \$13 million.

What types of analysis or mapping does the USNIC do?

QUILENDERINO: We don't necessarily do ice mapping, but we do ice analysis, and I use that distinction between because, particularly, in my mind, ice mapping would be more of something that you would do when you are actively in reconnaissance mode. In general, our day-to-day analysis is a wider area analysis that we then fine-tune to a higher resolution. We do that with, really, any data that are available, because the Arctic is a very data-sparse region. We are looking for anything from satellite data to buoys and models, anything that's available within the region that can provide us with information on the ice conditions, with satellites being our primary, models being our additional input and then, if buoys are available in our region of interest, we use them to validate the overhead sensing to provide additional information.

We do have some specific examples of ice mapping. What comes to mind is ICEX [Ice Exercise] conducted by the Arctic Submarine Lab [ASL]. When they are selecting the ice floe for the ice camp for that exercise every two years, they do aerial reconnaissance flights to select the floe generally with our analysts on board. We send one of our analysts as well as one of our Navy lieutenants, who leads the mobile environmental team, and they will be part of the pioneering flights to locate potential floes. The pilots will conduct the virgin landings on the floes and do coring samples or tow a sled to do more rigorously map the ice to get the conditions. These are collaborative projects that we do with University of Fairbanks. These are things that we will add in with our partners when doing specific mission operations like that with ASL that we wouldn't normally do.



What sensors and platforms does the USNIC use for ice data?

QUILENDERINO: Of our newest, exciting tools, one is operational, and one is still in development. The Earth System Prediction Capability is a new operational ensemble at FNMOC [Fleet Numerical Meteorology and Oceanography Center] in Monterey, California. It provides us with a 45-day ensemble of sea ice forecasts and is the first medium-range ensemble forecast that we have for sea ice. We began testing it two years ago with the Naval Research Lab, and it has shown extremely positive results in several of our tailored missions, as well as ICEX 2020 in predicting long-term location and concentration of sea ice and multi-year ice.

The second project that we are working on in collaboration with NGA [National Geospatial-Intelligence Agency] Research Division is called Snowfox. It's an AI/ML [artificial intelligence/machine learning] project where they're working on an automated sea ice classification algorithm to help us manage the large quantity of synthetic aperture radar imagery that's coming in from satellites. It will be able to automate some of the routine ice analysis that we do, so that our analysts can focus on areas where tailored mission support is going on. So, we provide one of our master ice analysts with their skills set to the project in collaboration with NGA, and that has shown some exciting results. We look forward to bringing that into operations in the next two years at the USNIC.

Does USNIC have dedicated satellites, or does it piggyback on those of other agencies?

QUILENDERINO: We don't have dedicated satellites for us and for ice reconnaissance. So, all of the satellite resources we use are usually multipurpose satellites, but, really, any satellite that has visible, IR [infrared], microwave or synthetic aperture radar [SAR] can provide data that will be of use to us in our ice analysis. We use a variety of U.S. and foreign satellites. For example, we use a significant number of NOAA satellites where we're using a multitude of visible, IR and microwave sensors. Our two primary SAR satellites are RadarSat 2 and Sentinel. SAR is our No. 1 choice for ice analysis, because it is an all-weather capability and does not have any daylight requirement as there is with visible, which is very important in the polar regions.

ICESAT-2, a NASA satellite for ice reconnaissance, is more applicable to science and research applications, because it has too much time latency to be applicable for operational use. And, so, we rely on RADARSAT-2, the Canadian satellite and a Sentinel, which is operated by the European Space Agency. We receive data from Sentinel through an agreement where NOAA is able to access that in near-real time.

The Northern View Agreement, which is a U.S./Canadian agreement that we benefit from through NGA, provides a significant amount of funding for our RADARSAT-2 imagery and supports almost all of the tailored support imagery ordering that we provide to U.S. government customers in the Arctic.

Now, we do not provide tailored support for foreign entities unless they are in cooperation with a U.S. government project. For example, just this past year, the Norwegian vessel Svalbard picked up an ONR [Office of Naval Research] mission to transit the Arctic and retrieve some ONR buoys. This was supposed to be part of the Coast Guard icebreaker Healy's mission and needed to be reassigned after the Healy's casualty last summer, so the Svalbard was assigned on relatively short notice, and we were able to provide direct support to Svalbard because of their support of the ONR mission. And we had a collaboration with the Norwegian Meteorological Office.

Is the USNIC able to draw upon foreign data and observations to some degree?

QUILENDERINO: We do. We have a few critical international partnerships, the first being the North American Ice Service [NAIS], a partnership between the Canadian Ice Service, USNIC and the U.S. Coast Guard. It is a critical partnership both for working through the data-sharing of the new RADARSAT Constellation Mission that will replace RADARSAT-2, but also, we share responsibility with things like the Great Lakes ice season as well. USCG International Ice Patrol is the USCG core member of NAIS, and Canadian Ice Service is the Canadian core member, along with USNIC, [they] share responsibility for the North Atlantic iceberg season. This partnership is incredibly beneficial throughout the Arctic because of our overlapping areas of interest and partnership.



The second partnership is the International Ice Charting Working Group [IICWG], a collaboration of all of the world's ice services in either hemisphere. Our goal is to create a collaborative environment where we can maintain the same standards and training throughout the globe. If you are a mariner receiving support in one area and you are transiting around the world and need to receive publicly available ice services from another country's ice service, you could be familiar with their products, because we're all meeting the same WMO [World Meteorological Organization] standards. We also are able to develop decision support products for mariners that can be useful regardless of country of origin when we're talking about protecting safety of navigation. So, through IICWG, one way that we are able to leverage this partnership is we actually use their local area expertise for ice analysis in the Baltic Sea region. We use ice analysis from the Finnish Meteorological Institute and the Swedish Meteorological and Hydrological Institute as part of our global analysis, because they are the experts in their area of the world.

Finally, the final partnership I wanted to mention is the International Arctic Buoy Program. This directly ties to foreign observations. There are 12 nations that contribute to the International Arctic Buoy Program, and our goal is to maintain a network of buoys that are reporting throughout the Arctic. All of those buoys contributed through this program are publicly available data that are transmitted over the Global Telecommunications System, and into model data worldwide. So, all atmospheric models from any country can pull this data and use it in their weather models to improve forecasts.

What agencies are your customers?

QUILENDERINO: Primarily the Navy. Our No. 1 Navy customer always has been and still is the submarine force as they have been in the Arctic for decades. We continue to support them on a daily basis. We have seen an increase in naval surface forces requesting our support primarily through individual ships that are doing high-north deployments. In the past few years, we've seen a significant increase in support of planning products for Fleet, OPNAV [Office of the Chief of Naval Operations] and SECNAV [Secretary of the Navy] staffs.

On the NOAA side, we do provide tailored support to NOAA ships in their research missions to include things like fisheries missions, some of their autonomous vehicle operations, and their weather forecasting offices in areas where sea and lake ice can impact the local communities. And this linkage was also one of the reasons for the realignment to National Weather Service within NOAA in 2020.

For the Coast Guard, we directly support icebreakers and any other Coast Guard ships that are in or near ice-infested waters and we provide support to various Coast Guard staffs.

So, any U.S. government entity or government-funded entity can request tailored support. For example, an ONR- or NSF [National Science Foundation]-funded scientific mission may reach out and request tailored support from us. And then, as part of NOAA's weather-ready nation, much of what we do is on our publicly available website, which is also a mobile enhanced site to make it easy for some of our low-bandwidth customers to be able to access that data as they need it.

How do your customers get access to your products?

QUILENDERINO: The majority is through the website. We also use the Navy's CTG [Commander Task Group] 80.7 portals on the various Navy networks, as well as standard Navy message traffic, email for some of our shipboard customers because then we can tailor products down to meet the bandwidth requirements that they may have. So, you have a single JPEG or very, very small bandwidth or even a text ice bulletin if that's what they need. And we can also provide just a simple overlay that they can bring into Google Earth or their navigation system or any sort of GIS-enabled visualization system.

The Arctic has been a focus of attention with the thinning and the melting of the icecap. Has that increased demand for your services?

QUILENDERINO: It certainly has. Over the past three to four years we've seen over a 20% increase annually in the number of products that have been requested, particularly our tailored support products and especially our climatology and long-range planning products.



One of the things that we have found is that, as we've seen the changes in sea ice, that the 30-year climatology is not providing an accurate planning assessment for long-range planning from an operational standpoint because of the significant changes.

We have a product that we call our Trivariate Climatology, which is available on our website. It's a simple product that provides open water, the marginal ice zone and pack ice from 2007 to present, so a more recent two-week averaged time period over those years. We think that it provides a more accurate assessment when it comes to operational planning than looking at a 30-year record that begins in 1980, due to the more recent changes that we've seen in sea ice extent in particular. We're also looking into updating climatology so that we can provide the best planning products for our operational planners.

What has been the most dramatic change in ice coverage that you've observed?

QUILENDERINO: 2020 was the second lowest year on record in the satellite record for minimum sea ice extent during the summer melt season, and during the summer of 2020 we provided a weekly analysis of all the Arctic Sea routes. Normally we provide this for the Northern Sea Route and the Northwest Passage. What most people will refer to as the Transpolar Route is not included in these products because it is generally ice covered. So, for the first time ever, we actually published a product that included all three routes as open. And we produced this product four times between the Sept. 4 and Oct. 2, when all three routes were open. That was very significant from our perspective.

The second is from Project MOASiC, when the [German] icebreaker Polar Stern wintered over in the pack ice for the yearlong project. We did not have anybody on board but we were supporting MOSAiC from our watch floor. They were expecting to see significantly thicker multi-year ice than they found. This is a rather anecdotal example, but I think that this is the other significant change that we've seen. Most people focus on the decrease in extent of sea ice, but the thickness of the multi-year ice is also rapidly decreasing which is, of course, decreasing the overall volume of ice in the Arctic and will have implications as we continue to see a reduction in sea ice.

The third thing is the thinner first-year ice that has formed over the winter and is more susceptible to easy breakup and melt faster as the melt season begins. What I have seen in just my short time as director is that we've seen these very significant fast breakup events in areas where we haven't necessarily seen them before. Strong storms may come through either early in the melt season or very late in the melt season and cause a significant change in the amount of sea ice simply because that sea ice along the edge of the extent is very fragile. And so, it's very easy to break it up and cause a large significant change in a rapid period of time. My analysts observe that these significant events are happening more frequently.

In addition to support of ICEX, what are some other examples of operations the USNIC supports?

QUILENDERINO: The Coast Guard icebreaker Healy is planning their Northwest Passage transit for this upcoming summer — both their primary and secondary routes — off of our planning products and the expected ice conditions. NOAA recently had a Saildrone mission to map the north slope of Alaska, which was the first time full North Slope operations were mapped with autonomous vehicles. Using our products, they were able to safely navigate all the way to the Canadian border and back avoiding all ice and ensuring their vehicles were safe.

And finally, we impact operations by enabling things like fuel- and time-savings when we are able to provide a "easier ice channel" when the [Coast Guard heavy icebreaker] Polar Star is breaking and maintaining an ice channel down at McMurdo Sound in Antarctica for the annual resupply mission called Operation Deep Freeze. We know that they're going to break the ice channel to get the ships in. If we can find a channel through first-year ice versus multi-year ice, there is a significant fuel, time and, obviously, cost savings to the Coast Guard and to the U.S. government to be able to break and maintain that channel while they conduct their resupply.

[Q&A: Heather H. Quilenderino, Director, U.S. National Ice Center and Commander, U.S. Naval Ice Center - Seapower \(seapowermagazine.org\)](#)

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St. Thomas Native Makes Coast Guard History as Newly-Minted Commander

(St. John Source 23 June 21) ... Carol Bareuther

(St. Thomas Source 23 June 21) ... Carol Bareuther

(Virgin Island Daily News 23 June 21) ... Agata Popeda

Karima Greenaway Hantal, a native of St. Thomas, has been promoted to commander by the U.S. Coast Guard – the first woman of U.S. Virgin Islands descent to achieve the rank.

The U.S. Coast Guard's 9th District Great Lakes region announced Hantal's history-making promotion in a press release issued on June 14.

Hantal is now the most senior officer from the U.S. Virgin Islands currently serving in the U.S. Coast Guard, according to the press release. She is also the first woman from the Virgin Islands to graduate from the United States Coast Guard Academy, it said.

"As we navigate through life's ups and downs, success might be waiting for us at the end of the road less traveled," said Hantal, who pursued lifesaving work in response to the tragic drowning of her late brother, Kenric Greenaway, when she was just 13 years old, and subsequently rose from a public housing community with her mom and six siblings with the resolve to never let anything deter her from achieving her goals.

"Anything worth achieving in life is never handed to you. You have to work hard, persevere, remain focused, and yes, sometimes you have to start over. Virgin Islands youth are leaders and achievers, and when we put our minds to something we are unstoppable," said Hantal.

Hantal's promotion ceremony was attended by coworkers, friends, and family from the U.S. Virgin Islands. The ceremony featured the U.S. national anthem performed on the steel pan by her niece, Desiya Samuel, and the celebratory luncheon included Virgin Islands desserts to showcase her V.I pride. During the event, Hantal was awarded a Coast Guard Commendation Medal by Capt. Don Montoro, Commander Sector Lake Michigan, which recognized her outstanding achievement while serving as the chief of the Inspections Division at Coast Guard Sector Lake Michigan from July 2019 to June 2021. In this role, she provided direct oversight in the management of safety, security, and environmental protection compliance in vessel- and facility-regulated communities throughout a four-state region covering 20 ports and 14 foreign ports of entry.

After departing Sector Lake Michigan, Hantal will assume her next assignment as the Prevention Department head at Coast Guard Marine Safety Unit Port Arthur, Texas. Port Arthur boasts the third-busiest port, the third-largest petrochemical complex, and the busiest Strategic Port of Embarkation for Military Outload operations in the United States, according to the press release.

Hantal is a 1999 graduate of the Ivanna Eudora Kean High School on St. Thomas and a 2001 graduate of the Naval Academy Preparatory School. She received a Bachelor of Science in Naval Architecture and Marine Engineering from the U.S. Coast Guard Academy in 2005. She subsequently earned a Master of Science in Mechanical Engineering from the **Naval Postgraduate School** in Monterey, California, where she received an outstanding distinction for her thesis on a Novel Nonelectrolytic Process for Chromium and Nickel Coating.

Her previous assignments include staff engineer, Office of Design and Engineering Standards and the Office of Commercial Vessel Compliance, U.S. Coast Guard Headquarters, Washington, D.C.; apprentice marine inspector, Sector New Orleans; Type Desk manager, Maintenance and Logistics Command Atlantic; and engineering officer in training, Coast Guard Cutter Dauntless, Galveston, Texas. Her military awards include three Coast Guard Commendation Medals, one Coast Guard Achievement Medal, Marine Safety Insignia, and various unit and team awards.

Hantal is married to Ali C. Hantal of Istanbul, Turkey, and is the daughter of Judith Dawson and the late George "Keith" Greenaway.

[St. Thomas Native Makes Coast Guard History as Newly-Minted Commander | St. John Source \(stjohnsource.com\)](#)

[St. Thomas Native Makes Coast Guard History as Newly-Minted Commander | St. Thomas Source \(stthomassource.com\)](#)



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Lompoc hires first female fire chief

(KeyT.com 23 June 21) ... Julia Nguyen

(LompocRecord 24 June 21) ... Lisa Andre

The City of Lompoc announced its new fire chief on Wednesday.

The City announced that Alicia Welch has been hired as Lompoc's new fire chief. She will be taking over for Interim Chief Brian Federmann, who was hired after Chief Gerald Kuras retired in August 2020. Federmann filled in during the search for a new, permanent fire chief.

Chief Welch, a veteran fire service professional with nearly 30 years of experience, will be the City of Lompoc's first female fire chief.

ADVERTISING

"Chief Welch brings a wealth of experience, valuable strategic planning and technical skills, and also has family roots on the Central Coast. She will be an outstanding addition to the Lompoc Fire Department, and the City of Lompoc," said Lompoc City Manager Jim Throop.

Chief Welch served with the Los Angeles City Fire Department from 1990 to 2017, rising in the ranks from firefighter to battalion chief. Most recently, she was the fire chief for Golden, Colorado, where she held the position from November 2018 to this summer.

Chief Welch was hired after an extensive, national recruitment conducted by Bob Murray & Associates.

Her education includes a bachelor's degree from Cal State University, Long Beach, and a master's degree in homeland security from the **Naval Postgraduate School**.

Chief Welch is set to begin her duties on August 9.

"I am excited to join the fantastic team of professional firefighters in Lompoc Fire, and look forward to carrying on the tradition of quality fire and emergency services that they work hard on each day," said Welch. "I look forward to working with the community and elected officials to address their needs, while ensuring Lompoc Fire Department personnel prevent incidents from occurring in the first place."

There will be a badge pinning and swearing-in ceremony at the City Council meeting on August 17.

[Lompoc hires first female fire chief | NewsChannel 3-12 \(keyt.com\)](#)

[Lompoc hires first female fire chief, Alicia Welch | Government and Politics | lompocrecord.com](#)

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A Sailor's Advice on Life book released by Cleveland O. Eason

(EIN Presswire 25 June 21)

Sailing For Your Future! Stand Guard on Your Basics and Unleash Your Confidence

"Everyone faces challenges in life. It's a matter of how you learn to overcome them and use them to your advantage." — Celestine Chua.

Do you want to know how to leverage time? Do you find yourself taking two steps forward and one step back? Are you seeking alternatives to the school of hard knocks? Author Cleveland O. Eason releases his book *A Sailor's Advice on Life* is a motivational work exploring the hallmarks of good character and the traits for success in any endeavor.

Whether you are starting, starting over, looking for the North Star, or trying to figure where you are, this book is for you! I am a believer in critical thinking. As it is often said, life is not about the destination, but the journey! It is my sincere hope that this book will encourage you to navigate life with your eyes wide open and realize your fullest potential!



“Mr. Eason draws on his years of experience and keen observations to provide an “owner’s manual” for life. Appropriate for teenagers and young adults as they navigate to the trials and challenges of growing in a world filled with mixed, often contradictory, messages. He points out the many attractive pitfalls and ways to avoid them. Short, sweet, and to the point. An excellent read for a young adult and the people that love them.” — Amazon customer review.

Cleveland O. Eason, a Lieutenant Commander in the US Navy who retired after 23 years of honorable service following deployments in both the Atlantic and Pacific. His military overseas and stateside assignments, ports of call, and post-military retirement entrepreneur pursuits, contributed to his ability to have positive interactions with people from all walks of life. His introspective reflections of those interactions allowed him to gain insights into human behavior.

He holds both a master’s degree in Systems Analysis from the **Naval Postgraduate School** in Monterey and an MBA from the University of Maryland.

[A Sailor's Advice on Life book released by Cleveland O. Eason - EIN Presswire \(einnews.com\)](#)

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Fire Commissioner Daniel A. Nigro Appoints Thomas J. Richardson as Chief of Department and John J. Hodgens as Chief of Fire Operations

(NYC Fire Department 24 June 21)

Fire Commissioner Daniel A. Nigro today appointed Thomas J. Richardson as Chief of Department, the highest-ranking uniformed position in the FDNY, and John J. Hodgens as Chief of Fire Operations.

“Tom Richardson has served our city with valor for four decades. He’s battled fires, rescued New Yorkers from life-threatening emergencies, and served as Chief of Operations and Chief of Training during his distinguished career,” said Fire Commissioner Nigro. “John Hodgens has led by example at every level of our Department and has excelled at our lifesaving mission throughout his 35-year career. Together, their leadership will ensure the safety of the more than 8 million New Yorkers our Department is sworn to protect, and the members of the FDNY who bravely serve our city each day.”

“I am honored Commissioner Nigro has selected me to serve as the 37th Chief of Department,” said Chief Richardson. “During my career in the FDNY I have witnessed remarkable acts of sacrifice, compassion, heroism, and above all else, bravery, by the members of our great Department. The men and women who serve as FDNY Firefighters, EMTs and Paramedics are the gold standard for all first responders. Our members are out there each and every day, focused on our mission of saving lives and protecting the citizens of this great city. I am truly honored and humbled to lead them as their Chief.”

“Each day, our Firefighters perform incredible acts of bravery – battling fires, providing emergency medical care, responding to dangerous incidents, and carrying out elaborate rescues,” said Chief Hodgens. “It is a tremendous honor to serve as Chief of Fire Operations, and I look forward to working closely with my fellow leaders in the Department to further advance our lifesaving mission.”

About Chief of Department Thomas J. Richardson

Chief Richardson is a 40-year veteran who has served as the Chief of Fire Operations since 2019. He will oversee the Department’s 16,000 uniformed Firefighters and EMS personnel and four major agency Bureaus: Fire Operations, EMS Operations, Training and Fire Prevention. Chief Richardson’s appointment is effective immediately. He succeeds former Chief of Department John Sudnik, who is moving to an administrative role within the Department after 35 years of service within the uniformed ranks.

As Chief of Fire Operations, Chief Richardson has overseen the day-to-day work of more than 11,000 Firefighters and fire officers, as well as dozens of high-ranking Staff Chiefs, Deputy Chiefs and Battalion Chiefs throughout the COVID-19 pandemic.

Chief Richardson joined the FDNY in 1980. His first assignment was at Engine Company 227 in Brooklyn, and he later worked at Ladder Company 102 and Rescue Company 2, also in Brooklyn. In



1990, he was promoted to Lieutenant and worked in Battalion 16 in Harlem for a year before returning to Brooklyn when he was assigned to Engine Company 235 in Bedford Stuyvesant. He was promoted again in 1994 and served as the Captain of Engine Company 234 in Crown Heights and later of Squad Company 270 in Queens. In September of 2000, he was promoted to Battalion Chief.

He has been cited for bravery six times in his career, including for the rescue of a 15-year-old boy from a fire in Brooklyn on January 10, 1989. At that incident, Firefighter Richardson was lowered by his lifesaving rope from the roof of a three-story brownstone on Monroe Street and rescued the teenager who was trapped by a fire. He was awarded the Dr. Albert A. Cinelli Medal for his heroic actions.

Chief Richardson is a 2010 graduate of the **Naval Postgraduate School** – Center for Homeland Defense and Security, where he earned a Master of Arts degree in Security Studies. He received his undergraduate degree at SUNY Empire State College. He has also attended both the FDNY's Advanced Leadership Course (2015), the Fire Officers Management Institute (2009), and the Combatting Terrorism Center at West Point in 2006.

About Chief of Operations John J. Hodgens

Chief Hodgens is a 35-year veteran who has most recently served as Assistant Chief of Fire Operations. As Chief of Fire Operations, Chief Hodgens will oversee the day-to-day work of more than 11,000 Firefighters, Fire Officers and Chiefs. He will also oversee the Department's highly trained special units including Hazardous Materials, Marine Operations, Rescue Operations, and the Special Operations Command.

Chief Hodgens joined the Department in 1986, and his first assignment was at Ladder Company 11 in Manhattan. He worked there until his promotion to Lieutenant in 1998, when he was transferred to Battalion 41 in Brooklyn, and was later assigned to Ladder Company 157 in Flatbush. Five years later, he was promoted to Captain and worked in the 8th Division on Staten Island, later becoming the officer in charge of Ladder Company 87 in Eltingville. In 2006, he was promoted to Battalion Chief and assigned to Battalion 38, where he and Chief Richardson served together for five years. In 2012, he was promoted to Deputy Chief and served as the Division Commander of Division 8, responsible for fire companies assigned to Staten Island and Brooklyn.

He has been cited for bravery twice in his career, including the rescue of an unconscious occupant from a fire in a Lower East Side apartment building in 1992 as a Firefighter in Ladder Company 11. He was awarded the Emerald Society Medal for his heroic actions.

He studied at John Jay College of Criminal Justice and Columbia Southern University, receiving Bachelor of Applied Science degree in Fire Science and Emergency Management. He also graduated from the **Naval Postgraduate School** – Center for Homeland Defense and Security's Executive Leadership Program (2021), the FDNY's Advanced Leadership Course (2014) and the Officers Management Institute (2013).

Chief Hodgens' father, John J. Hodgens Sr., also rose to the rank of Chief, and served as the Chief of Fire Prevention. He retired in 1997 as an Assistant Chief after 32 years of service.

[Commissioner Nigro Appoints Chief of Department and Chief of Fire Operations | City of New York \(nyc.gov\)](#)

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A new 'mayor' at Fort Irwin hopes to expand the base's civilian reach, and end 'this COVID era'

(Victorville Daily Press 24 June 21) ... Charlie Mcgee

A new leader is at the helm of Fort Irwin's residential hub, where roughly 21,000 U.S. military personnel and family members live alongside the Army's National Training Center and a NASA space-communication complex.



Col. Jason A. Clarke took over on Friday as garrison commander at Fort Irwin in a change-of-command ceremony that bid celebratory farewell to his predecessor, Col. Jeanette A. Martin. The role of garrison commander is similar to that of a city's mayor, Fort Irwin spokesperson Abe Dawoud told the Daily Press. The role changes hands every two years.

Clarke was commissioned as a second lieutenant in 1998, according to a biography provided at the ceremony. He went on to serve as a platoon leader in the 95th Military Police Battalion before transitioning to Special Forces. He has served in a number of military roles and deployed for operations in Africa, Europe, the Middle East and elsewhere.

Clarke graduated from U.S. Army War College as the Senior Army Fellow at its Asia-Pacific Center for Security Studies. In civilian education, he obtained an undergraduate degree in criminal justice from Columbus, Ohio-based Capital University and a master's in defense analysis from the **Naval Postgraduate School** in Monterey.

Martin's term was complicated by the emergence of COVID-19 early in her term. Clarke says he hopes to help the military's High Desert base regain its pre-pandemic form, while expanding its reach to new civilian communities.

Clarke said he hadn't yet gotten the chance to sit down with Barstow Mayor Paul Courtney, who attended the ceremony, to discuss a rekindling of Fort Irwin's various economic and public engagements in the neighboring city, much of which were halted by the pandemic.

However, the new garrison commander hopes to redevelop the military base's connections both in the High Desert and beyond.

"I want to continue to grow relationships at Barstow and Victorville, down at the L.A. Basin, all the way to the Vegas area," Clarke told the Daily Press after the ceremony. He said Fort Irwin brought in Chapter 51 of the Special Forces Association, which is based in Las Vegas, calling it "something that hasn't happened before."

Clarke's jurisdiction doesn't include the more than 750,000-acre National Training Center that covers most of Fort Irwin's territory.

Rather, his focus will be on a chunk of land the Army has carved out near its southeastern end and designated as its "cantonment," the residential area for trainees and people with long-term roles at the base.

His duties within the cantonment will be myriad. According to the Army's website, they include:

- emergency services such as Fort Irwin's military police, fire protection and police and community liaison services
- the base's public affairs office
- human resources divisions for military personnel
- continuing-education services
- the Army substance abuse program
- public works such as maintenance and infrastructure
- veteran services.

Roughly 21,000 people live in Fort Irwin's cantonment, according to U.S. military-run website Military OneSource. That includes more than 6,000 soldiers in rotation at the National Training Center, 4,580 active-duty personnel, 4,000 civilian workers, nearly 6,000 family members and about 88 reserve or National Guard members.

"Fort Irwin maintains a small-town atmosphere with town hall meetings and other community forums, even though 4,000 to 5,000 soldiers from other installations rotate through the NTC each month," the website says.

The cantonment offers restaurants, arcades and other commercial hospitality and entertainment centers common to any other bustling American town. Separate from more standard Army barracks, multiple private housing developments line the roads near the base's visitor entryway on Fort Irwin Road — such as The Villages at Fort Irwin, where spacious, well-kept two-story homes contrast with lower-income communities of the surrounding High Desert.



Clarke said he still needs to evaluate some aspects of the risks posed by the virus before a full return of normalcy in the cantonment, but he said mask mandates have already been relaxed at facilities that aren't tied to the base's child-care system, hospital or medical clinic.

"If you're vaccinated, you can go to events without a mask on like what you saw today at the Change of Command ceremony," he said.

Clarke said he's most excited to meet the demands and needs of Fort Irwin residents.

"Fixing things that are broken, getting us out of this COVID era and back to pre-COVID era," he said. "I think the other side of it, what I'm most nervous about is there's a lot of moving parts to being a garrison commander. Truly understanding those parts, and how I can use that to our advantage, will make the first part better."

[New Fort Irwin garrison commander Jason Clarke installed \(vvdaily.com\)](https://www.vvdaily.com/news/2020/09/24/new-fort-irwin-garrison-commander-jason-clarke-installed/)

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